



**Planning & Community Dev.**  
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**AGENDA**  
**Molalla Planning Commission**  
**6:30 PM, October 6, 2021**

**Meeting Location: Molalla Adult 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. PUBLIC COMMENT** – Limited to 3 minutes per person

**IV. MINUTES:**

- September 1, 2021, Planning Commission Meeting

**V. QUASI-JUDICIAL HEARINGS:**

- SDR06-2021 & CUP01-2021 – 250/270 W 7<sup>th</sup> Street (Danson's)
- SDR01-2021 & SUB02-2021 – 220 W Main St.

**VI. DISCUSSION ITEMS:**

- Planning Commissioner Recommendation

**VII. REPORTS AND ANNOUNCEMENTS**

- Planner's Report
- Director's Report

**VIII. ADJOURNMENT**



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

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**The September 1, 2021, meeting of the Molalla Planning Commission was called to order by Chair Rae Botsford at 6:35pm.**

**COMMISSIONER ATTENDANCE:**

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

**STAFF IN ATTENDANCE:**

Mac Corthell, Planning Director - Present  
Dan Zinder, Associate Planner – Present  
Julie Larson, Planning Specialist - Present  
Gerald Fisher, Public Works Director - 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:**

- August 4, 2021, Planning Commission Meeting

Planning Commission approves minutes 6-0

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## **V. QUASI-JUDICIAL HEARING:**

- SDR06-2020 – 501 E Main (Center Market Convenience)

Associate Planner, Dan Zinder, presented the staff report and material for planning file SDR06-2020, a Site Design Review application for Center Market Convenience located at 501 E Main. This application establishes appropriate land use approvals for the proposed development.

Brian Doyle spoke on behalf of Sonny Singh the applicant. Mr. Doyle stated that the applicant had no other comments to add to the record. No one spoke in opposition and no written comments were received.

Commissioner Giberson voiced concerns over three items that seemed incomplete on the application; landscaping, entrances of building; TIA (Traffic Impact Analysis). He was concerned that the Planning Commission wasn't getting the full availability to review. Director Corthell addressed the TIA stating that Cascade Center has another application which will dictate the placement of a traffic light at the intersection of Leroy & Main. I&E Construction wants to build the traffic light, however ODOT hasn't signed off on it. Therefore, the TIA from SDR06-2020 is conditioned but isn't as necessary. Landscaping will stay the same as current, although the developer will be required to plant as required per City code. The developer will be required to leave the existing entrance. The developer can also add the front entrance which will bring the development to a more conforming use.

Commissioner Giberson agreed with the staff follow-up. Director Corthell explained that the Planning Commission can condition the approval that the front entrance must be added.

After discussion, Commissioner Giberson made a motion to approve the application with the modification of the entrance condition of approval that street (south) side of the building be added as a customer entrance. Commissioner Farrens seconded the motion. Motion passes 6-0

## **VI. REPORTS AND ANNOUNCEMENTS**

- Planner's Report

Associate Planner Zinder gave an update on applications. Staff has completed 14 Type I reviews since July 7, 2021. Staff has four Type III reviews underway and Two Pre-Apps. Code Enforcement has closed 6 cases since July 7, 2021.

- Directors Report

Director Corthell thanked staff for being flexible during the past couple of weeks. He also thanked the Planning Commission for their adaptability to moving to Zoom meetings. Director Corthell also mentioned he is working at rebuilding the cities relationship with the Chamber of Commerce.

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**VI. ADJOURNMENT**

Meeting adjourned at 7:23PM

\_\_\_\_\_  
Chair, Rae Lynn Botsford

\_\_\_\_\_  
Date

ATTEST: \_\_\_\_\_  
Mac Corthell, Planning Director

**CITY OF MOLALLA STAFF REPORT FOR SDR06-2021/CUP01-2021**

**250 W 7<sup>TH</sup> ST – DANSONS MOLALLA, LLC**

**Date:** October 6, 2021 Planning Commission

**File No.:** SDR06-2021 & CUP01-2021

**Proposal:** Establish appropriate land use approvals for a new wood pellet manufacturing, storage, and distribution use on a 16.3 acre site located at 250 W 7<sup>th</sup> St. in Molalla, OR.

**Address:** 250 W 7<sup>th</sup> St

**Tax Lots:** 52E17A 05600/05500/00102

**Applicant:** John Utter  
Dansons Molalla, LLC  
3411 N 5<sup>th</sup> Ave #500  
Phoenix, AZ 85013

**Property Owners:** Dansons Molalla, LLC

**Applicable Standards:** **Molalla Municipal Code - Title 17 Development Code**  
**Division I. Introduction & General Provisions**  
*Chapter 17-1.4.030 Nonconforming Development*  
**Division II. Zoning Regulations**  
*Chapter 17-2.2.030 Allowed Uses*  
*Chapter 17-2.2.040 Lot and Development Standards*  
**Division III. Community Design Standards**  
*Chapter 17-3.2.040 Non-Residential Buildings,*  
*Chapter 17-3.3 Access and Circulation,*  
*Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting,*  
*Chapter 17-3.5 Parking and Loading,*  
*Chapter 17-3.6 Public Facilities*  
**Division IV. Application Review Procedures and Approval Criteria**  
*Chapter 17-4.1.040 Type III Procedure (Quasi-Judicial)*  
*Chapter 17-4.2 SITE DESIGN REVIEW*  
*Chapter 17-4.4 CONDITIONAL USE PERMITS*

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- II. Recommendations
- III. Conditions of Approval

EXHIBITS:

Exhibit A: Proposed Findings of Fact

Exhibit B: SDR06-2021 & CUP01-2021 Application Package

Exhibit C: Molalla Public Works Comments

Exhibit D: Molalla Fire Department Comments

Exhibit E: Clackamas County Roadway Authority Comments

## I. EXECUTIVE SUMMARY

### **Proposal:**

This is a consolidated Site Design Review and Conditional Use Permit application. The Applicants/Owners seek to establish appropriate land use approvals for a new industrial manufacturing, warehousing and distribution use on a 16.3 acre site located at 250 W 7<sup>th</sup> St in Molalla adjacent to the north of Molalla Forest Road and adjacent to the west of S Molalla Ave. Proposed operations include manufacturing, warehousing, and distribution of wood pellets. The applicant proposes to relocate an existing access on Molalla Forest Road to facilitate employee ingress/egress to the site. The applicant further proposes a new access on South Molalla Ave to facilitate heavy truck and visitor traffic. Finally, the applicant proposes use of an existing access provided by easement to Section St. for heavy truck traffic only.

### **Site Description:**

The proposed 16.3-acre site is located on tax lots 52E17A 05600/05500/00102, which abuts the west edge of S Molalla Ave, and the north edge of Molalla Forest Road. The current zoning of the site is Heavy Industrial (M-2) and no change to the zoning designation is proposed. The site is the prior location of a lumber mill that was used for processing local timber and is owned by Dansons Molalla, LLC. There are currently 4 blighted buildings on site that will be rehabilitated and used as follows: 1) 32,645 sqft - warehousing, 2) 18,141 sqft - warehousing, 3) 12,496 sqft – production, 4) 4,482 sqft – warehousing. The site slopes gradually from the high point on the southeast side, to the low points on the north side.

### **Surrounding Zoning and Land Uses:**

The project site is abutted by rural industrial land to the north on the east side of the site (outside city limits, within UGB), heavy industrial to the north for the remainder of the site (inside city limits), and rural residential farm forest to the west (outside city limits, within UGB). The site is separated by roadways from rural residential farm forest property to the south (outside the UGB), and farm forest to the east (outside UGB). All mentioned lands within the UGB are scheduled as heavy industrial in the City of Molalla Comprehensive Plan. Notably, Pacific Fibre Products Inc., owns and operates on the adjacent property to the north at the west end of the site.

### **Public Agency Responses:**

Staff circulated notice of the project to the City's Public Works Director, Fire Marshal, and the Clackamas County Roadway Authority on September 22, 2021. Staff has included responses from Public Works as Exhibit C, Molalla Fire District as Exhibit D, and Clackamas County Roadway Authority as Exhibit E. These responses have also been integrated into the comments and proposed conditions in this staff report.

### **Public Notice and Comments:**

Per MMC 17-4.1.040, notice of the public hearing was sent to all property owners within 300 feet of the subject properties and to a group of interested parties on September 9, 2021. Notice was published in the Molalla Pioneer on September 15, 2021. Signage containing public notice information was posted on the property on September 13, 2021. **Staff received/did not receive public comment.**

## II. Recommendation

Based on the application materials and findings demonstrating compliance with the applicable criteria, staff recommends approval of Site Design Review SDR06-2021 and Conditional Use Permit CUP01-2021, subject to the following conditions of approval. Any modifications to the approved plans other than those required by the conditions of this decision will require a new land use application and approval.

## III. Conditions of Approval

### A. Conditions Prior to Building & Grading Permit Approval:

1. All public improvements shall be completed and accepted, or otherwise bonded in accordance with the policies and regulations of the City of Molalla and any other public agency with jurisdiction over a given improvement.
2. The applicant shall provide full copies of recorded easements for the existing access on Section St. and the adjacent private utility easement that runs with it.
3. The applicant shall dedicate a 10-foot Public Utility Easement (PUE) across all South Molalla Ave. frontage, and all Molalla Forest Road frontage. No structures may encroach in the PUE unless they pre-exist the date of this decision, but may not be replaced if destroyed or otherwise removed. The applicant shall record the easement and provide the original to the City of Molalla.
4. The applicant shall provide the City of Molalla with Oregon Department of State Lands (DSL) concurrence on a wetland delineation, and obtain required DSL permits if needed.
5. The applicant shall provide the City of Molalla with DEQ concurrence or approval of the Bear Creek Restoration plan.
6. As part of the Building Permit Authorization submittal, the applicant shall submit architectural drawings/elevations of the proposed and existing buildings that show a consistent aesthetic theme and include elements from the City of Molalla Development Code Section 17-3.2.040.E Articulation and Detailing.
7. As part of their Building Permit Authorization submittal the applicant shall submit and gain approval of a plan for visual screening of the Air Cleaning Equipment area located on the south side of Building #3. The plan must be compliant with the City of Molalla Development Code.



8. System Development Charges (SDC) - Transportation, Stormwater, Sanitary, and Water. In accordance with MMC 13.14 this development increases the impacts to the public improvement facilities and is therefore subject to SDC's. SDC's shall be calculated in accordance with the City of Molalla SDC Methodology and must be paid at the time of Building Permit Authorization Approval.
9. The site development proposal will require a traffic impact analysis update. The proposed development will add a total of 408 trips and the threshold for a traffic impact analysis is 25 AM or PM PH trips, impacts to an intersection currently at failure, impacts intersections with high number of accidents, or increase number of vehicles with 20,000Lb GVW. ***This condition is complete.***
10. S Molalla Ave. is a Minor Arterial Street under Clackamas County jurisdiction. Street improvements shall meet Clackamas County Department of Transportation and Development requirements.
11. S. Molalla Forest Rd is a major collector street under City of Molalla jurisdiction. Current right-of-way width is 60 feet and approximate pavement width of 20 feet. Major collector streets (w/o PK) require 60 feet of right-of-way and 34 feet of pavement.
  - i. On S Molalla Forest Rd. applicant shall complete half-street improvements along the property frontage from back of sidewalk to center line of the right-of-way, and street lighting, in accordance with the City of Molalla Transportation System Plan.
  - ii. In lieu of required improvements on S Molalla Forest Rd, the applicant may sign, record, and provide to the city, a city approved waiver of remonstrance for the improvements referenced above.
12. Applicant shall construct a double pedestrian access ramp at the northwest corner of the intersection at S. Molalla Forest Rd and S. Molalla Ave. Design shall be in conformance with the ADA provisions for Accessible Design standards.
13. Applicant shall dedicate a 30-foot right-of-way radius along the northwest corner of the S Molalla Forest Rd. and S Molalla Ave. in accordance with the City of Molalla Transportation System Plan.
14. For right of way dedications on streets under the jurisdiction of the City of Molalla, applicant shall submit dedications to the City of Molalla in a format approved by the City of Molalla. For right of way dedications on streets under the

jurisdiction of Clackamas County, applicant shall submit dedications to Clackamas County in a format approved by Clackamas County.

## **B. Conditions Requiring Completion Prior to Occupancy:**

1. All private improvements must be completed, inspected, and approved as proposed in the approved site design review, and in accordance with the City of Molalla Development code, and the Oregon State Structural Specialty Code as applicable. City of Molalla Planning inspects non-structural private side improvements, and Clackamas County Building Official inspects those private improvements subject to the Oregon Structural Specialty Code.
2. All public improvements not otherwise completed and accepted prior to building permit authorization must be completed and accepted prior to permanent certificate of occupancy. However, due to receipt of an ODOT Immediate Opportunity Fund grant for South Molalla Ave improvements the applicant may take occupancy prior to completion of required South Molalla Ave improvements exclusively, but only subject to the terms of a development agreement voluntarily entered into by the applicant, the City of Molalla and/or Clackamas County.
3. Conditions relevant to S Molalla Ave Improvements (Clackamas County Administers)
  - a. All improvements within County right-of-way shall be constructed and approved per Roadway Standards Section 190.
  - b. The applicant shall provide a Certificate of Compliance and Completion ensuring all improvements were constructed per plans and manufacture recommendation.
  - c. The applicant shall submit electronic as-builts showing all changes and improvements within County right-of-way.
  - d. The applicant shall dedicated, by document, sufficient right-of-way to provide a minimum 35-foot half-street and accommodate the required frontage improvements and a minimum 8-foot wide Public Sidewalk, Sign and Utility Easement along the entire frontage of S Molalla Ave.
  - e. The applicant shall provide a 25% warranty surety for all improvements within County right-of-way.
  - f. Provide a maintenance agreement for the on-going and continued maintenance for any water quality/quantity located within the County right-of-way.
4. The applicant shall submit engineered design plans (As-Builts) detailing connection to storm drain, domestic water, and sanitary sewer facilities for approval and retention by City of Molalla Public Works.
5. Applicant proposes to collect, treat, and detain all stormwater onsite and discharge to Bear Creek.

- a. Connections to Bear Creek shall comply with all City of Molalla and DEQ requirements but are reviewed and permitted by DEQ, including water quality requirements.
  - b. The detention and flow control facilities shall comply with City of Molalla standards, and are reviewed, permitted, and inspected by City of Molalla Public Works.
  - c. The onsite private storm system shall comply with plumbing code requirements and shall be reviewed and inspected by Clackamas County Building Codes Division under a plumbing permit.
6. Applicant shall connect to City of Molalla Sanitary Sewer Facilities. An 8-inch sanitary main exists on Hart Ave. Sanitary main is approx. 6.19 feet deep near proposed Tax Lot 52E17A 00102 and will serve this development to the south by gravity system.
7. Applicant shall connect to City of Molalla Water Facilities. Applicant will connect a new 8" water main to the existing 6" water main at the intersection of S Molalla Ave. and 7th Street, then extend the new 8" main south along S Molalla Ave to the south end of the subject property at the intersection of S Molalla Ave and S Molalla Forest Rd. to allow for future extensions beyond present development in compliance with the Water Master Plan.
8. 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.
9. The applicant shall improve the existing accesses on Molalla Forest Road, and on Section St. to current City of Molalla development code and public works design standards. The applicant is responsible to obtain access permits from the City of Molalla Public Works prior to improvements as needed.
10. The applicant shall obtain access permits for the proposed accesses on Molalla Forest Road, and on South Molalla Ave., from the City of Molalla and Clackamas County respectively. The applicant shall place and construct the accesses in accordance with the standards of the applicable roadway authority and subject to their approval.
11. The applicant shall execute and complete the Bear Creek Restoration as approved by Oregon DEQ or provide a DEQ approved timeline for completion.

12. All walkways on-site, and ADA parking spaces, shall comply with the Americans with Disabilities Act and Chapter 17-3.2 of the Molalla Development Code.
13. All walkways adjacent to a parking area shall be raised 6 inches and curbed along the area abutting the parking area or separated using bollards with adequate minimum spacing to prevent vehicles entering the walkway.
14. All walkways crossing a parking area or driveway shall be clearly marked with contrasting paving materials in accordance with Chapter 17-3.3.040 of the Molalla Development Code.
15. The applicant shall provide and implement a plan for heat prevention and/or monitoring of green product storage that is satisfactory to the Molalla Fire District.
16. The applicant must install and gain approval of sprinkler systems in buildings as required by the State Fire Code and Molalla Fire District.
17. The applicant must comply with Chapter 22 of the 2019 Oregon Fire Code if it is determined that combustible dust is produced on the site.
18. The applicant shall submit and gain Molalla Fire District acceptance of a plan to install and connect no less than 6 fire hydrants that are functioning and distributed in accordance with Appendices B and C of the 2019 Oregon Fire Code. Hydrants shall be in accordance with the City of Molalla's detail for hydrants.
19. All hydrants shall be provided with a 4-inch stortz quick connect.
20. FDC's shall be placed on the same side of the road as hydrants and within 50 feet of a hydrant.
21. The applicant shall provide current fire flow readings (within 12 months) for sprinkler calculations.
22. All fire and life safety systems shall be acceptance tested, approved, and functioning as determined by the Molalla Fire District.
23. The applicant shall install Knox locks for manual gates, Knox override switch for electronic gates, and a Knox box for any buildings not occupied 24/7.
24. Fire line must be installed and meet the standards of the City of Molalla and Clackamas County Building Codes division. Inspection and approval of the fire line portion shall be completed by Molalla Fire District and Clackamas County.

25. Site access for emergency vehicles shall comply with the standards of the 2019 Oregon Fire Code.

### **C. Conditions to be Met Prior to Site Improvements:**

1. 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, Molalla Public Works).
2. Public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction.
3. Public improvement plans submitted for review shall be based on a 22"x34" format and meet the requirements of the Molalla Standard Specifications for Public Works Construction.
4. 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.
5. 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.
6. 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.
7. 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.

8. 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.
9. All utilities shall 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.
10. Clackamas County Conditions for S Molalla Ave improvements and access (Clackamas County Administers)
  - a. A Development Permit is required from the Clackamas County Engineering Department for review and approval of frontage improvements, erosion control Best Management Practices implemented and sight distances. The permit shall be obtained prior to commencement of work within the County right-of-way and Certificate of Occupancy. To obtain the permit, the applicant shall submit construction plans prepared and stamped by an Engineer registered in the State of Oregon, provide a performance guarantee equal to 125% of the estimated cost of the construction within existing County right-of-way and pay a plan review and inspection fee. The fee will be calculated as a percentage of the construction costs if it exceeds the minimum permit fee. The minimum fee and the percentage will be determined by the current fee structure at the time of the Development Permit Application.
  - b. Submit approvable construction Plans showing all required improvements. All proposed and required improvements for S Molalla Ave shall be designed, constructed, inspected and approved, pursuant to *Clackamas County Roadway Standards*:
  - c. Provide minimum frontage improvements for S Molalla Ave:
    - i. 20-feet of pavement from centerline with structural section meeting C100 for Minor Arterials
    - ii. Standard curb or curb and gutter
    - iii. 5-foot wide planter strip with street trees
    - iv. 7-foot wide ADA compliant sidewalk

- v. Private driveway meeting standard detail D650
- vi. Stormwater Drainage system in conformance with Clackamas County Roadway Standards Chapter 4 and City of Molalla Standard Specifications.
- vii. ADA ramp where the new sidewalk does not connect with existing sidewalk
- viii. 35-foot curb radius and dual ADA ramp at the intersection with S Molalla Forest Rd.
- ix. Show all utility connection and extensions with County right-of-way
- x. The applicant shall provide a minimum 125% surety of the cost estimate for all frontage improvements within existing County right-of-way.
- xi. Provide a Stormwater Management Plan for S Molalla Ave in conformance with Clackamas County Roadway Standards Chapter 4 and City of Molalla Standard specifications.
- xii. Submit approvable traffic control plan
- xiii. Submit contractor's Certificate of Insurance naming Clackamas County as additionally insured.
- xiv. Submit cost estimate for all improvements within County right-of-way.
- xv. The applicant shall enter into a Developer/Engineer Agreement, on County forms, providing primary inspection services.
- xvi. Submit AutoTurn exhibits showing the anticipated truck traffic turning maneuvers not crossing into oncoming travel lane

#### **D. Ongoing Conditions:**

1. 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 the intersection of the proposed site access driveway approaches and the streets with which they intersect.
2. The applicant shall provide and maintain minimum intersection sight distances at the proposed shared private access intersection with S Molalla Ave. Intersection sight distance shall restrict plantings at maturity, retaining wall, embankments, trees, fences or any other objects that obstruct vehicular sight distance. Minimum required intersection sight distance is 500 feet both north and south bound along S Molalla Ave.
3. All landscaping shall be maintained in good condition, or otherwise replaced by the property owner.
4. All fences and walls shall be maintained in good condition, or otherwise replaced by the property owner.
5. All outdoor lighting shall be maintained in good condition, or otherwise replaced by the property owner.

6. The applicant shall install and utilize air quality controls in accordance with Oregon DEQ standards.
7. The applicant shall obtain a DEQ Air Contaminant Discharge Permit as required.



**Exhibit A:**

*Proposed Findings of Fact*

## I. MMC 17-1.4 NONCONFORMING SITUATIONS

### MMC 17-1.4.030 Nonconforming Development.

Section 17-1.4.030 regulates nonconforming development. Nonconforming development includes situations where a development exists on the effective date of adoption or amendment of this Code that could not be built under the terms of the Code today, for example, by reason of restrictions on lot area, lot coverage, location on a lot, setbacks, height, yard, equipment, access, parking, landscaping, or other physical restriction or requirement. If the development was lawful when constructed, it may remain on the site so long as it remains otherwise lawful and complies with the following regulations:

**Finding:** The existing development could not be built under the current code due to lack of compliance with several current development code standards. However, the entire development predates adoption of this code in 2017, was lawful when constructed, remains otherwise lawful, and complies with the sub-regulations below. *This is a nonconforming development and may remain on site.*

**A. Alterations.** Any expansion of a nonconforming development shall not exceed 50 percent of the subject building area or development area, as applicable; for example, such area may include floor area or other surface area, paving, parking spaces, landscaping, outdoor storage, signage, lighting, or other developed areas that existed as of November 10, 2017. Expansion of a nonconforming use requires approval of a Conditional Use Permit under Chapter 17-4.4. A nonconforming development shall not be enlarged or altered in a way that increases its nonconformity by more than 50 percent. Approval of a variance is required to increase a development's nonconformity, and not more than one such variance shall be approved to expand the same development. A development or portion thereof may be enlarged or altered in a way that satisfies the current requirements of this Code or moves in the direction of conformity.

**Finding:** Approximately 12 of the 16.3 acres in this site were the pre-existing development area used for buildings, outdoor storage, parking, vehicle maneuvering, and other timber operations. The proposal development area includes all 16.3 acres; this is a 35% expansion. This application is a consolidated review of a conditional use permit application and site design review application. All parts of this proposal satisfy the current code or move substantially in the direction of conformity. *This criterion is met.*

**B. Destruction.** Should a nonconforming development or nonconforming portion of a development be destroyed by any means to an extent more than 50 percent of its current value as assessed by the Clackamas County Assessor, it shall be reconstructed only in full conformity with this Code. This does not preclude the reestablishment of a

nonconforming use after fire or other catastrophe as allowed under Section 17-1.4.020. This section does not apply to the R-5 Historic Residential district.

**Finding:** This criterion is not applicable.

C. **Roadway Access.** The owner of a nonconforming driveway approach or access to a public street or highway, upon receiving land use or development approval, may be required as a condition of approval to bring the nonconforming access into conformance with the standards of the applicable roadway authority.

**Finding:** There are two existing, nonconforming accesses to this site. The applicant proposes to bring these accesses into conformance with the standards of the applicable roadway authority. *This criterion is met with conditions.*

D. **Relocation or Removal.** Once a nonconforming structure or a portion of a nonconforming structure or development is moved it shall thereafter conform to current Code standards. (Ord. 2017-08 §1)

**Finding:** This criterion is not applicable.

## II. MMC 17-4.2 SITE DESIGN REVIEW

### MMC 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.

**Finding:** Under the provisions of MMC 17-1.4.030 Nonconforming Developments (see analysis in Section I of this staff report), this proposal is an expansion of a nonconforming development and none of the listed exceptions to site design review are applicable. *Site Design Review is Required for this proposal.*

### MMC 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. (Ord. 2017-08 §1).

**Finding:** This proposal includes a use in excess of one-acre total site area and involves a conditional use (wood manufacturing facility). *A Type III procedure under MMC 17-4.1.040 is required.*

#### **MMC 17-4.2.040 Application Submission Requirements**

**Finding:** The applicant met all application submission requirements, and they are included in this report. *This criterion is met.*

#### **MMC 17-4.2.050 Approval Criteria**

An application for Site Design Review shall be approved if the proposal meets all 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;**

**Finding:** The City received the Applicant’s proposal on September 1, 2021 and deemed it incomplete on September 1, 2021. Revised submissions submitted on September 23, 2021 were deemed complete on September 24, 2021. *This criterion is 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;**

**Findings:** Applicable Criteria under Division II Zoning Regulations for this project include:

*Chapter 17-2.2.030 Allowed Uses*

*Chapter 17-2.2.040 Lot and Development Standards*

*Chapter 17-2.4.030 Water Resources (WR) Overlay*

#### **MMC 17-2.2.030 Allowed Uses.**

Table 17-2.2.030 identifies “Wood Products Manufacture, such as Sawmills, Paper and Allied Products, and Secondary Wood Products; except Artisanal and Light Manufacture Uses” as permitted subject to Conditional Use Permit in the M-2 zone.

Table 17-2.2.030 identifies warehousing, freight terminals, and wholesale distribution as outright permitted uses in the M-2 zone.

**Findings:** The subject property is zoned M-2 Heavy Industrial as shown on the City's Zoning Map and Comprehensive Plan Map. The proposed wood pellet production facility and associated warehousing, freight, and distribution uses fit within the above use categories and are not prohibited in the M2 zone. This proposal includes a consolidated site design review and conditional use permit application review. *This criterion is met.*

#### **MMC 17-2.2.040 Lot and Development Standards.**

**Findings:** The Applicant's submitted application and site plan show compliance with Lot and Development standards for Industrial Zones (MMC Table 17-2.2.040.E) as follows:

##### **Minimum Lot Area, Depth, and Width**

Standard: No standard

Proposal: *Complies*

##### **Maximum Structure Height:**

Standard: 55ft

Proposal: 41 ft - *Complies*

##### **Fences and Non-Building Walls:**

Refer to Staff responses to MMC Section 17-3.4.040, Fences and Walls - *Complies*

##### **Maximum Lot Coverage:**

Standard: 100% (no standard)

Proposal: *Complies*

##### **Minimum Landscaping Area:**

Standard: 5%

Proposal: Approximately 35% - *Complies*

##### **Minimum Setback Yards:**

Standard: No minimum setback except a 10ft setback is required for industrial projects adjacent to residential districts

Proposal: Subject site is not adjacent to a residential district - *Complies*

##### **Build-To Line:**

*Build-To Line standards are not applicable in industrial zones*

#### **Section 17-2.4.030 Water Resources Overlay (WR)**

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

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

**Finding:** The portion of Bear Creek on the subject site has been degraded over time and a Habitat Restoration Plan has been included in the application (see Exhibit B of this report) as required in the “Agreement to Facilitate Cleanup and Production Reuse of Property” dated August 20, 2020 between Dansons and Oregon DEQ. This plan is designed to restore habitat 20-feet on each side of the creek for approximately 1,350 feet. The extent of the restoration work is shown on the submitted Site Plan. *The proposal complies with the purpose of the water resources overlay.*

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

1. Locally significant wetlands identified on the Molalla Local Wetlands Inventory or the Natural Features Inventory.
2. The riparian corridor extending upland 50 feet from the tops-of-bank of Bear Creek, Creamery Creek, and the Molalla River tributary as shown on the Natural Features Map.
  - a. Where a significant wetland is located fully or partially within the riparian corridor, the riparian corridor shall extend 50 feet from the upland edge of the wetland;
  - b. The riparian buffer for isolated wetlands shall extend 25 feet from the edge of the wetland.
3. The 100-year floodplain on properties identified as vacant or partly vacant on the 2007 Molalla Buildable Lands Inventory.

**Finding:** Bear Creek flows through the western portion of the subject property and is shown on the City’s Water Resources Overlay map. In addition, the city’s 2004 wetland inventory shows a wetland identified as BC-22E on the subject property. A Wetland Jurisdictional Evaluation report is included with the application package (see Exhibit B of this report). The report evaluated this resource to determine if it is a jurisdictional wetland or not. The conclusion of this report is the mapped wetland area is an artificial roadside ditch less than ten feet wide and was originally excavated from uplands. It does not contain food or game fish and is connected or contiguous with other wetland and is non- jurisdictional. *The portions of the project site*

located within the Water Resources (WR) overlay are appropriately identified in the wetland jurisdictional evaluation report.

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

**Finding:** The City issued the appropriate notification to DSL on 9/27/21. A wetland delineation with concurrence from DSL, and appropriate DSL permits for all work in the delineated area will be required as a condition of approval. *This criterion will be met with conditions.*

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

1. Topography;
2. The stream top-of-bank;
3. The 100-year flood elevation;
4. The delineated wetland boundary with documentation of concurrence by the Oregon Division of State Lands;
5. The required riparian setback;
6. Existing vegetative cover and type; and
7. Existing and proposed site improvements.

**Finding:** A site plan is included with the Habitat Restoration Plan included in Exhibit B of this report. *This criterion is met.*

**E. Modification of Boundaries.** The boundaries of the WR Overlay District may be modified under the following circumstances:

1. The approval authority may modify the boundary of a significant stream corridor or wetland, and by extension the required riparian setback, based on:
  - a. A wetland delineation prepared by a professional wetland scientist;
  - b. Written concurrence by the Department of State Lands; and
  - c. A site survey, prepared by a registered land surveyor, showing the precise location of the stream top-of-bank or delineated wetland edge.

**Finding:** No modification of this boundary is requested or required. *This criterion is not applicable.*

2. The approval authority may modify the boundary of the 100-year floodplain based on a report from a registered civil engineer demonstrating the floodplain has been improperly mapped.



**Finding:** No modification of this boundary has been requested. *This criterion is not applicable.*

3. The approval authority may modify the boundaries of an isolated significant wetland (i.e., a wetland that is not within 50 feet of the top-of-bank of a significant stream) when all of the following criteria are satisfied:

- a. The proposed use or alteration of the wetland is approved by the U.S. Army Corps of Engineers and the Oregon Division of State Lands;
- b. The wetland can be altered without substantial adverse impact on the natural character of the area and function of the wetland;
- c. The wetland does not support rare or endangered species of fish, wildlife, or vegetation;
- d. Elimination, alteration, or relocation does not significantly alter water movement, including normal levels or rates of runoff into and from wetlands;
- e. The benefit to the public from the proposed use clearly outweighs the public good from retaining the wetland area;
- f. Disturbance of the wetland will not require any public costs, including maintenance due to secondary impacts; and
- g. The disturbance to the wetland will be the minimum necessary to accommodate reasonable development of the property. Efforts should be made to integrate the wetland area into the proposed development.

**Finding:** No boundary modification is requested. *This criterion is not applicable.*

4. The approval authority may reduce the stream corridor boundary in highly disturbed areas by up to 25 feet when all of the following criteria are satisfied:

- a. The average stream corridor setback for the subject property shall remain at 50 feet;
- b. The applicant has prepared a mitigation plan demonstrating that there will be no net reduction in the water resource values, as identified in the Local Wetlands Inventory or Natural Features Inventory, whichever applies;
- c. The mitigation plan shall include specific mitigation measures such as restoration of riparian areas, enhanced buffer treatment within the protected stream corridor, or measures to increase water quality;
- d. The plan shall ensure removal of invasive plant species and replacement with suitable native plant species within one year of project approval;
- e. The plan shall include provisions for monitoring and replacement of native plants; and
- f. A riparian conservation easement shall be required for the protected stream corridor.

**Finding:** The existing nonconforming development includes hard surfacing that encroaches to within 20 feet of the centerline of Bear Creek for an area approximately 150 feet long. This proposal will provide for native revegetation of the entire (approximately) 1,350 linear feet of the creek on this site. As noted above, a Habitat Restoration Plan is included with the application package. This plan includes non-native plant species removal, removal of existing fill material, importation of top soil, and planting 450 native trees and 1,405 native

shrubs. The remaining stream corridor of the property has setbacks that exceed 50 feet throughout. The applicant will be required to provide a riparian conservation easement for the protected stream corridor. *This criterion will be met with conditions and the brief encroachment into the 50-foot riparian setback is approved as provided in the site plan.*

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

1. Trails.
2. Passive recreation uses and activities.
3. Maintenance of existing structures, lawns and gardens.
4. Normal maintenance and expansion of existing public facilities.
5. Construction of public facilities projects identified in adopted public facilities master plans.
6. Construction of transportation facilities identified in the adopted Transportation System Plan.

**Finding:** No use is proposed within the WR overlay boundary. *This criterion is not applicable.*

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

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

**Finding:** The proposal would remove only non-native plant species that will be replaced with native species planted. *This criterion is met.*

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

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

**Finding:** The submitted Habitat Restoration Plan has been submitted to and is under review by DEQ. The project area includes the removal of 2-feet of existing fill materials (pit run, cobbles, rip rap) along with invasive blackberry bushes. Imported topsoil will then be added to this area and contoured to drain to the creek. Following these activities, native trees and shrubs will be planted. *The city will defer to Oregon DEQ approval of the mentioned plan. This criterion will be met with conditions.*

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

**Finding:** None of these activities are proposed in the Water Resources boundary. *This criterion is met.*

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

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

**Finding:** All proposed plantings will be native species as required and will be monitored and maintained by the applicant. *This criterion will be met with conditions.*

**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;

**Finding:** This proposal constitutes expansion of a nonconforming development and is compliant with the provisions of Chapter 17-1.4 as described in Section I of this Exhibit A (Findings of Fact). *This criterion is met.*

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

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

*MMC 17-3.2.040 Non-Residential Buildings*

*MMC 17-3.3 Access and Circulation*

*MMC 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting,*

*MMC 17-3.5 Parking and Loading,*

*MMC 17-3.6 Public Facilities*

### **Section 17-3.2.040 Non-Residential Buildings**

**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.

**Finding:** The build to line is not applicable in industrial zones per Table 17-2.2.040.E. *This criterion is not applicable.*

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.

**Finding:** The build to line is not applicable in the Industrial zones, so the main office is not located abutting the street. However, a pedestrian pathway extends from the street to the main office as required. *This criterion 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.

**Finding:** None of the mentioned obstructions are placed between the building entrances and the streets to which they are oriented. *This criterion 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.

**Finding:** Off-street parking cannot be practicably oriented internally to the site due to the preexisting nonconforming development. See the MMC 17-3.3, 17-3.4, and 17-3.5 analysis below. *This criterion is met.*

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.

**Finding:** The street frontage requirement is part and parcel to the build to line standard which is not applicable in industrial zones. *This criterion is not applicable.*

**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.

**Finding:** The floor plate area of the proposed development exceeds 35,000 square feet. However, the terms of this section are intended to regulate large format commercial and residential development with multiple residences or commercial business operations occurring on a large site. *This criterion is not applicable to a single industrial operation on a large site.*

**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.

**Finding:** The proposal complies with all applicable portions of this section. *This criterion will be met with a condition of approval.*

**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.

**Finding:** None of the building elevations orient to a street or civic space. *This criterion is not applicable.*

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.

**Finding:** Due to the nonconforming nature of development on-site, the applicant will be conditioned to provide a consistent aesthetic design including changes in materials/texture/color as appropriate. *This criterion will be met with conditions.*

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.

**Finding:** All new buildings have been proposed to follow horizontal lines of the adjacent industrial building directly north of the subject property. *This criterion 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.

**Finding:** Only the proposed office is two floors. *This criterion will be met with conditions.*

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.

**Finding:** *This criterion will be met with conditions.*

**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.

**Finding:** This standard is waived as a pedestrian shelter associated with the proposed new buildings would unlawfully encroach in the right of way. *This criterion is met.*

**G. Mechanical Equipment**

a. 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.

**Finding:** *This criterion is not applicable.*

b. 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.

**Finding:** *This criterion is not applicable.*

c. 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.

**Finding:** Air cleaning equipment and ground-mounted power equipment are included in the proposal. Screening is already proposed for the power equipment, and additional

screening for the air cleaning equipment will be required as a condition of approval. *This criterion will be met with conditions.*

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

**Finding:** Civic space requirements do not apply to industrial development. *This criterion is not applicable.*

### **MMC 17-3.3 Access and Circulation**

**MMC 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. (Ord. 2017-08 §1)

**Finding:** Two accesses are proposed, one on Molalla Forest Road (City Jurisdiction), and one on S Molalla Ave (County Jurisdiction). The access on Molalla Forest Road is pre-existing, but not in conformance with current standards. The access on S Molalla Ave would be a new access and required to be constructed under current standards. *This section is applicable to this proposal.*

### **MMC 17-3.3.030 Vehicular Access and Circulation**

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

**Findings:** Four accesses are proposed, two are existing (Molalla Forest Road west access, and Section St. easement access). Additionally, two new accesses are proposed (Molalla Forest Road east access, and South Molalla Ave access). As a condition of approval, the applicant will be required to obtain approach permits from the City of Molalla, and Clackamas County for the corresponding access. *This criterion will be met with conditions.*

**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.



**Finding:** A traffic impact study was conducted and is included in Exhibit B of this report. *This criterion 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.
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.
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.
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.
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).
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.
7. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.
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.
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.
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.

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.
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.
14. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge. The roadway authority may require the driveway apron be installed outside the required sidewalk or walkway surface, consistent with Americans with Disabilities Act (ADA) requirements, and to manage surface water runoff and protect the roadway surface.
15. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.
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.
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.
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.
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.
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:**

South Molalla Ave Access – South Molalla Ave., adjacent to the subject site, is a Clackamas County roadway. Access standards for this access shall be managed through the Clackamas County Approach Permit process as a condition of approval.

Molalla Forest Road west Access – This is a pre-existing, non-conforming access that is required to be improved to conformance with current regulations. Access standards for this access shall be managed through the City of Molalla Approach Permit process as a condition of approval.

Molalla Forest Road east Access – This is a proposed new access. Standards for this access shall be managed through the City of Molalla Approach Permit process as a condition of approval.

Section Street Access – This is a pre-existing, non-conforming access utilizing an access easement across a neighboring property to the north. The applicant will be required to improve this access in accordance with current standards through the City of Molalla Approach Permit process, or the decommission the access. This will be a condition of approval.

Driveways (all accesses) – The proposal complies with the hard surfacing requirements for driveways. Emergency vehicle access standards will be included as a condition of approval.

*These criterion are met, or will be met with a condition of approval.*

- 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.

**Finding:** All proposed approaches meet spacing standards, are pre-existing, or are proposed in County Jurisdiction and will be controlled by their standards and access permitting process. *This criterion is met.*

- 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.

**Finding:** All proposed approaches meet spacing standards, are pre-existing, or are proposed in County Jurisdiction and will be controlled by their standards and access permitting process. *This criterion is met.*

- 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.

**Finding:** As an ongoing condition of approval, 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 the intersection of the proposed site access driveway approaches and the streets with which they intersect. *This criterion is met with conditions.*

### MMC 17-3.3.040 Pedestrian Access and Circulation

B. Standards. Developments shall conform to all 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.

**Finding:** The proposal contains a continuous walkway system connecting to the sidewalk along South Molalla Ave. *This criterion 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.

**Finding:** The proposed on-site walkways meet all of these standards. A condition requiring ADA compliance will be included. *This criterion is met.*

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.

**Finding:** The site plan does not indicate how the walkway along the north and southside parking areas will be separated. It will be a condition of approval to raise the walkway by 6 inches or separate it by bollards adjacent to both parking areas. *This criterion is met with conditions.*

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.

**Finding:** All crosswalks shall be clearly marked as indicated above. *This criterion is met with conditions.*

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.

**Finding:** All walkways are proposed to be asphalt and 6 feet in width. *This criterion is 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.

**Finding:** All walkways are proposed to be asphalt and 6 feet in width. *This criterion is 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

**Finding:** No multi-use pathways are proposed or required. *This criterion is not applicable.*

#### **MMC 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.

**Finding:** All portions of the site not occupied by structures or hard surface for vehicle maneuvering are proposed to be landscaped. *This criterion 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.

**Finding:** The Applicant's submitted application shows over 5% landscape coverage, which is the standard for industrial zones. *This criterion 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:** The applicants submitted landscaping plan, and Bear Creek Improvement plan meet all standards contained above and are included with Exhibit B of this report. *This criterion is 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.

**Finding:** The subject property is not in the C-1 zone. *This criterion is not applicable.*

- 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.

**Finding:** Two parking lots are proposed, one on the north side of the property and one on the south side. The south side contains 7,845 sqft of landscaping out of a 10,418 sqft lot, for a total landscaped proportion of more than 75%. The north side does not contain landscaping, but is located on a DEQ required cap that cannot be excavated due to prior hazardous activities that occurred on the site, and thus does not contain landscaping.

This site is going from zero parking or parking lot landscaping to 32 parking spaces and 7,845 sqft of parking lot landscaping. *This moves in the direction of conformity as required by MMC 17-1.4.030, and thus meets this criterion.*

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.

**Finding:** This development had zero parking or parking lot landscaping. The Applicant's submitted site plan shows 32 parking spaces with 4 landscaping islands integrated. There is one row of parking that contains more than 10 spaces without an island break in-between and the remainder of the rows are less spaces, or meet this standard. *This moves in the direction of conformity as required by MMC 17-4.1.030, and thus meets this criterion.*

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.

**Finding:** A comprehensive landscaping plan is included with Exhibit B of this report and provides for this requirement. *This criterion 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.

**Finding:** The Applicant's submitted site plan shows wheel stops between landscaped areas and vehicle maneuvering areas. *This criterion 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 site plan does not show tree wells within sidewalks or other paved areas. *This criterion is not applicable.*

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.

**Finding:** No outdoor storage or unenclosed uses are proposed. *This criterion is not applicable.*

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.

**Finding:** Each of the proposed parking lots includes substantial vegetative and structural screening on the submitted landscaping plan (exhibit xx). *This criterion 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:** The proposal includes substantial vegetative screening along both right-of-way frontages as encouraged by the planning department at pre-application. This includes both existing and additional trees and shrubs along the south property line and new trees and shrubs along the east property line, including along the east wall of proposed building #6. *This criterion is met.*

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

**Findings:** *This criterion will be met with conditions.*

#### **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.
- C. Height.
  - 1. 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.
  - 2. All Zones. Fences and walls shall comply with the vision clearance standards of Section 17-3.3.030.G. Other provisions of this Code, or the requirements of the roadway authority, may limit allowable height of a fence or wall below the height limits of this section.
- D. Materials. Prohibited fence and wall materials include straw bales, tarps, barbed or razor wire (except in the M-2 Heavy Industrial zone); scrap lumber, untreated wood (except cedar or redwood), corrugated metal, sheet metal, scrap materials; dead, diseased, or dying plants; and materials similar to those listed herein.
- E. Permitting. A Type I approval is required to install a fence of six feet or less in height, or a wall that is four feet or less in height. All other walls and fences require review and approval by the Planning Official through a Type II procedure. The Planning Official may require installation of walls or fences as a condition of approval for development, as provided by other Code sections. A building permit may be required for some fences and walls, pursuant to applicable building codes. Walls greater than four feet in height shall be designed by a Professional Engineer licensed in the State of Oregon.
- F. Maintenance. Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner. (Ord. 2017-08 §1)

**Findings:** The fence proposed in this application was approved in a separate Type I application and meets all requirements of this section. It is a 6-foot chain link fence that meets the 90% opacity

requirement and will have barbed wire along the top for security as allowed in the Industrial Zone. *This criterion is met.*

#### **17-3.4.050 Outdoor Lighting**

1. Light poles, except as required by a roadway authority or public safety agency, shall not exceed a height of 20 feet; pedestal- or bollard-style lighting shall be used to illuminate walkways. Flag poles, utility poles, and streetlights are exempt from this requirement.
2. Where a light standard is placed over a sidewalk or walkway, a minimum vertical clearance of eight feet shall be maintained.
3. Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.
4. Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.
5. Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.
6. Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.
7. Active building entrances shall have a minimum average illumination of not less than two foot-candles.
8. Surfaces of signs shall have an illumination level of not more than two foot-candles.
9. Parking lots and outdoor services areas, including quick vehicle service areas, shall have a minimum illumination of not less than 0.2 foot-candles, average illumination of approximately 0.8 foot-candles, and a uniformity ratio (maximum-to-minimum ratio) of not more than 20:1.
10. Where illumination grid lighting plans cannot be reviewed or if fixtures do not provide photometrics and bulbs are under 2,000 lumens, use the following guidelines:
  - a. Poles should be no greater in height than four times the distance to the property line.
  - b. Maximum lumen levels should be based on fixture height.
  - c. Private illumination shall not be used to light adjoining public right-of-way.

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

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

**Findings:** The proposed lighting plan included in Exhibit B of this report complies with all the requirements of this section. *These criteria are met.*

## Chapter 17-3.5 PARKING AND LOADING

### 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:

**Findings:** The Applicant has proposed a reduction in required off-street parking in accordance with MMC 17-3.5.030.C, below. Per MMC Table 17-3.5.030.A, the "Warehouse and Freight Movement" use requires one (1) parking space per 2,000 sqft, and the "Manufacturing and Production" use requires one parking space per 1,000 sqft. The required parking spaces for full compliance are based on these requirements and would require approximately 120 parking spaces. Due to the nonconforming nature of this development and the complete lack of parking associated with the existing structures. *The addition of 32 spaces (2 ADA) moves in the direction of conformity as required under MMC 17-1.4.030. See exceptions and reductions analysis below.*

#### C. Exceptions and Reductions to Off-Street Parking.

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

**Finding:** Based on the provisions of MMC 17-1.4.030 allowing expansion of nonconforming development that moves in the direction of conformity, and the applicant's submitted analysis from an AICP certified planner (see application narrative), the parking standard is reduced to 32 vehicle spaces as proposed. *This criterion is met.*

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.

**Finding:** All parking is proposed at 10' wide, 20' deep, 25' drive aisles, on asphalt, and each space includes a wheel stop to protect the abutting pedestrian walkway and landscaping. The proposal includes 24 employee parking spaces, six visitor spaces, and two ADA parking spaces. A stormwater management plan designed in compliance with Section 17-3.6.050 is included with the application package. A condition will be included to comply with ADA requirements. *This criterion is met.*

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.

**Finding:** *This criterion will be met with a condition of approval.*

**Finding:** *Criteria B, D, E, and G do not apply to this proposal.*

### **MMC 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.

**Finding:** A 5 bicycle parking rack in the north (main customer lot) is proposed. The requirement of 1 bike space per 10 parking spaces leaves the minimum requirement at 3.2 bike spaces. *This criterion is met.*

As a condition of approval, the Applicant shall install bicycle racks consistent with criterion B of MMC Section 17-3.5.040 prior to City approval of occupancy. *Criterion D is met. Criterion C does not apply.*

### MMC 17-3.5.050 Loading Areas

- B. 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.

**Finding:** There is a proposed 4 tractor trailer loading dock proposed on the west side of building #1 (pre-existing). This loading area is pre-existing and large enough to safely accommodate loading operations without interfering with a right-of-way. *This criterion is met.*

- 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.

**Findings:** The proposed loading area is pre-existing, and complies with all of the above provisions. *This criterion is met.*

### MMC 17-3.6 PUBLIC FACILITIES

#### 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.

**Findings:** Both streets upon which the proposal fronts (S Molalla Ave & S Molalla Forest Rd) are substandard under the Clackamas County and City of Molalla Transportation System Plans respectively. Improvements will be required along South Molalla Ave and a waiver of remonstrance will be required along Molalla Forest Road. *This criterion is met with conditions.*

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.

**Findings:** The right of way on S Molalla Ave is substandard, dedication will be required along South Molalla Ave, and at the site's frontage with the intersection of South Molalla Ave and Molalla Forest Rd. *This criterion is met with conditions.*

#### 17-3.6.030 Public Use Areas

**Findings:** This deals with parks dedications and parks SDC's and is not applicable to industrial development. *This criterion is not applicable.*

#### 17-3.6.040 Sanitary Sewer and Water Service Improvements

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

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

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.

**Finding:** A new connection to City Water and City Sanitary Sewer will be required along with the improvements necessary to make that possible. *This criterion is met with conditions.*

#### 17-3.6.050 Storm Drainage and Surface Water Management Facilities

**Findings:** The applicant has submitted a storm water management plan included in this report as exhibit XX. This plan will be reviewed by the City engineer for compliance with applicable regulations. Storm water facilities will need to be built to facilitate this development and must incorporate the entire development (pre-existing and proposed). *This criterion is met with conditions.*

#### 17-3.6.060 Utilities

**Findings:** All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city. *This criterion is met with conditions.*

### 17-3.6.070 Easements

**Findings:** The proposal includes an access easement from Section Street bearing south to the subject site, and a stormwater and sanitary sewer easement running parallel to the access easement, and a 10' public utility easement along both roadway frontages (South Molalla Ave and Molalla Forest Rd). The city will require recorded copies of each easement as a condition of approval. *This criterion is met with conditions.*

### 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. (Ord. 2017-08 §1)

**Findings:** *This criterion is met with conditions.*

### MMC 17-3.7 Signs

**Finding:** No signs are proposed with this review. The applicant will be required to gain sign permit approval separately from this application before utilizing any signs on the site.

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;

**Findings:** The applicants proposed use is a wood pellet manufacturing and warehousing facility. Building #3 on the site plan is proposed as the operating location of production equipment. It is buffered to the north by building #2, to the east by building #6, to the west by building #1, and the south by building #4. Additionally, the manufacturing operation is proposed to occur inside of building #3.

The surrounding property to the north and west is either already Heavy Industrially zoned or is designated as such in the Comprehensive Plan. The properties to the south are designated Rural Residential Farm Forest with minimum 5-acre parcels, and the properties to the east are designated Farm Forest with 10-acre minimum parcels. All property surrounding the site includes either a Forestry designation or a Heavy Industrial designation making this an extremely appropriate location for a wood product manufacturing facility.

The applicant will be required to install air quality equipment in accordance with DEQ regulations and obtain the applicable air contaminant discharge permit from Oregon DEQ.



The applicant is installing and retaining substantial vegetative screening on the south and east property lines where their operations are located in order to minimize noise, visual, and light glare impacts.

Operations on the site are performed substantially inside of the existing and proposed buildings which provides an additional barrier to noise and visual impacts. *This criterion is 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.

**Findings:** There are no known prior land use approvals associated with this site. *This criterion is met.*

### III. MMC 17-4.4 Conditional Use Permits

#### 17-4.4.020 Approvals Process

The Planning Commission using a Type III procedure, per Section 17-4.1.040, reviews conditional use applications.

**Finding:** This consolidated site design review and conditional use permit application is being processed under a Type III procedure. *This criterion is met.*

#### 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. (Ord. 2017-08 §1)

**Finding:** All required submission requirements were provided by the applicant. *This criterion is 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;

**Finding:** The proposal is to use this site as a Wood Pellet Manufacturing, Warehousing, and Distribution Center. This site was formerly the home of a timber mill and contains several blighted buildings as well as a DEQ contamination site that had to be hard capped. The revival of this site will bring restoration of blighted buildings, new code compliant buildings, and compliant water, sewer, stormwater, and transportation systems. The location of the proposed operation on a heavy industrial site historically used for timber milling and chemical treatment could not be a better fit. In addition, the applicant will be restoring and revitalizing a blighted, contaminated piece of property to serve a significantly higher and better employment use. *This criterion is 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;

**Finding:** The applicants proposed use is a wood pellet manufacturing and warehousing facility. Building #3 on the site plan is proposed as the operating location of production equipment. It is buffered to the north by building #2, to the east by building #6, to the west by building #1, and the south by building #4. Additionally, the manufacturing operation is proposed to occur inside of building #3.

The surrounding property to the north and west is either already Heavy Industrially zoned or is designated as such in the Comprehensive Plan. The properties to the south are designated Rural Residential Farm Forest with minimum 5-acre parcels, and the properties to the east are designated Farm Forest with 10-acre minimum parcels. All property surrounding the site includes either a Forestry designation or a Heavy Industrial designation making this an extremely appropriate location for a wood product manufacturing facility.

The applicant will be required to install air quality equipment in accordance with DEQ regulations and obtain the applicable air contaminant discharge permit from Oregon DEQ.

The applicant is installing and retaining substantial vegetative screening on the south and east property lines where their operations are located in order to minimize noise, visual, and light glare impacts.

Operations on the site are performed substantially inside of the existing and proposed buildings which provides an additional barrier to noise and visual impacts. *This criterion is met.*

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

**Finding:** The applicant is required to make the relevant facilities improvements as a condition of approval. *This criterion is met with conditions.*

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.

**Finding:** Wood product manufacturing is a permitted use, subject to conditional use permit, in the Heavy Industrial (M2) zone where this property is located. *This criterion is 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.

**Finding:** City staff has proposed multiple conditions of approval to ensure the use is compatible with other uses in the vicinity which include heavy industrial, rural residential farm forest, and farm forest. *This criterion is met with conditions.*

## Exhibit B:

### *SDR06-2021 and CUP01-2021 Application Package:*

1. Application Form & Ownership Docs
2. Application Narrative
3. Existing and Proposed Conditions Site Plans
4. Landscaping Plan
5. Lighting Plan
6. Bear Creek Improvement/Revegetation Plan
7. Wetland Jurisdictional Evaluation Report
8. DEQ Productive Property Agreement 20-08
9. Stormwater Report
10. Traffic Impact Study Report



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

**Owner/Applicant:**

Applicant: _____	Phone: _____
Applicant Address: _____	Email: _____
Owner: _____	Phone: _____
Owner Address: _____	Email: _____
Contact for additional info: _____	

**Property Information:**

Address: \_\_\_\_\_

Assessors \_\_\_\_\_

Map/Taxlot #: \_\_\_\_\_

Current Use of Site: \_\_\_\_\_ Zoning Designation: \_\_\_\_\_

Intended Use: \_\_\_\_\_

**Proposed Action:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Proposed Use: \_\_\_\_\_

Proposed No. of Phases (one each year): \_\_\_\_\_

**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):**

Jordan Thiessen

Print or Type



Signature

Jeff Thiessen

Print or Type



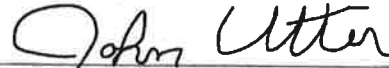
Signature

Dan Thiessen

**Applicant(s) or Authorized Agent:**

John Utter

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.

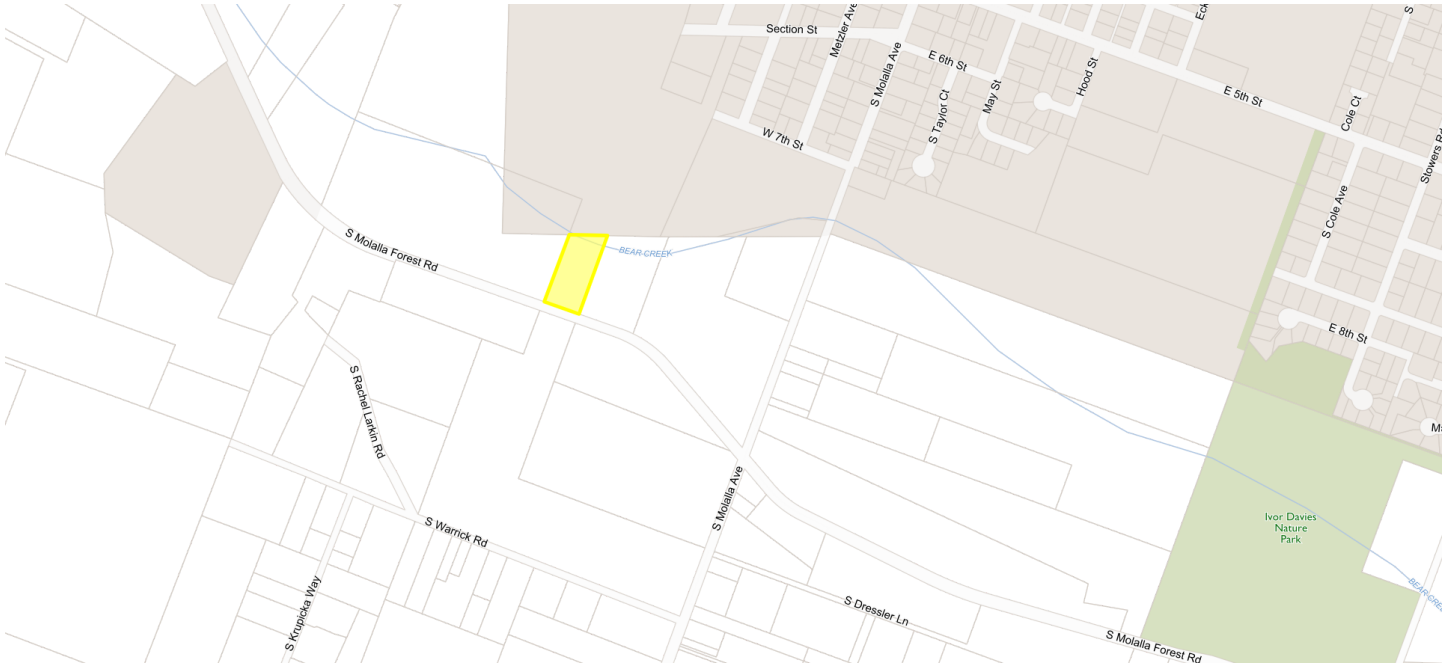
- 3 Copies of Application Form\*** completely filled out and signed by the property owner (or person with authority to make decisions on the property).
- Copy of Deed** to verify ownership, easements, etc.
- At least 3 folded** sets of plans\*
- At least 3 copies** of narrative addressing application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



# Property Report

Geographic Information Systems  
 121 Library Court  
 Oregon City, OR 97045



<b>Parcel Number</b>	01107956
<b>Tax Payer</b>	DANSONS MOLALLA LLC
<b>Site Address</b>	undefined
<b>Mailing Address</b>	3411 N 5TH AVE STE 500, PHOENIX, AZ 85013
<b>Tax Lot Number</b>	52E17A 05600
<b>Land Value</b>	\$96,429.00
<b>Building Value</b>	\$0.00
<b>Total Value</b>	\$96,429.00
<b>Bedrooms</b>	N/A
<b>Bathrooms</b>	N/A
<b>Living Area</b>	N/A
<b>Assessed Acres</b>	1.75
<b>Assessed Value</b>	\$30,918.00
<b>Year Built</b>	N/A
<b>Sale Date</b>	09/15/2020
<b>Sale Amount</b>	\$1,600,000.00
<b>Sale Type</b>	S
<b>Document Number</b>	2020-076426
<b>Land Class</b>	301
<b>Building Class</b>	N/A
<b>Neighborhood</b>	Area 02 industrial
<b>Taxcode Districts</b>	N/A
<b>Urban Growth Boundary</b>	Molalla UGB
<b>FEMA</b>	Area Of Minimal Flood Hazard
<b>Zoning</b>	RI: 1.77 acres

<b>Fire District</b>	Molalla RFPD #73	
<b>Park District</b>	Not In District	
<b>School District</b>	Molalla River	
<b>Sewer District</b>	N/A	
<b>Water District</b>	N/A	
<b>Community Planning Organization</b>	Molalla	
<b>Garbage And Recycling Service</b>	Molalla Sanitary	
<b>City</b>	Unincorporated Clackamas County	

This map and all other information have been compiled for preliminary and/or general purposes only. This information is not intended to be complete for purposes of determining land use restrictions, zoning, title, parcel size, or suitability of any property for a specific use. Users are cautioned to field verify all information before making decisions.

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# Property Report

Geographic Information Systems  
 121 Library Court  
 Oregon City, OR 97045



<b>Parcel Number</b>	01107368
<b>Tax Payer</b>	DANSONS MOLALLA LLC
<b>Site Address</b>	undefined
<b>Mailing Address</b>	3411 N 5TH AVE STE 500, PHOENIX, AZ 85013
<b>Tax Lot Number</b>	52E17A 05500
<b>Land Value</b>	\$106,829.00
<b>Building Value</b>	\$0.00
<b>Total Value</b>	\$106,829.00
<b>Bedrooms</b>	N/A
<b>Bathrooms</b>	N/A
<b>Living Area</b>	N/A
<b>Assessed Acres</b>	3.23
<b>Assessed Value</b>	\$106,829.00
<b>Year Built</b>	N/A
<b>Sale Date</b>	09/15/2020
<b>Sale Amount</b>	\$1,600,000.00
<b>Sale Type</b>	M
<b>Document Number</b>	2020-076426
<b>Land Class</b>	300
<b>Building Class</b>	N/A
<b>Neighborhood</b>	Area 02 industrial
<b>Taxcode Districts</b>	N/A
<b>Urban Growth Boundary</b>	Molalla UGB
<b>FEMA</b>	Area Of Minimal Flood Hazard
<b>Zoning</b>	RI: 3.39 acres

<b>Fire District</b>	Molalla RFPD #73	
<b>Park District</b>	Not In District	
<b>School District</b>	Molalla River	
<b>Sewer District</b>	N/A	
<b>Water District</b>	N/A	
<b>Community Planning Organization</b>	Molalla	
<b>Garbage And Recycling Service</b>	Molalla Sanitary	
<b>City</b>	Unincorporated Clackamas County	

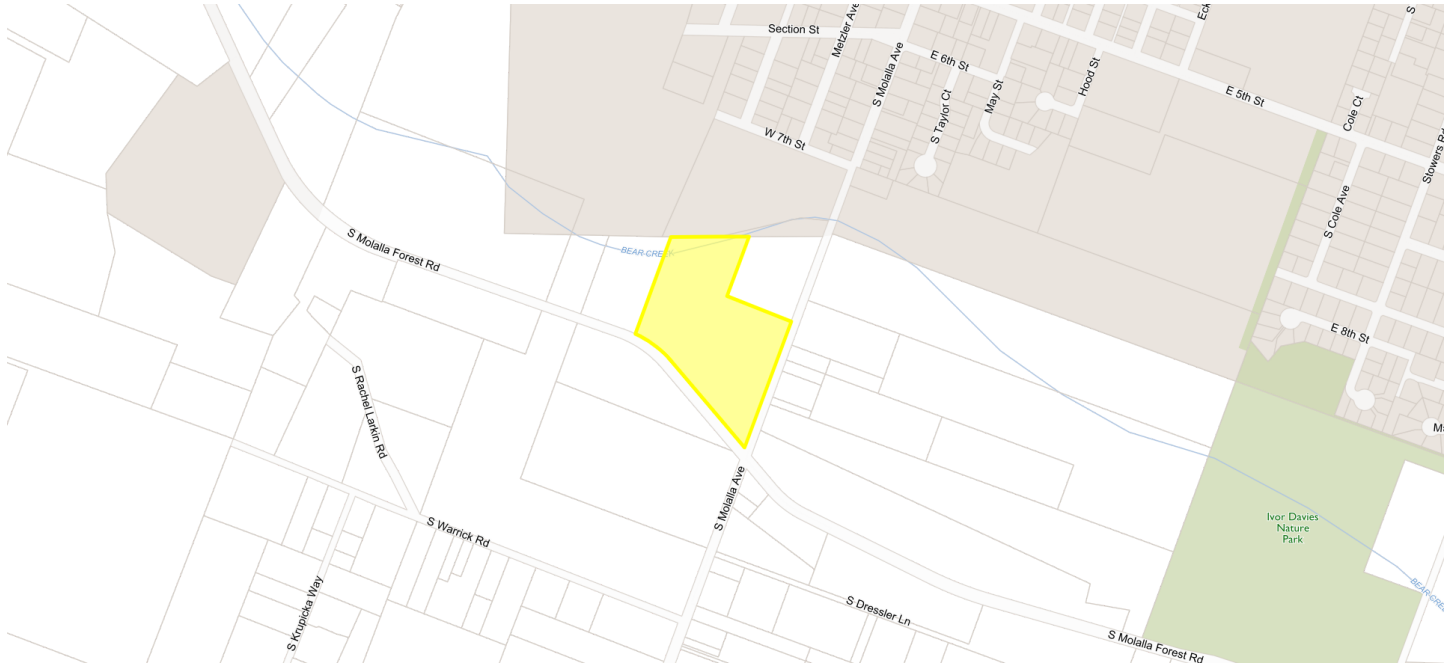
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# Property Report

Geographic Information Systems  
 121 Library Court  
 Oregon City, OR 97045



<b>Parcel Number</b>	05002348
<b>Tax Payer</b>	DANSONS MOLALLA LLC
<b>Site Address</b>	250 W 7TH ST, MOLALLA, OR 97038
<b>Mailing Address</b>	3411 N 5TH AVE STE 500, PHOENIX, AZ 85013
<b>Tax Lot Number</b>	52E17A 00102
<b>Land Value</b>	\$74,318.00
<b>Building Value</b>	\$1,618,220.00
<b>Total Value</b>	\$1,692,538.00
<b>Bedrooms</b>	N/A
<b>Bathrooms</b>	N/A
<b>Living Area</b>	N/A
<b>Assessed Acres</b>	10.93
<b>Assessed Value</b>	\$1,364,663.00
<b>Year Built</b>	N/A
<b>Sale Date</b>	09/15/2020
<b>Sale Amount</b>	\$1,600,000.00
<b>Sale Type</b>	X
<b>Document Number</b>	2020-076426
<b>Land Class</b>	301
<b>Building Class</b>	N/A
<b>Neighborhood</b>	Area 02 industrial
<b>Taxcode Districts</b>	N/A
<b>Urban Growth Boundary</b>	Molalla UGB
<b>FEMA</b>	Area Of Minimal Flood Hazard
<b>Zoning</b>	RI: 10.93 acres

<b>Fire District</b>	Molalla RFPD #73	
<b>Park District</b>	Not In District	
<b>School District</b>	Molalla River	
<b>Sewer District</b>	N/A	
<b>Water District</b>	N/A	
<b>Community Planning Organization</b>	Molalla	
<b>Garbage And Recycling Service</b>	Molalla Sanitary	
<b>City</b>	Unincorporated Clackamas County	

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GMT



*First American*

121 SW MORRISON ST, STE 300  
PORTLAND OR 97204



**Transmittal**

10/16/2020

DANSONS MOLALLA, LLC  
3411 N 5TH AVENUE, SUITE 500  
PHOENIX AZ 85013

Order No: 3471160

Enclosed please find 8 attached documents.

First American Title Insurance Company

Page Count 17



*First American*

# Owner's Policy

## Owner's Policy of Title Insurance

ISSUED BY

**First American Title Insurance Company**

POLICY NUMBER

**5011416-3471160**

**Any notice of claim and any other notice or statement in writing required to be given to the Company under this policy must be given to the Company at the address shown in Section 18 of the Conditions.**

### COVERED RISKS

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B, AND THE CONDITIONS, **FIRST AMERICAN TITLE INSURANCE COMPANY**, a Nebraska corporation (the "Company") insures, as of Date of Policy and, to the extent stated in Covered Risks 9 and 10, after Date of Policy, against loss or damage, not exceeding the Amount of Insurance, sustained or incurred by the Insured by reason of:

1. Title being vested other than as stated in Schedule A.
2. Any defect in or lien or encumbrance on the Title. This Covered Risk includes but is not limited to insurance against loss from
  - (a) A defect in the Title caused by
    - (i) forgery, fraud, undue influence, duress, incompetency, incapacity, or impersonation;
    - (ii) failure of any person or Entity to have authorized a transfer or conveyance;
    - (iii) a document affecting Title not properly created, executed, witnessed, sealed, acknowledged, notarized, or delivered;
    - (iv) failure to perform those acts necessary to create a document by electronic means authorized by law;
    - (v) a document executed under a falsified, expired, or otherwise invalid power of attorney;
    - (vi) a document not properly filed, recorded, or indexed in the Public Records including failure to perform those acts by electronic means authorized by law; or
    - (vii) a defective judicial or administrative proceeding.
  - (b) The lien of real estate taxes or assessments imposed on the Title by a governmental authority due or payable, but unpaid.
  - (c) Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
3. Unmarketable Title.
4. No right of access to and from the Land.

**(Covered Risks Continued on Page 2)**

In Witness Whereof, First American Title Insurance Company has caused its corporate name to be hereunto affixed by its authorized officers as of Date of Policy shown in Schedule A.

### **First American Title Insurance Company**

Dennis J. Gilmore, President

Greg L. Smith, Secretary

(This Policy is valid only when Schedules A and B are attached)

**This Jacket was created electronically and constitutes an original document**

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### COVERED RISKS (Continued)

5. The violation or enforcement of any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
  - (a) the occupancy, use, or enjoyment of the Land;
  - (b) the character, dimensions, or location of any improvement erected on the Land;
  - (c) the subdivision of land; or
  - (d) environmental protectionif a notice, describing any part of the Land, is recorded in the Public Records setting forth the violation or intention to enforce, but only to the extent of the violation or enforcement referred to in that notice.
6. An enforcement action based on the exercise of a governmental police power not covered by Covered Risk 5 if a notice of the enforcement action, describing any part of the Land, is recorded in the Public Records, but only to the extent of the enforcement referred to in that notice.
7. The exercise of the rights of eminent domain if a notice of the exercise, describing any part of the Land, is recorded in the Public Records.
8. Any taking by a governmental body that has occurred and is binding on the rights of a purchaser for value without Knowledge.
9. Title being vested other than as stated in Schedule A or being defective
  - (a) as a result of the avoidance in whole or in part, or from a court order providing an alternative remedy, of a transfer of all or any part of the title to or any interest in the Land occurring prior to the transaction vesting Title as shown in Schedule A because that prior transfer constituted a fraudulent or preferential transfer under federal bankruptcy, state insolvency, or similar creditors' rights laws; or
  - (b) because the instrument of transfer vesting Title as shown in Schedule A constitutes a preferential transfer under federal bankruptcy, state insolvency, or similar creditors' rights laws by reason of the failure of its recording in the Public Records
    - (i) to be timely, or
    - (ii) to impart notice of its existence to a purchaser for value or to a judgment or lien creditor.
10. Any defect in or lien or encumbrance on the Title or other matter included in Covered Risks 1 through 9 that has been created or attached or has been filed or recorded in the Public Records subsequent to Date of Policy and prior to the recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The Company will also pay the costs, attorneys' fees, and expenses incurred in defense of any matter insured against by this Policy, but only to the extent provided in the Conditions.

### 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 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.

## CONDITIONS

### 1. DEFINITION OF TERMS

The following terms when used in this policy mean:

- (a) "Amount of Insurance": The amount stated in Schedule A, as may be increased or decreased by endorsement to this policy, increased by Section 8(b), or decreased by Sections 10 and 11 of these Conditions.
- (b) "Date of Policy": The date designated as "Date of Policy" in Schedule A.
- (c) "Entity": A corporation, partnership, trust, limited liability company, or other similar legal entity.
- (d) "Insured": The Insured named in Schedule A.
  - (i) The term "Insured" also includes
    - (A) successors to the Title of the Insured by operation of law as distinguished from purchase, including heirs, devisees, survivors, personal representatives, or next of kin;
    - (B) successors to an Insured by dissolution, merger, consolidation, distribution, or reorganization;
    - (C) successors to an Insured by its conversion to another kind of Entity;
    - (D) a grantee of an Insured under a deed delivered without payment of actual valuable consideration conveying the Title
      - (1) if the stock, shares, memberships, or other equity interests of the grantee are wholly-owned by the named Insured,
      - (2) if the grantee wholly owns the named Insured,
      - (3) if the grantee is wholly-owned by an affiliated Entity of the named Insured, provided the affiliated Entity and the named Insured are both wholly-owned by the same person or Entity, or
      - (4) if the grantee is a trustee or beneficiary of a trust created by a written instrument established by the Insured named in Schedule A for estate planning purposes.
  - (ii) With regard to (A), (B), (C), and (D) reserving, however, all rights and defenses as to any successor that the Company would have had against any predecessor Insured.
- (e) "Insured Claimant": An Insured claiming loss or damage.
- (f) "Knowledge" or "Known": Actual knowledge, not constructive knowledge or notice that may be imputed to an Insured by reason of the Public Records or any other records that impart constructive notice of matters affecting the Title.
- (g) "Land": The land described in Schedule A, and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is insured by this policy.
- (h) "Mortgage": Mortgage, deed of trust, trust deed, or other security instrument, including one evidenced by electronic means authorized by law.
- (i) "Public Records": Records established under state statutes at Date of Policy for the purpose of imparting constructive

notice of matters relating to real property to purchasers for value and without Knowledge. With respect to Covered Risk 5(d), "Public Records" shall also include environmental protection liens filed in the records of the clerk of the United States District Court for the district where the Land is located.

- (j) "Title": The estate or interest described in Schedule A.
- (k) "Unmarketable Title": Title affected by an alleged or apparent matter that would permit a prospective purchaser or lessee of the Title or lender on the Title to be released from the obligation to purchase, lease, or lend if there is a contractual condition requiring the delivery of marketable title.

### 2. CONTINUATION OF INSURANCE

The coverage of this policy shall continue in force as of Date of Policy in favor of an Insured, but only so long as the Insured retains an estate or interest in the Land, or holds an obligation secured by a purchase money Mortgage given by a purchaser from the Insured, or only so long as the Insured shall have liability by reason of warranties in any transfer or conveyance of the Title. This policy shall not continue in force in favor of any purchaser from the Insured of either (i) an estate or interest in the Land, or (ii) an obligation secured by a purchase money Mortgage given to the Insured.

### 3. NOTICE OF CLAIM TO BE GIVEN BY INSURED CLAIMANT

The Insured shall notify the Company promptly in writing (i) in case of any litigation as set forth in Section 5(a) of these Conditions, (ii) in case Knowledge shall come to an Insured hereunder of any claim of title or interest that is adverse to the Title, as insured, and that might cause loss or damage for which the Company may be liable by virtue of this policy, or (iii) if the Title, as insured, is rejected as Unmarketable Title. If the Company is prejudiced by the failure of the Insured Claimant to provide prompt notice, the Company's liability to the Insured Claimant under the policy shall be reduced to the extent of the prejudice.

### 4. PROOF OF LOSS

In the event the Company is unable to determine the amount of loss or damage, the Company may, at its option, require as a condition of payment that the Insured Claimant furnish a signed proof of loss. The proof of loss must describe the defect, lien, encumbrance, or other matter insured against by this policy that constitutes the basis of loss or damage and shall state, to the extent possible, the basis of calculating the amount of the loss or damage.

### 5. DEFENSE AND PROSECUTION OF ACTIONS

- (a) Upon written request by the Insured, and subject to the options contained in Section 7 of these Conditions, the Company, at its own cost and without unreasonable delay, shall provide for the defense of an Insured in litigation in which any third party asserts a claim covered by this policy adverse to the Insured. This obligation is limited to only those stated causes of action alleging matters insured against by this policy. The Company shall have the right to select counsel of its choice (subject to the right of the Insured to object for reasonable cause) to represent the Insured as to those stated causes of action. It shall not be liable for and will not pay the fees of any other counsel. The Company will not pay any fees, costs, or expenses incurred by the Insured in the defense of those causes of action that allege matters not insured against by this policy.



## CONDITIONS (Continued)

- (b) The Company shall have the right, in addition to the options contained in Section 7 of these Conditions, at its own cost, to institute and prosecute any action or proceeding or to do any other act that in its opinion may be necessary or desirable to establish the Title, as insured, or to prevent or reduce loss or damage to the Insured. The Company may take any appropriate action under the terms of this policy, whether or not it shall be liable to the Insured. The exercise of these rights shall not be an admission of liability or waiver of any provision of this policy. If the Company exercises its rights under this subsection, it must do so diligently.
- (c) Whenever the Company brings an action or asserts a defense as required or permitted by this policy, the Company may pursue the litigation to a final determination by a court of competent jurisdiction, and it expressly reserves the right, in its sole discretion, to appeal any adverse judgment or order.

### 6. DUTY OF INSURED CLAIMANT TO COOPERATE

- (a) In all cases where this policy permits or requires the Company to prosecute or provide for the defense of any action or proceeding and any appeals, the Insured shall secure to the Company the right to so prosecute or provide defense in the action or proceeding, including the right to use, at its option, the name of the Insured for this purpose. Whenever requested by the Company, the Insured, at the Company's expense, shall give the Company all reasonable aid (i) in securing evidence, obtaining witnesses, prosecuting or defending the action or proceeding, or effecting settlement, and (ii) in any other lawful act that in the opinion of the Company may be necessary or desirable to establish the Title or any other matter as insured. If the Company is prejudiced by the failure of the Insured to furnish the required cooperation, the Company's obligations to the Insured under the policy shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation, with regard to the matter or matters requiring such cooperation.
- (b) The Company may reasonably require the Insured Claimant to submit to examination under oath by any authorized representative of the Company and to produce for examination, inspection, and copying, at such reasonable times and places as may be designated by the authorized representative of the Company, all records, in whatever medium maintained, including books, ledgers, checks, memoranda, correspondence, reports, e-mails, disks, tapes, and videos whether bearing a date before or after Date of Policy, that reasonably pertain to the loss or damage. Further, if requested by any authorized representative of the Company, the Insured Claimant shall grant its permission, in writing, for any authorized representative of the Company to examine, inspect, and copy all of these records in the custody or control of a third party that reasonably pertain to the loss or damage. All information designated as confidential by the Insured Claimant provided to the Company pursuant to this Section shall not be disclosed to others unless, in the reasonable judgment of the Company, it is necessary in the administration of the claim. Failure of the Insured Claimant to submit for examination under oath, produce any reasonably requested information, or grant permission to secure reasonably necessary information from third parties as required in this subsection, unless prohibited by law or governmental regulation, shall terminate any liability of the Company under this policy as to that claim.

### 7. OPTIONS TO PAY OR OTHERWISE SETTLE CLAIMS; TERMINATION OF LIABILITY

In case of a claim under this policy, the Company shall have the following additional options:

- (a) To Pay or Tender Payment of the Amount of Insurance.  
To pay or tender payment of the Amount of Insurance under this policy together with any costs, attorneys' fees, and expenses incurred by the Insured Claimant that were authorized by the Company up to the time of payment or tender of payment and that the Company is obligated to pay. Upon the exercise by the Company of this option, all liability and obligations of the Company to the Insured under this policy, other than to make the payment required in this subsection, shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation.
- (b) To Pay or Otherwise Settle With Parties Other Than the Insured or With the Insured Claimant.
  - (i) To pay or otherwise settle with other parties for or in the name of an Insured Claimant any claim insured against under this policy. In addition, the Company will pay any costs, attorneys' fees, and expenses incurred by the Insured Claimant that were authorized by the Company up to the time of payment and that the Company is obligated to pay; or
  - (ii) To pay or otherwise settle with the Insured Claimant the loss or damage provided for under this policy, together with any costs, attorneys' fees, and expenses incurred by the Insured Claimant that were authorized by the Company up to the time of payment and that the Company is obligated to pay.

Upon the exercise by the Company of either of the options provided for in subsections (b)(i) or (ii), the Company's obligations to the Insured under this policy for the claimed loss or damage, other than the payments required to be made, shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation.

### 8. DETERMINATION AND EXTENT OF LIABILITY

This policy is a contract of indemnity against actual monetary loss or damage sustained or incurred by the Insured Claimant who has suffered loss or damage by reason of matters insured against by this policy.

- (a) The extent of liability of the Company for loss or damage under this policy shall not exceed the lesser of
  - (i) the Amount of Insurance; or
  - (ii) the difference between the value of the Title as insured and the value of the Title subject to the risk insured against by this policy.
- (b) If the Company pursues its rights under Section 5 of these Conditions and is unsuccessful in establishing the Title, as insured,
  - (i) the Amount of Insurance shall be increased by 10%, and
  - (ii) the Insured Claimant shall have the right to have the loss or damage determined either as of the date the claim was made by the Insured Claimant or as of the date it is settled and paid.
- (c) In addition to the extent of liability under (a) and (b), the Company will also pay those costs, attorneys' fees, and expenses incurred in accordance with Sections 5 and 7 of these Conditions.

## CONDITIONS (Continued)

### 9. LIMITATION OF LIABILITY

- (a) If the Company establishes the Title, or removes the alleged defect, lien, or encumbrance, or cures the lack of a right of access to or from the Land, or cures the claim of Unmarketable Title, all as insured, in a reasonably diligent manner by any method, including litigation and the completion of any appeals, it shall have fully performed its obligations with respect to that matter and shall not be liable for any loss or damage caused to the Insured.
- (b) In the event of any litigation, including litigation by the Company or with the Company's consent, the Company shall have no liability for loss or damage until there has been a final determination by a court of competent jurisdiction, and disposition of all appeals, adverse to the Title, as insured.
- (c) The Company shall not be liable for loss or damage to the Insured for liability voluntarily assumed by the Insured in settling any claim or suit without the prior written consent of the Company.

### 10. REDUCTION OF INSURANCE; REDUCTION OR TERMINATION OF LIABILITY

All payments under this policy, except payments made for costs, attorneys' fees, and expenses, shall reduce the Amount of Insurance by the amount of the payment.

### 11. LIABILITY NONCUMULATIVE

The Amount of Insurance shall be reduced by any amount the Company pays under any policy insuring a Mortgage to which exception is taken in Schedule B or to which the Insured has agreed, assumed, or taken subject, or which is executed by an Insured after Date of Policy and which is a charge or lien on the Title, and the amount so paid shall be deemed a payment to the Insured under this policy.

### 12. PAYMENT OF LOSS

When liability and the extent of loss or damage have been definitely fixed in accordance with these Conditions, the payment shall be made within 30 days.

### 13. RIGHTS OF RECOVERY UPON PAYMENT OR SETTLEMENT

- (a) Whenever the Company shall have settled and paid a claim under this policy, it shall be subrogated and entitled to the rights of the Insured Claimant in the Title and all other rights and remedies in respect to the claim that the Insured Claimant has against any person or property, to the extent of the amount of any loss, costs, attorneys' fees, and expenses paid by the Company. If requested by the Company, the Insured Claimant shall execute documents to evidence the transfer to the Company of these rights and remedies. The Insured Claimant shall permit the Company to sue, compromise, or settle in the name of the Insured Claimant and to use the name of the Insured Claimant in any transaction or litigation involving these rights and remedies.

If a payment on account of a claim does not fully cover the loss of the Insured Claimant, the Company shall defer the exercise of its right to recover until after the Insured Claimant shall have recovered its loss.

- (b) The Company's right of subrogation includes the rights of the Insured to indemnities, guaranties, other policies of insurance, or bonds, notwithstanding any terms or conditions contained in those instruments that address subrogation rights.

### 14. ARBITRATION

Either the Company or the Insured may demand that the claim or controversy shall be submitted to arbitration pursuant to the Title Insurance Arbitration Rules of the American Land Title

Association ("Rules"). Except as provided in the Rules, there shall be no joinder or consolidation with claims or controversies of other persons. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the Insured arising out of or relating to this policy, any service in connection with its issuance or the breach of a policy provision, or to any other controversy or claim arising out of the transaction giving rise to this policy. All arbitrable matters when the Amount of Insurance is \$2,000,000 or less shall be arbitrated at the option of either the Company or the Insured. All arbitrable matters when the Amount of Insurance is in excess of \$2,000,000 shall be arbitrated only when agreed to by both the Company and the Insured. Arbitration pursuant to this policy and under the Rules shall be binding upon the parties. Judgment upon the award rendered by the Arbitrator(s) may be entered in any court of competent jurisdiction.

### 15. LIABILITY LIMITED TO THIS POLICY; POLICY ENTIRE CONTRACT

- (a) This policy together with all endorsements, if any, attached to it by the Company is the entire policy and contract between the Insured and the Company. In interpreting any provision of this policy, this policy shall be construed as a whole.
- (b) Any claim of loss or damage that arises out of the status of the Title or by any action asserting such claim shall be restricted to this policy.
- (c) Any amendment of or endorsement to this policy must be in writing and authenticated by an authorized person, or expressly incorporated by Schedule A of this policy.
- (d) Each endorsement to this policy issued at any time is made a part of this policy and is subject to all of its terms and provisions. Except as the endorsement expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsement, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance.

### 16. SEVERABILITY

In the event any provision of this policy, in whole or in part, is held invalid or unenforceable under applicable law, the policy shall be deemed not to include that provision or such part held to be invalid, but all other provisions shall remain in full force and effect.

### 17. CHOICE OF LAW; FORUM

- (a) Choice of Law: The Insured acknowledges the Company has underwritten the risks covered by this policy and determined the premium charged therefor in reliance upon the law affecting interests in real property and applicable to the interpretation, rights, remedies, or enforcement of policies of title insurance of the jurisdiction where the Land is located.

Therefore, the court or an arbitrator shall apply the law of the jurisdiction where the Land is located to determine the validity of claims against the Title that are adverse to the Insured and to interpret and enforce the terms of this policy. In neither case shall the court or arbitrator apply its conflicts of law principles to determine the applicable law.

- (b) Choice of Forum: Any litigation or other proceeding brought by the Insured against the Company must be filed only in a state or federal court within the United States of America or its territories having appropriate jurisdiction.

### 18. NOTICES, WHERE SENT

Any notice of claim and any other notice or statement in writing required to be given to the Company under this policy must be given to the Company at **First American Title Insurance Company, Attn: Claims National Intake Center, 1 First American Way, Santa Ana, CA 92707. Phone: 888-632-1642.**



*First American*

# Schedule A

## Owner's Policy of Title Insurance

ISSUED BY

**First American Title Insurance Company**

POLICY NUMBER

**3471160**

Name and Address of Title Insurance Company:

**First American Title Insurance Company, 1 First American Way, Santa Ana, CA 92707.**

File No.: 7012-3471160

Address Reference: 250 West 7th Street, Molalla, OR 97038

Amount of Insurance: \$1,600,000.00

Premium: \$3,000.00

Date of Policy: September 16, 2020 at 8:00 a.m.

1. Name of Insured:

Dansons Molalla, LLC, a Delaware limited liability company

2. The estate or interest in the Land that is insured by this policy is:

Fee Simple as to Parcels I, II, III and IV; easement as to Parcel V

3. Title is vested in:

Dansons Molalla, LLC, a Delaware limited liability company

4. The Land referred to in this policy is described as follows:

Parcel I:

A tract of land Situated in the Northeast one-quarter of Section 17, Township 5 South, Range 2 East, of the Willamette Meridian, in the County of Clackamas and State of Oregon, being a portion of vacated Blocks 15, 16 and 19, METZLER AND HART'S ADDITION TO MOLALLA, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, of the Willamette Meridian, marked with a bronze disk in concrete; thence South 18°17'55" West 1160.07 feet to the Southeast corner of the land described as Exhibit B in Fee No. 2018-015788 and the true point of beginning; thence along the Westerly line of Molalla Avenue, having a right of way width of 60.00 feet, South 18°17'55" West 1178.21 feet to the point of intersection of the Westerly line of Molalla Avenue with the Northerly line of S. Molalla Forest Road, having a right of way width of 60.00 feet; thence along said Northerly line of S. Molalla Forest Road North 41°38'30" West 573.25 feet; thence continuing along the Northerly line of S. Molalla Forest Road, along a curve to the left with a radius of 572.96 feet 255.25 feet (chord bears North 54°24'16" West 253.15 feet); thence North 17°48'10" East 556.47 feet to a point on the South boundary of Fee No. 2018-015788; thence North 89°02'56" East along the South boundary of Fee No. 2018-015788, 786.64 feet to a point on the Westerly line of Molalla Avenue and the true point of beginning.

EXCEPTING THEREFROM the following:

A tract of land Situated in the Northeast one-quarter of Section 17, Township 5 South, Range 2 East, of the Willamette Meridian, in the County of Clackamas and State of Oregon, being a portion of vacated Blocks 15, 16 and 19, METZLER AND HART'S ADDITION TO MOLALLA, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, of the Willamette Meridian, marked with a bronze disk in concrete; thence South 18°17'55" West 1160.07 feet to the Southeast corner of the land described as Exhibit B in Fee No. 2018-015788 and the true point of beginning; thence South 18°17'55" West 458.22 feet to a point marked with a 5/8" iron rod marked with a yellow plastic cap marked "ACS&P 668-3151"; thence North 71°58'15" West 367.00 feet to a point marked with a 5/8" iron rod marked with a yellow plastic cap marked "ACS&P 668-3151"; thence North 18°17'55" East parallel with the centerline of Molalla Avenue 331.78 feet to a point on the South boundary of Fee No. 2018-015788; thence along the South boundary of Fee No. 2018-015788 North 89°02'56" East, 388.73 feet to a point on the Westerly line of Molalla Avenue and the true point of beginning.

Parcel II:

A tract of land located in the Northeast quarter of Section 17, Township 5 South, Range 2 East, Willamette Meridian, in the County of Clackamas, State of Oregon, being a portion of vacated P.E. & E. Railway, METZLER AND HART'S ADDITION TO MOLALLA, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, Willamette Meridian, marked by a bronze disk in concrete; thence South 18° 17' 55" West 2338.28 feet to a one inch iron pipe at the intersection of the Northerly right of way line of S. Molalla Forest Road (a 60 foot right of way, also being former Eastern & Western Logging Co. Railway right of way) with the Westerly right of way of S. Molalla Avenue (a 60 foot right of way); thence along the Northerly line of S. Molalla Forest Road North 41° 38' 30" West 573.25 feet; thence continuing along the Northerly line of S. Molalla Forest Road, along a curve to the left with a radius of 572.96 feet 255.25 feet (long chord bears North 54° 24' 16" West 253.15 feet) to a point of intersection with the East line of former P.E. & E. Railway right of way (a former 80 foot right of way) and True Point Of Beginning; thence continuing along a curve to the left with a radius of 572.96 feet 46.07 feet (long chord bears North 69° 28' 13" West 46.05 feet) to a point of tangency; thence North 71° 46' 25" West 34.00 feet to a point of intersection with the West line of former P.E. & E. Railway right of way; thence North 17° 48' 10" East 526.86 feet along the West line of said named right of way line to a point of intersection with the Molalla city limits line; thence North 89° 02' 56" East 84.48 feet along said city limits line to the East line of former P.E. & E. Railway right of way; thence South 17° 48' 10" West 556.47 feet along the East line of said named right of way line to a point on the North line of S. Molalla Forest Road and the True Point of Beginning.

Parcel III:

A tract of land located in the Northeast quarter of Section 17, Township 5 South, Range 2 East, Willamette Meridian, in the County of Clackamas, State of Oregon, being a portion of vacated Blocks 17, 18, and Down St., METZLER AND HART'S ADDITION TO MOLALLA, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, Willamette Meridian, marked by a bronze disk in concrete; thence South 18° 17' 55" West 2338.28 feet to a one inch iron pipe at the intersection of the Northerly right of way line of S. Molalla Forest Road (a 60 foot right of way, also being former Eastern & Western Logging Co. Railway right of way) with the Westerly right of way of S. Molalla Avenue (a 60 foot right of way); thence along the Northerly line of S. Molalla Forest Road North 41° 38' 30" West 573.25 feet; thence continuing along the Northerly line

of S. Molalla Forest Road, along a curve to the left with a radius of 572.96 feet 255.25 feet (long chord bears North 54° 24' 16" West 253.15 feet) to a point of intersection with the East line of former P.E. & E. Railway right of way; thence continuing along a curve to the left with a radius of 572.96 feet 46.07 feet (long chord bears North 69° 28' 13" West 46.05 feet) to a point of tangency; thence North 71° 46' 25" West 34.00 feet to a point of intersection with the West line of former P.E. & E. Railway right of way and True Point Of Beginning; thence North 17° 48' 10" East 526.86 feet along the West line of said named right of way line to a point of intersection with the Molalla city limits line; thence South 89° 02' 56" West 238.84 feet along said city limits line to a point of intersection with the Westerly line of vacated Block 18, METZLER AND HART'S ADDITION TO MOLALLA; thence South 17° 38' 13" West along the Westerly line thereof, also being the Westerly lines of vacated Down St. and vacated Block 17, METZLER AND HART'S ADDITION TO MOLALLA, 448.42 feet to the Northerly right of way line of S. Molalla Forest Road; thence South 71° 46' 25" East 224.87 feet along said right of way line to the True Point of Beginning.

Parcel IV:

A tract of land located in the Northeast quarter of Section 17, Township 5 South, Range 2 East, Willamette Meridian, in the County of Clackamas, State of Oregon, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, Willamette Meridian, marked by a bronze disk in concrete; thence South 18° 17' 55" West 2338.28 feet to a one inch iron pipe at the intersection of the Northerly right of way line of S. Molalla Forest Road (a 60 foot right of way, also being former Eastern & Western Logging Co. Railway right of way) with the Westerly right of way of S. Molalla Avenue (a 60 foot right of way); thence along the Northerly line of S. Molalla Forest Road North 41° 38' 30" West 573.25 feet; thence continuing along the Northerly line of S. Molalla Forest Road, along a curve to the left with a radius of 572.96 feet 255.25 feet (long chord bears North 54° 24' 16" West 253.15 feet) to a point of intersection with the East line of former P.E. & E. Railway right of way; thence continuing along a curve to the left with a radius of 572.96 feet 46.07 feet (long chord bears North 69° 28' 13" West 46.05 feet) to a point of tangency; thence North 71° 46' 25" West 34.00 feet to a point of intersection with the West line of former P.E. & E. Railway right of way; thence continuing along the Northerly line of S. Molalla Forest Road North 71° 46' 25" West 224.87 feet to the Westerly line of vacated Block 17, METZLER AND HART'S ADDITION TO MOLALLA and True Point Of Beginning; thence continuing along the Northerly line of S. Molalla Forest Road North 71° 46' 25" West 191.11 feet to the East line of a tract of land sold to Andy W Falk, et ux, by contract recorded January 9, 2002, Fee No. 2002-002140, Clackamas County Deed Records; thence North 18° 30' 14" East along the said East line, a distance of 384.18 feet to a point of intersection with the Molalla city limits line; thence North 89° 02' 56" East 195.48 feet along said North line to a point of intersection with the Westerly line of vacated Block 18, METZLER AND HART'S ADDITION TO MOLALLA; thence South 17° 38' 13" West along the Westerly line thereof, also being the Westerly lines of vacated Down St. and vacated Block 17, METZLER AND HART'S ADDITION TO MOLALLA, 448.42 feet to the Northerly right of way line of S. Molalla Forest Road and the True Point of Beginning.

Parcel V:

An easement for ingress and egress as described in document recorded August 28, 2017 as Fee No 2017-058796.



*First American*

## Schedule B

### Owner's Policy of Title Insurance

ISSUED BY

**First American Title Insurance Company**

POLICY NUMBER

**7012-3471160**

### EXCEPTIONS FROM COVERAGE

File No.: 7012-3471160

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees, or expenses that arise by reason of:

1. 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.
2. 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.
3. 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.
4. 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.

This exception (#5) is hereby waived without additional cost in accordance with the provisions of the Oregon Title Insurance Rating Manual provision 5.001 A 5 PROVIDED a Lender has been issued a simultaneous title insurance policy on the subject property and to the extent this exception has been eliminated or modified on said Lender's policy.

5. Taxes for the fiscal year 2020-2021 a lien due, but not yet payable.
6. Rights of the public and of governmental bodies in and to that portion of the premises herein described lying below the high water mark of Bear Creek.
7. Easements for utilities over and across the premises formerly included within the boundaries of Streets now vacated, if any such exists.
8. Notice of Obligation to Pay Economic Improvement District Charges Per City of Molalla Ordinance 2010-11 and To Make Existing Liens attached to the Economic Improvement District Liens (2020-11) filed by the City of Molalla as Null and Void Per Molalla City Ordinance 2013-01, including terms and provisions thereof.

Recorded:

March 27, 2014 as Fee No. 2014 013807

9. Easement, including terms and provisions contained therein:  
Recording Information: March 28, 1947 as Book 387, page 578  
In Favor of: Portland General Electric Company, an Oregon corporation  
For: Utility
  
10. Easement, including terms and provisions contained therein:  
Recording Information: July 14, 1948 as Book 408, Page 605  
In Favor of: Southern Pacific Company  
For: Railroad Purposes
  
11. Easement, including terms and provisions contained therein:  
Recording Information: August 28, 2017 as Fee No. 2017 058796  
For: Ingress, egress and road maintenance
  
12. Easement and Equitable Servitudes, including terms and provisions thereof.  
Recorded: August 19, 2020 as Fee No. 2020-067026
  
13. Limited License To Use, as disclosed by Warranty Deed, including terms and provisions thereof.  
Recorded: September 16, 2020 as Fee No. 2020-076426



**First American**

**COMMERCIAL ENVIRONMENTAL  
PROTECTION LIEN ENDORSEMENT**

**Issued by**

***First American Title Insurance Company***

Attached to Policy No.: 7012-3471160

File No.: 7012-3471160

Date : September 16, 2020

Premium : 300.00

The Company insures against loss or damage sustained by the Insured by reason of an environmental protection lien that, at Date of Policy, is recorded in the Public Records or filed in the records of the clerk of the United States district court for the district in which the Land is located, unless the environmental protection lien is set forth as an exception in Schedule B.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

***First American Title Insurance Company***

Dennis J. Gilmore, President

Greg L. Smith, Secretary





**First American**

**ACCESS AND ENTRY  
ENDORSEMENT**

**Issued by**

***First American Title Insurance Company***

Attached to Policy No.: 7012-3471160

File No.: 7012-3471160

Date : September 16, 2020

Premium : 125.00

The Company insures against loss or damage sustained by the Insured if, at Date of Policy (i) the Land does not abut and have both actual vehicular and pedestrian access to and from South Molalla Forest Road and South Molalla Avenue (the "Street"), (ii) the Street is not physically open and publicly maintained, or (iii) the Insured has no right to use existing curb cuts or entries along that portion of the Street abutting the Land.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

***First American Title Insurance Company***

Dennis J. Gilmore, President

Greg L. Smith, Secretary



**First American**

**INDIRECT ACCESS AND  
ENTRY ENDORSEMENT**

**Issued by**

***First American Title Insurance Company***

Attached to Policy No.: 7012-3471160

File No.: 7012-3471160

Date : September 16, 2020

Premium : 150.00

The Company insures against loss or damage sustained by the Insured if, at Date of Policy (i) the easement identified as Fee No. 2017-058796 in Schedule B (the "Easement") does not provide that portion of the Land identified as Parcel 1-4 in Schedule A both actual vehicular and pedestrian access to and from 7th Street (the "Street"), (ii) the Street is not physically open and publicly maintained, or (iii) the Insured has no right to use existing curb cuts or entries along that portion of the Street abutting the Easement.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

***First American Title Insurance Company***

Dennis J. Gimore, President

Greg L. Smith, Secretary



**First American**

**MULTIPLE TAX PARCELS ENDORSEMENT**

**Issued by**

***First American Title Insurance Company***

Attached to Policy No.: 7012-3471160

File No.: 7012-3471160

Date : September 16, 2020

Premium : 75.00

The Company insures against loss or damage sustained by the Insured by reason of:

1. those portions of the Land identified below not being assessed for real estate taxes under the listed tax identification numbers or those tax identification numbers including any additional land:

Parcel:	Tax Identification Numbers:
	01107368
	01107956

2. the easements, if any, described in Schedule A being cut off or disturbed by the nonpayment of real estate taxes assessed against the servient estate.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

***First American Title Insurance Company***

Dennis J. Gamore, President

Greg L. Smith, Secretary



**First American**

**CONTIGUITY - MULTIPLE  
PARCELS ENDORSEMENT**

**Issued by**

***First American Title Insurance Company***

Attached to Policy No.: 7012-3471160

File No.: 7012-3471160

Date : September 16, 2020

Premium : 75.00

The Company insures against loss or damage sustained by the Insured by reason of:

1. the failure Parcels 1-4 of the Land to be contiguous to  
  
; or
2. the presence of any gaps, strips, or gores separating any of the contiguous boundary lines described above.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

***First American Title Insurance Company***

Dennis J. Gimere, President

Greg L. Smith, Secretary



**First American**

**ACCESS LAND ABUTS EXISTING STREET ENDORSEMENT**

**Issued by**

***First American Title Insurance Company***

Attached to Policy No.: 7012-3471160

Date : September 16, 2020

Premium : 50.00

The Company hereby assures the Insured

That said Land abuts upon a physically open street known as South Molalla Forest Road and South Molalla Avenue and the Company hereby insures said Assured against loss which said Assured shall sustain in the event said assurances herein shall prove to be incorrect.

The total liability of the Company under said policy and any endorsements therein shall not exceed, in the aggregate, the face amount of said policy and costs which the Company is obligated under the conditions and stipulations thereof to pay.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

***First American Title Insurance Company***

Dennis J. Gimore, President

Greg L. Smith, Secretary



**First American**

**MODIFICATION OF ARBITRATION - OWNER ENDORSEMENT**

**Issued by**

***First American Title Insurance Company***

Attached to Policy No.: 7012-3471160

Date : September 16, 2020

Premium : 50.00

The arbitration provisions contained in Paragraph 14 in the Conditions and Stipulations of the policy are hereby modified as follows:

Said Paragraph 14 ("Arbitration") is eliminated.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

***First American Title Insurance Company***

Dennis J. Gilmore, President

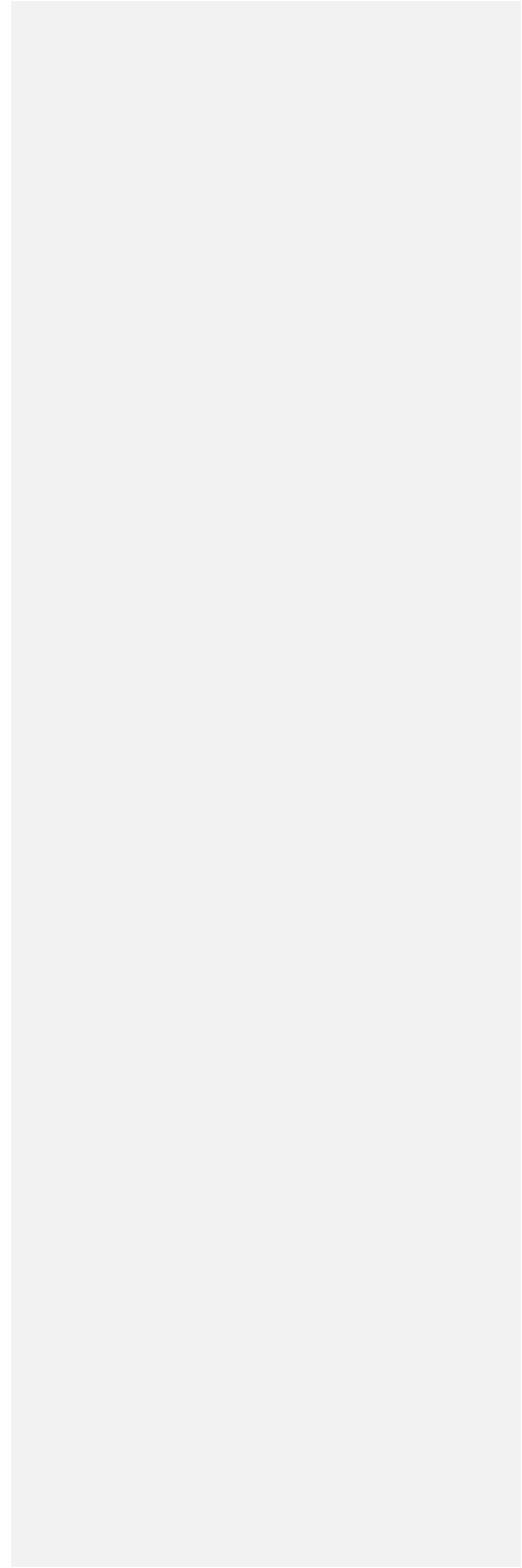
Greg L. Smith, Secretary

Site Design Review and  
Conditional Use Permit Application  
for  
Dansons Molalla, LLC  
250/270 West 7th Street, Molalla, Oregon  
(Tax Lots 102 and 290, 52E17A)  
(Tax Lot 2480, 52E17)



August, 2021  
Prepared by Tracy Brown Planning Consultants

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## **I. Project Description**

Dansons Molalla, LLC requests consolidated Site Design Review and Conditional Use Permit approval for the property they own in the City of Molalla. The property is a former lumber mill that has not been in use for several years. The site borders South Molalla Avenue along its eastern boundary and Molalla Forest Road along its southern boundary. The subject property includes three tax lots legally described as 52E17A tax lots 102 and 290 and 52E17 tax lot 2480 and contains 16.30 acres. The Molalla City Council approved annexation and a zone change for the property earlier this year with adoption of Ordinance 2021-07. With this approval, the subject property is now located in the Molalla city limits and carries a zoning designation of Heavy Industrial (M-2).

The applicant submitted this application in order to develop the property with a new wood pellet production facility. The development will be full production facility to receive, store, dry, pelletize, and package wood fibers from virgin sources. Wood fibers will be brought to the site, transformed into wood pellets, packaged, and shipped from this facility to retail outlets. These pellets will then be purchased by consumers at retail outlets to be used in a number of barbecue and smoker applications. The proposed facility is expected to employ about 30 people.

The site contains four existing structures of various sizes identified on the plans as Buildings #1 - #4. Due to past contamination on the site, an asphalt hardcap is located in the northern portion which cannot be penetrated as required by the Department of Environmental Quality. Three new structures will be built on the site, identified as Buildings #5 - #7, to include an office addition located between Buildings #2 and #3, a 52,500 square foot roofed structure located along Molalla Avenue to receive and store wood fibers prior to production, and an 8 x 12 foot guard building located at the primary truck entrance to the site. As shown on submitted plans, Building #3 is designed to include a 12 foot tall wall along the eastern elevation of this structure.

All travel lanes and production areas are proposed to be resurfaced as needed to accommodate truck traffic and onsite circulation. Other site improvements include construction of new water and sanitary sewer lines, a private sanitary sewer booster pump, and a new stormwater detention system. In addition, 20 feet either side of Bear Creek, which runs through the property, will be also be enhanced with native plantings. Other site improvements include construction of eight visitor automobile parking spaces including two ADA spaces and five bicycle parking spaces located in the northern portion of the site and 24 employee parking spaces located in the southeast corner of the site. A pedestrian connection to the site will be established at the southern boundary of the visitor parking lot and a marked accessible pathway will be improved from Molalla Avenue along the visitor parking spaces to the new office building (Building #5). Two new access driveways are proposed: one on Molalla Avenue to serve as the primary truck access and provide access to the visitor parking lot and a second access on Molalla Forest Road to provide access to the employee parking lot.

## **II. Application Approval Requests**

The applicant requests the following approvals with this application:

- Type III Site Design Review

- Type III Conditional Use Permit

### III. Items Submitted With This Application

The following items are included with this application:

- Land Use Application
- Proof of Ownership
- Project Narrative
- Civil Plans
  - Sheet 1 - Topographic Survey
  - Sheet 2 - Topographic Survey
  - Sheet 3 - Draft Site Plan and Utility Plan
  - Sheet 4 - Draft Site Grading Plan
- Architectural Plans
  - Building #6 Schematic
  - Building #7 Design
- Lighting Plans
  - EL1 - Private Lighting
  - EL1 - Public Lighting
- Landscape Plan
  - L101 - Planting Plan
  - L102 - Planting Plan
  - L103 - Details and Notes
- Stormwater Design
- Traffic Impact Study
- Preliminary Stormwater Report
- DEQ Cleanup and Reuse Agreement
- Wetland Jurisdictional Evaluation
- Bear Creek Improvement Plan

### IV. Review of Applicable Approval Criteria

Site Design Review and Conditional Use Permit requests are required to comply with code criteria found in the Molalla Development Code and Oregon Revised Statutes. Each of the relevant code sections are reviewed below written in regular text followed by a response written in *italics*.

#### Chapter 17-1.4 NONCONFORMING SITUATIONS

##### 17-1.4.010 Purpose and Applicability

Chapter 17-1.4 provides standards and procedures for the continuation of uses and developments that are lawfully established but do not comply with current Code standards (“nonconforming situations”). The Code is intended to protect public health, safety, and general welfare, while allowing reasonable use of private property. The chapter contains three sections, as follows:

Commented [1]:

- A. Nonconforming uses (e.g., industrial use in residential zone) are subject to Section 17-1.4.020.
- B. Nonconforming developments (e.g., structure does not meet setback or height standards) are subject to Section 17-1.4.030.
- C. Nonconforming lots (e.g., lot is smaller than minimum area standard) are subject to Section 17-1.4.040. (Ord. 2017-08 §1)

*Response: The subject application proposes redevelopment of a former lumber mill that has been out of operation for several years by upgrading facilities and adding new structures, parking, utilities, and landscaping. The existing structures and site is non-conforming development as provided by Subsection B above. These structures as constructed do not comply with a number of current building design standards contained in the current Development Code.*

**17-1.4.030 Nonconforming Development**

Section 17-1.4.030 regulates nonconforming development. Nonconforming development includes situations where a development exists on the effective date of adoption or amendment of this Code that could not be built under the terms of the Code today, for example, by reason of restrictions on lot area, lot coverage, location on a lot, setbacks, height, yard, equipment, access, parking, landscaping, or other physical restriction or requirement. If the development was lawful when constructed, it may remain on the site so long as it remains otherwise lawful and complies with the following regulations:

- A. **Alterations.** Any expansion of a nonconforming development shall not exceed 50 percent of the subject building area or development area, as applicable; for example, such area may include floor area or other surface area, paving, parking spaces, landscaping, outdoor storage, signage, lighting, or other developed areas that existed as of November 10, 2017. Expansion of a nonconforming use requires approval of a Conditional Use Permit under Chapter 17-4.4. A nonconforming development shall not be enlarged or altered in a way that increases its nonconformity by more than 50 percent. Approval of a variance is required to increase a development's nonconformity, and not more than one such variance shall be approved to expand the same development. A development or portion thereof may be enlarged or altered in a way that satisfies the current requirements of this Code or moves in the direction of conformity.

*Response: As noted above, the existing buildings and site arrangement are considered non-conforming development. The applicant proposes altering the site as allowed by this section to construct new parking and pedestrian circulation improvements, and installing new landscaping and lighting, and resurfacing worn asphalt areas. In addition, three new structures are proposed to be added to the site. The area of the site currently occupied by buildings is 67,764 square feet and the applicant proposes adding 56,220 square feet in new structures. The proposed expansion represents about 83 percent of the existing nonconforming development. The improvements proposed with this application are designed to bring the development closer to conformity with applicable standards and to transform the site into an active and productive use.*

**Chapter 17.2.2 Zoning District Regulations**

**17-2.2.030 Allowed Uses**

A. **Uses Allowed in Base Zones.** Allowed uses include those that are permitted, those that are permitted subject to special use standards, and those that are allowed subject to approval of a conditional use permit, as identified by Table 17-2.2.030. Allowed uses fall into four general categories: Residential, Public and Institutional, Commercial, and Other. If Table 17-2.2.030 does not list a specific use, and Division V Definitions does not identify the use or include it as an example of an allowed use, the City may find that use is allowed, or is not allowed, by following the procedures of Section 17-1.5.010 Code Interpretations. Uses not listed in Table 17-2.2.030 and not found to be similar to an allowed use are prohibited.

*Response: The subject property is zoned M-2, Heavy Industrial as shown on the City's Zoning Map. Table 17.2.2.030 identifies "Wood Products Manufacture, such as Sawmills, Paper and Allied Products, and Secondary Wood Products; except Artisanal and Light Manufacture Uses" as requiring a Conditional Use Permit. The proposed wood pellet production facility is similar to these uses and the applicant has requested Conditional Permit approval with this application.*

B. **Permitted Uses and Uses Permitted Subject to Special Use Standards.** Uses listed as "Permitted (P)" are allowed provided they conform to Section 17-2.2.040 Lot and Development Standards. Uses listed as "Permitted Subject to Special Use Standards (S)" are allowed, provided they conform to the Chapter 17-2.3 Special Use Standards and Section 17-2.2.040 Lot and Development Standards. Uses listed as "Not Allowed (N)" are prohibited. Uses not listed but similar to those allowed may be permitted pursuant to Section 17-1.5.010.

*Response: The use requires Conditional Use permit approval.*

C. **Conditional Uses.** Uses listed as "Conditional Use Permit Required (CU)" are allowed subject to the requirements of Chapter 17-4.4 Conditional Use Permits.

*Response: The use is listed as a Conditional Use requiring a Conditional Use Permit.*

#### **17-2.2.040 Lot and Development Standards**

A. **Development Standards.** Section 17-2.2.040 provides the general lot and development standards for each of the City's base zoning districts. The standards of Section 17-2.2.040 are organized into two tables: Table 17-2.2.040.D applies to residential zones, and Table 17-2.2.040.E applies to non-residential zones.

*Response: The standards of Section 17.2.2.040 are reviewed below.*

B. **Design Standards.** City standards for Access, Circulation, Site and Building Design, Parking, Landscaping, Fences and Screening, and Public Improvements, among others, are located in Division III. Notwithstanding the provisions of Section 17-2.2.040 and Division III, different standards may apply in specific locations, such as at street intersections, within overlay zones, adjacent to natural features, and other areas as may be regulated by this Code or subject to state or federal requirements. For requirements applicable to the City's overlay zones, please refer to Chapter 17-2.4.

*Response: All applicable City standards are reviewed below.*

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	I Zone Standards	Proposed
Minimum Lot Area	None	Complies
Minimum Lot Width and Depth	None	Complies
Building and Structure Height	55 feet	The proposed new storage building is approximately 41-feet at the peak. All buildings comply with this standard.
Height Increase	Yes	None requested
Fences and Non-building Walls	Max. height front - 4 ft. Max. height interior side 6 ft. Max. height rear - 6 ft. Max. Height - street side 4 ft or 6ft with 5ft landscape buffer	A 6-foot chainlink fence with barbed wire on top is proposed to be installed around the entire site. Vinyl slats will be installed in the fence from the east side of Building #4 around the southern parking lot, up Molalla Avenue to Building #6 and from the north end of this building to the pedestrian access.
Maximum Lot Coverage	100%	Complies
Minimum Landscape Area	5%	9.6% of the subject property will feature landscaping in compliance with this section.
Minimum Setback Yards	All - 0 ft. Adjacent to R Districts - 10 ft.	The subject property is not adjacent to a Residential District.
Build to Line	Not Applicable	Complies
Special Setbacks for Planned Street Improvements		N/A

**Response:** As reviewed above, the proposal complies with all of these standards.

**17-2.4.030 Water Resources (WR) Overlay**

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

1. Conserving significant riparian corridors, undeveloped floodplains and locally significant wetlands in keeping with the requirements of State Planning Goal 5

(Natural Resources) and applicable state statutes and administrative rules, and the Molalla Comprehensive Plan;

2. Protecting and enhancing water quality;
3. Preventing property damage during floods and storms;
4. Limiting development activity in designated riparian corridors;
5. Maintaining and enhancing fish and wildlife habitats; and
6. Conserving associated scenic and recreational values.

**Response:** *Bear Creek flows through a portion of the subject property and is identified on the city's natural resource mapping. This resource is also included in the city's Water Resources Overlay. This portion of Bear Creek has been degraded over time. For this reason a Habitat Restoration Plan is included with this submittal as required in the "Agreement to Facilitate Cleanup and Production Reuse of Property" dated August 20, 2020 between Dansons and Oregon DEQ. This plan is designed to restore habitat 20-feet on each side of the creek for approximately 1,350 feet. The extent of the restoration work is shown on the submitted Site Plan.*



- B. Boundaries and Setbacks.** The general location of the WR Overlay District is shown on the Molalla Comprehensive Plan Map (for areas within the UGB) and the Molalla Zoning Map (for areas within the City limits) and includes:
1. Locally significant wetlands identified on the Molalla Local Wetlands Inventory or the Natural Features Inventory.
  2. The riparian corridor extending upland 50 feet from the tops-of-bank of Bear Creek, Creamery Creek, and the Molalla River tributary as shown on the Natural Features Map.

- a. Where a significant wetland is located fully or partially within the riparian corridor, the riparian corridor shall extend 50 feet from the upland edge of the wetland;
  - b. The riparian buffer for isolated wetlands shall extend 25 feet from the edge of the wetland.
3. The 100-year floodplain on properties identified as vacant or partly vacant on the 2007 Molalla Buildable Lands Inventory.

*Response: Bear Creek flows through the western portion of the subject property and is shown on city mapping. In addition, the city's 2004 shows a wetland identified as BC-22E on the subject property. A Wetland Jurisdictional Evaluation report is included with the application package. The report evaluated this resource to determine if it is a jurisdictional wetland or not. The conclusion of this report is the mapped wetland area is an artificial roadside ditch less than ten feet wide and was originally excavated from uplands. It does not contain food or game fish and is connected or contiguous with other wetland and is non-jurisdictional.*

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

*Response: The city will need to notify DSL of the proposed application to review and concur with the submitted Jurisdictional Evaluation report.*

- D. **Site Plan Required.** When a use or activity that requires the issuance of a building permit or approval of a land use application is proposed on a parcel within, or partially within the WR Overlay District, the property owner shall submit a scaled site plan to the City that shows the precise location of:
1. Topography;
  2. The stream top-of-bank;
  3. The 100-year flood elevation;
  4. The delineated wetland boundary with documentation of concurrence by the Oregon Division of State Lands;
  5. The required riparian setback;
  6. Existing vegetative cover and type; and
  7. Existing and proposed site improvements.

*Response: A site plan is included with the Habitat Restoration Plan included with this application.*

- E. **Modification of Boundaries.** The boundaries of the WR Overlay District may be modified under the following circumstances:
1. The approval authority may modify the boundary of a significant stream corridor or wetland, and by extension the required riparian setback, based on:
    - a. A wetland delineation prepared by a professional wetland scientist;
    - b. Written concurrence by the Department of State Lands; and

c. A site survey, prepared by a registered land surveyor, showing the precise location of the stream top-of-bank or delineated wetland edge.

**Response:** *A modification of this boundary is not requested or required.*

2. The approval authority may modify the boundary of the 100-year floodplain based on a report from a registered civil engineer demonstrating the floodplain has been improperly mapped.

**Response:** *A modification of this boundary has not been requested.*

3. The approval authority may modify the boundaries of an isolated significant wetland (i.e., a wetland that is not within 50 feet of the top-of-bank of a significant stream) when all of the following criteria are satisfied:

- a. The proposed use or alteration of the wetland is approved by the U.S. Army Corps of Engineers and the Oregon Division of State Lands;
- b. The wetland can be altered without substantial adverse impact on the natural character of the area and function of the wetland;
- c. The wetland does not support rare or endangered species of fish, wildlife, or vegetation;
- d. Elimination, alteration, or relocation does not significantly alter water movement, including normal levels or rates of runoff into and from wetlands;
- e. The benefit to the public from the proposed use clearly outweighs the public good from retaining the wetland area;
- f. Disturbance of the wetland will not require any public costs, including maintenance due to secondary impacts; and
- g. The disturbance to the wetland will be the minimum necessary to accommodate reasonable development of the property. Efforts should be made to integrate the wetland area into the proposed development.

**Response:** *This section is not applicable.*

4. The approval authority may reduce the stream corridor boundary in highly disturbed areas by up to 25 feet when all of the following criteria are satisfied:

- a. The average stream corridor setback for the subject property shall remain at 50 feet;
- b. The applicant has prepared a mitigation plan demonstrating that there will be no net reduction in the water resource values, as identified in the Local Wetlands Inventory or Natural Features Inventory, whichever applies;
- c. The mitigation plan shall include specific mitigation measures such as restoration of riparian areas, enhanced buffer treatment within the protected stream corridor, or measures to increase water quality;
- d. The plan shall ensure removal of invasive plant species and replacement with suitable native plant species within one year of project approval;
- e. The plan shall include provisions for monitoring and replacement of native plants; and
- f. A riparian conservation easement shall be required for the protected stream corridor.

**Response:** *As noted above, a Habitat Restoration Plan is included with the application package. This plan is designed to restore 20 feet on both sides of*



*Bear Creek for 1,350 linear feet located on the subject property. This plan includes non-native plant species removal, removal of existing fill material, importation of top soil, and planting 450 native trees and 1,405 native shrubs.*

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

1. Trails.
2. Passive recreation uses and activities.
3. Maintenance of existing structures, lawns and gardens.
4. Normal maintenance and expansion of existing public facilities.
5. Construction of public facilities projects identified in adopted public facilities master plans.
6. Construction of transportation facilities identified in the adopted Transportation System Plan.

**Response:** *None of these uses are proposed.*

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

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

**Response:** *Only non-native plant species are proposed to be removed and native species planted.*

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

- a. Replacement of existing structures with structures located on the original building footprint that do not disturb additional wetland or riparian corridor surface area;
- b. Streets, roads and paths that are included in the Molalla Transportation System Plan;
- c. Water-related and water-dependent uses, including drainage facilities, water and sewer facilities, flood control projects, drainage pumps, public paths, access ways, trails, picnic areas or interpretive and educational displays and overlooks, including benches and outdoor furniture;
- d. Routine maintenance or replacement of existing public facilities projects and public emergencies, including emergency repairs to public facilities; and
- e. In-channel erosion or flood control measures that have been approved by the Oregon Division of State Lands (DSL), the U.S. Army Corps of Engineers or another state or federal regulatory agency, that utilize bio-engineering methods (rather than rip rap).

*Response: The submitted Habitat Restoration Plan has been submitted to and is under review by DEQ. The project area includes the removal of 2-feet of existing fill materials (pit run, cobbles, rip rap) along with invasive blackberry bushes. Imported topsoil will then be added to this area and contoured to drain to the creek. Following these activities, native trees and shrubs will be planted.*

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

*Response: None of these activities are proposed.*

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

*Response: All proposed plantings will be native species as required and will be monitored and maintained by the applicant.*

#### **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.

*Response: The proposed use is to use the former lumber mill site for a non-residential industrial redevelopment.*

- 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:** *This section is not applicable to buildings in industrial zones.*

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 proposal is for a manufacturing and warehousing facility and the site contains four existing buildings. The primary new structure is an open sided storage*

facility identified as Building #6 to be located adjacent to Molalla Avenue. For these reasons, this standard is not applicable.

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:** *As noted above, the proposal is for a manufacturing and warehousing facility within several buildings on the site. The proposed Site Plan does not feature a clear building entrance except on the new office building located behind Building #6.*
  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:** *The Site Plan includes two separate parking areas: one for visitors located in the northern part of the site and a second for employees in the southern part of the site. The remainder of the site is designated for production activities and truck access and circulation. The proposal complies with this section and the requirements of each of the identified sections as reviewed below.*
  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:** *The site contains multiple buildings and the majority of these buildings are intended for warehousing and production function. For this reason, pedestrian circulation is limited to a walkway between the visitor parking lot and the facility office.*
- 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.
1. The site plan or preliminary subdivision plan, as applicable, shall comply with the street connectivity standards of Section 17-3.6.020. The plan approval shall bind on all future phases of the development, if any, to the approved block layout.  
**Response:** *The size of the project qualifies as a Large-Format Development as defined in this section, however, the use of the site is for industrial development and the majority of the standards in this section are not applicable to this use.*

2. Except as provided by subsections C.6 through 9, the site shall be configured into blocks with building pads that have frontage onto improved streets meeting City standards, and shall contain interior parking courts and with interconnected pedestrian walkways.

**Response:** *Development of a heavy industrial production facility does not lend itself to complete compliance with this section. The site is a former lumber mill with four existing buildings.*

3. The build-to line standards in Table 17-2.2.040.E shall be met across not less than 75 percent of the site's street frontage, consistent with subsection 17-3.2.040.B, except the build-to standard does not apply where a railroad, expressway, water body, topographic constraint, or similar physical constraint makes it impractical to orient buildings to a particular street or highway.

**Response:** *The section is not applicable to industrial buildings.*

4. Walkways shall connect the street right-of-way to all primary building entrances, and shall connect all primary building entrances to one another, including required pedestrian crossings through interior parking areas, if any, in accordance with Section 17-3.3.040. The Planning Official may condition development to provide facilities exceeding those required by Section 17-3.3.040, including a requirement for lighting, stairways, ramps, and midblock pedestrian access ways (e.g., to break up an otherwise long block) to ensure reasonably safe, direct, and convenient pedestrian circulation. Development in the right-of-way shall be approved by the City Engineer.

**Response:** *As shown on the submitted Site Plan, the entire Molalla Avenue frontage adjacent to the site will be improved. A pedestrian connection to this sidewalk is proposed at the visitor parking area and a striped pedestrian walkway will be provided from Molalla Avenue to the entrance of the new office building (Building #5). This facility provides a reasonably safe, direct, and convenient route for pedestrians and visitors to enter the site.*

5. Buildings placed at a block corner shall have a primary entrance oriented to the block corner. That entrance shall be located no more than 20 feet from the corner, as measured from the street curb and shall have a direct and convenient pedestrian walkway connecting to the corner sidewalk.

**Response:** *This section is not applicable.*

6. All buildings shall orient to a street, pursuant to subsection B. Where it is not practical to orient all buildings to streets due to existing parcel configuration or a similar site constraints, buildings may orient to a "shopping street" providing, at a minimum, on-street parking (parallel or angled parking), 10-foot sidewalks (which shall include a four-foot zone for street trees and furnishings such as benches and other street furniture), and pedestrian-scale lighting. Shopping street dimensions do not apply to the public right-of-way.

**Response:** *The proposed manufacturing and warehousing use does not require compliance with this section.*

7. Each building that is proposed as orienting to a shopping street shall comply with the orientation standards of subsection B in reference to the shopping street, and shall have at least one primary entrance oriented to the shopping street.

*Response: This section is not applicable.*

8. Where a building fronts both a shopping street and a public street, that building shall contain at least one primary entrance oriented to each street; except that an entrance is not required where the public street is not improved with a sidewalk and the City determines that sidewalk improvements to the public street cannot be required as a condition of approval.

*Response: This section is not applicable.*

9. All other provisions of this Code apply to large-format developments.

*Response: All applicable code provisions are reviewed in this narrative.*

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.

*Response: The subject application is to redevelop the former lumber mill site into a wood fiber pellet production facility.*

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.

*Response: All buildings will feature similar materials and the applicant intends to make every effort to select a coordinated color palette for these structures.*

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: Except for warehousing and production buildings, the only entrance is at the proposed new office (Building #5) located between Buildings #2 and #3. This facility is located to the west and behind Building #6 and will not be visible from Molalla Avenue or Molalla Forest Road.*

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.

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.
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.
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.
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: The requirements of these sections are not applicable.*
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: No civic spaces are proposed or required and this section is not applicable.*
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: No windows are required in the warehouse structure proposed to be located along Molalla Avenue and this section is not applicable.*
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.
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: Because of the use of the new structures none of these structures will include windows except the new office building. The details of this design will be submitted with building plans.*

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: An exception to window standards has not been requested unless the City determines these standards are applicable to the structures and use.*

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: None of the proposed building will be oriented toward a street or civic space. All buildings except the small office are intended for warehousing and production functions of the wood pellet production facility.*

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: The applicant requests the Planning Official approve the proposed building design.*

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: None of these architectural elements are proposed.*



- 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: As noted above, none of the building elevations are intended to be oriented to a street or civic space. For this reason, the proposal is not required to comply with the 24-inch wall plane standard in subsection "a" above.*

- 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 most visible building is Building #6 that will be used as a warehouse to store and mix wood chips after they are transported to the site. This building will be open on the west, north, and south elevations and a 12-foot concrete wall will be constructed under the eave of the east elevation. The wall is intended to screen material storage and activities within this facility. The details of this design will be provided with construction plans.*
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: All new buildings will be designed to follow horizontal lines of the adjacent industrial building directly north of the subject property.*
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.
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: Only the office building proposed to be located between Buildings #2 and #3 will contain two stories. The details of this design will be submitted with construction plans.*
- 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.

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: No pedestrian shelters are proposed or warranted with this design.*

#### 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.

*Response: New ground-mounted power transformers are proposed to be installed just east of Building #4. As shown on the Site Plan and Landscape Plan this facility will be screened by landscaping, Building #4, and vinyl slats installed in the proposed chain link perimeter fence.*

- #### H. Civic Space.
- Commercial development projects shall provide civic space 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.

*Response: The proposal is for an industrial building/use. These sections are not applicable.*

## Chapter 17-3.3 ACCESS AND CIRCULATION

### 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:** *New accesses are proposed on both Molalla Avenue under Clackamas County jurisdiction and Molalla Forest under City jurisdiction.*

### 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.  
**Response:** *Permits for the two new accesses will be needed from the appropriate jurisdiction.*
- 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:** *A Traffic Impact Study in compliance with the requirements of Section 17-3.6.020 is included with the application package.*
- 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:** *A new single access is proposed from both Molalla Avenue and Molalla Forest Road.*
  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.
  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.

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.
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).
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.
7. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.
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.
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.
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.
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.
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: These accesses will be designed in compliance with County and City standards.*
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:** *A new public sidewalk designed in compliance with County standards is proposed along the Molalla Avenue frontage. The City requires the applicant to sign a waiver of remonstrance to defer improvements to Molalla Forest Road.*

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 sidewalk improvements will be designed pursuant to ADA standards as required by Clackamas County Engineering.*
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:** *The applicant understands the City Engineer may require changes to these plans.*
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:** *Neither Molalla Avenue or Molalla Forest Road are state highways. No approach to a state highway is proposed.*
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.  
**Response:** *The applicant understands the requirements of these sections.*
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:** *No temporary accesses are proposed.*
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:** *A stormwater plan designed in compliance with these standards is submitted with the application package.*

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.

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: Vision clearance areas are shown on the Site Plan at both driveways and at the intersection of Molalla Avenue and Molalla Forest Road to ensure no visual obstruction greater than 2.5 feet will be located in this area. The other items in these sections are addressed in the submitted Traffic Impact Study. As detailed in this report, the proposed driveways comply with these standards.*

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: No exceptions to these standard are requested or necessary.*

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: No joint use accesses are proposed.*

### 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.

*Response: The City's TSP shows a future Shared-Use Path is proposed along Molalla Forest Road abutting the south line of the subject property. The City has requested the applicant sign a Waiver of Remonstrance for this facility when it is constructed at a later date.*

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.

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 shown on the Site Plan submitted with this application, a pedestrian walkway is proposed from the sidewalk on Molalla Avenue through the site to the new office building (Building #5). This facility will allow pedestrians to safely walk from this sidewalk or from the visitor parking lot/ADA parking spaces to the main building entrance. Due to the nature of the development no other pedestrian walkways or facilities are proposed.*

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.

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.

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: The proposed pedestrian facility includes a six-foot wide marked walkway painted on the asphalt surface from the visitor parking lot to the office entrance in compliance with these sections.*
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 walkway surfaces will be on an asphalt surface in compliance with ADA requirements and six-feet in width in compliance with this section.*
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: No multi-use paths are proposed or required.*

#### **Chapter 17-3.4 LANDSCAPING, FENCES AND WALLS, OUTDOOR LIGHTING**

##### **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.  
*Response: A Landscape Plan designed in compliance with applicable standards is submitted with the application package.*
- 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.  
*Response: As shown on the submitted Site Plan, a chain link fence with barbed wire on top is proposed around the perimeter of the entire facility. This fence will include vinyl privacy slats from the east edge of Building #4 around the southern parking lot to the south side of Building #6, and from the north side of Building #6 to the pedestrian access on Molalla Avenue.*



- C. Section 17-3.4.050, Outdoor Lighting, applies to all new outdoor lighting, i.e., lighting that is installed after November 10, 2017.  
*Response: Lighting Plans for both onsite lighting and lighting along Molalla Avenue are included with the application package.*
- 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: No exceptions to these standards are requested or needed.*

#### **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 not developed with structures or containing hard surfaces will generally be landscaped.*
- B. **Minimum Landscape Area.** All lots shall conform to the minimum landscape area standards of the applicable zoning district, as contained in Tables 17-2.2.040.D and 17-2.2.040.E. The Planning Official, consistent with the purposes in Section 17-3.4.010, may allow credit toward the minimum landscape area for existing vegetation that is retained in the development.  
*Response: The M-2 zoning district requires 5 percent of the site in landscaping. As detailed on the submitted Site Plan, about 10 percent of the site will be in landscaping in compliance with this standard.*
- 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.

*Response: The submitted Landscape Plan is designed in compliance with these standards.*

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: The site contains two stormwater detention facilities as shown on the Site Plan and detailed in the submitted Stormwater Report. Also, rain gardens will be developed as part of the Molalla Avenue frontage improvements. All of these facilities are designed in compliance with applicable 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.

*Response: Existing trees along Molalla Forest Road will be retained to the greatest extent practicable. Construction of a new access on this road will tree removal as needed.*

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.
- Response: All of these standards have been considered in the development of the submitted Landscape and Stormwater plans.*

- 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: As detailed on the Site Plan two parking lots are proposed: the northern lots is intended for visitors and includes ADA parking and the southern parking lot is intended for employees. The visitor parking area will be located on the DEQ Hardcap area (See DEQ Cleanup and Reuse Agreement) that prohibits excavation in this area. For this reason, landscaping is not allowed to be installed or is any proposed in this parking lot. The applicant considered moving the visitor parking area to the south off the hardcap area but as shown on the Site Plan an existing four foot wall directly south of the pedestrian walkway in this area limits this lot from being moved without considerable expense. The southern parking lot does not have this same constraints. For this reason, the Site Plan and Landscape Plan includes considerable landscaping in this area. This parking area contains 10,418 square feet including the area for parking and drive aisles and 7,845 square feet of landscaping is proposed in this area. Landscaping in the employee parking lot represents 75 percent of the total area of this lot, well in excess of this standard.*
  
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 employee parking area contains 24 parking spaces and this code section is applicable. As shown on the Site and Landscape plans a landscape planter is provided at both ends of the banks of employee parking spaces. Due to the configuration of this lot and the location of proposed Building #6, the bank of vehicle spaces facing east contains 13 spaces greater than the 10 space maximum in this standard. A landscape planter is proposed at each end of this parking bay. The proposed complies with the intent of this section. As noted above, no landscaping is allowed to be installed in and around the visitor parking area due to limitations on penetrating the hardcap in this area.*
  
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 submitted Landscape Plan is designed in compliance with this section.*
  
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: Wheel stops are proposed with each parking space as shown on the Site Plan.*

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

*Response: This standard has been considered where applicable.*

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.

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.

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: All storage areas and parking lots will be screened to the greatest extent practicable by the east wall of Building #6, fencing with vinyl privacy slats installed, and landscaping. This screening is designed to limit viewing from outside the development of storage areas and will limit vehicle headlights from shining towards adjacent streets.*

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

*Response: The applicant intends to maintain all landscaping in good condition.*

#### **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: A six-foot tall chain link fence with barbed wire on top is proposed to be installed around the entire perimeter of the site. In addition, vinyl privacy slats will be installed in this fence from the eastern side of Building #4 around the employee parking lot to the south side of Building #6 and from the north side of Building #6 to the pedestrian walkway.*

**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.

*Response: The subject property is located in an Industrial zone.*

**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.

*Response: A 6-foot tall fence is proposed around the entire perimeter of the site as allowed.*

**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: As shown on the Site Plan no fencing will be located in a vision clearance area.*

**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: As noted above, the proposed perimeter fence will be chain link with barbed wire on top as allowed by this section.*

**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 applicant is aware of the requirements of this section.*

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

*Response: The applicant intends to maintain all fencing in good condition.*

#### **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.
  2. Where a light standard is placed over a sidewalk or walkway, a minimum vertical clearance of eight feet shall be maintained.
  3. Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.
  4. Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.
  5. Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.
  6. Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.
  7. Active building entrances shall have a minimum average illumination of not less than two foot-candles.
  8. Surfaces of signs shall have an illumination level of not more than two foot-candles.
  9. Parking lots and outdoor services areas, including quick vehicle service areas, shall have a minimum illumination of not less than 0.2 foot-candles, average illumination of approximately 0.8 foot-candles, and a uniformity ratio (maximum-to-minimum ratio) of not more than 20:1.
  10. Where illumination grid lighting plans cannot be reviewed or if fixtures do not provide photometrics and bulbs are under 2,000 lumens, use the following guidelines:
    - a. Poles should be no greater in height than four times the distance to the property line.
    - b. Maximum lumen levels should be based on fixture height.
    - c. Private illumination shall not be used to light adjoining public right-of-way.
  11. Where a light standard is placed within a walkway, an unobstructed pedestrian through zone not less than 48 inches wide shall be maintained.
  12. Lighting subject to this section shall consist of materials approved for outdoor use and shall be installed according to the manufacturer's specifications.

***Response:** Lighting Plans for both onsite lighting and lighting along Molalla Avenue are included with the application package. These plans are designed to comply with all applicable standards.*

**Chapter 17-3.5 PARKING AND LOADING**  
**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.

*Response: The standards of this chapter are applicable to the proposed development.*

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: The applicant is aware that parking areas are required to be developed 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.

*Response: This section has been considered in calculating required parking.*

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

*Response: Only one use is proposed to occupy the site.*

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 section is not applicable to the subject application.*

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: This section is not applicable to the subject application.*

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 parking is proposed to be developed for employees and visitors only. No customer access to the site will be allowed.*

**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: All proposed parking is located on the subject parcel as required.*

**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: All parking spaces are designed in compliance with applicable standards.*

**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: Table 17-3.5.030.A requires one vehicle parking space for each 1,000 square feet of production space and one parking space for each 2,000 square feet of warehouse space. The proposed development contains the following building areas and uses:*

<b>Production Space</b>	<b>Warehousing Space</b>
Building 3 - 12,496 s.f.	Building 1 - 32,645 s.f.
Building 5 - 3,720 (office)	Building 2 - 18,141 s.f.
<b>Total - 16,216 s.f.</b>	Building 4 - 4,482 s.f.
	Building 6 - 52,500 s.f.
	<b>Total - 107,768 s.f.</b>

*As shown on the table above the site will contain 16,216 square feet of production space requiring 16 parking spaces (16 x 1 space/1,000 = 16 spaces) and 107,768 square feet of warehouse space requiring 54 parking spaces 107,768/2 = 53,884 rounded up to 54*



parking spaces. As shown on the submitted Site Plan, the applicant proposes a reduction in parking as reviewed in Section 17-3.5.030.C.2 below.

**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 proposal includes fewer than 50 parking spaces and this section is not applicable.*

**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: This section is not applicable.*

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 applicant proposes a parking standard based on the number of employees during the largest shift rather than based on the building square footage calculation in Table 17-3.5.030.A reviewed above. The proposed facility is designed to operate 24 hours/day, seven days/week and the largest shift will be during weekdays when a maximum of 17 employees will be working. This employee count includes the Plant Manager in addition to office and production staff. As shown on the Site Plan, 24 employee parking spaces, six visitor spaces, and two ADA spaces are proposed for a total of 30 spaces. In addition, a rack to accommodate five bicycles is also proposed.*

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: The applicant has requested a parking reduction per Subsection 17-3.5.030 C.2 as reviewed above.*

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

*Response: No shared parking is proposed.*

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: There is no on-street parking located adjacent to the site and the applicant is not requesting a parking reduction based on this section.*

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 section is not applicable.*

- 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: As noted above, the applicant has requested a reduction in the minimum number of required vehicle parking spaces as allowed by Subsection 17-3.5.030 C.2 as reviewed above.*

- 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 use is a stand alone use. This section is not applicable.*

- 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 proposed parking will be on asphalt and each space includes a wheel stop to protect the abutting pedestrian walkway and landscaping. The proposal includes 24 employee parking spaces, six visitor spaces, and two ADA parking spaces. As designed the proposal complies with ADA requirements. A stormwater management plan designed in compliance with Section 17-3.6.050 is included with the application package.*

- 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: All parking spaces are designed in compliance with applicable standards.*

- 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: The proposed 30 standard parking spaces require two ADA compliant parking spaces and two ADA spaces are proposed. As shown on the Site Plan, a marked accessible route is also provided from these spaces to the proposed office entrance.*

- 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: An electric charging station is not proposed or required with this development.*

#### **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: This section requires two bike parking space per primary use or one space per 10 vehicle spaces. The 32 vehicle parking spaces requires a minimum of three bicycle parking spaces. As shown on the Site Plan, a bicycle rack to accommodate five bicycle parking spaces is located next to the ADA parking spaces in the visitor parking lot.*

- 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: Bicycle parking will be provided with a rack to accommodate five bicycles.*

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

*Response: The proposed use is not exempt from bicycle parking requirements.*

- 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: A rack to accommodate five bicycles is included near the ADA parking spaces in the visitor parking lot. This location of this rack does not impede or create a hazard as required by this section.*

#### **17-3.5.050 Loading Areas**

- A. **Purpose.** The purpose of Section 17-3.5.050 is to provide adequate loading areas for commercial and industrial uses that do not interfere with the operation of adjacent streets.

*Response: This section is applicable to the proposed industrial use.*

- 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.

**Response:** As shown on the Site Plan a loading area to accommodate four large trucks is proposed on the west side of Building #1. This area has been determined to be adequate to serve the needs of the proposed facility.

- 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.

**Response:** As shown on the Site Plan, the proposed loading area has been sized to accommodate the largest vehicle expected to serve the facility.

- 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.

**Response:** As shown on the Site Plan, the proposed loading area is located on the west side of Building #1 and will not be visible from Molalla Avenue. This area will also be partially screened from view from Molalla Forest Road by the location of this facility and the configuration of the building.

- 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:** No exceptions to these standards are proposed.

#### **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 requirements of this chapter are applicable to the subject application.

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: The submitted Site and Utility Plan is designed in compliance with the requirements of the City's Public Works Design Standards.*

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: The applicant is aware a building permit may not be issued until all required public facility improvements are in place and approved by the City Engineer or otherwise bonded.*

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: The applicant is not contesting required dedications or easements as identified on the submitted Site Plan.*

2. 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: Easements and road dedications are shown on the submitted Site and Utility Plan as required.*

### **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.  
*Response: Molalla Avenue abuts the site along its entire eastern line. This road is under Clackamas County's jurisdiction and will be improved according to this agency's standards. Molalla Forest Road is under the City's jurisdiction and the City has indicated the applicant will not be required to make improvements to this road at this time but will be required to sign a waiver of remonstrance for roadway and lighting improvements to be determined at a later date.*
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: Only improvements to Molalla Avenue, a County Road, are required with this application.*
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: No new streets are proposed. A five foot roadway dedication is required along Molalla Avenue.*
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:** *The City required submittal of a Traffic Impact Analysis with this application. A TIA prepared by a Transportation Engineer is included with application materials.*

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:** *The submitted TIA includes all of the items as required by this section.*

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: The applicant is not requesting deferral of any improvements except those to Molalla Forest Road as allowed by the City. The City is requiring the applicant to sign a waiver of remonstrance for these improvements.*

**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.

*Response: No new streets are proposed or required with this application.*

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.

*Response: Improvements to Molalla Avenue are designed in compliance with County standards.*

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: These sections are not applicable to the subject application.*

**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.
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.
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: All street improvements are required in accordance with Clackamas County standards.*

**D. Transportation Connectivity and Future Street Plans.** The following standards apply to the creation of new streets:

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

*Response: All streets are existing.*

2. **Access Ways.** The Planning Commission, in approving a land use application with conditions shall require a developer to provide an access way where the creation of a cul-de-sac or dead-end street is unavoidable and the access way connects or may in the future connect, the end of the street to another street, a park, or a public access way, except where the City Engineer and City Planner determine the access way is not feasible. Where an access way is required, it shall be not less than 10 feet wide and shall contain a minimum eight-foot-wide concrete surface or other all-weather surface approved by the City Engineer. Access ways shall be contained within a public right-of-way or public access easement, as required by the City.
3. **Connectivity to Abutting Lands.** The street system of a proposed subdivision shall be designed to connect to existing, proposed, and planned streets adjacent to the subdivision. Wherever a proposed development abuts unplatted land or a future development phase of an existing development, street stubs shall be provided to allow access to future abutting subdivisions and to logically extend the street system into the surrounding area. Street ends shall be designed to facilitate future extension in terms of grading, width, and temporary barricades.
4. **Street Connectivity and Formation of Blocks.** In order to promote efficient vehicular and pedestrian circulation throughout the City, subdivisions and site developments shall be served by an interconnected street network, pursuant to the current version of the Public Works Design Standards and Transportation System Plan. Where a street connection cannot be made due to physical site constraints, approach spacing requirements, access management requirements, or similar restrictions; a pedestrian access way connection shall be provided pursuant to Chapter 17-3.3. Streets and accessways need not be required where one or more of the following conditions exist:
  - a. Physical or topographic conditions make a street or accessway connection impracticable. Such conditions include, but are not limited to, freeways, railroads, steep slopes, wetlands or other bodies of water where a connection could not reasonably be provided:
  - b. Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment; or
  - c. Where streets or accessways would violate provisions of leases, easements, covenants, restrictions or other agreements existing as of May 1, 1995, which preclude a required street or accessway connection.
5. **Cul-de-Sac Streets.** A cul-de-sac street shall only be used where the City Engineer determines that environmental or topographical constraints, existing development patterns, or compliance with other applicable City requirements preclude a street extension. Where the City determines that a cul-de-sac is allowed, cul-de-sac length,

turn-around type, and pedestrian access to adjoining properties shall meet the requirements of the current version of the Public Works Design Standards and Transportation System Plan and subsection D.2.

6. **Future Street Plan.** Where a subdivision is proposed adjacent to other developable land, a future street plan shall be filed by the applicant in conjunction with an application for a subdivision in order to facilitate orderly development of the street system. The plan shall show the pattern of existing and proposed future streets from the boundaries of the proposed land division and shall include other divisible parcels within 600 feet surrounding and adjacent to the proposed subdivision. The street plan is binding when part of a multi-phased master planned development. The plan must demonstrate, pursuant to City standards, that the proposed development does not preclude future street connections to adjacent development land.

7. **Private Streets and Gated Drives.** Private streets and gated drives serving more than two dwellings (i.e., where a gate limits access to a development from a public street), are prohibited.

*Response: The requirements of these sections are not applicable to the subject application.*

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: Improvements to Molalla Avenue are designed in compliance with County Road Standards as required.*

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: No conflicts between the Fire Code and City standards have been identified.*

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: Clackamas County is requiring a five foot road dedication along the entire site frontage.*

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: No traffic calming features have been identified.*

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: Molalla Avenue frontage improvements include a new curb, 7-foot sidewalk, and 7-foot planter. A rain garden will be integrated into the planter in several places along this frontage.*

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.

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: These sections are not applicable.*

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: New survey monuments will be installed as required to monument the new property line after roadway dedication.*

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: No new street signs have been identified.*

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: A streetlight plan for lighting Molalla Avenue is included with the plan set.*

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

*Response: A mailbox will be installed or a Post Office box obtained to receive mail.*

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. (Ord. 2019-01 §1; Ord. 2017-08 §1)

*Response: The final lift of paving as needed will be completed as required by Clackamas County Engineering.*

#### 17-3.6.030 Public Use Areas

##### A. Dedication of Public Use Areas.

1. Where a proposed park, playground, or other public use shown in a plan adopted by the City is located in whole or in part in a subdivision, the City may require the dedication or reservation of this area on the final plat for the subdivision, provided that the impact of the development on the City park system is roughly proportionate to the dedication or reservation being made.
2. The City may purchase or accept voluntary dedication or reservation of areas within the subdivision that are suitable for the development of parks and other public uses; however, the City is under no obligation to accept such areas offered for dedication or sale.

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

*Response: These sections are not applicable to the subject application.*

#### 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: A new 6-inch public water line within a 15-foot public easement will be constructed to connect all fire hydrants on the site. In addition, an FDC and double-check valve will be installed as shown on submitted plans. Improvements also include the installed of a new sanitary sewer lines to serve the new office. As shown on the Utility Plan, new private pump station will be constructed and a new force main installed from there to connect to the existing sanitary sewer line in the intersection of Shaver and Section Streets.*

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: The applicant understands the Public Works Director and City Engineer will need to approve all water and sanitary sewer plans.*

- 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 City will need to determine if all proposed sewer and water lines are adequately sized to serve the development in compliance with applicable facility master plans.*

- 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: The proposed Utility Plan includes new water and sanitary sewer lines and a new private sanitary sewer lift station and force main. With these improvements proposed facilities will be adequate to serve the development.*

#### **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: A Storm Drainage Report is included with the application package. This report details how stormwater on the site will be treated and detained.*

- 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 submitted report has considered the upstream flow of Bear Creek in this analysis.*

- 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 applicant understands the stormwater design requires City Engineer approval.*

- 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 applicant is aware of this section.*

- 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: Bear Creek flows in an east-west direction through the western portion of the site.*

#### **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.
- 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.
- C. **Exception to Undergrounding Requirement.** The City Engineer may grant exceptions to the undergrounding standard where existing physical constraints, such as geologic conditions, streams, or existing development conditions make underground placement impractical. (Ord. 2017-08 §1)
- Response: Electrical, natural gas, and communication services will be coordinated with the appropriate company.*

#### **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.
- 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.
- 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: Several public and private utility easements are proposed as shown on the submitted Site and Utility Plan. A written legal description and sketch will be*

*prepared for each of these easements and these documents will be recorded prior to final occupancy as required.*

#### **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: The applicant is aware all facilities require City or County approval as appropriate prior to construction.*

#### **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.
- B. **Adopted Installation Standards.** The City of Molalla has adopted Public Works Design Standards for public improvements and private utility installation within the public right-of-way.
- C. **Commencement.** Work in a public right-of-way shall not begin until all applicable agency permits have been approved and issued.
- D. **Resumption.** If work is discontinued for more than six months, it shall not be resumed until the Public Works Director is notified in writing and grants approval of an extension.
- E. **City Inspection.** Improvements shall be constructed under the inspection of the City Engineer. The City Engineer may approve minor changes in typical sections and details if unusual conditions arising during construction warrant such changes in the public interest, except that substantive changes to the approved design shall be subject to review under Chapter 17-4.5 Modifications to Approved Plans and Conditions of Approval. Any survey monuments that are disturbed before all improvements are completed by the developer or subdivider shall be replaced at the developer or subdivider's expense prior to final acceptance of the improvements.
- F. **Engineer's Certification and As-Built Plans.** In accordance with the current version of the Public Works Design Standards, a registered civil engineer shall provide written certification in a form required by the City that all improvements, workmanship, and materials meet current and standard engineering and construction practices, conform to approved plans and conditions of approval, and are of high grade, prior to City's acceptance of the public improvements, or any portion thereof, for operation and maintenance. The developer's engineer shall also provide two sets of "as-built" plans, one paper set and one electronic set for permanent filing with the City. If required by the City, the developer or subdivider shall provide a warranty bond pursuant to Section 17-3.6.100. (Ord. 2017-08 §1)

*Response: The applicant is aware of the requirements of these sections. All improvements will be designed by a Registered Professional Engineer in conformance with applicable regulations and standards.*

### 17-3.6.100 Performance Guarantee and Warranty

- A. **Performance Guarantee Required.** The City at its discretion may approve a final plat or building permit when it determines that all of the public improvements required for the site development or land division, or phase thereof, are complete and the applicant has an acceptable assurance for the balance of said improvements. The applicant shall provide a performance and payment bond in accordance with the current version of the Public Works Design Standards.
- B. **Determination of Sum.** The assurance of performance shall be for a sum determined by the City Engineer as required to cover the cost of the improvements and repairs, including related engineering and incidental expenses, plus reasonable inflationary costs. The assurance shall not be less than 150 percent of the estimated improvement costs.
- 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.
- 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.
- 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.
- 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.
- 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: The applicant is aware providing a performance guarantee may be an option if occupancy is desired prior to the completion of all required site improvements.*

### 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. (Ord. 2017-08 §1)

*Response: The proposed production and warehousing uses are similar to uses identified as Conditional Uses in the M-2, Heavy Industrial zoning district.*

#### **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.

*Response: The applicant is aware the subject application requires review at a public hearing before the Planning Commission.*

#### **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 submittal package includes all of the items required by this section. The project narrative submitted with this application responds to all applicable approval criteria.*

#### **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 submitted Site Plan, Traffic Impact Study, Landscape Plan, Stormwater Plan, and Lighting Plan are designed to address items in this criterion.*

*Site Size, Dimensions, Location, Topography, and Access - The project includes the redevelopment of a former lumber mill site that has not been operating for at least 10 years. The proposal utilizes existing buildings, makes improvements to these buildings, and adds three new buildings. The development also includes construction of new visitor and employee parking lots, a pedestrian walkway, and bicycle parking improvements. The submitted traffic impact study demonstrates that all study intersections are projected to operate acceptably per the appropriate jurisdictional standards and no operational mitigation is recommended.*

*Noise, Vibration, Exhaust/Emission, Light, Glare - Most processing functions on the site will occur within enclosed buildings (Building #2 and #3). The exception to this is the hammer mill in the green processing facility and air cleaning equipment located on the southside of Building #3. The location of these*

facilities and the proposed building arrangement and landscaping are designed to mitigate sound impacts. Building #6 is also proposed to include a 12 foot wall constructed along its eastern elevation. This structure is designed to shield properties east of Molalla Avenue from noise and visual impacts from the site. Vibrations generated on the site are not expected to be noticeable off the site. The submitted Lighting Plan is designed to comply with city standards to minimize light trespass and glare off the site.

*Erosion, odor, dust* - The subject site is generally flat with most site areas containing hardscape or landscaping. Erosion generated from the site and dust from vehicle movement will not occur. No odors except wood odors are expected to occur and these odors are expected to be contained on the site. As shown on the submitted Site Plan, new air cleaning equipment will be installed to mitigate and contain dust generated by processing operations.

*Visibility, safety, and aesthetic considerations* - Landscaping, fencing, and building placement are intended to address visibility and aesthetic considerations. In addition, as shown on the Site Plan vinyl privacy slats will be installed in this fence from east of Building #4 around the south parking lot, to the south side of Building #6 and from the north side of Building #6 to the pedestrian access. Regarding safety, the proposed Site Plan is designed to ensure pedestrians, passenger vehicles, and trucks are able to safely navigate on-off and around the site.

As detailed on submitted plans and in this narrative, all items in this section have been addressed and this criterion is satisfied.

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 submitted plans are designed to minimize negative impacts off the site.
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:** The conclusion of the submitted Traffic Impact Analysis shows that all study intersections are projected to operate acceptably per the appropriate jurisdictional standards and no operational mitigation is recommended. With proposed sanitary sewer, water, and stormwater improvements findings can be made that all required facilities have adequate capacity or can be improved to serve the proposal, consistent with City standards. The proposal complies with this criterion.
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 proposed use is allowed with Conditional Use Permit approval as has been requested with this application. Approval of a Conditional Use Permit will not allow a prohibited use from occurring or grant a variance that has not been requested.*

#### **IV. Conclusion**

Dansons Molalla, LLC requests Site Design and Conditional Use Permit approval to redevelop the property they own as a new wood fiber pellet production facility. The subject property includes three tax lots legally described as 52E17A tax lots 102 and 290 and 52E17 tax lot 2480 and contains 16.30 acres. The Molalla City Council approved annexation of the subject property and a zone change earlier this year with adoption of Ordinance 2021-07. With this approval the subject property is now located in the Molalla city limits and carries a zoning designation of Heavy Industrial (M-2). As reviewed above, the subject application complies with all submittal requirements and applicable approval criteria contained in the Molalla Development Code and the applicant respectfully requests this application be approved.

Date: September 22, 2021

Mr. Mac Corthell  
Planning Director  
City of Molalla  
117 N. Molalla Avenue  
Molalla, OR. 97038

Re: Dansons Land Use Application (SDR06-File No. 20-21 & CUP01-2021)

Dear Mac:

This letter and attachments are intended to respond to each of the items in your September 1, 2021 Incompleteness Letter. With these submittals we believe the application is ready to be deemed complete.

Site Design Review Information

1. Plan Size - *All plans are now printed in color in a 24"x 36" scaleable format.*
2. Plan Title - *The plan titles have been changed as requested. Two new sheets are also included.*
3. Draft Reference - *This reference has been removed.*
4. Stormwater Plan - *A stamped plan is included as requested.*

Site Analysis Map (Sheets C1 and C2)

1. Existing Drive Widths - *All existing drives have been labeled and dimensioned.*
2. Tree Mapping = *All existing trees 6-inches and greater DBH within the development site area are now shown.*

Proposed Site Plan (Sheet C3)

1. Property Dimensions - *All dimensions are included and scaleable on the 24"x 36" formatted plan set.*
2. Drive Widths - *The width of all drives is included.*
3. Truck Turning - *Truck turning templates for trucks entering and exiting the site are included.*
4. S. Molalla Sidewalk - *The proposed sidewalk along Molalla Ave. is shown. A profile showing this feature is also included*
5. Road Dedication - *The required right-of-way dedication at the corner of Molalla Ave. and Molalla Forest Road is shown.*
6. PUE identified - *A 10 foot PUE is shown along both site frontages.*
7. Existing/Proposed Buildings - *The dimensions and setbacks for all existing and proposed buildings is included.*
8. New Resurfaced Areas - *The total area of all resurfaced areas is included.*
9. Vehicle Circulation - *All parking/maneuvering areas are identified and dimensioned.*
10. Sidewalk/Bike Lane Molalla Ave. - *A sidewalk and bike lane is shown and a cross section provided showing these improvements.*
11. Waste Disposal Location - *A waste disposal area is shown west of Building #1.*

Utility Plan (Sheet C4)

1. A separate Utility Plan including *electrical and gas service is provided.*

Landscape Plan

1. Entire Site - *The entire site is shown on the revised Landscape Plan.*
2. Fencing - *All proposed fencing is shown.*

3. Retaining Walls - A new six-foot tall "L" shaped retaining wall is shown east of Building #2 and north of Building #3. The existing retaining walls north and south of Building #6 have also been labelled.
4. Trees - All trees greater than 6-inches DBH are now shown on this plan.
5. Trees to be Removed - All inventoried trees proposed to be removed are shown.
6. Building ID - All buildings have been labelled.
7. Paved Areas - The location of all paved areas are now shown.
8. Planting Details - Additional planting details including planting specifications, water requirements of proposed species, and anticipated planting scheduled is included. Plants identified with a water requirement of either "low" or "medium" are drought tolerant once they are established.
9. Irrigation - A long term irrigation plan is not needed as all plantings are proposed to be drought tolerant species. Watering bags will be used to water trees for the first year. The applicant will consider options for watering shrubs and groundcover until established.

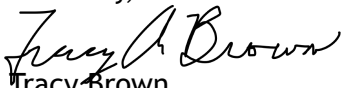
#### Property Deeds

1. Property Deeds - Property deeds for all properties are included.

#### Staff Feedback Items

1. Utilities - A Revised Utility Plan as suggested is included as a new sheet.
2. Pedestrian Circulation - The Proposed Site Plan has been modified to include six-foot wide striped walkways to and between all building entrances.
3. Fencing - As shown on revised plans the fence location has been modified. A six-foot tall galvanized chain link fence is proposed around the entire site perimeter.
4. Vinyl Slats - Vinyl slats in the fence are no longer proposed.
5. Wall - The 12-foot wall shown on the Proposed Site Plan is an integral wall of Building #6 and is not a separate screening wall. This feature is necessary for the internal function of this building. Landscaping is included along the eastern site boundary to screen this structure.
6. Consistent Fence Design - The proposed fence is now a consistent design - six foot galvanized chain link with barb wire on top.
7. Outdoor Lighting - A revised Lighting Plan is included to address Section 17-3.4.050. No light standard is proposed to exceed 20 feet in height.

Sincerely,



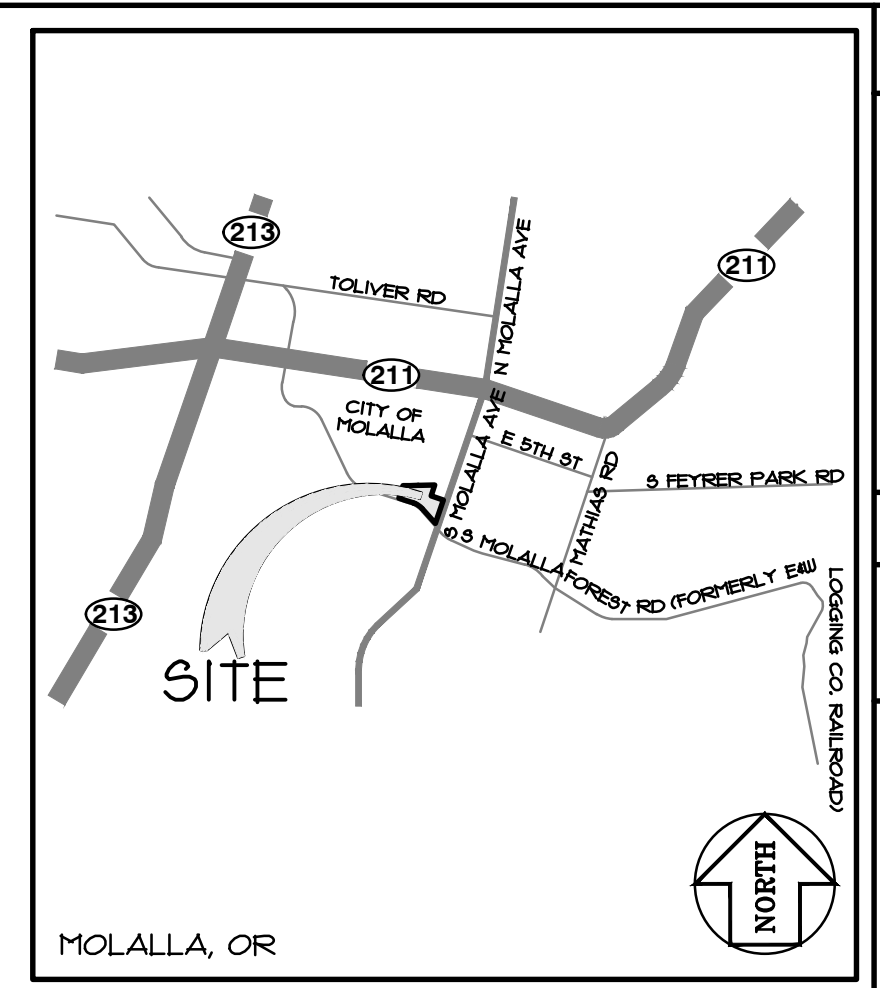
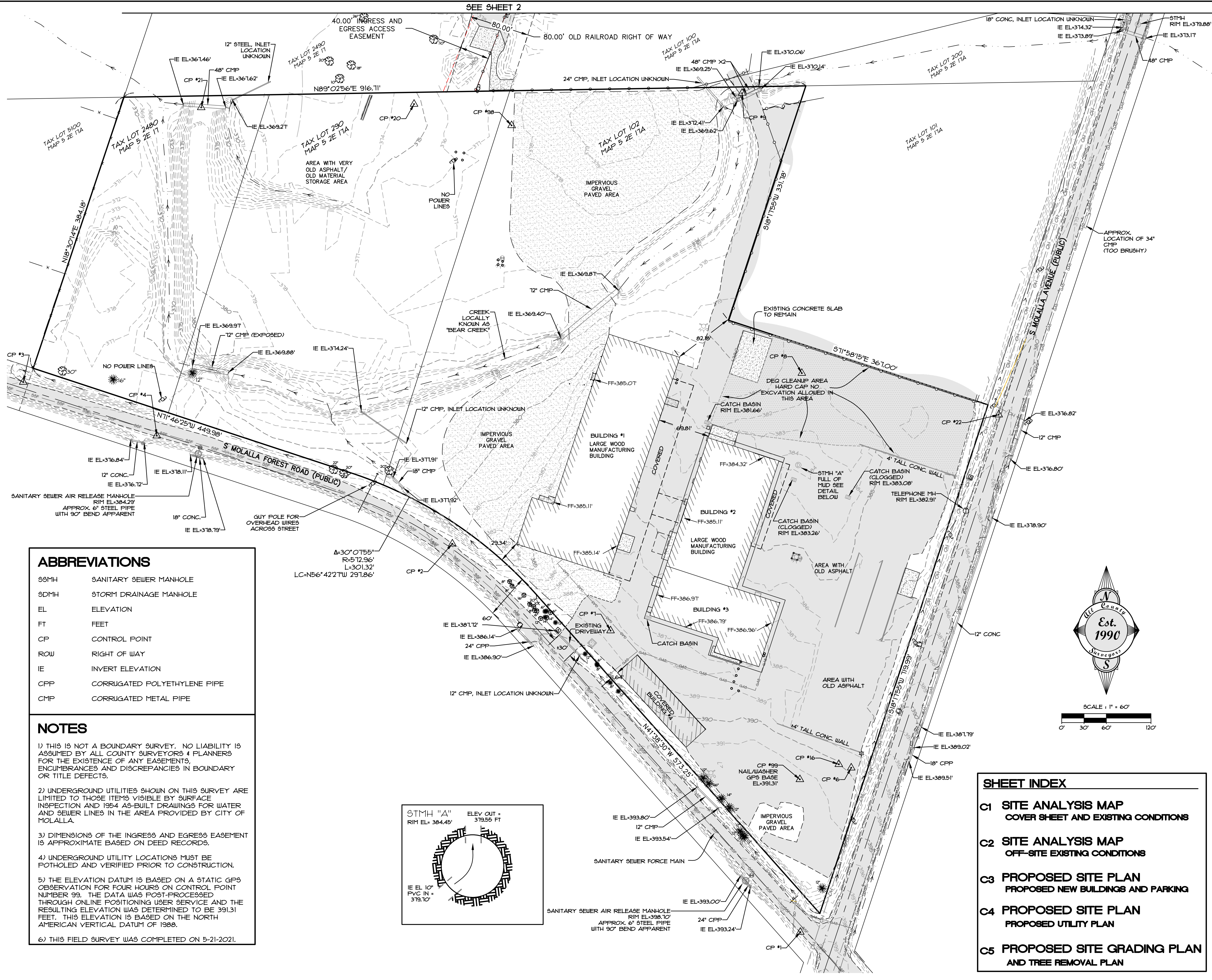
Tracy Brown

Tracy Brown Planning Consultants, LLC

#### Attachments:

- Property Deeds
- Stamped Stormwater Plan
- Revised Civil Plans
  - Sheet C1 - Site Analysis Map - Cover Sheet and Existing Conditions
  - Sheet C2 - Site Analysis Map - Off-Site Existing Conditions
  - Sheet C3 - Proposed Site Plan - Proposed New Building and Parking
  - Sheet C4 - Proposed Site Plan - Proposed Utility Plan
  - Sheet C5 - Proposed Site Grading Plan and Tree Removal Plan
- Revised Landscape Plan
  - Sheet L101 - Planting Plan
  - Sheet L102 - Planting Plan
  - Sheet L103 - Planting Details and Notes
- Revised Lighting Plan





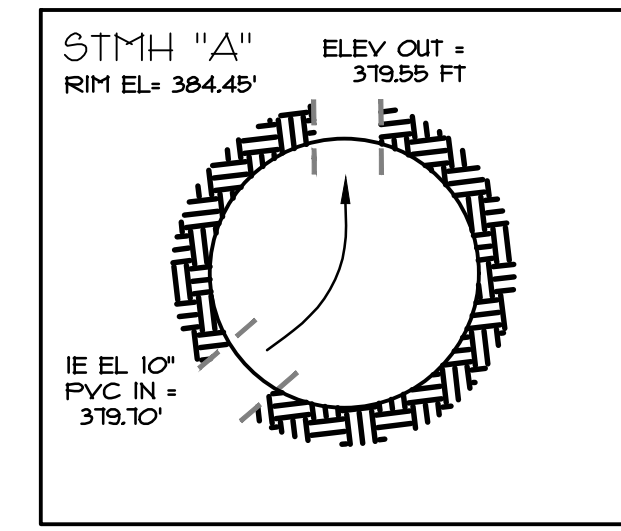
**LEGEND**

[Symbol]	SURVEY CONTROL POINT
[Symbol]	PROPERTY LINE
[Symbol]	INTERIOR PROPERTY LINE
[Symbol]	LOT LINE
[Symbol]	EASEMENT LINE
[Symbol]	CL RIGHT OF WAY
[Symbol]	CL DITCH AND FLOW DIRECTION
[Symbol]	5' GROUND CONTOUR
[Symbol]	1' GROUND CONTOUR
[Symbol]	BUILDING WALL
[Symbol]	BLDG OH
[Symbol]	WALL
[Symbol]	AC PAVEMENT
[Symbol]	SIDEWALK/CONCRETE
[Symbol]	GRAVEL
[Symbol]	RAILROAD TRACKS
[Symbol]	BARBED WIRE FENCE
[Symbol]	CHAINLINK FENCE
[Symbol]	WOOD FENCE
[Symbol]	CULVERT (AS NOTED)
[Symbol]	WATER LINE
[Symbol]	6" WATER LINE
[Symbol]	SANITARY LINE
[Symbol]	SANITARY FORCE MAIN LINE
[Symbol]	FOUND SURVEY MONUMENT
[Symbol]	STORM MANHOLE
[Symbol]	SANITARY SEWER MANHOLE
[Symbol]	TELEPHONE MANHOLE
[Symbol]	WATER/IRRIGATION MANHOLE
[Symbol]	WATER VALVE
[Symbol]	FIRE HYDRANT
[Symbol]	FIRE DEPARTMENT CONNECTION
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[Symbol]	POWER METER
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[Symbol]	GAS LINE
[Symbol]	PHONE/CATV/FIBER OPTICS

**ABBREVIATIONS**

SSMH	SANITARY SEWER MANHOLE
SDMH	STORM DRAINAGE MANHOLE
EL	ELEVATION
FT	FEET
CP	CONTROL POINT
ROW	RIGHT OF WAY
IE	INVERT ELEVATION
CPP	CORRUGATED POLYETHYLENE PIPE
CMP	CORRUGATED METAL PIPE

- NOTES**
- THIS IS NOT A BOUNDARY SURVEY. NO LIABILITY IS ASSUMED BY ALL COUNTY SURVEYORS & PLANNERS FOR THE EXISTENCE OF ANY EASEMENTS, ENCUMBRANCES AND DISCREPANCIES IN BOUNDARY OR TITLE DEFECTS.
  - UNDERGROUND UTILITIES SHOWN ON THIS SURVEY ARE LIMITED TO THOSE ITEMS VISIBLE BY SURFACE INSPECTION AND 1954 AS-BUILT DRAWINGS FOR WATER AND SEWER LINES IN THE AREA PROVIDED BY CITY OF MOLALLA.
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  - THE ELEVATION DATUM IS BASED ON A STATIC GPS OBSERVATION FOR FOUR HOURS ON CONTROL POINT NUMBER 99. THE DATA WAS POST-PROCESSED THROUGH ONLINE POSITIONING USER SERVICE AND THE RESULTING ELEVATION WAS DETERMINED TO BE 391.31 FEET. THIS ELEVATION IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.
  - THIS FIELD SURVEY WAS COMPLETED ON 5-21-2021.



**SHEET INDEX**

C1	SITE ANALYSIS MAP COVER SHEET AND EXISTING CONDITIONS
C2	SITE ANALYSIS MAP OFF-SITE EXISTING CONDITIONS
C3	PROPOSED SITE PLAN PROPOSED NEW BUILDINGS AND PARKING
C4	PROPOSED SITE PLAN PROPOSED UTILITY PLAN
C5	PROPOSED SITE GRADING PLAN AND TREE REMOVAL PLAN

BY		REVISION		SHEET	
DATE		NO.		1	
SCALE		DATE		OF	
HORIZ: 1"=60'		FILE: 21-003 - Topo.dwg		5	
VERT: N/A		LEGAL		DRAWN: RLM	
DATE: 9-16-21		SECTION		CHECKED: RLM	
FILE: 21-003 - Topo.dwg		TWP. RANGE		APPROVED: DLH	
SECTION		NE 1/4		RENEWS 07/01/23	
SEC. 17		SS		2E	
SCALE		DATE		FILE	
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DATE: 9-16-21		TWP. RANGE		NE 1/4	
FILE: 21-003 - Topo.dwg		SECTION		SEC. 17	
SECTION		SS		2E	
SCALE		DATE		FILE	
HORIZ: 1"=60'		DATE: 9-16-21		FILE: 21-003 - Topo.dwg	
VERT: N/A		LEGAL		SECTION	
DATE: 9-16-21		TWP. RANGE		NE 1/4	
FILE: 21-003 - Topo.dwg		SECTION		SEC. 17	
SECTION		SS		2E	

**PROJECT:** SITE ANALYSIS MAP COVER SHEET AND EXISTING CONDITIONS FOR: DANSONS

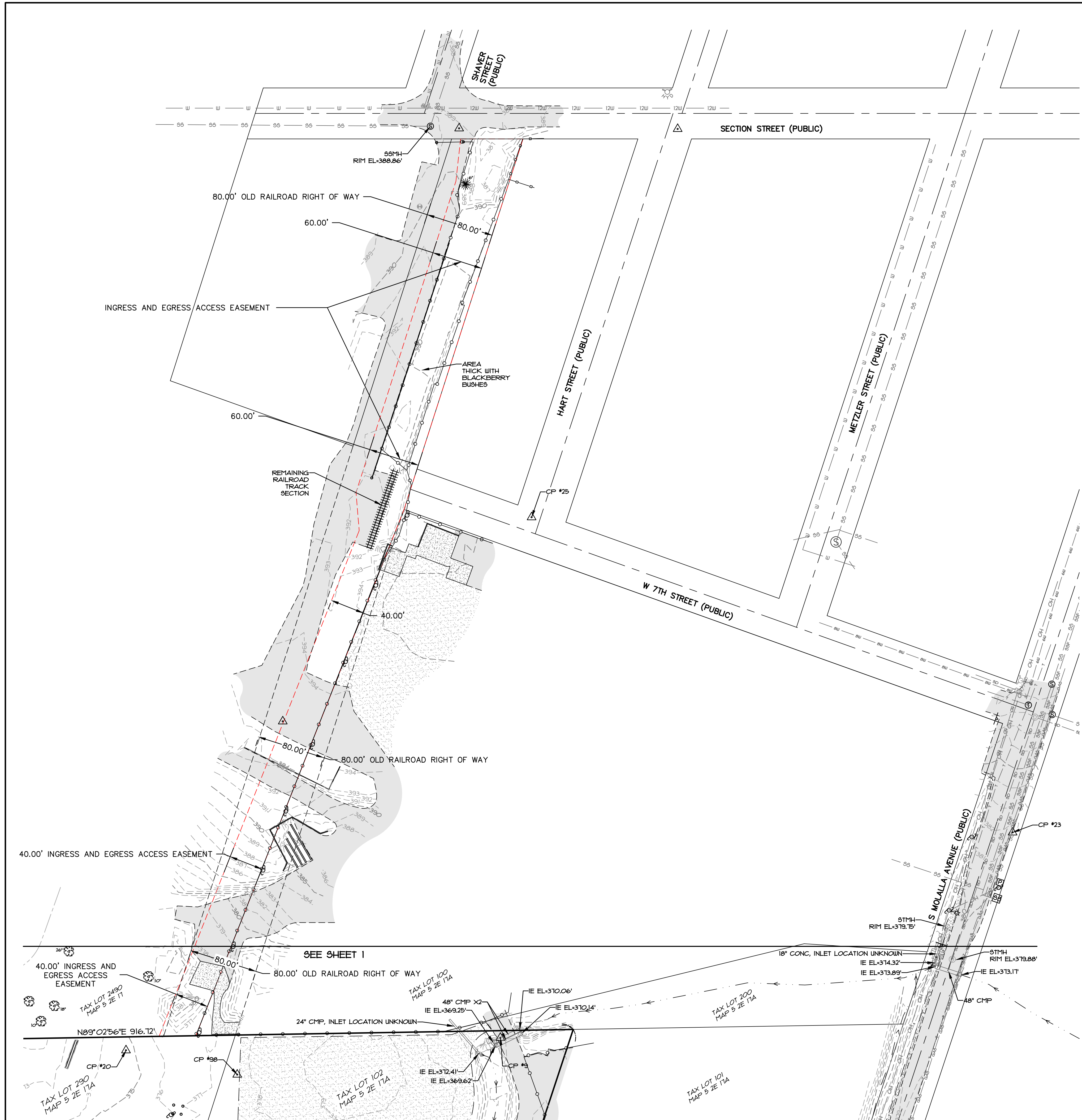
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**DATE OF PLOT:** 9-16-21

**CLIENT:** DANSONS

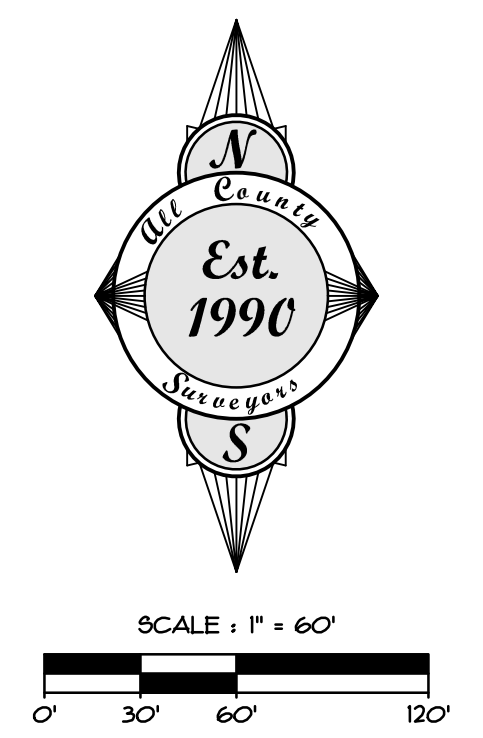
**DANSONS**  
SURVEYING, PLANNING AND CIVIL ENGINEERING  
P.O. Box 955 Sandy, OR 97055  
Phone: (503) 868-3151

ATTENTION: JOHN UTTER, VP OF PELLET MILL OPERATIONS  
3411 N 5TH AVE, SUITE 500  
PHOENIX, AZ 85013  
PHONE: 304-678-6644



**ABBREVIATIONS**

SSMH	SANITARY SEWER MANHOLE
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**LEGEND**

	SURVEY CONTROL POINT
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**NOTES**

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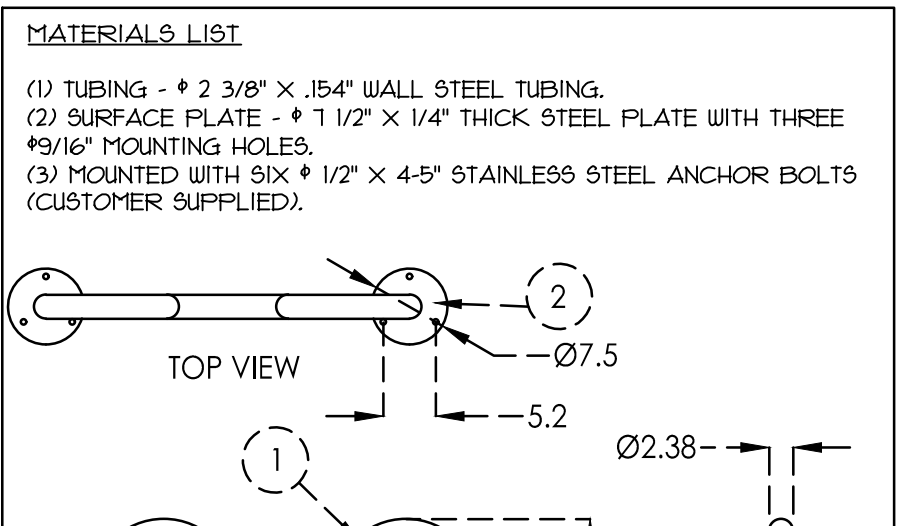
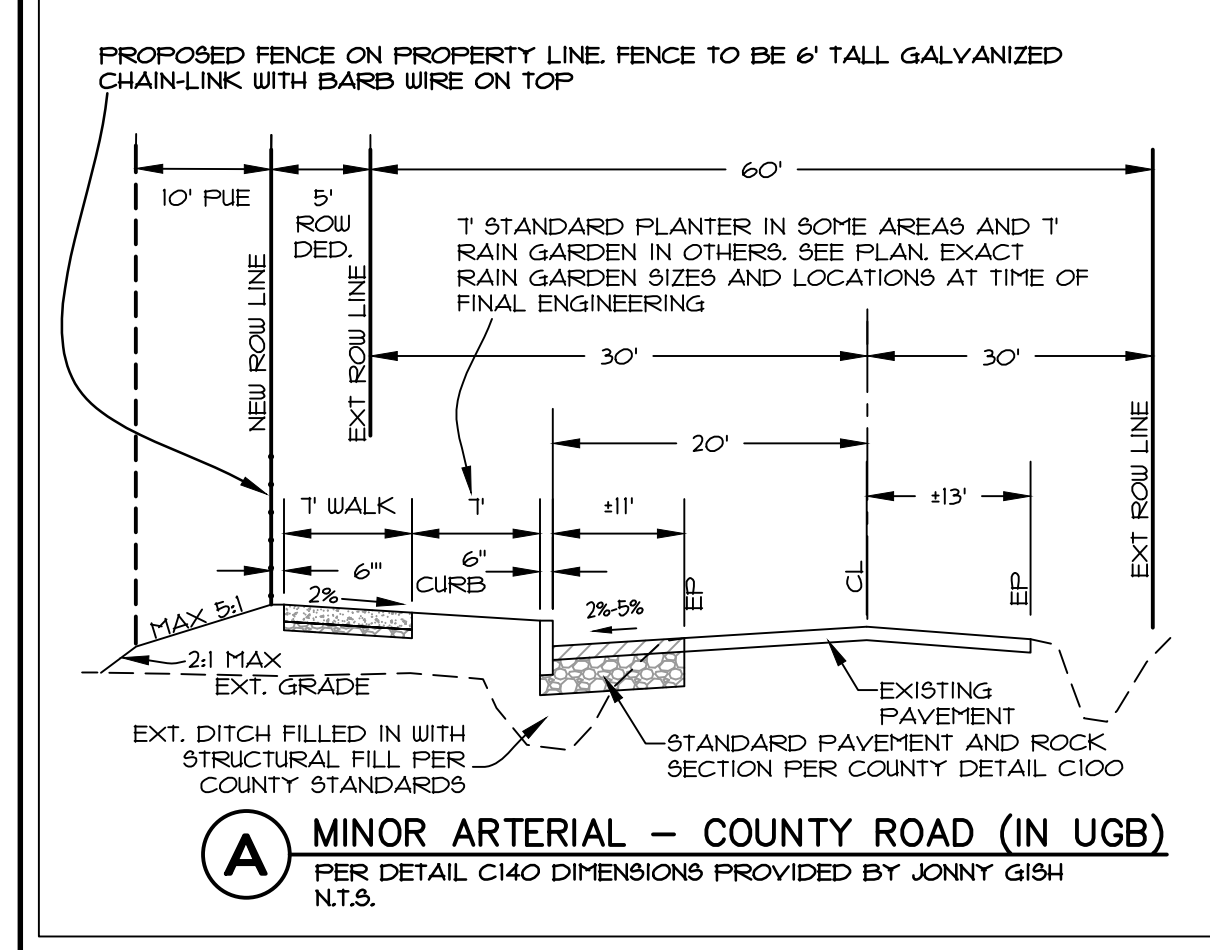
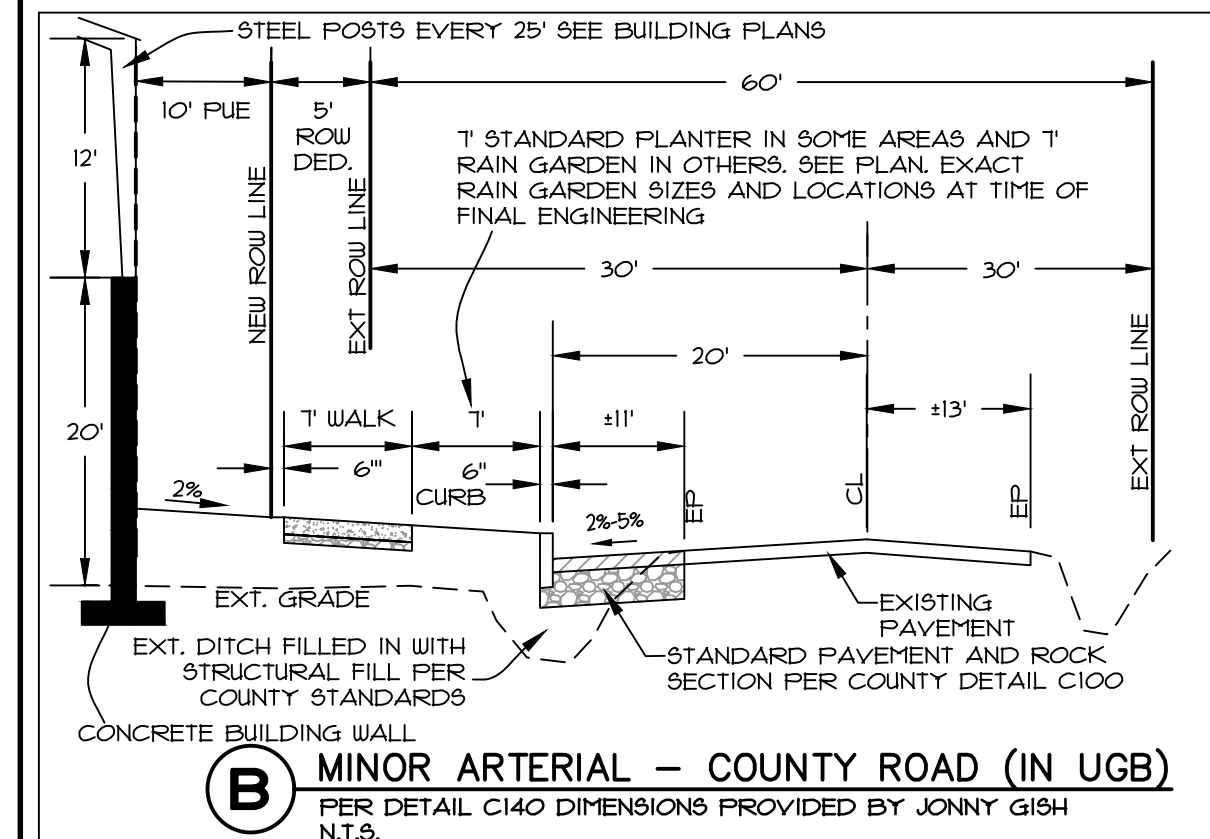
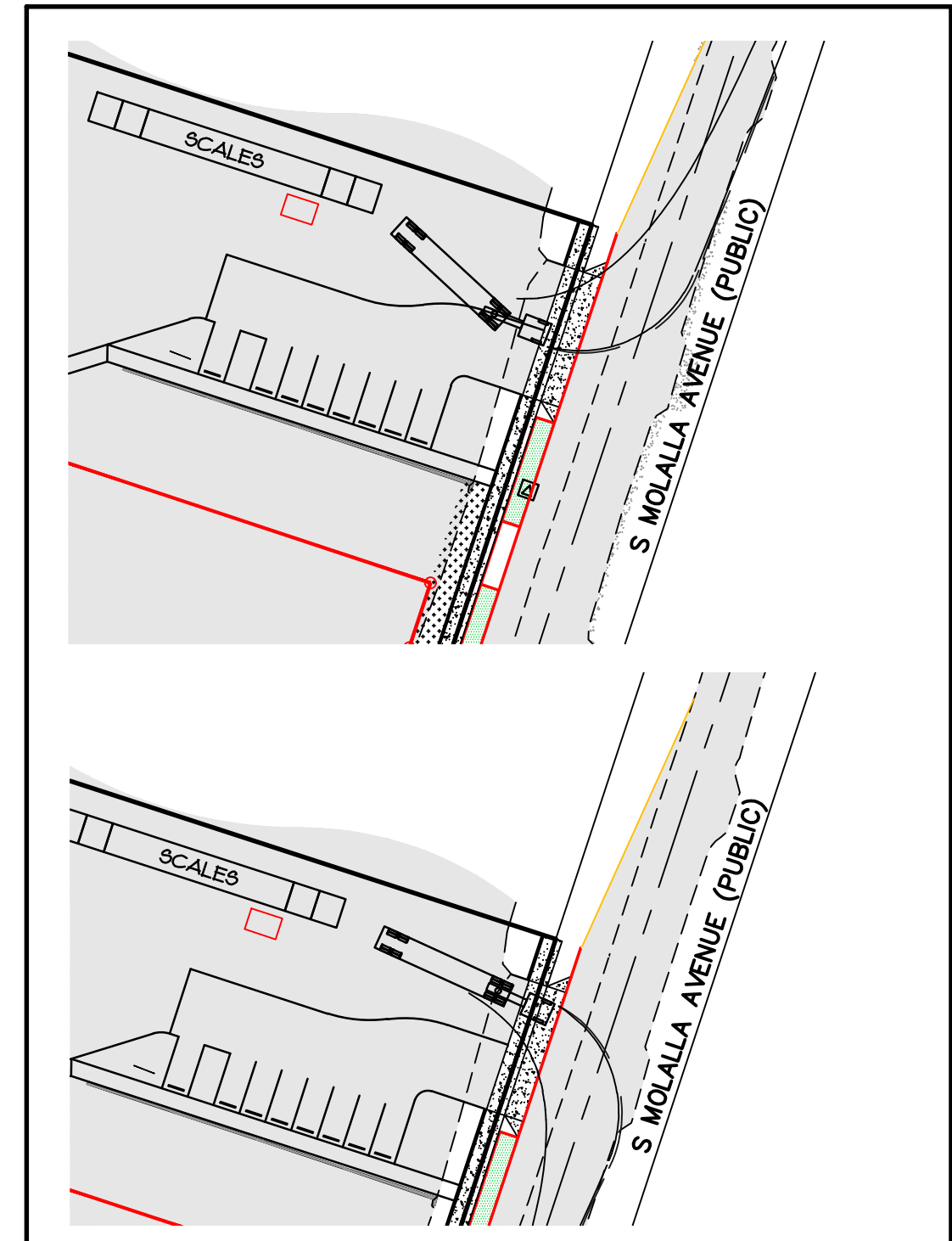
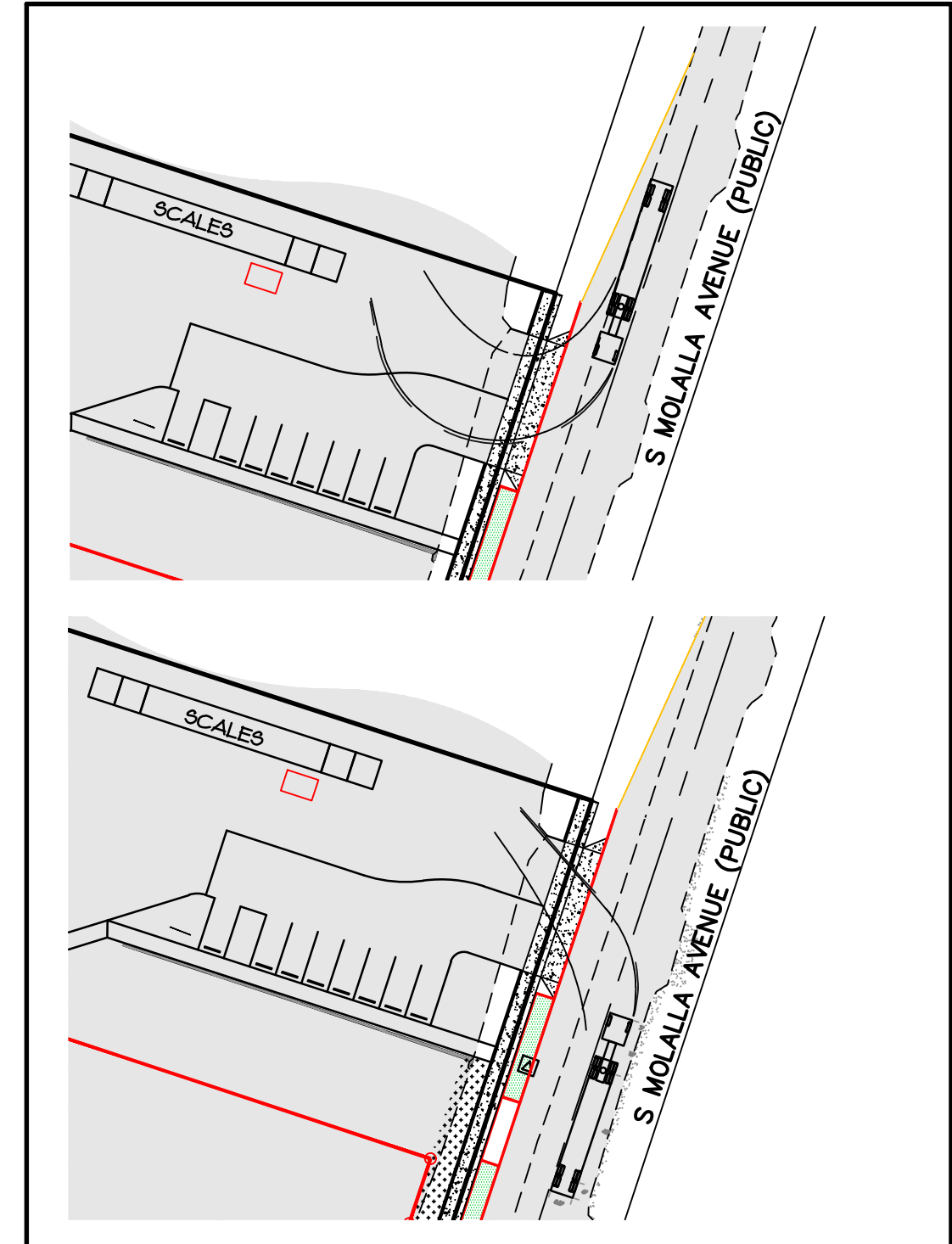
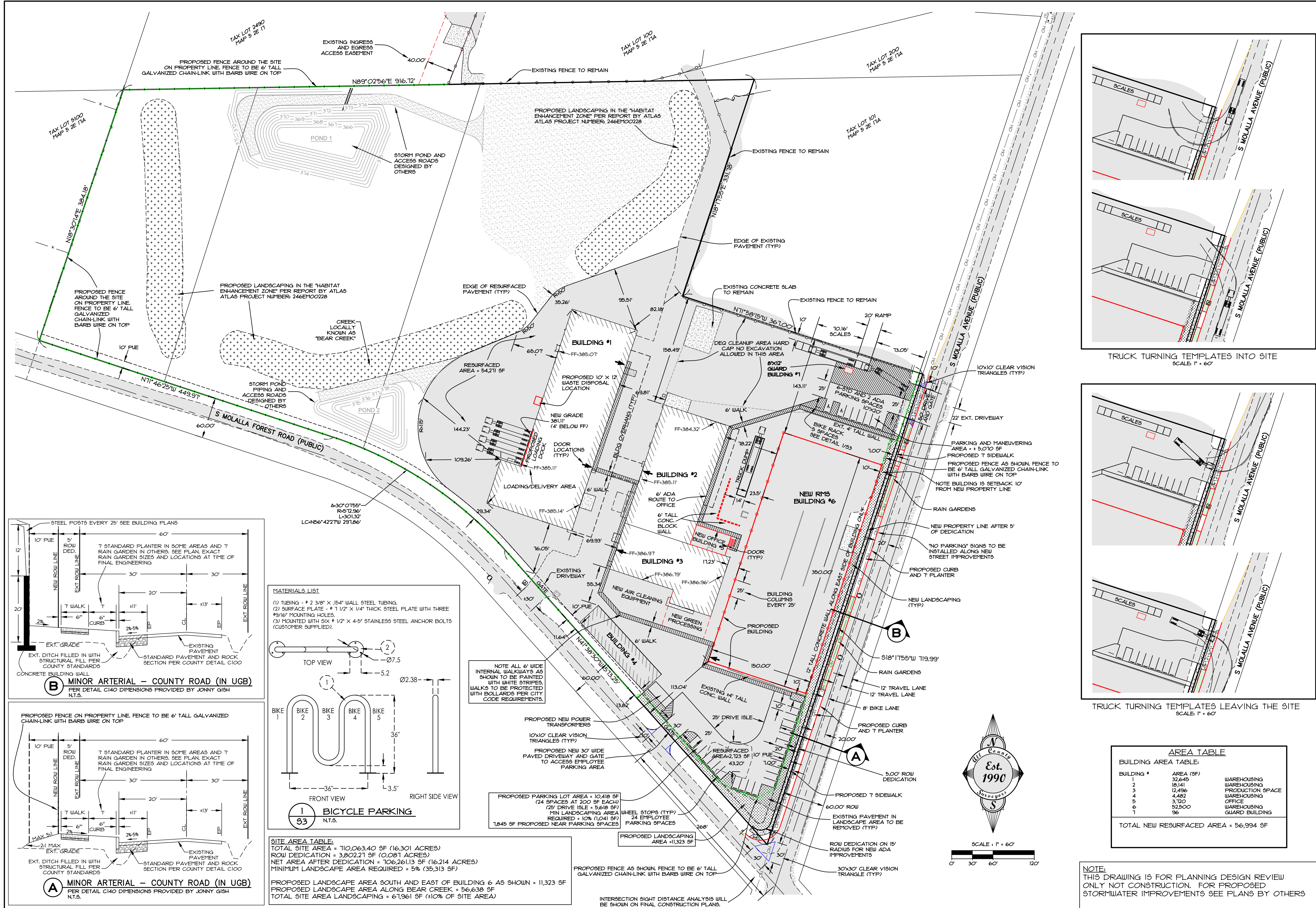
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VERT. N/A	DATE:	NO.	REVISION:	BY:	OF 5
HORIZ. 1"=60'	DATE:	NO.	REVISION:	BY:	
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LEGAL:	SECTION:	TWP.	RANGE:	DESIGNED:	RLM
	NE 1/4	5S	2E	DRAWN:	DFA
	SEC. 17			CHECKED:	RLM
				APPROVED:	DLH
				REGISTERED PROFESSIONAL LAND SURVEYOR	
				OREGON LICENSE NO. 1880	
				DALE L. HULT	
				2427	
				RENEWS 07/01/23	

**SITE ANALYSIS MAP**  
**OFF-SITE EXISTING CONDITIONS**

**FOR: DANSONS**  
**250 W 7TH ST, MOLALLA, OREGON**

CLIENT: DANSONS  
ATTENTION: JOHN UTTER, VP OF PELLET MILL OPERATIONS  
3411 N 5TH AVE, SUITE 500  
PHOENIX, AZ 85013  
PHONE: 304-678-6644

DATE OF PLOT: 5-16-21



NOTE ALL 6' WIDE INTERNAL WALKWAYS AS SHOWN TO BE PAINTED WITH WHITE STRIPES. WALKS TO BE PROTECTED WITH BOLLARDS PER CITY CODE REQUIREMENTS.

PROPOSED NEW POWER TRANSFORMERS

10' X 10' CLEAR VISION TRIANGLES (TYP)

PROPOSED NEW 30' WIDE PAVED DRIVEWAY AND GATE TO ACCESS EMPLOYEE PARKING AREA

PROPOSED PARKING LOT AREA = 10,418 SF (24 SPACES AT 430 SF EACH) (25' DRIVE ISLE = 5,618 SF) MIN LANDSCAPING AREA REQUIRED = 10% (1,041 SF) 1,845 SF PROPOSED NEAR PARKING SPACES

PROPOSED LANDSCAPING AREA = 11,323 SF

PROPOSED LANDSCAPING AREA SOUTH AND EAST OF BUILDING 6 AS SHOWN = 11,323 SF

PROPOSED LANDSCAPING AREA ALONG BEAR CREEK = 5,638 SF

TOTAL SITE AREA LANDSCAPING = 61,961 SF (10% OF SITE AREA)

INTERSECTION SIGHT DISTANCE ANALYSIS WILL BE SHOWN ON FINAL CONSTRUCTION PLANS.

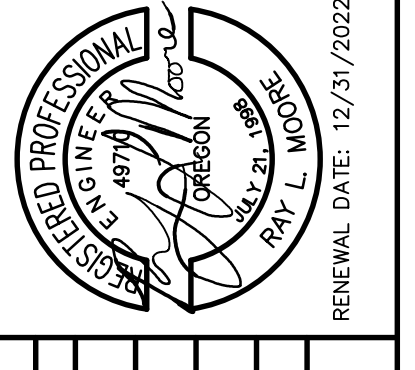


**AREA TABLE**

BUILDING #	AREA (SF)	USE
1	32,645	WAREHOUSING
2	18,141	WAREHOUSING
3	12,496	PRODUCTION SPACE
4	4,482	WAREHOUSING
5	3,120	OFFICE
6	52,500	WAREHOUSING
7	96	GUARD BUILDING
TOTAL NEW RESURFACED AREA = 56,994 SF		

**NOTE:**  
THIS DRAWING IS FOR PLANNING DESIGN REVIEW ONLY NOT CONSTRUCTION. FOR PROPOSED STORMWATER IMPROVEMENTS SEE PLANS BY OTHERS

BY: [Signature]  
REVISION: [Blank]  
DATE: [Blank]  
NO.: [Blank]  
SCALE: VERT: N/A, HORIZ: 1"=60'



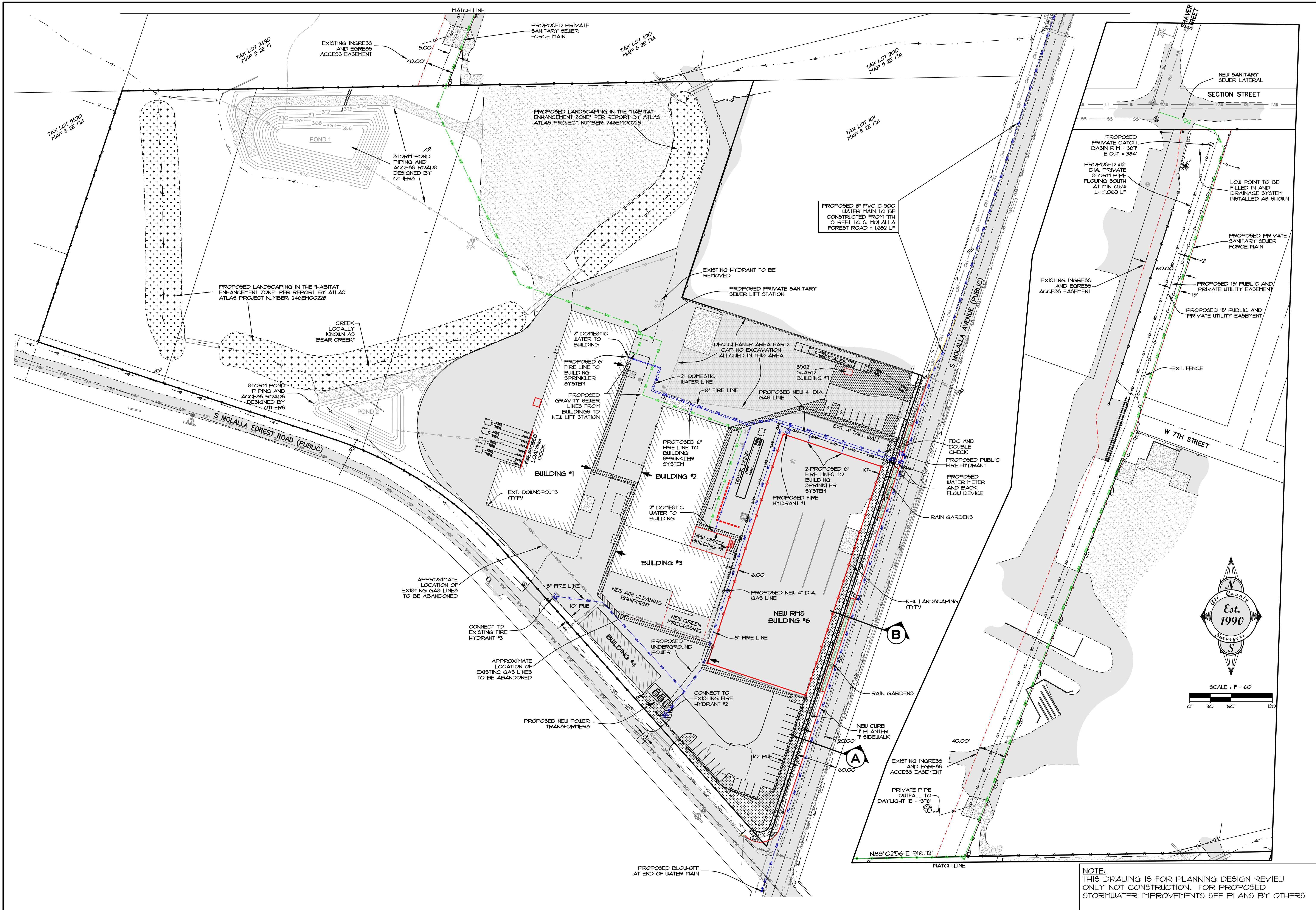
DATE: 9-16-21  
FILE: 21-003 - Topo.dwg

SECTION: TWP. RANGE: 5S 2E  
N.E. 1/4 SEC. 17

**PROPOSED SITE PLAN**  
**PROPOSED NEW BUILDINGS AND PARKING**  
FOR: DANSONS  
LOCATION: 250 W 7TH ST, MOLALLA, OREGON

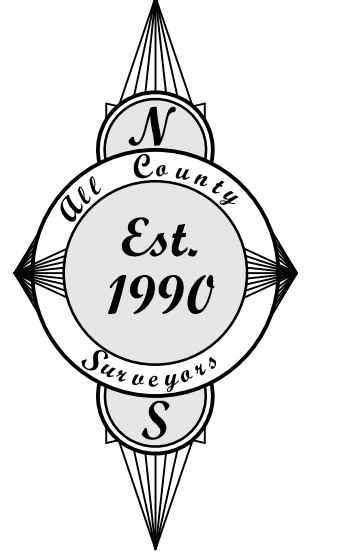
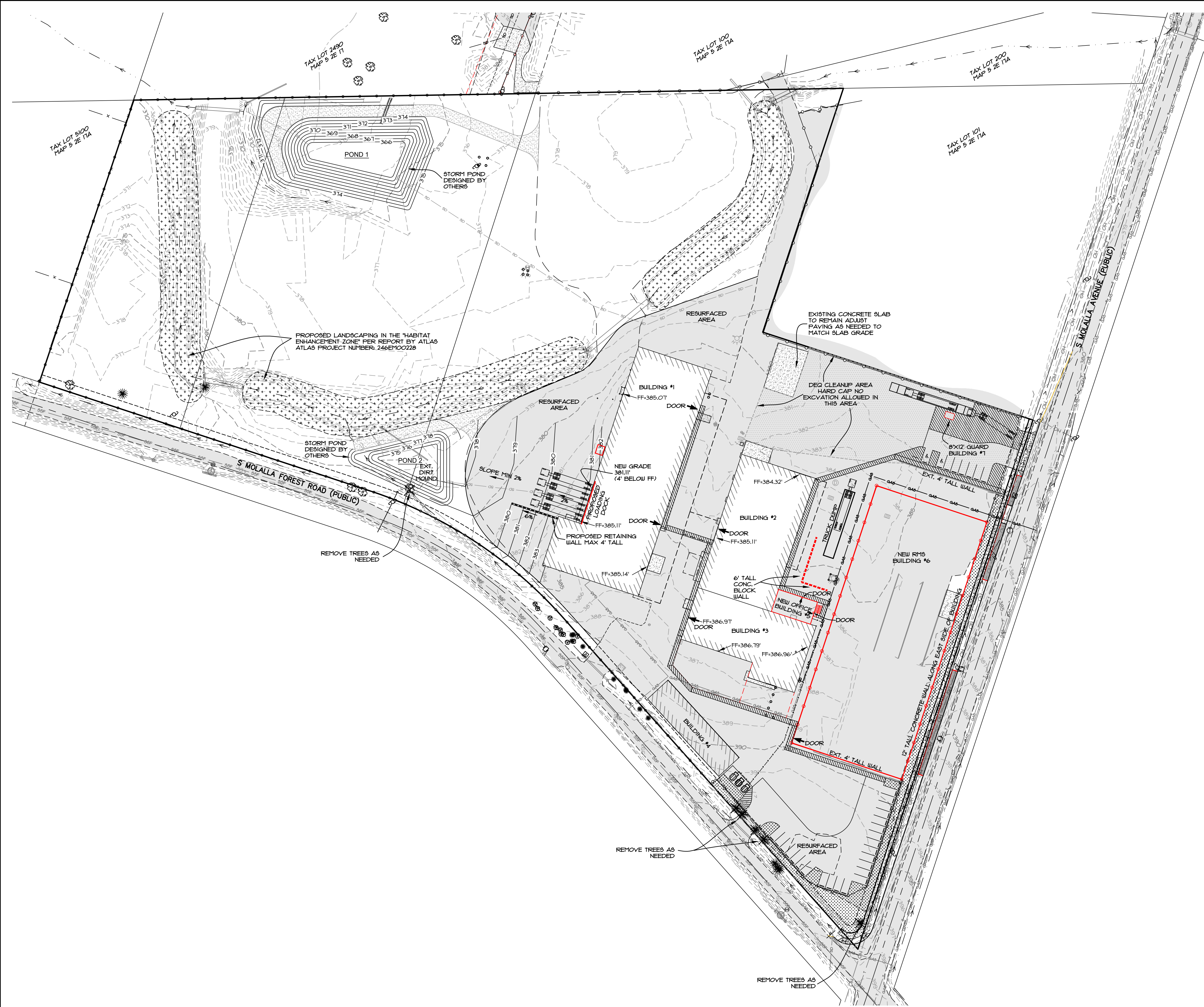
**DANSONS & PLANNERS, Inc.**  
Surveying, Planning and Civil Engineering  
P.O. Box 955 Sandy, OR 97055  
Phone: (503) 868-3151

CLIENT: DANSONS  
ATTENTION: JOHN UTTER, VP OF PELLET MILL OPERATIONS  
3411 N 5TH AVE, SUITE 500  
PHOENIX, AZ 85013  
PHONE: 304-678-6644

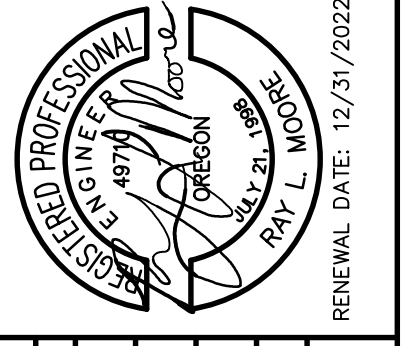


BY: _____		REVISION: _____		SHEET: <b>4</b>	
DATE: _____		NO. _____		OF <b>5</b>	
DESIGNED: RLM		DRAWN: DPA		CHECKED: DLH	
APPROVED: RLM		DATE: 12/31/2022		RENEWAL DATE: _____	
SCALE: VERT. N/A HORIZ. 1"=60'		DATE: 9-16-21		FILE: 21-003 - Topo.dwg	
SECTION: TWP. RANGE		LEGAL: _____		SEC. 17	
NE 1/4		SS		2E	
<b>PROPOSED SITE PLAN</b> <b>PROPOSED UTILITY PLAN</b> FOR: DANSONS 250 W 7TH ST, MOLALLA, OREGON					
SCALE: 1" = 60' 					
PROJECT: <b>PROPOSED SITE PLAN</b> LOCATION: <b>250 W 7TH ST, MOLALLA, OREGON</b>					
CLIENT: DANSONS ATTENTION: JOHN UTTER, VP OF PELLET MILL OPERATIONS 3411 N 5TH AVE, SUITE 500 PHOENIX, AZ 85013 PHONE: 304-678-6644					

NOTE:  
THIS DRAWING IS FOR PLANNING DESIGN REVIEW ONLY NOT CONSTRUCTION. FOR PROPOSED STORMWATER IMPROVEMENTS SEE PLANS BY OTHERS



DATE	NO.	REVISION	BY
DESIGNED: RLM			SHEET <b>5</b>
DRAWN: DFA			
CHECKED: DLH			
APPROVED: RLM			OF <b>5</b>

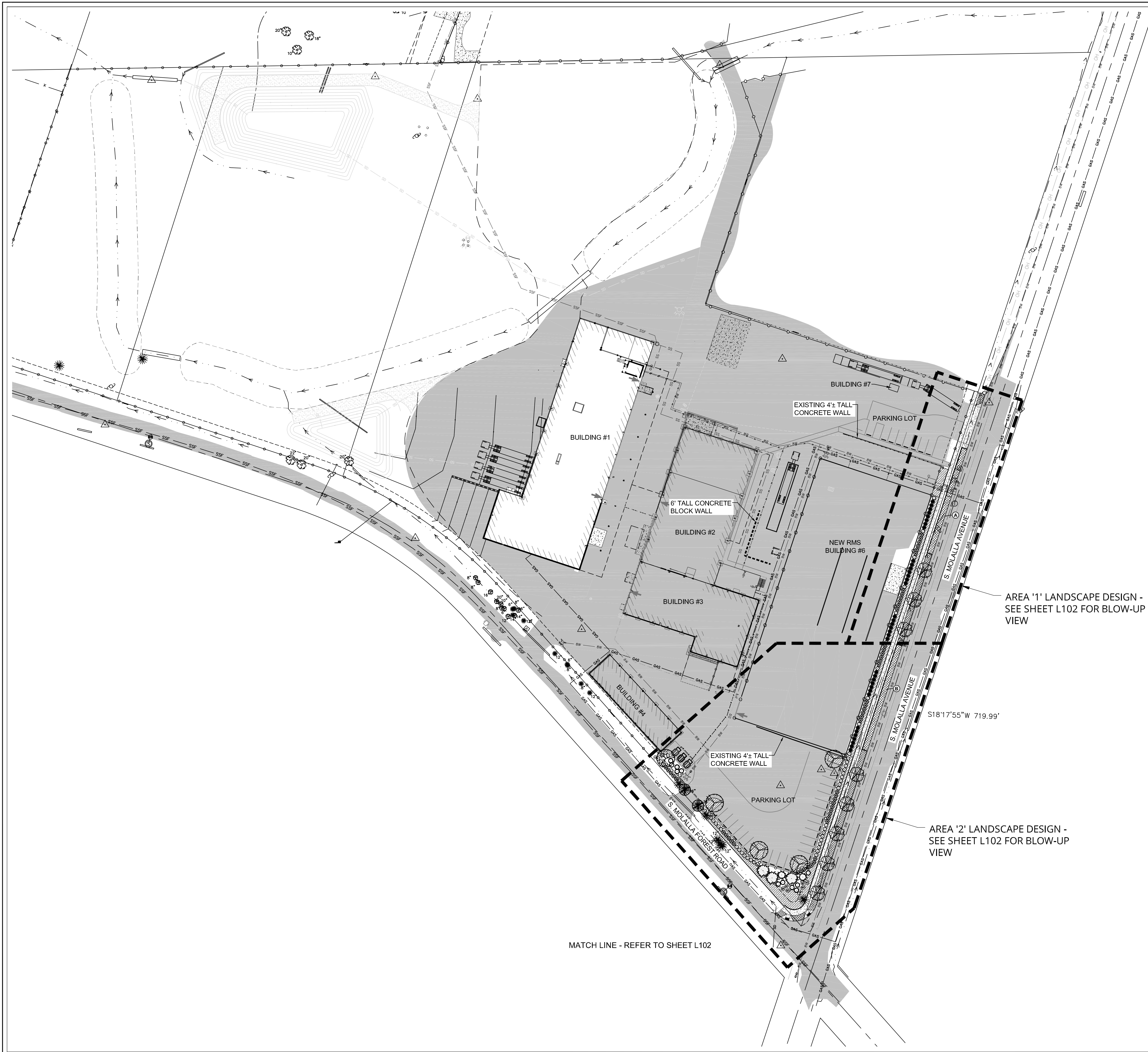


SCALE	VERT. N/A	HORIZ. 1"=60'
DATE	9-16-21	
FILE	21-003 - Topo.dwg	
SECTION	TWP.	RANGE
NE 1/4	5S	2E
SEC. 17		

**PROPOSED SITE GRADING  
AND TREE REMOVAL PLAN**  
FOR: DANSONS  
250 W 7TH ST, MOLALLA, OREGON

**Surveyors & Planners, Inc.**  
Surveying, Planning and  
Civil Engineering  
P.O. Box 955 Sandy, OR 97055  
Phone: (503) 866-3151

**DANSONS**  
CLIENT: DANSONS  
ATTENTION: JOHN UTTER, VP OF  
PELLET MILL OPERATIONS  
3411 N 5TH AVE, SUITE 500  
PHOENIX, AZ 85013  
PHONE: 304-678-6644



SUGGESTED PLANT SCHEDULE						
TREES						
SYM	Scientific name Common Name	Minimum Quantity	Minimum Size	Condition	Water Requirement	Remarks
☀	x Cupressocyparis leylandii 'Moncal' Emerald Isle Leyland Cypress	2	5-6'	B&B	Low	
☀	Parrotia persica 'Vanessa' Vanessa Persian Ironwood	8	2 Cal.	B&B	Low	Street Tree
☀	Thuja plicata 'Hogan' Hogan Cedar	3	5-6'	B&B	Low	
☀	Zelkova serrata 'Village Green' Village Green Zelkova	5	1.5" Cal.	B&B	Medium	
Total Trees		18				

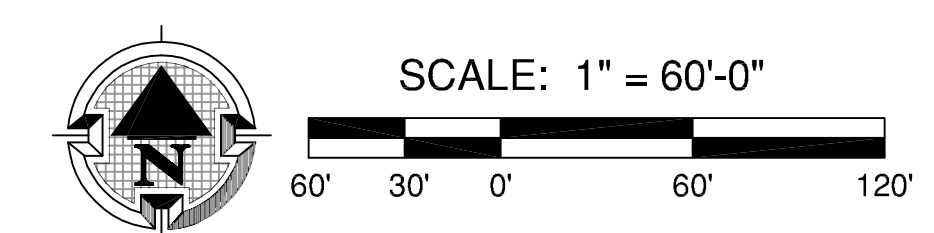
SHRUBS						
SYM	Scientific name Common Name	Minimum Quantity	Minimum Size	Condition	Water Requirement	Spacing Format
☀	Berberis thunbergii 'Rose Glow' Rose Glow Barberry	39	2 Gal.	Can	Low	as shown
☀	Euonymus alata 'Compacta' Compact Winged Euonymus	11	5 Gal.	Can	Low	as shown
☀	Physocarpus opulifolius 'Ginger Wine' Ginger Wine Ninebark	36	2 Gal.	Can	Low	as shown
☀	Rhododendron 'PJM Elite' PJM Elite Rhododendron	10	5 Gal.	Can	Low	as shown
☀	Ribes sanguineum 'King Edward VII' King Edward Flowering Currant	6	1 Gal.	Can	Low	as shown
☀	Sarcococca ruscifolia Fragrant Sweet Box	50	5 Gal.	Can	Low	as shown
Total Shrubs		152				

SYM GROUND COVER						
☀	Fragaria x chiloensis Beach Strawberry	1,180	4"	Pot	Low	24" o/c.
☀	Cotoneaster dameri 'Moner' Canadian Creeper Cotoneaster	626	4"	Pot	Low	36" o/c.

PLANT LISTING FOR STORMWATER PLANTER					
STORMWATER PLANTER (A)					
TREATMENT AREA		Minimum Quantity	Plant Category	Condition	Spacing Format
919 sq. ft.					
Scientific Name	Common Name				
Carex obnupta	Slough Sedge	919	Herb	Plug	3 per SF
Juncus effuses	Soft Rush	919	Herb	Plug	3 per SF
Scirpus microcarpus	Small-fruited Bulrush	919	Herb	Plug	3 per SF
HERBACEOUS PLANT TOTAL:		2757			

STORMWATER PLANTER (B)					
TREATMENT AREA		Minimum Quantity	Plant Category	Condition	Spacing Format
919 sq. ft.					
Scientific Name	Common Name				
Carex obnupta	Slough Sedge	919	Herb	Plug	3 per SF
Juncus patens	Soft Rush	919	Herb	Plug	3 per SF
Scirpus microcarpus	Small-fruited Bulrush	919	Herb	Plug	3 per SF
HERBACEOUS PLANT TOTAL:		2757			

LEGEND	
☀	(E) DECIDUOUS TREE W/ DBH
☀	(E) CONIFEROUS TREE W/ DBH
☀	INDICATES PROPOSED TREE TO BE REMOVED
☀	INDICATES PAVEMENT AREA (SEE CIVIL)



**MEARS**  
DESIGN + GROUP  
LANDSCAPE ARCHITECTURE & PLANNING  
PO Box 23338 | PORTLAND, OREGON | 97281  
PHONE: 503.601.4516 | FAX: 503.924.4666

REGISTERED  
LANDSCAPE ARCHITECT  
PRELIMINARY  
NOT FOR CONSTRUCTION

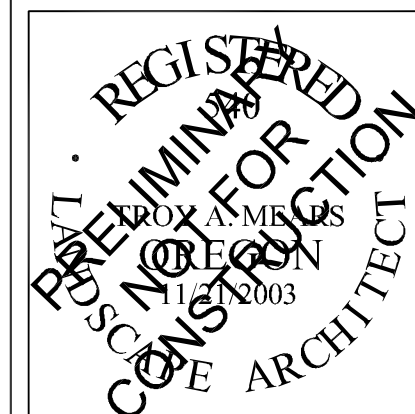
**DANSONS**  
LANDSCAPE PLAN  
250 W 7TH STREET, MOLALLA, OREGON

REVISIONS		
REV.	DATE	DESCRIPTION
	8/20/2021	City Comments

SHEET NAME:  
**PLANTING PLAN**

DRAWN BY: \_\_\_\_\_ TM  
CHECKED BY: \_\_\_\_\_ TM  
ISSUE DATE: 8/16/2021  
JOB NO.: 2128

SHEET:  
**L101**  
OF 3

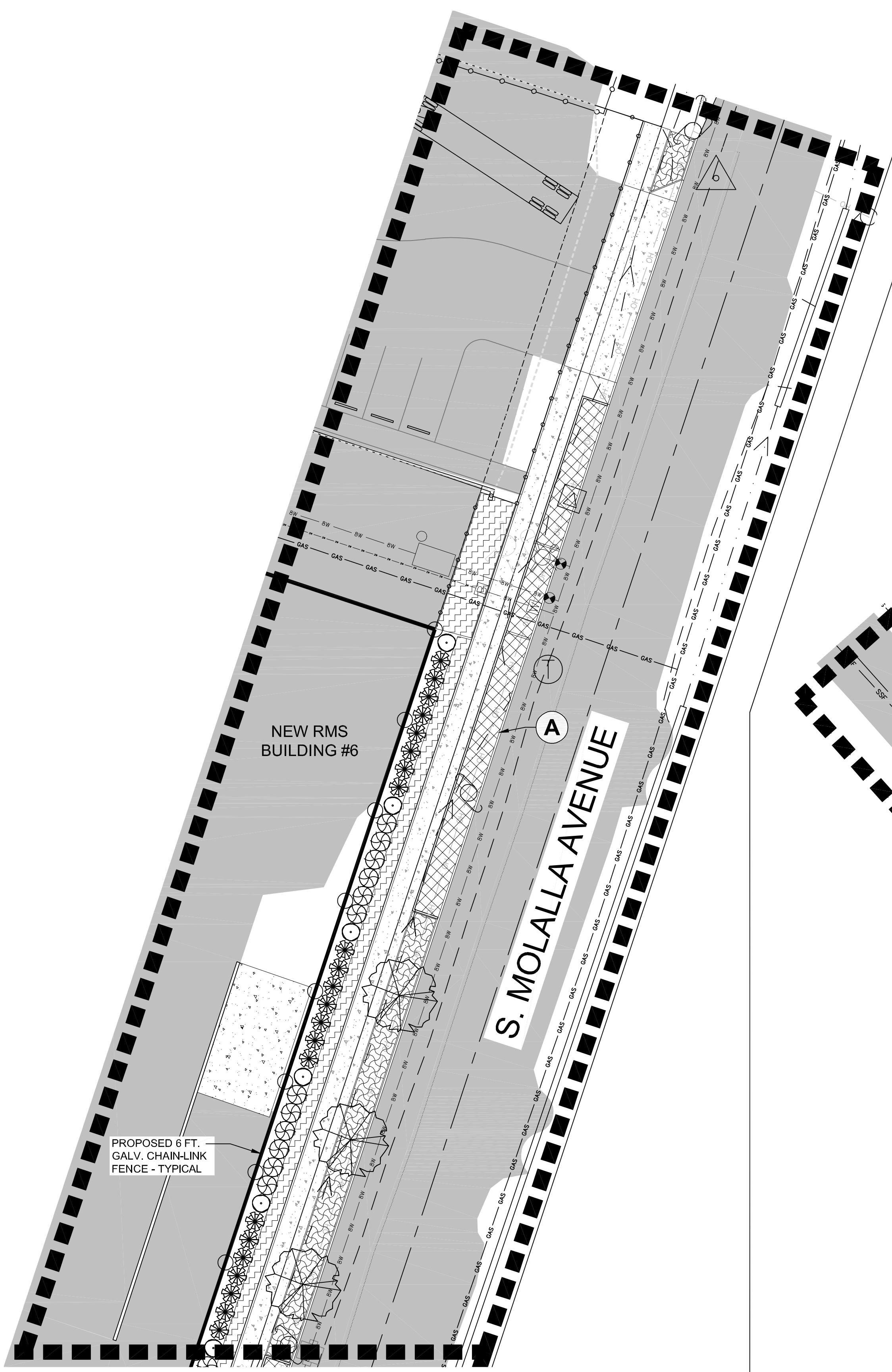


REVISIONS		
REV.	DATE	DESCRIPTION
1	8/20/2021	City Comments

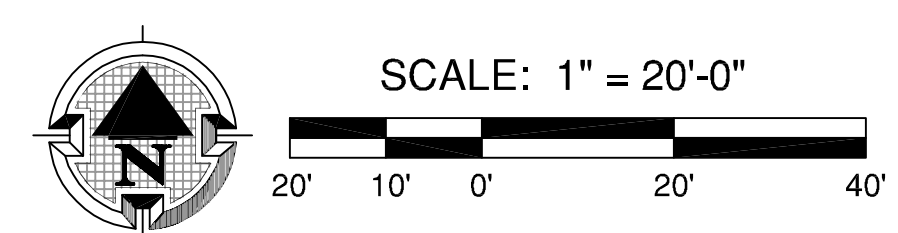
SHEET NAME:  
**PLANTING PLAN**

DRAWN BY: \_\_\_\_\_ TM  
CHECKED BY: \_\_\_\_\_ TM  
ISSUE DATE: 8/16/2021  
JOB NO.: 2125

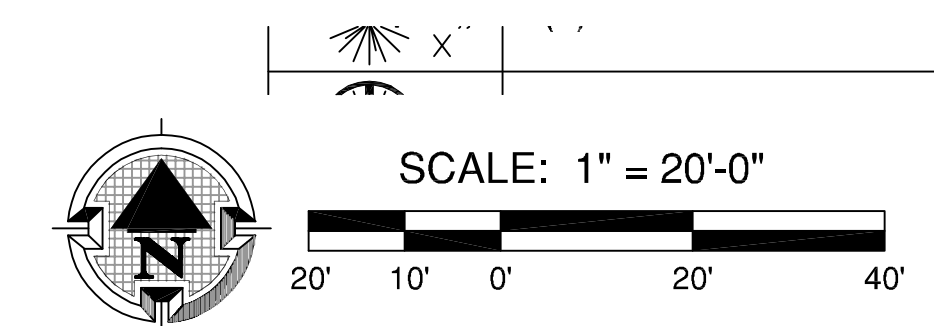
SHEET:  
**L102**  
OF 3

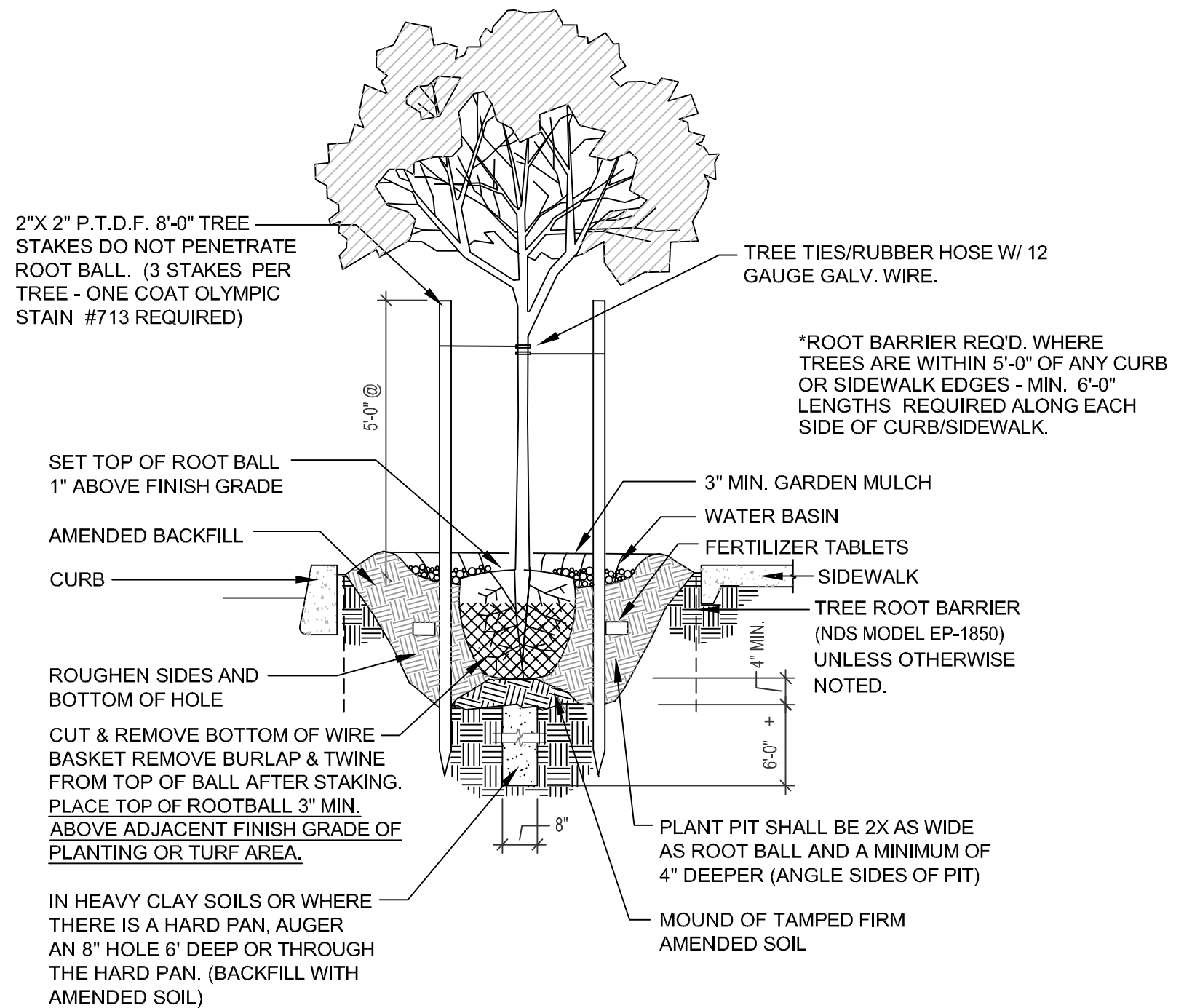


**AREA '1' - LANDSCAPE DESIGN**  
REFER TO SHEET L101 FOR PLANT SCHEDULE LISTING BLOW-UP



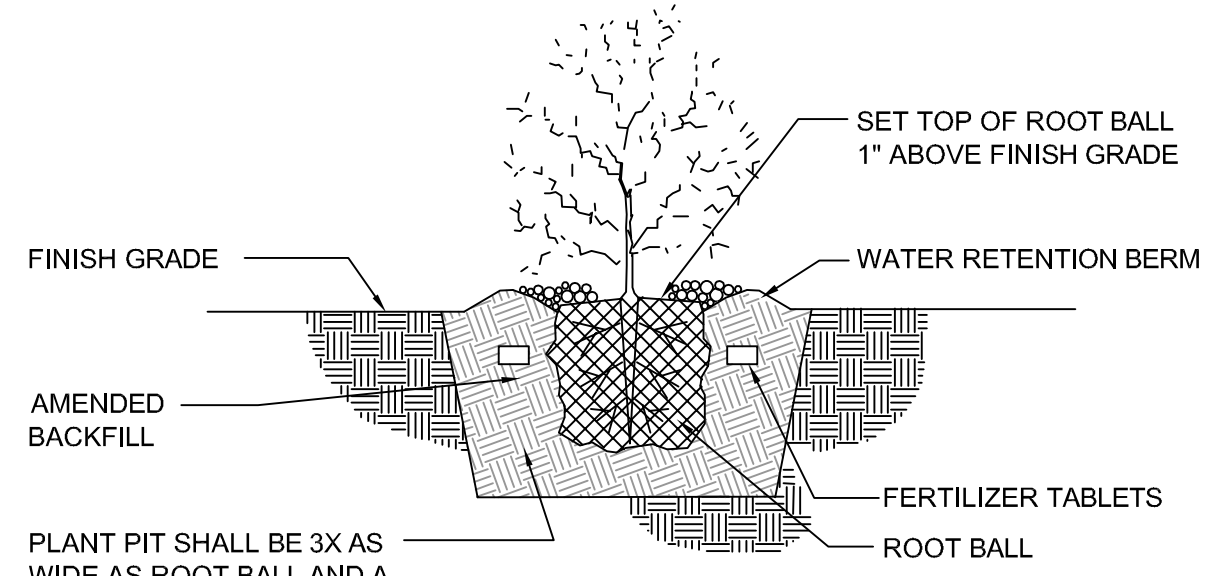
**AREA '2' - LANDSCAPE DESIGN**  
REFER TO SHEET L101 FOR PLANT SCHEDULE LISTING BLOW-UP





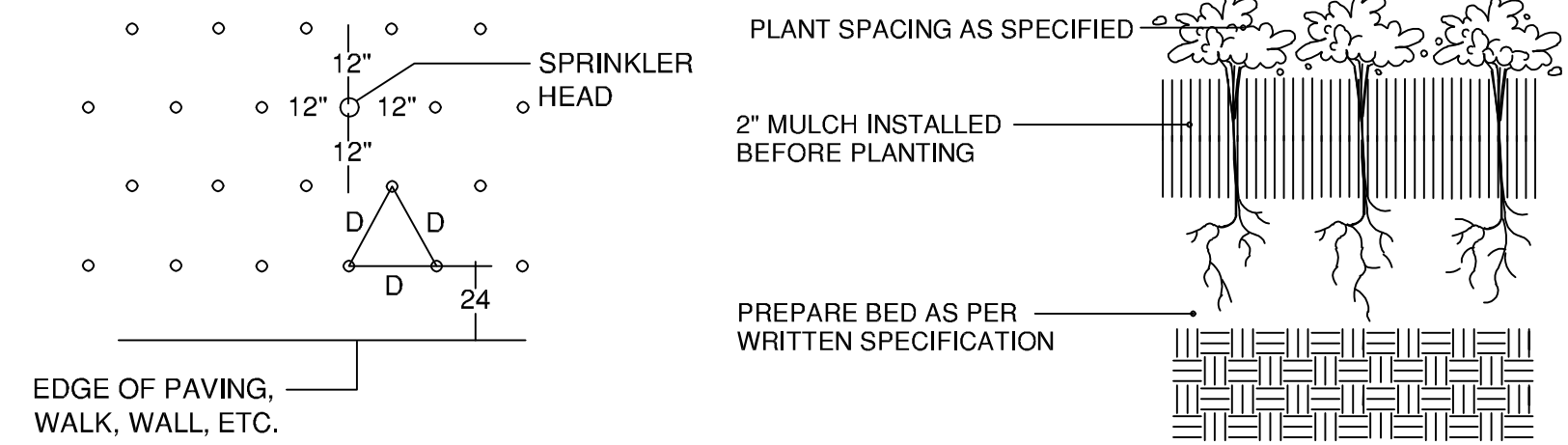
**TREE PLANTING DETAIL**

N.T.S.



**SHRUB PLANTING DETAIL**

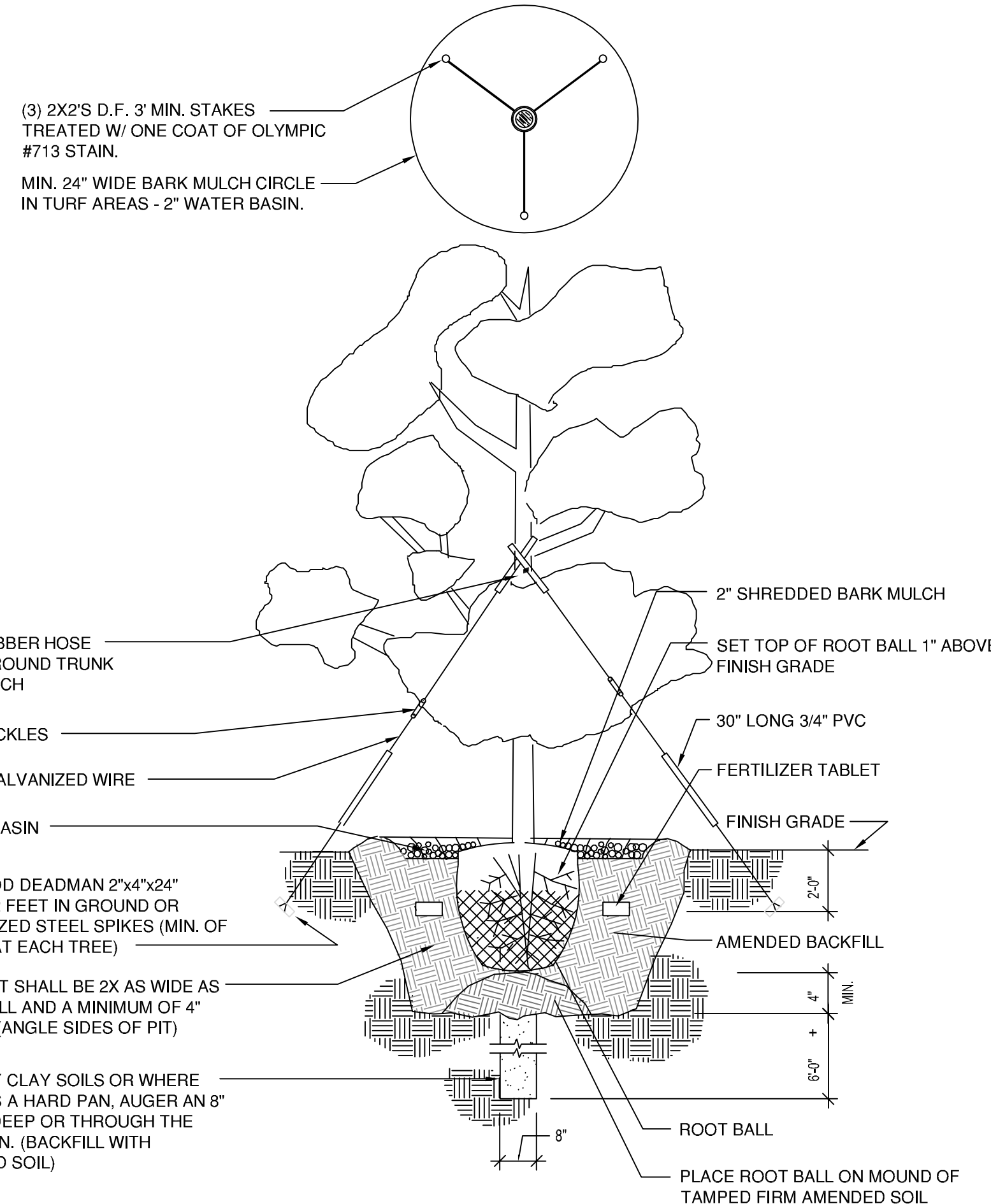
N.T.S.



NOTE:  
LOCATE PLANTS SPACED EQUAL DISTANT (D) FROM EACH OTHER AS SPECIFIED AND MINIMUM OF 12" FROM SPRINKLER HEAD

**HERBACEOUS/GROUNDCOVER PLANTING DETAIL**

N.T.S.



**EVERGREEN TREE PLANTING DETAIL**

N.T.S.

- GENERAL PLANTING NOTES:**
- B&B stock may be substituted with container stock of equal grade.
  - Container stock may be substituted with B&B stock of equal grade.
  - Plant material shall conform with American Standard for Nursery Stock, ANSI Z60.1, 2014 edition.
  - All trees shall be branched.
  - Stormwater Facility shall have a minimum of 18 inches amended soil as defined by the City of Portland Stormwater Management Manual. Re-use of existing topsoil is recommended, but must meet specifications.
  - Landscape Contractor to provide soil analysis of existing soil and/or imported soil prior to placement. Recommended amendments to be reviewed and approved by Landscape Architect.
  - Garden mulch all planting beds with 2" min. Layer of specified garden mulch.
  - In the event of a discrepancy between this material listing and the drawings, the drawings shall govern the plant species and quantities required.
  - In the event of question or lack of clarity on drawings, Landscape Contractor is to call Landscape Architect before proceeding.
  - Landscape contractor is to notify Landscape Architect prior to installation of plant material to approve final placement.
  - Landscape Contractor to verify plant material quantities.
  - Contractor will provide a one year warranty on all provided & installed plant material from date of final approval by owner's representative.
  - All plantings shall be watered with a automatic irrigation system or manual irrigation system (hand watering). Irrigation shall be provided for the first two years minimum after planting.
  - If automatic irrigation is not provided, all trees are to have a treegator for supplemental watering until established.

**TOPSOIL NOTES:**

- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO FURNISH AND INSTALL AMENDED TOPSOIL IN ALL LANDSCAPE BEDS AS SPECIFIED BELOW UNLESS OTHERWISE NOTED. AMENDED TOPSOIL SHALL INCLUDE ALL NECESSARY FERTILIZERS, ORGANIC AND INORGANIC AMENDMENTS, BASED ON INDUSTRY STANDARDS FOR EXCEPTIONAL PLANT DEVELOPMENT.
  - SCARIFY ALL PLANTING AREA SUBGRADE TO A DEPTH OF 6". INSTALL & TILL IN 2" LAYER OF AMENDED TOPSOIL INTO SCARIFIED SUBGRADE AND RE-COMPACT TO 95%.
  - PROVIDE MIN. 12" DEPTH AMENDED TOPSOIL TO ALL PLANTING AREAS.
  - PROVIDE MIN. 18" DEPTH AMENDED TOPSOIL TO ALL PLANTER ISLANDS PLUS MOUNDING REQUIREMENT.
- UPON BEING AWARDED THE CONTRACT, THE GENERAL CONTRACTOR SHALL COORDINATE WITH A STATE LICENSED SOIL LABORATORY AND THE LANDSCAPE ARCHITECT, TO DETERMINE THE SUITABILITY AND AVAILABILITY OF THE EXISTING SITE TOPSOIL. THE CONTRACTOR SHALL SEND THE TOPSOIL TO A SOIL LABORATORY FOR ANALYSIS STATING THAT THE TOPSOIL BE ANALYZED FOR A LANDSCAPE CROP. AFTER RECEIVING RECOMMENDATIONS FROM THE SOILS EXPERT FORWARD A COPY TO THE OWNERS REPRESENTATIVE AT WHICH TIME A DECISION WILL BE MADE BY THE OWNER AS TO WHETHER OR NOT THE EXISTING ON-SITE STOCKPILE WILL BE USED FOR THE PROJECT.
- IF THE EXISTING TOPSOIL IS TO BE USED THE CONTRACTOR SHALL ADD THE RECOMMENDED AMENDMENTS AND FERTILIZERS AS STATED IN THE SOILS ANALYSIS ALONG WITH ADDITIONAL AMENDMENTS AND FERTILIZERS LISTED IN NOTE #6 AND #7 BELOW.
- IN THE EVENT THE EXISTING ON-SITE TOPSOIL IS OF POOR QUALITY (AS DETERMINED BY THE SOIL ANALYSIS) OR IS UNAVAILABLE FOR USE, THE OWNER'S REPRESENTATIVE WILL MAKE A DECISION AS TO WHETHER OR NOT THE NUMBER FOR IMPORTING 9" OF AMENDED IMPORTED TOPSOIL WILL BE ADDED TO THE SIGNED CONTRACT AGREEMENT.
- IF AMENDED IMPORTED TOPSOIL IS TO BE USED, THE GENERAL CONTRACTOR WILL BE NOTIFIED IN WRITING BY THE OWNER'S REPRESENTATIVE AND THE CONTRACT MODIFIED ACCORDINGLY. TOPSOIL SHALL BE OBTAINED FROM NATURALLY WELL-DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST 4 INCHES DEEP. DO NOT OBTAIN FROM BOGS OR MARSHES. IMPORTED TOPSOIL TO COMPLY WITH ASTM D 5288, WITH A PH RANGE OF 5.5 TO 7.0, FREE OF STONES 1 INCH OR LARGER IN ANY DIMENSION, AND ANY OTHER EXTRANEIOUS MATERIALS (ROCKS, STICKS, RUBBISH, SOD) HARMFUL TO PLANT GROWTH. AN ADDITIONAL SOILS ANALYSIS WILL BE REQUIRED FOR THE IMPORTED TOPSOIL.
- AMENDED IMPORTED TOPSOIL SHALL INCLUDE ALL NECESSARY FERTILIZER AND AMENDMENTS PER THE SOIL ANALYSIS RECOMMENDATIONS. TOPSOIL ANALYSIS SHALL STATE ORGANIC MATTER, INORGANIC MATTER (SILT, CLAY AND SAND), DELETERIOUS MATERIAL, PH, MINERAL AND PLANT-NUTRIENT CONTENT. IN ADDITION THE REPORT SHALL ALSO STATE RECOMMENDED QUANTITIES (BY PERCENTAGE OF WEIGHT "I.E. 2 LBS OF 15-15-15 PER 1000SF) OF NITROGEN, PHOSPHORUS AND POTASH, NUTRIENTS AND ANY LIMESTONE, ALUMINUM SULFATE, OR OTHER SOIL AMENDMENTS TO BE ADDED TO PRODUCE A SATISFACTORY AMENDED TOPSOIL. FURNISH REPORT AND RECOMMENDATIONS TO LANDSCAPE ARCHITECT FOR REVIEW AND WRITTEN APPROVAL 30 DAYS PRIOR TO MOBILIZATION.
- IN ADDITION TO THE SOILS ANALYSIS RECOMMENDATIONS THE LANDSCAPE CONTRACTOR SHALL ADD 1 PART (2" LAYER) OF APPROVED HUMUS MATERIAL TO 2 PARTS AMENDED TOPSOIL. SUBMIT CUT SHEET OF HUMUS MATERIAL (CERTIFIED FINE COMPOSTED YARD DEBRIS) TO LANDSCAPE ARCHITECT FOR REVIEW AND WRITTEN APPROVAL PRIOR TO MIXING.
- PRIOR TO PLACEMENT OF TOPSOIL SCARIFY AND LOOSEN SUBGRADE OF PLANTING BED AREA TO A MINIMUM DEPTH OF 6 INCHES. REMOVE STONES LARGER THAN 1" IN ANY DIMENSION AND STICKS, ROOTS, RUBBISH AND OTHER EXTRANEIOUS MATERIALS. REMOVE WEEDS FROM EXISTING SUBGRADE AND TREAT WITH NECESSARY HERBICIDE TO PREVENT WEED GROWTH. SPREAD HALF OF THE AMENDED TOPSOIL MIXTURE AND WORK INTO TOP OF LOOSEN SUBGRADE TO CREATE A TRANSITION LAYER. PLACE REMAINING HALF OF THE PLANTING SOIL MIXTURE TO THE DEPTH REQUIRED TO MEET THICKNESS, GRADES AND ELEVATIONS SHOWN, AFTER LIGHT ROLLING AND NATURAL SETTLEMENT.
- WITHIN TREE WELLS & PLANTER ISLANDS, REMOVE EXISTING SOIL AND OTHER DEBRIS, TO A MINIMUM DEPTH OF 18" AND REPLACE WITH AMENDED TOPSOIL. ADD ADDITIONAL SOIL AS REQUIRED PER DETAILS AND NOTES.
- THE CONTRACTOR SHALL SUBMIT TO THE LANDSCAPE ARCHITECT, SHIPPING TICKETS FOR IMPORTED TOP SOIL AND HUMUS MATERIAL, 60 DAYS PRIOR TO INSTALLATION FOR REVIEW AND WRITTEN APPROVAL.

**NOT USED**

REVISIONS		
REV.	DATE	DESCRIPTION
	8/20/2021	City Comments

SHEET NAME:  
**PLANTING  
DETAILS & NOTES**

DRAWN BY: \_\_\_\_\_ TM  
CHECKED BY: \_\_\_\_\_ TM  
ISSUE DATE: 8/16/2021  
JOB NO.: 2125

SHEET:  
**L103**  
OF 3



**LEGEND**

- (LP1 / X)** = INSTALL 34W LED TYPE IV FT W/HSS SHOEBOX LUMINAIRE ON 20 FT METAL POLE #.  
(X = POLE #).
- (LP2 / X)** = INSTALL 66W LED TYPE IV FT W/HSS SHOEBOX LUMINAIRE ON 20 FT METAL POLE #.  
(X = POLE #).
- (LP3 / X)** = INSTALL 34W LED TYPE IV WIDE SHOEBOX LUMINAIRE ON 20 FT METAL POLE #.  
(X = POLE #).
- (LP4 / X)** = INSTALL 96W LED TYPE IV FT SHOEBOX LUMINAIRE ON 20 FT METAL POLE W/EXTENDED ARM #.  
(X = POLE #).
- (LP5 / X)** = INSTALL 96W LED TYPE IV FT W/HSS SHOEBOX LUMINAIRE ON 20 FT METAL POLE W/EXTENDED ARM #.  
(X = POLE #).
- (WP1 / X)** = INSTALL 86W LED WALLPACK 20 FT HIGH #.  
(X = WALLPACK #).
- (WP2 / X)** = INSTALL 34W LED WALLPACK 15 FT HIGH #.  
(X = WALLPACK #).
- (WP3 / X)** = INSTALL 34W LED WALLPACK 20 FT HIGH #.  
(X = WALLPACK #).
- (WP4 / X)** = INSTALL 86W LED WALLPACK 20 FT HIGH #.  
(X = WALLPACK #).
- (WP5 / X)** = INSTALL 86W LED WALLPACK 20 FT HIGH #.  
(X = WALLPACK #).
- (WP6 / X)** = INSTALL 86W LED WALLPACK 15 FT HIGH #.  
(X = WALLPACK #).
- (B)** = CONCRETE BASE THAT LIGHT POLE WILL BE INSTALLED ABOVE GROUND TO AVOID ANY EXCAVATION FOR THE POLE.

**PRIVATE LIGHTING NOTES:**

1. LIGHT POLES SHALL BE 20-FOOT TALL, BRONZE METAL POLES.

APPROVED LIGHT POLES ARE:  
COOPER SSS4M2F41

2. LUMINAIRES SHALL BE APPROVED, FULL-CUTOFF, LED 240V, BRONZE "GLEON" LUMINAIRES.

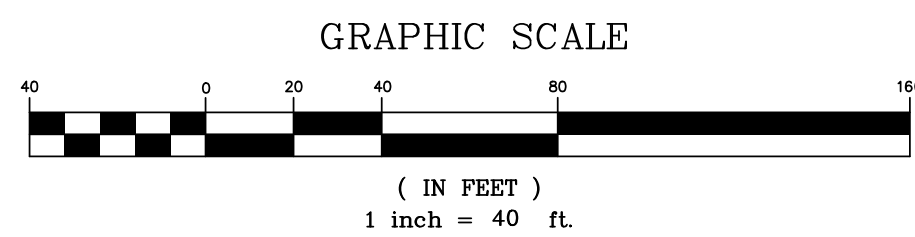
APPROVED LUMINAIRES ARE:

- LP1: 34W COOPER GLEON-SA1A-730-U-T4FT-BZ-HSS
- LP2: 66W COOPER GLEON-SA2A-730-U-T4FT-BZ-HSS
- LP3: 34W COOPER GLEON-SA1A-730-U-T4W-BZ
- LP4: 96W COOPER GLEON-SA3A-730-U-T4FT-QMEA-BZ
- LP5: 96W COOPER GLEON-SA3A-730-U-T4FT-QMEA-BZ-HSS

3. WALLPACKS SHALL BE APPROVED, FULL-CUTOFF LED 240V, BRONZE WALLPACKS MOUNTED 20/15 FOOT HIGH.

APPROVED WALLPACKS ARE:

- WP1: 86W COOPER GAW-SA2B-730-U-T4FT-BZ
- WP2/3: 34W COOPER GAW-SA1B-730-U-SL2-BZ
- WP4: 86W COOPER GAW-SA2B-730-U-T4W-BZ
- WP5: 86W COOPER GAW-SA2B-730-U-SL2-BZ
- WP6: 86W COOPER GAW-SA2B-730-U-SLL-BZ



**STREETLIGHTING DESIGN**

Scale: 1" = 40'

**LIGHT LEVEL REQUIREMENTS**

LOCATION		LIGHT LEVEL	MINIMUM	MAX/MIN
PARKING LOT	TARGET	≥0.80 FC AVG	≥0.20 FC MIN	≤20:1 MAX/MIN
	ACHIEVED	0.92 FC AVG	0.20 FC MIN	20.00:1 MAX/MIN
BUILDING ENTRANCES	TARGET	≥2.00 FC AVG	≥1.00 FC MIN	≤10:1 MAX/MIN
	ACHIEVED	2.18 FC AVG	1.10 FC MIN	3.09:1 MAX/MIN
OFF-SITE	TARGET	≤0.50 FC MAX		
	ACHIEVED	0.40 FC MAX		

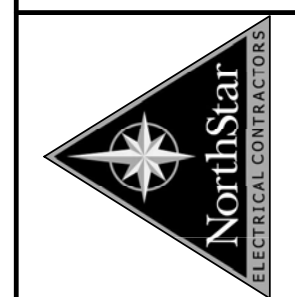


REV DATE	NO.	REV DESCRIPTION
9.10.21	1	REDUNES

Title: PRIVATE LIGHTING  
 Designed by: Adam Suminski  
 Checked by: Jesse Culp  
 Date: August 13, 2021

DWG. NO  
**EL1**

DANSON  
 MOLALLA, OR



Northstar Electrical Contractors  
 11055 S.W. Clay Street, Suite A  
 Sherwood, Oregon 97140  
 Phone 503-612-0840  
 Fax 503-612-0891  
 Email adam.suminski@NorthStarElect.com



5319 SW Westgate Drive, Suite 123  
Portland, OR 97221  
971-319-6950 | [oneatlas.com](http://oneatlas.com)

August 13, 2021

Mr. John M. Pearce  
Director  
Sent via email: [jpearce@fennemorelaw.com](mailto:jpearce@fennemorelaw.com)

**Dansons Pellet Company  
c/o Fennemore**

2394 E Camelback Road  
Phoenix, Arizona 85016

**SUBJECT:     Habitat Restoration Plan  
               Dansons Pellet Company  
               250 West 7<sup>th</sup> Street  
               Molalla, Oregon  
               Atlas Project No. 246EM00228**

Dear Mr. Pearce:

ATC Group Services LLC dba Atlas Technical (Atlas) is pleased to provide this habitat rehabilitation plan for the Dansons Pellet Company (Dansons) facility located at 250 West 7<sup>th</sup> Street in Molalla, Oregon (Site) (**Figure 1**). The preparation and implementation of this plan satisfies a requirement presented in the “*Agreement to Facilitate Cleanup and Productive Reuse of Property*” dated August 28, 2020 and signed by Dansons and the Oregon Department of Environmental Quality (DEQ). The ultimate goal of this plan is to restore riparian habitat along a portion of Bear Creek that is located on the 16-acre Dansons property.

**SCOPE OF WORK**

The scope of work includes pre-field, field and post field tasks which are presented below.

**Task 1- Pre-Field Activities**

**Site Safety Plan and Coordination:** A site-specific health and safety plan (HASP) will be developed to accommodate tasks proposed to be performed during the scope of work. All Atlas personnel are required to complete the 40-hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) standard training course, with annual refresher courses. Anyone who enters the work zone will be required to read, sign and conform to the safety plan.

**Underground Utility Locates:** Prior to initiating soil disturbance activities, Atlas will evaluate the areas to be excavated for the presence of subsurface structures and utilities by contacting Oregon One-Call (811), the public utility notification center. Additionally, Atlas will subcontracted a private utility locating contractor to perform additional property utility location services.

## Task 2 - Field Activities

**Site Preparation/ Revegetation Planting:** Atlas will subcontract an earthwork contractor to prepare the Site for planting. The earthwork will be conducted under the supervision of Atlas and a landscape contractor. After site preparation, the landscape contractor will conduct the planting. The habitat restoration activities will occur in the unpaved areas along Bear Creek as it crosses the Dansons 16-acre property (**Figure 2**). The restoration habitat will encompass 20-foot wide areas along each side of Bear Creek. The 20 foot width will be measured from the top of bank of Bear Creek. In areas where there is existing pavement or proposed pavement/ gravel, the habitat restoration area will be less than 20 feet wide and the width will be determined in the field to fit these areas. The total length of the planting area is approximately 1,300 feet on either side of Bear Creek. Figure 2 presents the approximate locations of the proposed revegetation activities.

Prior to planting, the upper 2 feet of existing fill material (pit run gravel, cobbles, and rip rap) will be removed, along with invasive blackberry bushes. This area will be replaced with imported topsoil that can support the growth of the proposed vegetation. The excavated fill material will be spread in unpaved areas of the site outside of the habitat enhancement area. The imported topsoil will be contoured such that stormwater will drain to Bear Creek.

The existing trees in the riparian buffer zone will be saved and will be incorporated into the habitat restoration.

Once the habitat restoration areas have been prepared for planting, an Atlas subcontracted landscaper will plant the proposed native trees and shrubs in the riparian buffer zone. **Figure 3** presents a conceptual design of the proposed habitat restoration activities. **Table 1** presents a proposed list of trees and shrubs and also provides an estimate on the number of each to be planted. The actual trees and shrubs species and quantity of each will be based upon availability at the time of planting. Atlas will inspect the planting area on a quarterly basis for one year to monitor the progress of the plants.

Atlas is proposing to complete the habitat restoration in early October 2021.

## Task 3 - Post-Field Activities

**Report Preparation:** Following the completion of the field activities, a report will be prepared which will document the work performed. The report will include a description of the methods and procedures used, any assumptions made, our findings, conclusions, and recommendations. The report will also include a list of each of the species and the quantity of each species planted in the riparian buffer

## CLOSURE

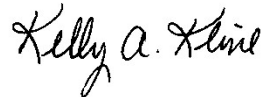
We appreciate the opportunity to provide consulting services to Dansons Pellet Company. If you have any questions or require further information, please email or call the undersigned.

Respectfully submitted,

## ATLAS



Danielle Cook, CSP  
Project Scientist  
971-319-6950  
Email: [Danielle.cook@oneatlas.com](mailto:Danielle.cook@oneatlas.com)

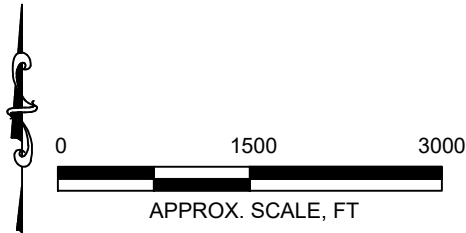
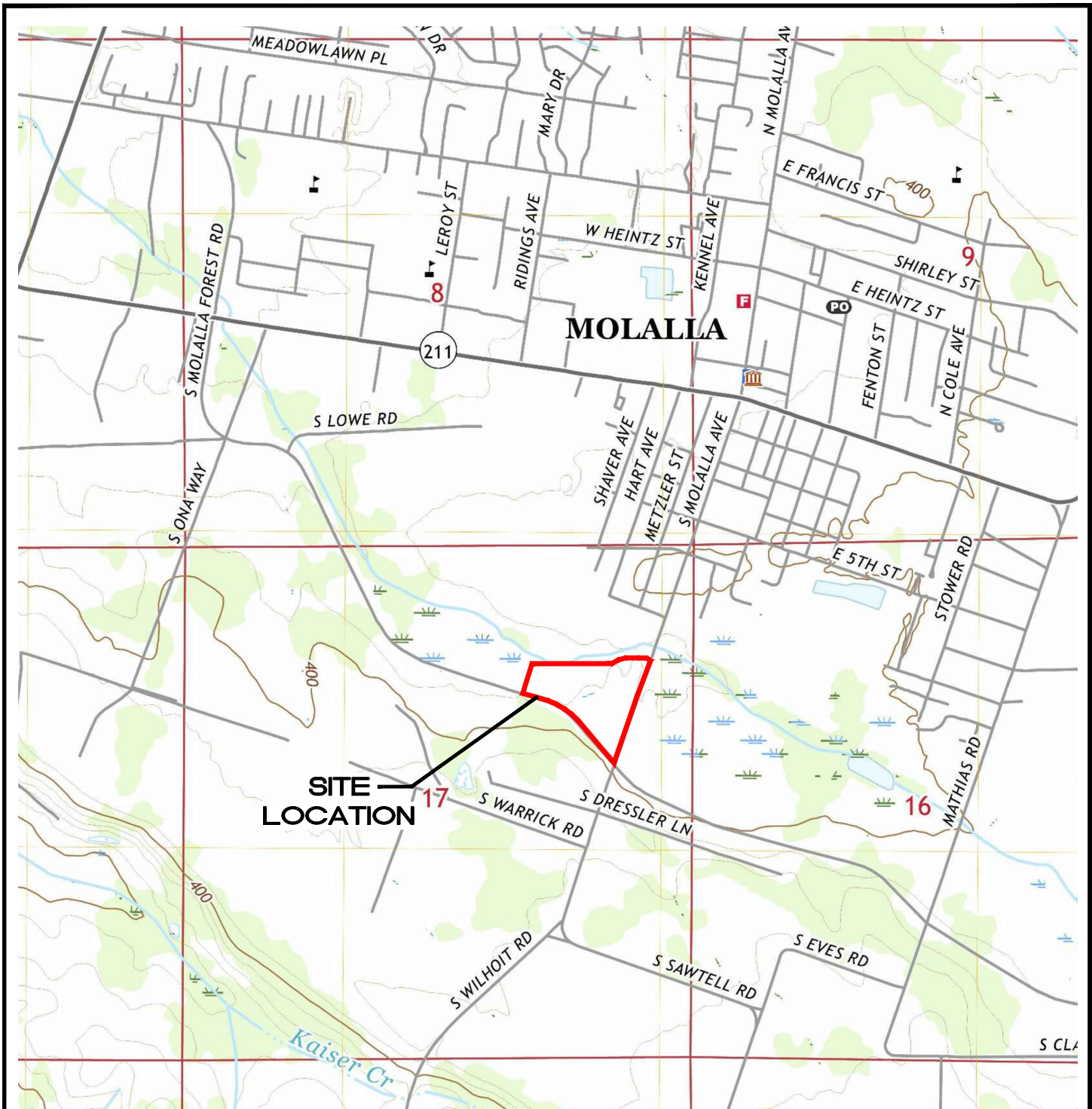


Kelly A. Kline, R.G.  
Senior Registered Geologist  
971-319-6950  
Email: [Kelly.kline@oneatlas.com](mailto:Kelly.kline@oneatlas.com)

Attachments: Table 1 – Proposed List of Plants  
Figure 1 – Site Vicinity Map  
Figure 2 – Site Plan  
Figure 3 – Habitat Enhancement Area

**Table 1 - Proposed List of Plants**  
**Dansons Pellet Company**  
**250 West 7th Street**  
**Molalla, Oregon**  
**ATC Project No. 246EM00228**

Common Name	Scientific Name	Size/Type	Quantity
<b>Tree</b>			
Oregon White Oak	Quercus garryana	one gallon pot	125
Oregon Ash	Fraxinus latifolia	one gallon pot	125
Scouler's Willow	Salix scouleriana	5-foot long live stake cuttings	200
<b>Shrub</b>			
Common Snowberry	Symphoricarpos albus	one gallon pot	375
Red Osier Dogwood	Cornus sericea	one gallon pot	300
Bald-hip Rose	Rosa gymnocarpa	one gallon pot	240
Douglas' Spirea	Spirea douglasii	one gallon pot	240
Saskatoon Serviceberry	Amanlanchier alnifolia	one gallon pot	125
Oceanspray Creambush	Holodiscus discolor	one gallon pot	125



**SITE VICINITY MAP**

DANSON'S PELLETT COMPANY  
 250 W. 7TH STREET  
 MOLALLA, OR

PROJECT NUMBER: 246EM00228	DATE: 7/16/21	FIGURE
APPROVED BY: KK	DRAWN BY: BK	1

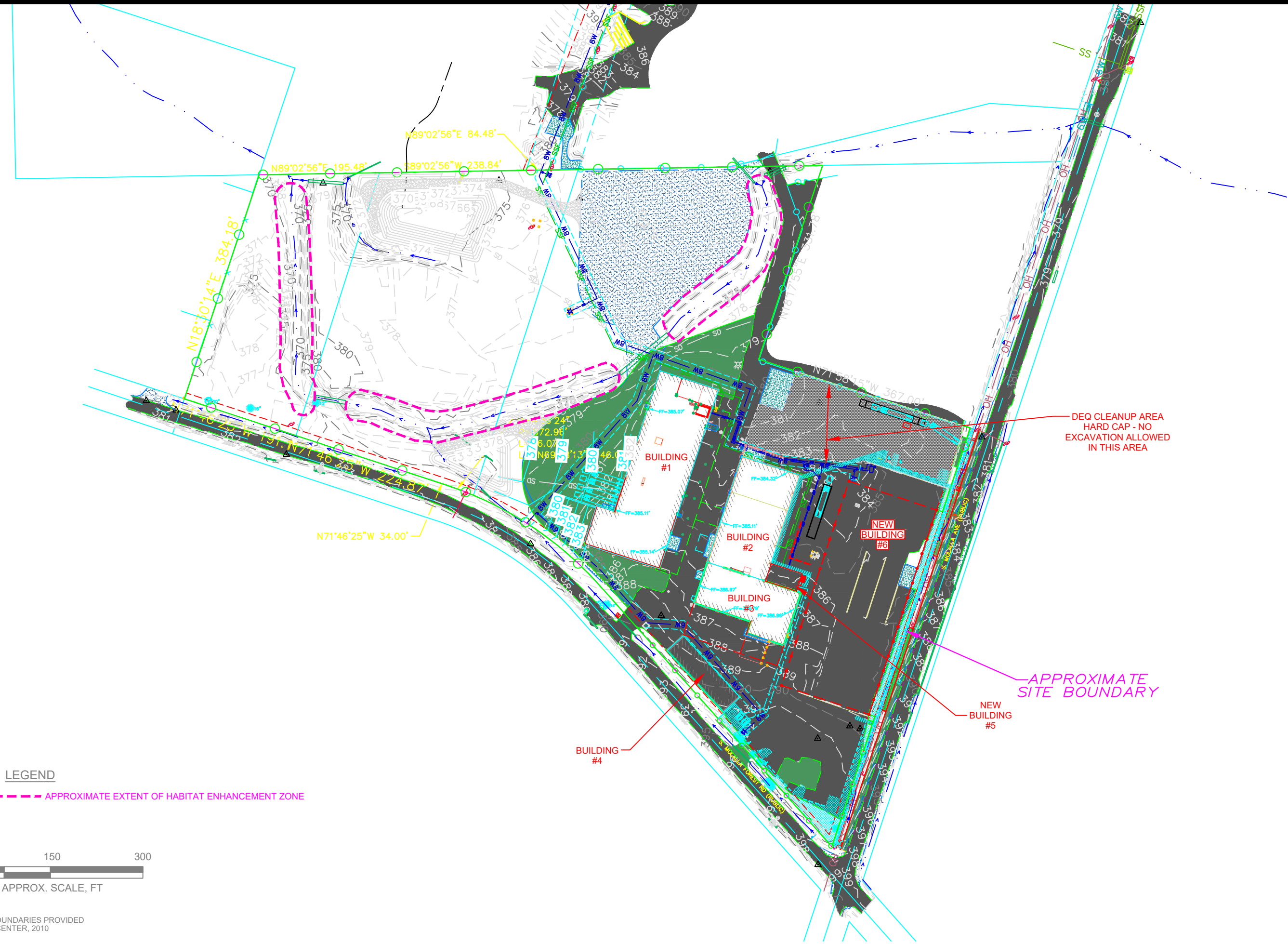
**ATLAS** 5319 SW Westgate Drive, #123  
 Portland, Oregon 97221-2409  
 Ph: (971) 319-6950 \*\*\* Fax: (971) 386-5918

**LEGEND**

--- APPROXIMATE EXTENT OF HABITAT ENHANCEMENT ZONE



NOTE: TAX LOT BOUNDARIES PROVIDED BY METRO DATA CENTER, 2010



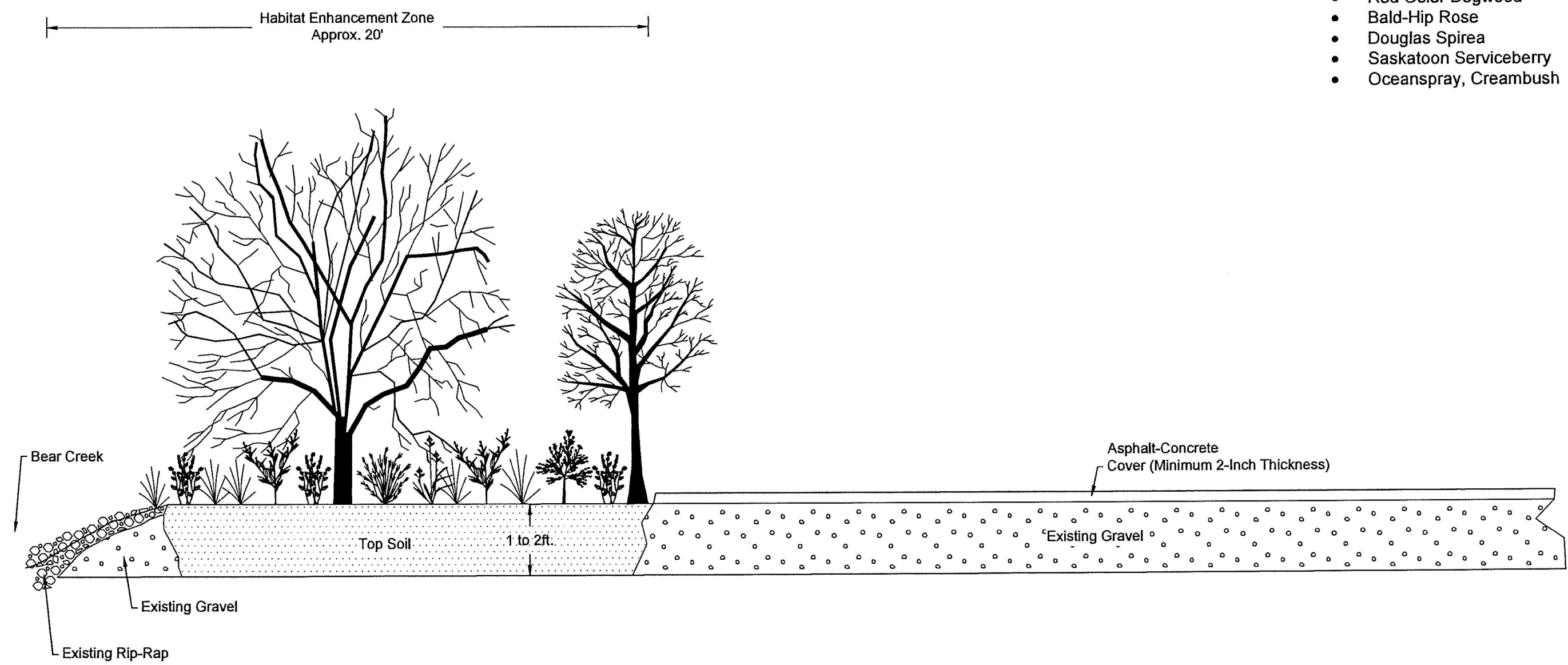
PROJECT NUMBER: 246EM00228	DATE: 8/13/21	FIGURE
APPROVED BY: KK	DRAWN BY: BK/GT	2
<b>ATLAS</b>		
5319 SW Westgate Drive, #123 Portland, Oregon 97221-2409		
Ph: (971) 319-6950 *** Fax: (971) 386-5918		

**SITE PLAN**  
DANSONS PELLET COMPANY  
250 W. 7TH STREET  
MOLALLA, OR

S:\Projects-BST\ANSONS PELLET CO\246EM002283\_HABENHANCE.dwg



NOT TO SCALE  
SOURCE: PNG ENVIRONMENTAL, INC.



**Trees**

- Oregon White Oak
- Oregon Ash
- Scouler's Willow

**Shrubs**

- Common Snowberry
- Red Osier Dogwood
- Bald-Hip Rose
- Douglas Spirea
- Saskatoon Serviceberry
- Oceanspray, Creambush

PROJECT NUMBER: 246EM00228  
 APPROVED BY: KK  
 DATE: 7/23/21  
 DRAWN BY: BK  
 FIGURE 3  
 5319 SW Westgate Drive, #123  
 Portland, Oregon 97221-2409  
 \*\*\*  
 Ph: (971) 319-6950 Fax: (971) 386-5918

**HABITAT ENHANCEMENT AREA**  
 DANSON'S PELLET COMPANY  
 250 W. 7TH STREET  
 MOLALLA, OR



**Jason Smith**

*Environmental Consulting  
849 Woodpecker Dr  
Kelso, WA 98626*

**Environmental Services**

*Planning & Permitting  
Assessment & Analysis  
Project Management*

August 18, 2021

Dansons

ATTN: Stephen Grandquest  
3411 N 5th Ave, Suite 500,  
Phoenix, AZ 85013  
[stephen.grandquest@dansons.com](mailto:stephen.grandquest@dansons.com)

**SUBJ: Wetland Jurisdictional Evaluation (Clackamas County Parcels 05002348; 01107368; 01107956)**

**Summary**

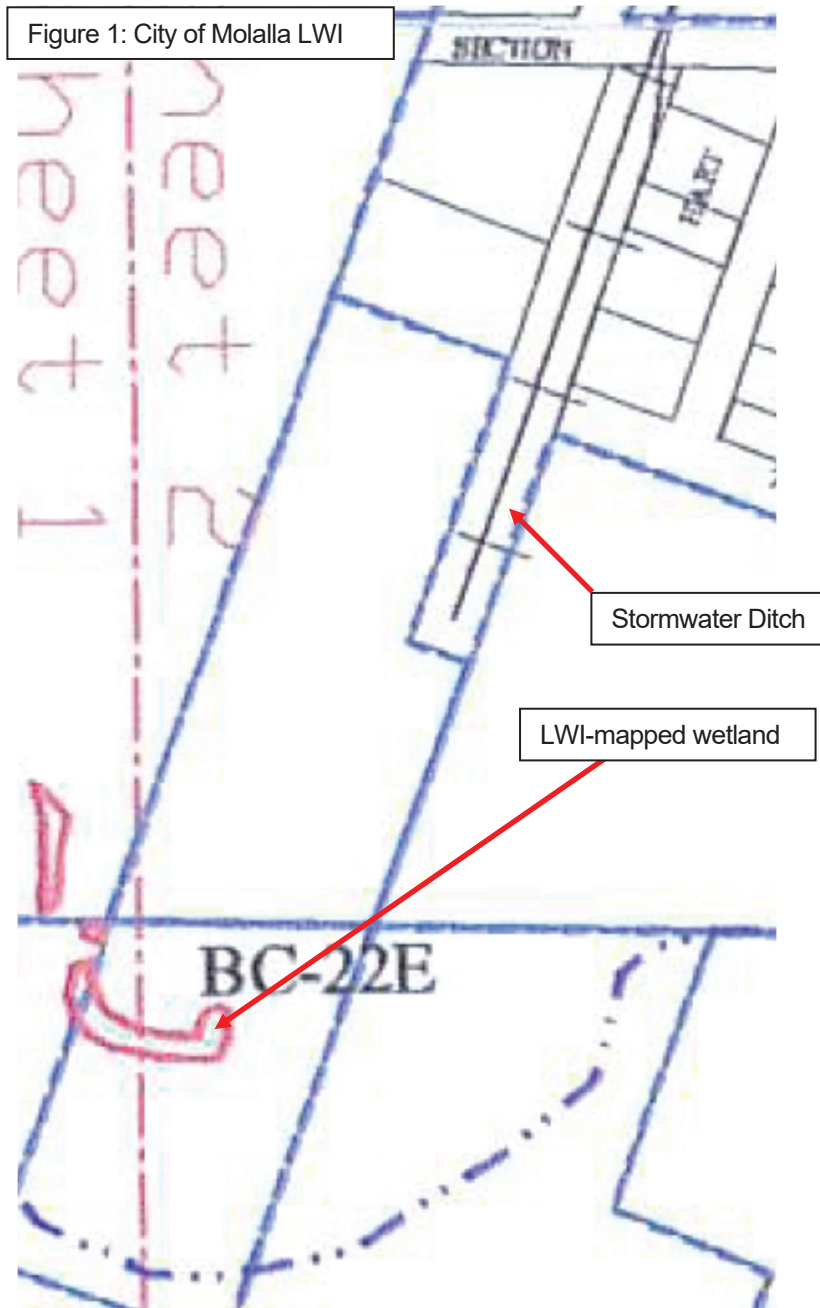
A 0.047-acre wetland is mapped in the City of Molalla Local Wetland Inventory (LWI) located on parcel located on Clackamas County Parcel number 05002348 (250 SW 7<sup>th</sup> Street, Molalla OR). The mapped wetland is an artificial roadside ditch aligned with the service road from an abandoned and filled artificial log pond.

Jurisdictional considerations are evaluated in this report under Oregon Administrative Rule (OAR) 141-085-0515 Removal-Fill Jurisdiction by Type of Water. Under OAR 141-085-0515(10) – Non-Jurisdictional Roadside Ditches – the LWI-mapped wetland does not meet jurisdictional criteria.

A stormwater ditch running north from parcel 01107368 through parcel 01107974 is non-jurisdictional under OAR 141-085-0515(

**Scope**

The scope of this review is all potential wetlands and jurisdictional ditches on the subject parcels. A 0.047-acre wetland is identified on parcel 05002348 via the City of Molalla Local Wetland Inventory prepared by Pacific Habitat Services in 2004  
(<https://docs.dsl.state.or.us/PublicReview/0/doc/863312/Electronic.aspx>):



No other potential wetlands identified on the subject parcels. A stormwater ditch alignment connecting parcel 01107368 with Section Street is also evaluated.

Jurisdictional evaluation for the LWI-mapped wetland and the stormwater drainage performed under Oregon Administrative Rule (OAR) 141-085-0515 Removal-Fill Jurisdiction by Type of Water.

Historical and database research was performed with field verification to determine the type of water for the mapped wetland and the appropriate jurisdictional criteria. Methodology for type of water followed Level 3 Routine Wetland Determination in accordance with methods prescribed by the US Army Corps of Engineers 1987 Wetland Delineation Manual (as referenced by OAR 141-090-0030):

*Section B. Preliminary Data Gathering and Synthesis*

53. This section discusses potential sources of information that may be helpful in making a wetland determination. When the routine approach is used, it may often be possible to make a wetland determination based on available vegetation, soils, and hydrology data for the area.

*Level 3 - Combination of Levels 1 and 2.* This level should be used when there is sufficient information already available to characterize the vegetation, soils, and hydrology of a portion, but not all, of the project area. Methods described for Level 1 may be applied to portions of the area for which adequate information already exists, and onsite methods (Level 2) must be applied to the remainder of the area (see Section D, Subsection 3).

Section B – Preliminary Data Gathering and Synthesis resources included:

1. Oregon Statewide Wetlands Inventory mapping program
  - a. Local Wetland Inventory (LWI)
    - i. City of Molalla LWI
  - b. NWI-mapped Wetlands
  - c. NRCS Hydric Soils
  - d. National Hydrography Dataset
2. The National Map
  - a. Topographic data
  - b. National Hydrography Dataset
  - c. FWS Topo Wetlands
  - d. National Landcover Database 2016 Land Cover L48
3. NRCS Web Soil Survey
  - a. Soil Profiles for entire site
4. NETRONLINE Historical Aerials Viewer (<https://www.historicaerials.com/viewer>)
  - a. Historical Topographic Maps:
    - i. 1956; 1958; 1962; 1971; 1980; 1985; 2014; 2017
  - b. Historical Aerials:
    - i. 1953; 1956; 1970; 1981; 1994
5. Google Earth Pro Historical Aerials
  - a. 2000 - 2020

Level 3 – Field Verification

**Findings**

1. Oregon Statewide Wetlands Inventory (SWI) and Local Wetlands Inventory (LWI)

The SWI showed no indications of National Wetland Inventory wetlands on the project site. The parcel in the mapped-wetland area is mapped with hydric soils (Dayton silt loam).

The parcels lie within the City of Molalla LWI study area. The LWI indicates a 0.047-acre wetland on parcel 05002348.

The National Hydrography Dataset indicates one stream channel (Bear Creek) correlating to the wetland, and a second (matching) offset connection between offsite wetlands. Field verification indicates the Bear Creek stream alignment is incorrectly mapped – and instead roughly follows the demarcated wetland connection. The LWI-mapped wetland is not mapped on the SWI or National Wetland Inventory (NWI).

## 2. NRCS Web Soil Survey

The NRCS Web Soil Survey for the parcel reflects “water” in the LWI-mapped wetland area (*attached*). This is an artifact of the historical log pond. Actual soils are fill materials. The surrounding soils are mapped as hydric Dayton silt loam.

## 3. NETRONLINE Historical Aerials Viewer (<https://www.historicaerials.com/viewer>)

Historical aerial and topographic maps were searched using the Historical Aerials Viewer tools. The earliest available topographic map from 1953 shows a log pond isolated from Bear Creek by a levee:



Between 1956 and 1970, the Bear Creek alignment shown in 1953 has been moved to the current alignment (*see Figure 3 in Field Survey section*).

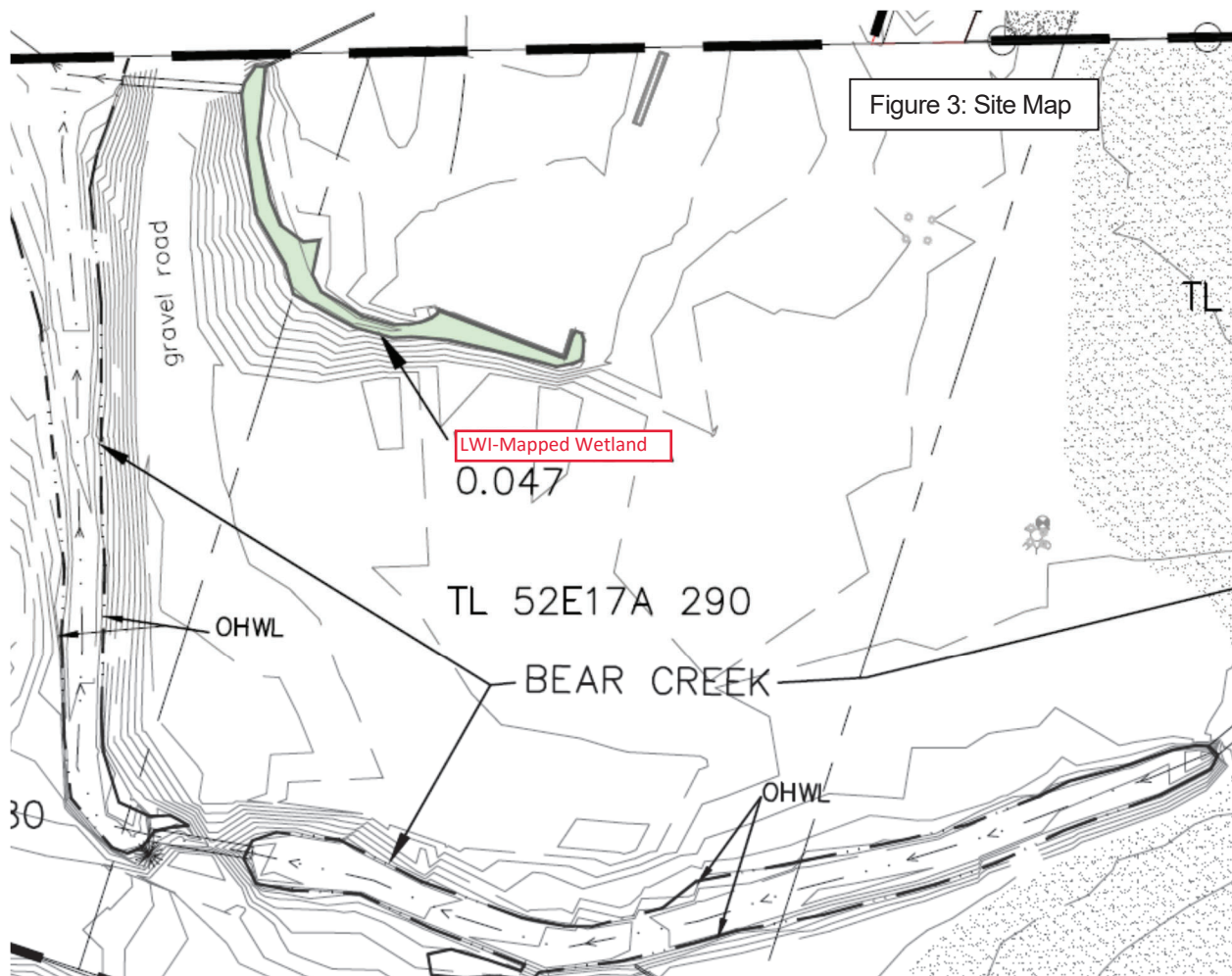
By 1981, the log pond has been partially filled to facilitate construction of new mill facilities. The log pond remnant in 1981 remains isolated by levee from the Bear Creek channel.

Between 1981 and 1994, no log pond remnant remains. At this point, the mapped wetland follows the original log pond levee road alignment and is a drainage ditch maintained for that purpose and to channel stormwater from the adjacent mill buildings.

Research identifies the mapped wetland as an artificial roadside ditch excavated from uplands.

## Field Survey

The site was visited to confirm database findings. The LWI-mapped wetland was confirmed as a roadside ditch also receiving stormwater from impervious remnant building pads. The ditch connects to Bear Creek via culvert through a levee. The ditch does not contain game fish or fish habitat. Portions of the ditch exhibit some channel morphology < 3' wide (majority of the ditch does not exhibit an Ordinary High Water (OHW) mark). The ditch is connected via culvert to Bear Creek.



Per the City of Molalla LWI - the stormwater ditch extending north to Section Street is aligned with an abandoned railroad corridor. The ditch has subject to ephemeral flow and is an extension of roadside ditches. The ditch has no defined channel; contains no food or game fish; is artificially-created from uplands.

No other potential waters of the state identified.

## Jurisdictional Analysis

In accordance with OAR 141-085-0515, the following jurisdictional criteria apply to roadside ditches:

- (10) Non-Jurisdictional Roadside and Railroad Ditches. Roadside and railroad ditches that meet the following tests are not jurisdictional:
  - (a) Ten feet wide or less at the ordinary high water line;
  - (b) Artificially created from upland or from wetlands;
  - (c) Not adjacent and connected or contiguous with other wetlands; and
  - (d) Do not contain food or game fish.

The NWI-mapped wetland is less than ten feet wide at the OHW mark. The ditch is artificial. The ditch is connected to the mapped Bear Creek wetland areas via culvert but is not contiguous with those wetlands. A levee separates the roadside ditch from the Bear Creek channel wetlands. The ditch does not contain food or game fish.

The stormwater ditch connected to Section Street is less than ten feet wide at the OHW mark; is artificial; is not adjacent and connected or contiguous with other wetlands; does not contain food or game fish. The ditch substrate is fill material. The ditch infiltrates all stormwater.

## Conclusion

The LWI-mapped wetland area is an artificial roadside ditch less than ten feet wide, originally excavated from uplands and does not contain food or game fish. Under these conditions, the ditch is not jurisdictional. The stormwater ditch extending north to Section Street is less than ten feet wide at the OHW mark; is artificial; is not adjacent and connected or contiguous with other wetlands; does not contain food or game fish and is similarly non-jurisdictional.

These findings and conclusions are subject to concurrence.



Jason Smith  
Project Manager

ENCL: Clackamas County Parcel Maps  
SWI Maps  
NRCS Soil Map



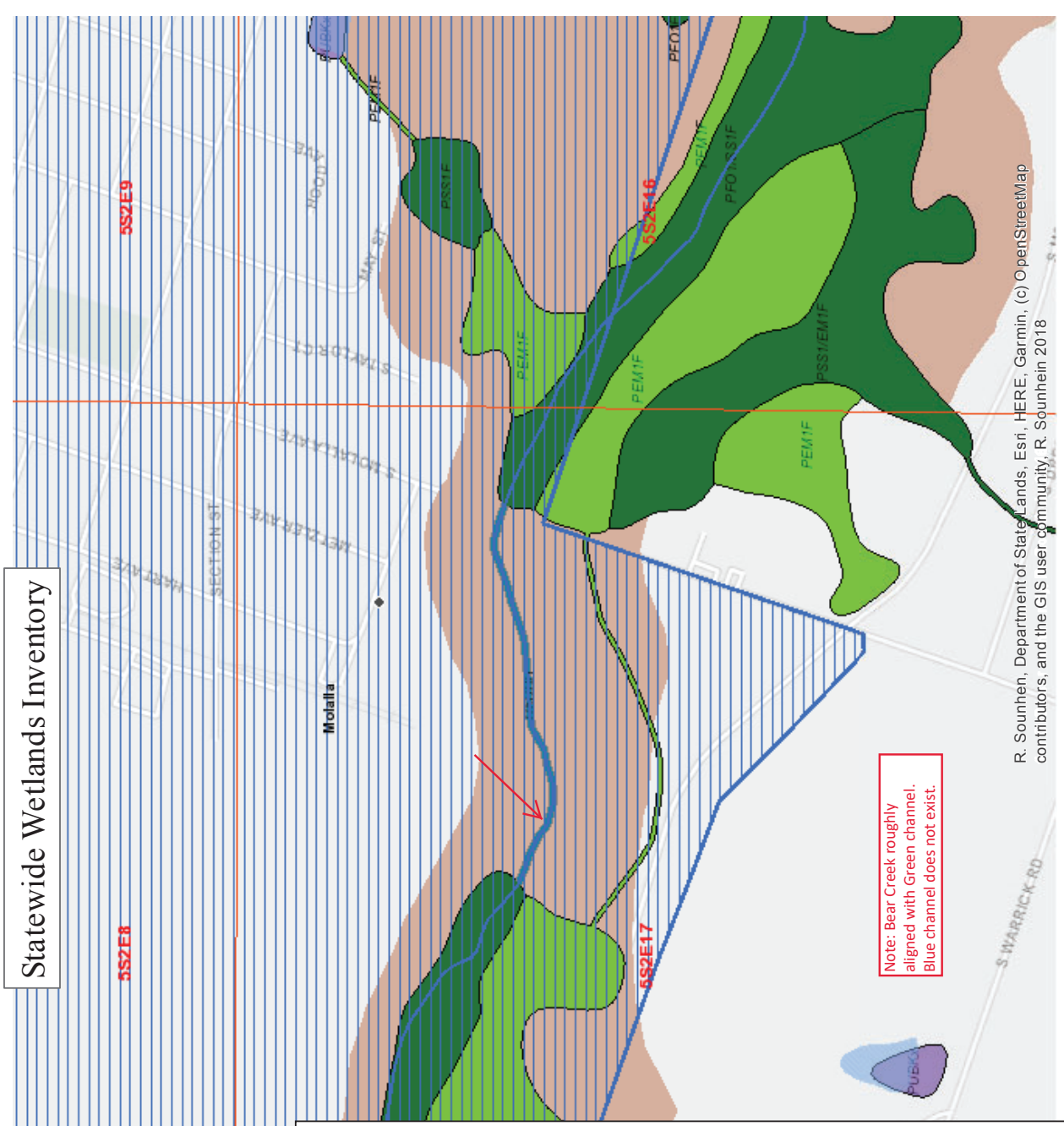
**Objectid:** 139329  
**Primary Address:** No Situs  
**Jurisdiction:** Clackamas County (<http://www.clackamas.us/>)  
**Map Number:** 52E17A  
**Taxlot Number:** 52E17A 05500  
**Parcel Number:** 01107368  
**Document Number:** 2020-076426  
**Census Tract:** 023902  
**Landclass:** 300

## Assessment

---

**Estimated Acres:** 3.39  
**Current Year Assessed Value:** \$106,829.00  
**Market Building Value:** \$0.00  
**Market Land Value:** \$106,829.00

# Statewide Wetlands Inventory



Note: Bear Creek roughly aligned with Green channel. Blue channel does not exist.

	Sections
	LWI Study Area
	NHD Springs/Seeps
<b>NHD Streams and Rivers</b>	
	Perennial
	Intermittent
	Ephemeral
	Unknown
	Canal/Ditch
	NHD Area
	NHD Waterbody
<b>Wetlands</b>	
	Estuarine and Marine Deepwater
	Estuarine and Marine Wetland
	Freshwater Emergent Wetland
	Freshwater Forested/Shrub Wetland
	Freshwater Pond
	Lake
	Riverine
	NRCS Predominantly Hydric Soil Map Units
	NRCS Agate-Winlo Soils in Jackson County

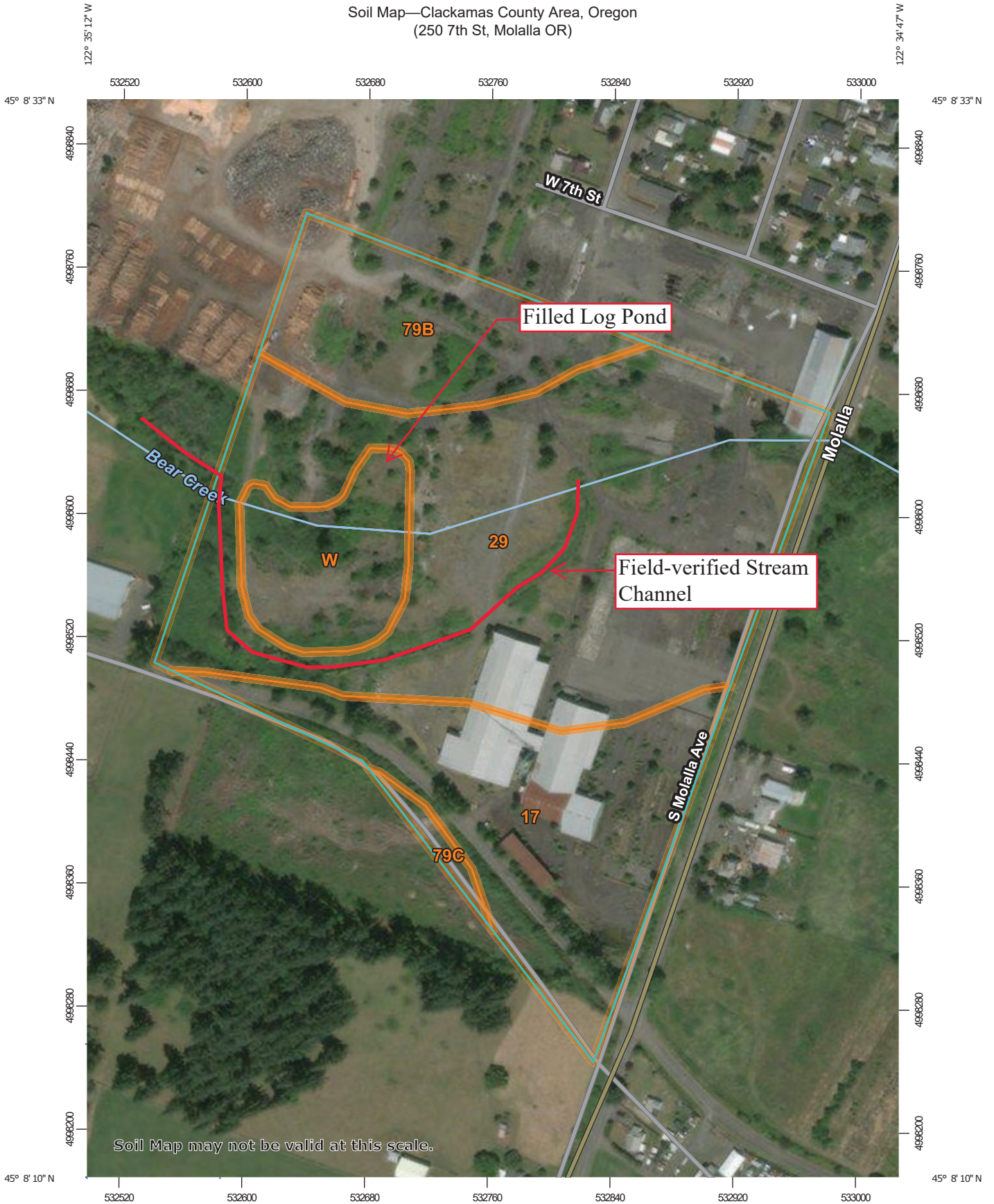


1 inch = 0.14 miles  
 0 0.05 0.1 0.2 0.3 0.4 0.5 miles

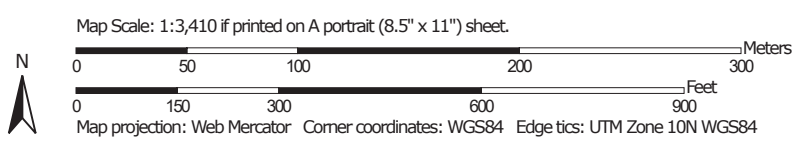
The Statewide Wetlands Inventory (SWI) represents the best data available at the time this map was published and is updated as new data becomes available. In all cases, actual field conditions determine the presence, absence and boundaries of wetlands and waters (such as creeks and ponds). An onsite investigation by a wetland professional can verify actual field conditions.








































Soil Map—Clackamas County Area, Oregon  
(250 7th St, Molalla OR)



Soil Map may not be valid at this scale.



## MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soil Map Unit Polygons	 Stony Spot
 Soil Map Unit Lines	 Very Stony Spot
 Soil Map Unit Points	 Wet Spot
 <b>Special Point Features</b>	 Other
 Blowout	 Special Line Features
 Borrow Pit	<b>Water Features</b>
 Clay Spot	 Streams and Canals
 Closed Depression	<b>Transportation</b>
 Gravel Pit	 Rails
 Gravelly Spot	 Interstate Highways
 Landfill	 US Routes
 Lava Flow	 Major Roads
 Marsh or swamp	 Local Roads
 Mine or Quarry	<b>Background</b>
 Miscellaneous Water	 Aerial Photography
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon  
Survey Area Data: Version 16, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 19, 2015—Sep 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
17	Clackamas silt loam	7.6	24.0%
29	Dayton silt loam	16.6	52.3%
79B	Sawtell silt loam, 0 to 8 percent slopes	4.5	14.1%
79C	Sawtell silt loam, 8 to 15 percent slopes	0.3	1.0%
W	Water	2.7	8.6%
<b>Totals for Area of Interest</b>		<b>31.8</b>	<b>100.0%</b>

---

*Space above this line for Recorder's use.*

***After recording, return to:***

**Grantee**

Oregon DEQ  
700 NE Multnomah, Ste. 600  
Portland, OR 97232  
Attention: Dan Hafley

**Grantor**

Dansons Pellet Company, LLC  
3411 N. 5<sup>th</sup> Avenue, Suite 500  
Phoenix, AZ 85013

AGREEMENT  
TO  
FACILITATE CLEANUP AND PRODUCTIVE REUSE OF PROPERTY

DEQ PPA No. 20-08

BETWEEN: Oregon Department of Environmental Quality

AND: Dansons Pellet Company, LLC

This Agreement to Facilitate Cleanup and Productive Reuse of Property (“Agreement”) is entered between the Oregon Department of Environmental Quality (“DEQ”) and Dansons Pellet Company, LLC pursuant to ORS 465.327. This Agreement contains the following provisions:

<u>Contents</u>	<u>Page</u>
1. RECITALS .....	2
2. STIPULATIONS .....	4
3. WORK TO BE PERFORMED.....	5
A.Measures to be Undertaken.....	5
B.Modification of SOW or Related Work Plans .....	5
C.Additional Measures .....	5
D.Site Restrictions .....	6
E.Property Activities.....	6
4. GENERAL PROVISIONS .....	7
A.Project Managers.....	7
B.Supervising Contractor.....	7

C. DEQ Approvals .....	8
D. Access to Property .....	9
E. Records .....	9
F. Notice and Samples .....	10
G. Quality Assurance .....	11
H. Progress Reports .....	11
I. Reimbursement of DEQ Costs .....	11
J. Force Majeure.....	12
K. Dispute Resolution.....	13
L. Effect of Agreement .....	14
M. Indemnification .....	14
N. Public Notice.....	15
O. Parties Bound .....	15
P. Modification .....	15
Q. Recording .....	15
R. Transfer of Interest.....	15
5. RELEASE FROM LIABILITY .....	16
6. WAIVERS .....	17
7. BENEFITS AND BURDENS RUN WITH THE LAND.....	17
8. COMPLETION OF WORK .....	17
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Exhibit A – Legal Description of Property

1. RECITALS

- A. The property (“Property”) subject to this Agreement is located at 250 West 7<sup>th</sup> Street in Molalla, Oregon. The legal description of the Property is set forth in Exhibit A to this Agreement.
- B. The Property comprises 16 acres of the approximately 105-acre Floragon – Molalla site, identified, identified in DEQ’s Environmental Cleanup and Site Information (ECSI) files as #0009. Lumber-related manufacturing occurred at the 105-acre parent site beginning in the 1940s and was largely discontinued by 2009. The mill site was owned and operated by Avison Lumber Company (Avison) until 1998-1999 when it was purchased and operated by Floragon Forest Products (Floragon). Buildings on the Property were constructed in the late 1990s for use in glue laminating and finger jointing operations. By 2002, all on-site lumber production had ceased and by 2005 most older site buildings and mill infrastructure had been demolished. Production of glue-lam beams continued at the

SE Corner area until late-2009 when all manufacturing at the Floragon property was discontinued. The Property is currently vacant.

- C. Soil, groundwater, and sediment sampling have been completed on the Property, primarily to determine the extent to which dioxins associated with historical wood preservation operations were released. Dioxins and petroleum hydrocarbons have been detected in soil, dioxins to 400 parts per trillion (ppt), and petroleum 6,500 parts per million. Dioxin contamination in an approximately 1-acre portion of the Property were determined to exceed relevant screening values, and pose a potential human health risk. At the request of DEQ, asphalt paving in the 1-acre area was cleaned and re-surfaced with a protective asphaltic chip-seal cover to prevent exposure, which shall be maintained in perpetuity unless the soil contamination is removed or is otherwise determined by DEQ to not pose a risk. A portion of Bear Creek is located on the Property, and will be addressed in upcoming cleanup work by DEQ, either by former property owner Avison Lumber or current owner FFP, Inc.
- D. Significant contamination is confined to dioxins in shallow soil in the 1-acre area, present at a concentration of 400 ppt.
- E. The contaminants described in Subsection 1.D. are “hazardous substances” within the meaning of ORS 465.200(16). The presence of hazardous substances at the Property constitutes a “release” of hazardous substances within the meaning of ORS 465.200(22), and makes the Property a “facility” within the meaning of ORS 465.200(13). Remedial action is necessary at the Property to protect human health or the environment.
- F. Pursuant to ORS 465.255(1)(b), Dansons Pellet Company, LLC could become liable to DEQ and other persons for releases of hazardous substances at or from the Property by becoming the owner or operator of the Property with actual or constructive knowledge of the releases. On August 10, 2020 Dansons Pellet Company, LLC applied to DEQ for entry of this Agreement.
- G. Dansons Pellet Company, LLC is a Delaware limited liability corporation and a “person” within the meaning of ORS 465.200(21). Dansons Pellet Company, LLC is not currently liable under ORS 465.255, 466.640, or 468B.310 for the release of hazardous substances existing at the facility as of the date of this Agreement.

- H. Dansons Pellet Company, LLC intends to use the property for a wood pellet manufacturing facility, and will utilize wood stock available nearby. The property will be cleaned up, refurbished and modernized and the manufacturing facility will provide local employment opportunities.
- I. DEQ determines that a “substantial public benefit” will result from this Agreement, within the meaning of ORS 465.327(1)(d).
- J. Based upon the information submitted by Dansons Pellet Company, LLC, DEQ determines that the proposed reuse or redevelopment activities at the Property will not contribute to or exacerbate existing contamination, increase health risks, or interfere with remedial measures necessary at the Property.
- K. In determining to enter this Agreement, DEQ considered reasonably anticipated future land uses at the Property and surrounding properties and consulted with Clackamas County.

## 2. STIPULATIONS

- A. For the purposes of this Agreement, the “Facility,” as defined in ORS 465.200(13), means: (a) the Property; and (b) the full extent of existing known or unknown contamination by hazardous substances of any media on, above, or below the Property, or that has migrated, might have migrated, or hereafter migrates to anywhere from the Property.
- B. For the purposes of this Agreement, “Existing Hazardous Substance Releases” means: (a) any release of hazardous substances, as defined in ORS 465.200, at the Facility existing as of the date of Dansons Pellet Company, LLC’s acquisition of ownership or operation of the Property; (b) any spill or release of oil or hazardous material, as defined in ORS 466.605, at the Facility existing as of the date of Dansons Pellet Company, LLC’s acquisition of ownership or operation of the Property; and (c) the entry of oil into the waters of the state, as defined in ORS 468B.300, from the Facility before the date of Dansons Pellet Company, LLC’s acquisition of ownership or operation of the Property.
- C. Nothing in this Agreement obligates DEQ to conduct or pay for any removal or remedial activities of any kind regarding the Property or releases from the facility.

### 3. WORK TO BE PERFORMED

#### A. Measures to be Undertaken

Dansons Pellet Company, LLC will perform measures to be undertaken for the Property as follows: (1) ensure long term maintenance for the approximately one acre covered area; (2) avoid exacerbation of contamination in Bear Creek; and (3) enhance natural areas adjacent to Bear Creek through debris removal and plantings in accordance with a DEQ approved revegetation plan.

#### B. Modification of SOW or Related Work Plans

(1) If DEQ determines that modification to the work specified in the SOW and/or in work plans developed pursuant to the SOW is necessary in order to implement or maintain the effectiveness of the remedy described in Subsection 1.H., DEQ may require that such modification be incorporated in the SOW and/or such work plans; provided, any such modification may be required pursuant to this paragraph only to the extent that the modification is consistent with the scope of the remedy to protect public health and the environment.

(2) Subject to dispute resolution under Subsection 4.K., Dansons Pellet Company, LLC will modify the SOW and/or work plans as required by DEQ and implement any work required by the modifications. Before invoking dispute resolution under Subsection 4.K., Dansons Pellet Company, LLC and DEQ will make a good-faith effort to resolve any dispute regarding DEQ-requested modifications by informal discussions for no more than 30 days following notice from DEQ of a requested modification.

#### C. Additional Measures

Dansons Pellet Company, LLC may elect at any time during the term of this Agreement to undertake measures, beyond those required under this Agreement and the SOW, necessary to address the release or threatened release of hazardous substances at the Property. Such additional measures are subject to prior approval by DEQ. DEQ's approval will be granted if DEQ determines that the additional measures are consistent with the remedy described in Subsection 1.H. and will not threaten human health or the environment.



D. Site Restrictions

- (1) Dansons Pellet Company, LLC will abide by any use and/or deed restrictions on the Property that are required by DEQ without limitation the Easement and Equitable Servitude.
- (2) Property subject to the Easement and Equitable Servitude may be freely alienated at any time after recording, provided the deed or other instrument of conveyance refers to or incorporates the Easement and Equitable Servitude.
- (3) Any deed, title, or other instrument of conveyance regarding the Property must contain a notice that the Property is the subject of this Agreement. The seller, in any such deed or conveyance, must also reserve such access (by easement, right-of-way, or otherwise) as might be necessary to carry out its obligations under this Agreement.
- (4) At least once every five years, DEQ will review the remedy to ensure that the Property remains protective of public health, safety, and welfare and the environment. Periodic reviews will include evaluation of monitoring data, progress reports, inspection and maintenance reports, land and water uses, compliance with institutional controls, and any other relevant information.

E. Property Activities

Any development, construction, or other use of the Property must be consistent with and may not interfere with investigative or remedial activities necessary at the Property. To ensure such consistency and prevent exacerbation of existing contamination at the Property, Dansons Pellet Company, LLC will ensure that all tenants, employees, authorized and regular users, and other occupants of the Property who perform activities on the Property that might affect the area of existing contamination, including soils, groundwater, other contaminated media, or affect necessary investigatory and/or remedial measures, will: (1) notify DEQ before such activity; and (2) submit development and/or construction plans for review by DEQ. These requirements may expire upon the Property receiving a No Further Action determination from DEQ in accordance with Section 8.

4. GENERAL PROVISIONS

A. Project Managers

To the extent possible, all reports, notices, and other communications required under or relating to this Agreement must be directed to:

DEQ Project Manager:

Dan Hafley  
Department of Environmental Quality  
Northwest Region  
700 NE Multnomah, Ste 600  
Portland, OR 97232  
Phone: 503-229-5417  
Email: hafley.dan@deq.state.or.us

Dansons Pellet Company, LLC

Project Manager:

Ken Wycherley  
3411 N. 5<sup>th</sup> Avenue, Suite 500  
Phoenix, AZ 85013  
Phone: 860-877-5320  
Email: ken.wycherley@dansons.com

With copy to:  
Jordan Thiessen  
Chief Operations Officer  
Dansons  
3411 N. 5<sup>th</sup> Avenue, Suite 500  
Phoenix, AZ 85013  
Phone: 860-877-5320  
Email: jordanthiessen@dansons.com

B. Supervising Contractor

- (1) Any aspects of the work that involve exposure to or measures that may affect contaminated soils, groundwater, and other contaminated media, that are performed by Dansons Pellet Company, LLC pursuant to this Agreement must be performed under the direction and supervision of a qualified employee or contractor having experience in hazardous substance remediation and knowledge of applicable state and federal laws, regulations, and guidance.
- (2) Should work of the nature set forth above be performed by Dansons Pellet Company, LLC, it will notify DEQ in writing of the name, title, and qualifications of any proposed supervising contractor. DEQ may for good cause disapprove the proposed contractor. In the event of such disapproval, DEQ will notify Dansons Pellet Company, LLC in writing of the reasons for its disapproval within 14 days of receipt of the initial notice from Dansons Pellet Company, LLC. Dansons Pellet Company,

LLC, within 14 days of receiving DEQ's notice of disapproval, will notify DEQ of the name, title, and qualifications of an alternate supervising contractor, subject to DEQ's right to disapprove under the terms and schedule specified above.

- (3) Should Dansons Pellet Company, LLC propose to change its supervising contractor, Dansons Pellet Company, LLC will notify DEQ in accordance with the provisions of the preceding paragraph. DEQ may disapprove such contractor, under the terms and schedule specified in the preceding paragraph.

C. DEQ Approvals

- (1) Where DEQ approval is required for any plan or activity under this Agreement Dansons Pellet Company, LLC may not proceed to implement the plan or activity prior to DEQ approval. DEQ will make a reasonable effort to conduct its review promptly to prevent undue delays of any proposed development activity. Any DEQ delay in granting or denying approval correspondingly extends the time for completion by Dansons Pellet Company, LLC. Prior approval is not required in emergencies, provided Dansons Pellet Company, LLC notifies DEQ immediately after the emergency and evaluates the impact of its actions.
- (2) After review of any plan, report, or other item required to be submitted for DEQ approval under this Agreement, DEQ will: (a) approve the submission in whole or in part; or (b) disapprove the submission in whole or in part, and notify Dansons Pellet Company, LLC of its deficiencies and/or request modifications to cure the deficiencies.
- (3) DEQ approvals, rejections, or identification of deficiencies will be given in writing within the time specified in the SOW or as soon as practicable, and will state DEQ's reasons with reasonable specificity.
- (4) In the event of DEQ disapproval or request for modification of a submission, Dansons Pellet Company, LLC will, within 30 days of receipt of the DEQ notice or such longer time as may be specified in the notice, correct the deficiencies and resubmit the revised report or other item for approval.
- (5) In the event of two deficient submittals of the same deliverable that are deficient for the same reasons due to Dansons Pellet Company, LLC's failure in good faith to cure the original deficiency, DEQ may modify the submission to cure the deficiency.

- (6) In the event of approval or modification of a submission by DEQ, Dansons Pellet Company, LLC will implement the action(s) required by the plan, report, or other item, as so approved or modified, or invoke dispute resolution under Subsection 4.K.

D. Access to Property

- (1) Dansons Pellet Company, LLC will allow DEQ to enter all portions of the Site owned by or under the control of Dansons Pellet Company, LLC at all reasonable times for the purpose of overseeing Dansons Pellet Company, LLC's performance under this Agreement, including but not limited to inspecting records relating to work under this Agreement, observing Dansons Pellet Company, LLC's progress in implementing this Agreement, conducting such tests and taking such samples as DEQ deems necessary, verifying data submitted to DEQ by Dansons Pellet Company, LLC, conducting periodic review, and using camera, sound recording, or other recording equipment. DEQ will make available to Dansons Pellet Company, LLC upon Dansons Pellet Company, LLC's request any photographs or recorded or videotaped material taken.
- (2) Dansons Pellet Company, LLC will also seek to obtain access to property not owned or controlled by Dansons Pellet Company, LLC as necessary to perform the work required in this Agreement, including access by DEQ for purposes described in Paragraph 4.D.(1). DEQ may use its statutory authority to obtain access to property on behalf of Dansons Pellet Company, LLC if DEQ determines that access is necessary and that Dansons Pellet Company, LLC has exhausted all good faith efforts to obtain access.

E. Records

- (1) Dansons Pellet Company, LLC will preserve all records and documents in possession or control of Dansons Pellet Company, LLC or its employees, agents, or contractors that relate in any way to activities regarding contaminated media under this Agreement for at least five years after receiving a No Further Action determination from DEQ. Upon DEQ's request, Dansons Pellet Company, LLC will provide to DEQ, or make available for copying by DEQ, copies of non-privileged records.
- (2) Dansons Pellet Company, LLC will permit DEQ to inspect and copy all records, files, photographs, documents, and data relating to work conducted involving contaminated

media under this Agreement, and the other obligations required of Dansons Pellet Company, LLC under this Agreement, except that Dansons Pellet Company, LLC may not be required to permit DEQ inspection or copying of items subject to attorney-client or attorney work product privilege.

- (3) Dansons Pellet Company, LLC will identify to DEQ (by addressor-addressee, date, general subject matter, and distribution) any document, record, or item withheld from DEQ on the basis of attorney-client or attorney work product privilege, except to the extent that such identifying information is itself subject to a privilege. DEQ reserves its rights under law to obtain documents DEQ asserts are improperly withheld by Dansons Pellet Company, LLC.

F. Notice and Samples

- (1) Dansons Pellet Company, LLC will make every reasonable effort to notify DEQ of any excavation, drilling, sampling, or other fieldwork relating to contaminated media to be conducted under this Agreement at least five working days before such activity, but in no event less than 24 hours before such activity. Upon DEQ's verbal request, Dansons Pellet Company, LLC will make every reasonable effort to provide a split or duplicate sample to DEQ or allow DEQ and/or its authorized representative to take a split or duplicate of any sample taken by Dansons Pellet Company, LLC while performing work under this Agreement. DEQ will provide Dansons Pellet Company, LLC with copies of all analytical data from such samples as soon as practicable.
- (2) In the event DEQ conducts any sampling or analysis in connection with this Agreement, DEQ will, except in an emergency, make every reasonable effort to notify Dansons Pellet Company, LLC of any excavation, drilling, sampling, or other fieldwork at least 72 hours before such activity. Upon Dansons Pellet Company, LLC's verbal request, DEQ will make every reasonable effort to provide a split or duplicate sample to Dansons Pellet Company, LLC or allow Dansons Pellet Company, LLC to take a split or duplicate of any sample taken by DEQ, and will provide Dansons Pellet Company, LLC with copies of all analytical data for such samples. Dansons Pellet Company, LLC will provide DEQ with copies of all analytical data from such samples as soon as practicable.

G. Quality Assurance

- (1) Dansons Pellet Company, LLC will conduct all sampling, sample transport, and sample analysis relating to contaminated media in accordance with the Quality Assurance/ Quality Control (QA/QC) provisions approved by DEQ as part of the work plan. All plans prepared and work conducted as part of this Agreement will be consistent with DEQ's *Environmental Cleanup Quality Assurance Policy* (DEQ10-LQ-0063-QAG). Dansons Pellet Company, LLC will make every reasonable effort to ensure that each laboratory used by Dansons Pellet Company, LLC for analysis performs such analyses in accordance with such provisions.
- (2) If DEQ conducts sampling or analysis in connection with this Agreement, DEQ will conduct sampling, sample transport, and sample analysis in accordance with the QA/QC provisions of the approved work plan. Upon written request, DEQ will provide Dansons Pellet Company, LLC with copies of DEQ's records regarding such sampling, transport, and analysis.

H. Progress Reports

On an annual basis Dansons Pellet Company, LLC will submit to DEQ one copy of a progress report describing its activities at the Property under Section 3.A. of this Agreement.

I. Reimbursement of DEQ Costs

- (1) DEQ will submit to Dansons Pellet Company, LLC a monthly invoice of costs by DEQ on or after August 10, 2020 in connection with any activities related to the oversight and periodic review of Dansons Pellet Company, LLC's implementation of this Agreement. Each invoice will include a summary of costs billed to date.
- (2) DEQ oversight costs payable by Dansons Pellet Company, LLC include direct and indirect costs. Direct costs include site-specific expenses, DEQ contractor costs, and DEQ legal costs actually and reasonably incurred by DEQ under ORS465.200 *et seq.* DEQ's direct cost summary will include a Land Quality share direct labor summary showing the persons charging time, the number of hours, and the nature of work performed. Indirect costs include those general management and support costs of DEQ and of the Land Quality share allocable to DEQ oversight of this Agreement and not charged as direct, site-specific costs. Indirect charges are based on actual

costs and applied as a percentage of direct personal services costs. DEQ will maintain work logs, payroll records, receipts, and other documents to document work performed and expenses incurred under this Agreement consistent with DEQ's records retention schedule and, upon request, will provide copies of such records to Dansons Pellet Company, LLC.

- (3) Within 30 days of receipt of DEQ's invoice, Dansons Pellet Company, LLC will pay the amount of costs billed by check payable to the "State of Oregon, Hazardous Substance Remedial Action Fund," or invoke dispute resolution under Subsection 4.K. After 30 days, any unpaid amounts that are not the subject of pending dispute resolution, or that have been determined owing after dispute resolution, will become a liquidated debt collectible under ORS 293.250 or other applicable law.
- (4) Dansons Pellet Company, LLC will pay simple interest of 9% per annum on the unpaid balance of any DEQ oversight costs, which interest will begin to accrue at the end of the 30-day payment period, unless dispute resolution has been invoked. Interest on any amount disputed under Subsection 4.K. will begin to accrue 30 days from final resolution of any such dispute.

J. Force Majeure

- (1) If any event occurs that is beyond Dansons Pellet Company, LLC's reasonable control and that causes or might cause a delay or deviation in performance of the requirements of this Agreement despite Dansons Pellet Company, LLC's reasonable efforts ("Force Majeure"), Dansons Pellet Company, LLC will promptly, upon learning of the event, notify DEQ's Project Manager verbally of the cause of the delay or deviation, its anticipated duration, the measures that have been or will be taken to prevent or minimize the delay or deviation, and the timetable by which Dansons Pellet Company, LLC proposes to carry out such measures. Dansons Pellet Company, LLC will confirm in writing this information within five working days of the verbal notification. Failure to comply with these notice requirements precludes Dansons Pellet Company, LLC from asserting Force Majeure for the event and for any additional delay caused by the event.
- (2) If Dansons Pellet Company, LLC demonstrates to DEQ's satisfaction that the delay or deviation has been or will be caused by Force Majeure, DEQ will extend times for

performance of related activities under this Agreement as appropriate. Circumstances or events constituting Force Majeure might include but not be limited to acts of God, unforeseen strikes or work stoppages, unanticipated site conditions, fire, explosion, riot, sabotage, war, and delays in receiving a governmental approval or permit. Normal inclement weather, increased cost of performance or changed business or economic circumstances may not be considered Force Majeure.

K. Dispute Resolution

- (1) Except as provided in Paragraph 4.K.(4), if Dansons Pellet Company, LLC disagrees with DEQ regarding any matter relating to this Agreement, Dansons Pellet Company, LLC will promptly notify DEQ in writing of its objection. DEQ and Dansons Pellet Company, LLC then will make a good-faith effort to resolve the disagreement within 14 days of Dansons Pellet Company, LLC's written objection. At the end of the 14-day period, DEQ will provide Dansons Pellet Company, LLC with a written statement of its position from DEQ's [Eastern/Northwest/Western] Region Cleanup Program Manager. If Dansons Pellet Company, LLC still disagrees with DEQ's position, then Dansons Pellet Company, LLC, within 14 days of receipt of DEQ's position from the Region Cleanup Manager, will provide Dansons Pellet Company, LLC's position and rationale in writing to DEQ's Northwest Region Administrator. The Region Administrator may discuss the disputed matter with Dansons Pellet Company, LLC and, in any event, will provide Dansons Pellet Company, LLC with DEQ's final position in writing as soon as practicable after receipt of Dansons Pellet Company, LLC's written position.
- (2) If Dansons Pellet Company, LLC refuses or fails to follow DEQ's final position pursuant to Paragraph 4.K.(1), and DEQ seeks to enforce its final position, the Parties, subject to Section 6, are entitled to such rights, remedies, and defenses as are provided by applicable law.
- (3) During the pendency of any dispute resolution under this subsection, the time for completion of work or obligations affected by such dispute is extended for a period of time not to exceed the actual time taken to resolve the dispute. Elements of work or obligations not affected by the dispute must be completed in accordance with the applicable schedule.



- (4) DEQ approval or modification of the work plan required under the SOW is not subject to dispute resolution under this Subsection, but is otherwise subject to the provisions of Subsection 4.C.

L. Effect of Agreement

- (1) In the event of any failure of the Dansons Pellet Company, LLC to comply with any obligation of this Agreement, DEQ may enforce this Agreement under ORS 465.260 and 465.900 or exercise any authority or pursue any claim or cause of action that DEQ might have. Dansons Pellet Company, LLC reserves any defenses or counterclaims it might have in the event of such action by DEQ.
- (2) Except as provided in Section 6, DEQ and Dansons Pellet Company, LLC reserve any claim or cause of action they respectively have as to any person or entity not a signatory to this Agreement.
- (3) Dansons Pellet Company, LLC does not admit any liability or violation of law by virtue of entering this Agreement.
- (4) DEQ reserves its authority to perform remedial measures regarding a release of hazardous substances at or from the Property.
- (5) This Agreement is effective upon the latter signature of a party ("Effective Date"), provided this Agreement is void and of no effect if Dansons Pellet Company, LLC does not complete acquisition of ownership or operation of the Property by October 31, 2020.
- (6) DEQ and Dansons Pellet Company, LLC intend for this Agreement to be construed as an administrative settlement by which Dansons Pellet Company, LLC has resolved its liability to the State of Oregon, within the meaning of Section 113(f)(2) of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9613(f)(2), regarding matters addressed by this Agreement, and for Dansons Pellet Company, LLC not to be liable for claims for contribution regarding matters addressed to the extent provided by Section 113(f)(2) of CERCLA, 42 U.S.C. §§ 9613(f)(2).

M. Indemnification

Dansons Pellet Company, LLC will indemnify and hold harmless the State of Oregon and its commissions, agencies, officers, employees, contractors, and agents from and against

any and all claims arising from acts or omissions related to this Agreement of Dansons Pellet Company, LLC or its officers, employees, contractors, agents, receivers, trustees, or assigns. DEQ may not be considered a party to any contract made by Dansons Pellet Company, LLC or its agents in carrying out activities under this Agreement.

N. Public Notice

Upon execution of this Agreement, DEQ will provide public notice of this Agreement in a local newspaper of general circulation, describing the measures to be undertaken under this Agreement. Copies of the Agreement will be made available to the public. DEQ will provide Dansons Pellet Company, LLC a draft of such notice and consider any comments by Dansons Pellet Company, LLC on the draft notice before publication. Dansons Pellet Company, LLC is responsible for the publication costs, if any, of such notice per Subsection 4.I.

O. Parties Bound

This Agreement is binding on the signatories and their respective commissions, agencies, officers, assigns, successors, employees, contractors, agents, and authorized representatives. The undersigned representative of each party certifies that he or she is fully authorized to execute and bind such party to this Agreement.

P. Modification

This Agreement may be modified only by written agreement of DEQ and Dansons Pellet Company, LLC.

Q. Recording

Within 30 days of Dansons Pellet Company, LLC's acquisition of property, Dansons Pellet Company, LLC will submit a copy or original of this Agreement (whichever is required by the county) to be recorded in the real property records of Clackamas County, State of Oregon. Dansons Pellet Company, LLC must provide DEQ with written evidence of such recording within seven days of recording.

R. Transfer of Interest

Dansons Pellet Company, LLC will provide written notice to the DEQ project manager within 10 days after the transfer of any interest in the Property, or any portion of the Property, from Dansons Pellet Company, LLC to another person or entity.

5. RELEASE FROM LIABILITY

- A. Pursuant to ORS 465.327, and subject to Subsection 5.B. and the satisfactory performance by Dansons Pellet Company, LLC of its obligations under this Agreement, Dansons Pellet Company, LLC is not liable to the State of Oregon under ORS 465.200 to 465.545 and 465.900, 466.640, or 468B.310 regarding Existing Hazardous Substance Releases. Dansons Pellet Company, LLC bears the burden of proving by a preponderance of the evidence that a hazardous substance release (for all hazardous substances, hazardous materials, and oils described in Subsection 2.B.) existed as of the date of Dansons Pellet Company, LLC's acquisition of ownership or operation of the Property.
- B. The release from liability under Subsection 5.A does not affect liability of Dansons Pellet Company, LLC for claims arising from:
- (1) A release of hazardous substances, spill or release of oil or hazardous material, or entry of oil into the waters of the state at or from the Property on or after the date of Dansons Pellet Company, LLC's acquisition of ownership or operation of the Property;
  - (2) Contribution to or exacerbation, on or after the date of Dansons Pellet Company, LLC's acquisition of ownership or operation of the Property, of a release of hazardous substance, spill or release of oil or hazardous material, or entry of oil into the waters of the state at or from the Property;
  - (3) Interference or failure to cooperate, on or after the date of Dansons Pellet Company, LLC's acquisition of ownership or operation of the Property, with DEQ or other persons conducting remedial measures under DEQ's oversight at the Property;
  - (4) Failure to exercise due care or take reasonable precautions, on or after the date of Dansons Pellet Company, LLC's acquisition of ownership or operation of the Property, with respect to any hazardous substance at the Property;
  - (5) Disposal or management of hazardous substances or solid waste removed from the Property by or on behalf of Dansons Pellet Company, LLC;
  - (6) Criminal liability;
  - (7) Violation of federal, state, or local law on or after the date of Dansons Pellet Company, LLC's acquisition of ownership or operation of the Property;

- (8) Any matters as to which the State of Oregon is owed indemnification under Subsection 4.M.; and
- (9) Claims based on any failure by Dansons Pellet Company, LLC to meet any requirements of this Agreement.

6. WAIVERS

- A. Dansons Pellet Company, LLC waives any claim or cause of action it might have against the State of Oregon regarding Existing Hazardous Substance Releases; provided, Dansons Pellet Company, LLC reserves all rights concerning the obligations of DEQ under this Agreement.
- B. Dansons Pellet Company, LLC waives any right it might have under ORS 465.260(7) to seek reimbursement from the Hazardous Substance Remedial Action Fund or the Orphan Site Account for cost incurred under this Agreement or related to the Property.

7. BENEFITS AND BURDENS RUN WITH THE LAND

The benefits and burdens of this Agreement run with the land; however, the release from liability set forth in Section 5 limits or otherwise affects the liability only of persons who: (1) are not potentially liable under ORS 465.255, 466.640, or 468B.310 for a release of hazardous substances at the Property as of the date of that person's acquisition of ownership or operation of the Property; and (2) assume and are bound by the terms of this Agreement applicable to the Property as of the date of their acquisition of ownership or operation of the Property.

8. COMPLETION OF WORK

Upon satisfactory completion of measures to be undertaken under Section 3, DEQ will issue a Certification of Completion determination for the Property, conditioned as appropriate to reflect Dansons Pellet Company, LLC's remaining obligations under this Agreement or to ensure long-term effectiveness of the remedy.

9. SIGNATURES

\_\_\_\_\_ Date: \_\_\_\_\_  
Jordan Thiessen, Chief Operations Officer,  
on behalf of Dansons Pellet Company, LLC

STATE OF ARIZONA        )  
  ) ss.  
County of \_\_\_\_\_)

The foregoing instrument is acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2020, by Jordan Thiessen of Dansons Pellet Company, LLC, on its behalf.

\_\_\_\_\_  
NOTARY PUBLIC FOR OREGON  
My commission expires: \_\_\_\_\_

Lydia Emer  
Lydia Emer, Administrator  
Land Quality Division  
Oregon Department of Environmental Quality

Date: 8.28.2020

STATE OF OREGON            )  
  ) ss.  
County of Multnomah)

The foregoing instrument is acknowledged before me this 28 day of August, 2020, by Lydia Emer as Land Quality Division Administrator of the Oregon Department of Environmental Quality, on its behalf.

Dawn Kristen Gomez  
NOTARY PUBLIC FOR OREGON

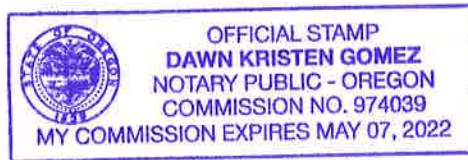


Exhibit A – Legal Description of Property

Real property in the County of Clackamas, State of Oregon, described as follows:

Parcel I:

A tract of land Situated in the Northeast one-quarter of Section 17, Township 5 South, Range 2 East, of the Willamette Meridian, in the County of Clackamas and State of Oregon, being a portion of vacated Blocks 15, 16 and 19, METZLER AND HART'S ADDITION TO MOLALLA, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, of the Willamette Meridian, marked with a bronze disk in concrete; thence South  $18^{\circ}17'55''$  West 1160.07 feet to the Southeast corner of the land described as Exhibit B in Fee No. 2018-015788 and the true point of beginning; thence along the Westerly line of Molalla Avenue, having a right of way width of 60.00 feet, South  $18^{\circ}17'55''$  West 1178.21 feet to the point of intersection of the Westerly line of Molalla Avenue with the Northerly line of S. Molalla Forest Road, having a right of way width of 60.00 feet; thence along said Northerly line of S. Molalla Forest Road North  $41^{\circ}38'30''$  West 573.25 feet; thence continuing along the Northerly line of S. Molalla Forest Road, along a curve to the left with a radius of 572.96 feet 255.25 feet (chord bears North  $54^{\circ}24'16''$  West 253.15 feet); thence North  $17^{\circ}48'10''$  East 556.47 feet to a point on the South boundary of Fee No. 2018-015788; thence North  $89^{\circ}02'56''$  East along the South boundary of Fee No. 2018-015788, 786.64 feet to a point on the Westerly line of Molalla Avenue and the true point of beginning.

EXCEPTING THEREFROM the following:

A tract of land Situated in the Northeast one-quarter of Section 17, Township 5 South, Range 2 East, of the Willamette Meridian, in the County of Clackamas and State of Oregon, being a portion of vacated Blocks 15, 16 and 19, METZLER AND HART'S ADDITION TO MOLALLA, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, of the Willamette Meridian, marked with a bronze disk in concrete; thence South  $18^{\circ}17'55''$  West 1160.07 feet to the Southeast corner of the land described as Exhibit B in Fee No. 2018-015788 and the true point of beginning; thence South  $18^{\circ}17'55''$  West 458.22 feet to a point marked with a 5/8" iron rod marked with a yellow plastic cap marked "ACS&P 668-3151"; thence North  $71^{\circ}58'15''$  West 367.00 feet to a point marked with a 5/8" iron rod marked with a yellow plastic cap marked "ACS&P 668-3151"; thence North  $18^{\circ}17'55''$  East parallel with the centerline of Molalla Avenue 331.78 feet to a point on the South boundary of Fee No. 2018-015788; thence along the South boundary of Fee No. 2018-015788 North  $89^{\circ}02'56''$  East, 388.73 feet to a point on the Westerly line of Molalla Avenue and the true point of beginning.

Parcel II:

A tract of land located in the Northeast quarter of Section 17, Township 5 South, Range 2 East, Willamette Meridian, in the County of Clackamas, State of Oregon, being a portion of vacated P.E. & E. Railway, METZLER AND HART'S ADDITION TO MOLALLA, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, Willamette Meridian, marked by a bronze disk in concrete; thence South  $18^{\circ} 17' 55''$  West 2338.28 feet to a one inch iron pipe at the intersection of the Northerly right of way line of S. Molalla Forest Road (a 60 foot right of way, also being former Eastern & Western Logging Co. Railway right of way) with the Westerly right of way of S. Molalla Avenue (a 60 foot right of way); thence along the Northerly line of S. Molalla Forest Road North  $41^{\circ} 38' 30''$  West 573.25 feet; thence continuing along the Northerly line of S. Molalla Forest Road, along a curve to the left with a radius of 572.96 feet 255.25 feet (long chord bears North  $54^{\circ} 24' 16''$  West 253.15 feet) to a point of intersection with the East line of former P.E. & E. Railway right of way (a former 80 foot right of way) and True Point Of Beginning; thence continuing along a curve to the left with a radius of 572.96 feet 46.07 feet (long chord bears North  $69^{\circ} 28' 13''$  West 46.05 feet) to a point of tangency; thence North  $71^{\circ} 46' 25''$  West 34.00 feet to a point of intersection with the West line of former P.E. & E. Railway right of way; thence North  $17^{\circ} 48' 10''$  East 526.86 feet along the West line of said named right of way line to a point of intersection with the Molalla city limits line; thence North  $89^{\circ} 02' 56''$  East 84.48 feet along said city limits line to the East line of former P.E. & E. Railway right of way; thence South  $17^{\circ} 48' 10''$  West 556.47 feet along the East line of said named right of way line to a point on the North line of S. Molalla Forest Road and the True Point of Beginning.

Parcel III:

A tract of land located in the Northeast quarter of Section 17, Township 5 South, Range 2 East, Willamette Meridian, in the County of Clackamas, State of Oregon, being a portion of vacated Blocks 17, 18, and Down St., METZLER AND HART'S ADDITION TO MOLALLA, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, Willamette Meridian, marked by a bronze disk in concrete; thence South  $18^{\circ} 17' 55''$  West 2338.28 feet to a one inch iron pipe at the intersection of the Northerly right of way line of S. Molalla Forest Road (a 60 foot right of way, also being former Eastern & Western Logging Co. Railway right of way) with the Westerly right of way of S. Molalla Avenue (a 60 foot right of way); thence along the Northerly line of S. Molalla Forest Road North  $41^{\circ} 38' 30''$  West 573.25 feet; thence continuing along the Northerly line of S. Molalla Forest Road, along a curve to the left with a radius of 572.96 feet 255.25 feet (long chord bears North  $54^{\circ} 24' 16''$  West 253.15 feet) to a point of intersection with the East line of former P.E. & E. Railway right of way; thence continuing along a curve to the left with a radius of 572.96 feet 46.07 feet (long chord bears North  $69^{\circ} 28' 13''$  West 46.05 feet) to a point of tangency; thence North  $71^{\circ} 46' 25''$  West 34.00 feet to a point of intersection with the West line of former P.E. & E. Railway right of way and True Point Of Beginning; thence North  $17^{\circ} 48' 10''$  East 526.86 feet along the West line of said named right of way line to a point of intersection with the Molalla city limits line; thence South  $89^{\circ} 02' 56''$  West 238.84 feet along said city limits line to a point of intersection with the Westerly line of vacated Block 18, METZLER AND HART'S ADDITION TO MOLALLA; thence South  $17^{\circ} 38' 13''$  West along the Westerly line thereof, also being the Westerly lines of vacated Down St. and vacated Block 17, METZLER AND HART'S ADDITION TO MOLALLA, 448.42 feet to the Northerly right of way line of S. Molalla Forest Road; thence South  $71^{\circ} 46' 25''$  East 224.87 feet along said right of way line to the True Point of Beginning.



Parcel IV:

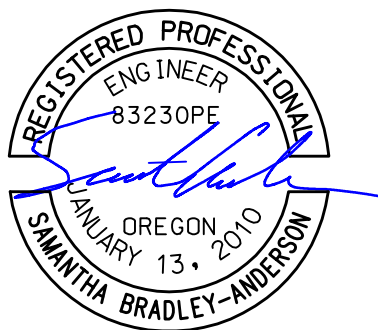
A tract of land located in the Northeast quarter of Section 17, Township 5 South, Range 2 East, Willamette Meridian, in the County of Clackamas, State of Oregon, more particularly described as follows:

Commencing at the Northeast corner of Section 17, Township 5 South, Range 2 East, Willamette Meridian, marked by a bronze disk in concrete; thence South  $18^{\circ} 17' 55''$  West 2338.28 feet to a one inch iron pipe at the intersection of the Northerly right of way line of S. Molalla Forest Road (a 60 foot right of way, also being former Eastern & Western Logging Co. Railway right of way) with the Westerly right of way of S. Molalla Avenue (a 60 foot right of way); thence along the Northerly line of S. Molalla Forest Road North  $41^{\circ} 38' 30''$  West 573.25 feet; thence continuing along the Northerly line of S. Molalla Forest Road, along a curve to the left with a radius of 572.96 feet 255.25 feet (long chord bears North  $54^{\circ} 24' 16''$  West 253.15 feet) to a point of intersection with the East line of former P.E. & E. Railway right of way; thence continuing along a curve to the left with a radius of 572.96 feet 46.07 feet (long chord bears North  $69^{\circ} 28' 13''$  West 46.05 feet) to a point of tangency; thence North  $71^{\circ} 46' 25''$  West 34.00 feet to a point of intersection with the West line of former P.E. & E. Railway right of way; thence continuing along the Northerly line of S. Molalla Forest Road North  $71^{\circ} 46' 25''$  West 224.87 feet to the Westerly line of vacated Block 17, METZLER AND HART'S ADDITION TO MOLALLA and True Point Of Beginning; thence continuing along the Northerly line of S. Molalla Forest Road North  $71^{\circ} 46' 25''$  West 191.11 feet to the East line of a tract of land sold to Andy W Falk, et ux, by contract recorded January 9, 2002, Fee No. 2002-002140, Clackamas County Deed Records; thence North  $18^{\circ} 30' 14''$  East along the said East line, a distance of 384.18 feet to a point of intersection with the Molalla city limits line; thence North  $89^{\circ} 02' 56''$  East 195.48 feet along said North line to a point of intersection with the Westerly line of vacated Block 18, METZLER AND HART'S ADDITION TO MOLALLA; thence South  $17^{\circ} 38' 13''$  West along the Westerly line thereof, also being the Westerly lines of vacated Down St. and vacated Block 17, METZLER AND HART'S ADDITION TO MOLALLA, 448.42 feet to the Northerly right of way line of S. Molalla Forest Road and the True Point of Beginning.

September 2021

# DANSONS

## Molalla Drainage Report



RENEWS:  
12-31-21

**PROJECT NUMBER:**  
171890  
**PROJECT CONTACT:**  
Stuart Toraason, PE  
**EMAIL:**  
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*Drainage Report  
Dansons Molalla*

**PREPARED FOR (APPLICANT):** DANSONS  
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**PREPARED BY:** POWER ENGINEERS, INC  
STUART TORAASON

REVISION HISTORY		
DATE	REVISED BY	REVISION

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## **ACRONYMS AND ABBREVIATIONS**

DEQ	Department of Environmental Quality
LID	Low Impact Development
NRCS	Natural Resources Conservation Service
ODOT	Oregon Department of Transportation
USDA	United States Department of Agriculture
WQV	Water Quality Volume



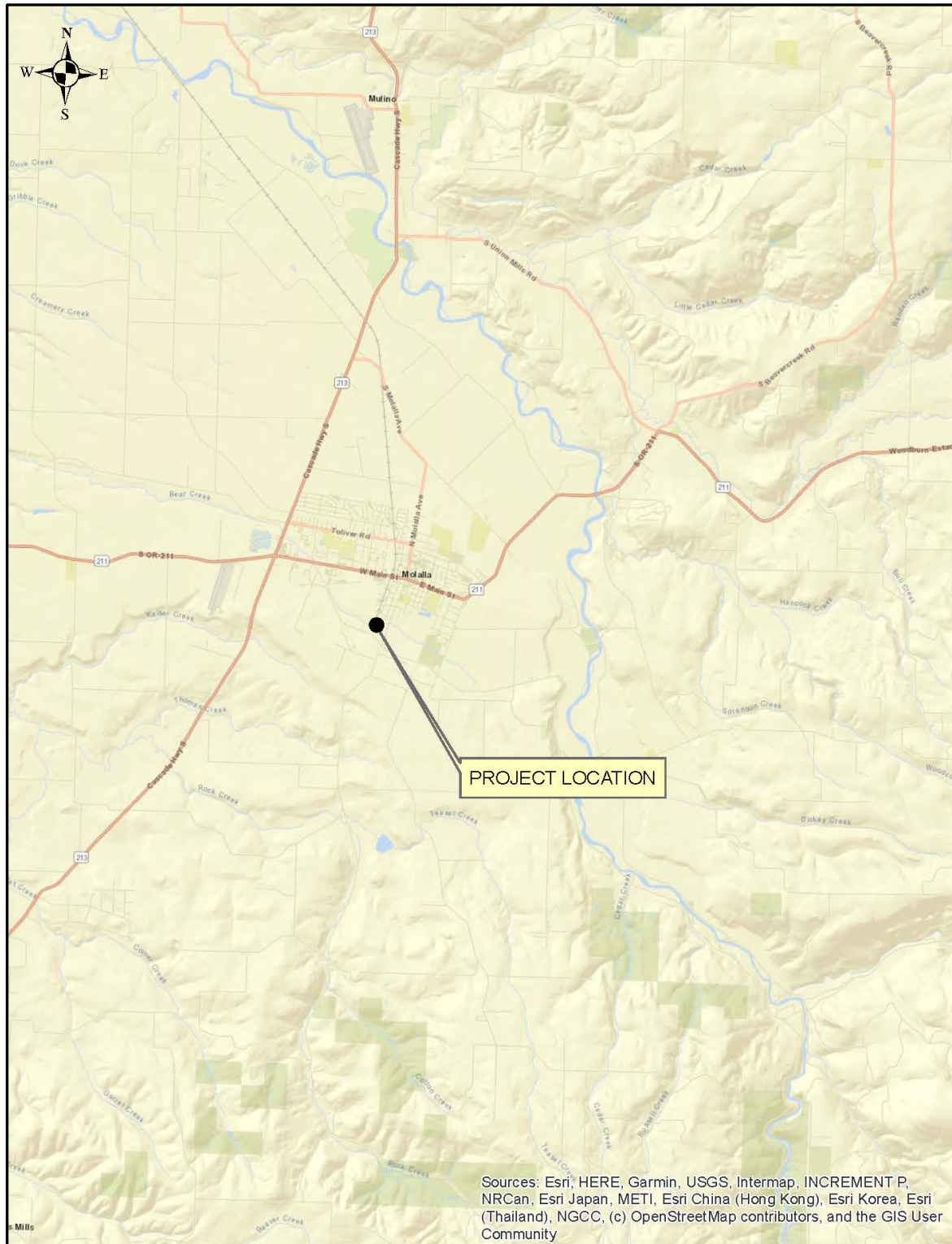
## **1.0 PROJECT OVERVIEW AND DESCRIPTION**

The existing property has been abandoned for over 10-years. The property will be refurbished to facilitate new wood fiber processing by Dansons. The existing asphalt gravel pavement will be resurfaced. On the east side of the property, a new prefabricated building will be constructed. New water and sewer utilities will be brought into the site from the north. The site drains to Bear Creek which runs from east to west through the middle of the site. Two detention ponds and a storage pipe are proposed to manage site runoff. The north part of the site will be captured in new drainage inlets and conveyed across Bear Creek to Pond 3 and Pond 1. Pond 1 will discharge to an existing culvert that flows to Bear Creek. The south part of the site will drain to Pond 2 located on the south side of the creek before discharging to Bear Creek.

## **2.0 PROJECT INFORMATION**

- Project Name: Dansons Molalla
- Project Location: West Seventh Street, Molalla, OR 97038
- Location Coordinates (Degrees Lat/Long): 45.1379306°, -122.5824639°
- Site Acreage: Approximately 16
- Jurisdictional Entity: Molalla, OR
- Zoning: Rural Industrial

FIGURE 1 VICINITY MAP



---

## 3.0 PERMITTING REQUIREMENTS

The project requires a City of Molalla building permit to construct or disturb more than 5,000 square feet of impervious cover. The project is subject to compliance with Section 3 of the 2020 Molalla Standard Specifications for Public Works Construction and the Department of Environmental Quality (DEQ) 1200-C Construction Stormwater General Permit and 1200-Z Industrial Stormwater Permit.

### 3.1 Engineering

The project is located within the city limits of Molalla and is subject to section 3 of the Molalla stormwater standards developed by City Public Works to protect the beneficial uses of waters in the Willamette River Basin and inside the City limits.

#### 3.1.1 General Design Requirements

Onsite stormwater management is required to control post-developed runoff to rates and volumes that mimic pre-developed conditions. The use of Low Impact Development (LID) principals are also required to manage hydrologic conditions over the full range of rainfall intensities. LID principals included in this project are:

- Integration of stormwater management into the site planning activities
- Minimizing site disturbances during construction by phasing
- The implementation of simple low-tech, and low-cost methods for managing stormwater

### 3.2 Hydraulic Analysis

#### 3.2.1 Hydraulic Design

##### *Detention/Retention*

Stormwater management for the project meeting both water quality and water quantity control requirements will consist of two proposed surface detention basins and one subsurface detention pipe.

- Pond 1 includes permanent pool retention, water quality volume storage, and detention for quantity control.
- Pond 2 to the south manages runoff from the southeast side of the creek only. Pond 2 includes water quality volume and quantity control as extended dry detention.
- Pond 3 is a 36" underground detention storage pipe that connects the conveyance system to Pond 1. Pond 3 is directly connected to Pond 1 but is modeled as a separate storage feature with a hydraulic connection to Pond 1.

Dynamic flow routing through the basins was completed using AutoDesk Storm and Sanitary Analysis software.

##### *Peak Runoff Rates*

The ponds are design to control peak runoff rates to predevelopment rates for the 2-, 10-, and 25-year rain events.

***Pond Overflow***

Primary pond overflow will be through the top of the control structure. The ponds are sized to contain the 100-year storm event below the top of the control structure.

***Emergency Spillway***

Secondary overflow will be over the emergency spillway. The emergency spillway for each pond will be located in existing soils where feasible and armored with erosion protection.

**3.2.2 Design Criteria**

The proposed Ponds 1 and 2 are designed as combined water quality/quantity facilities with 4H:1V side slopes. The ponds will be over excavated to create 20% of the pond volume below the outfall for sediment deposition. Ponds are designed for a 1-foot minimum freeboard in the 25-year event and for a maximum water depth of 4-feet in the 100-year event. Pond 3 is designed for quantity control retention only.

**3.2.3 System Design Criteria**

The project includes proposed drainage capture and conveyance infrastructure to carry the surface runoff and roof runoff from the site to the proposed basins. The existing system on site will be removed or abandoned in place.

**3.2.4 Review of Downstream System**

The site drains to Bear Creek. Bear Creek is a natural waterway and is not known to have capacity issues or flooding issues. The creek was not analyzed for capacity or quality.

**3.2.5 Conveyance System Hydraulic Standards**

The proposed conveyance system is designed to contain the peak flows from a 25-year storm with a minimum 1-foot of freeboard inside all proposed structures. 100-year flood conveyance is via overland surface flow to the creek via existing flow patterns and does not impact the building structures.

**3.2.6 Catch Basin System Standards**

New catch basins are designed to be unsumped flow-through catch basins with sumped manholes downstream, between the catch basins and the pond. No more than three unsumped catch basins will be constructed above a sumped manhole.

**3.3 Hydrology and Hydraulics****3.3.1 Unit Hydrograph Method**

Hydrograph analysis was completed for the drainage planning and design calculations using Soil Conservation Service (SCS) and National Resource Conservation Service (NRCS) methodology. Total rainfall depths were analyzed for a series of design storms to develop peak runoff rates and volumes. The

runoff was quantified assuming a 24-hour duration and type 1A rainfall distribution. Rainfall totals used are in Table 1.

**TABLE 1 PRECIPITATION**

RECURRENCE INTERVAL (YEARS)	TOTAL PRECIPITATION DEPTH (IN)
2	2.50
10	3.45
25	3.90
100	4.50

### 3.3.2 NRCS Curve Number

The SCS Runoff Curve Number method from USDA Technical Release 55 (TR-55) was used to estimate runoff rates and volumes. Time of concentration was calculated using TR-55 methodology and assuming a maximum sheet flow length of 300-feet. Curve numbers can be found in Table 2.

**TABLE 2 CURVE NUMBERS**

SOIL GROUP	LAND COVER	CN
C	Meadow, non-grazed	71
D	Developed, grass cover >50%, <75%	79
	Meadow, non-grazed	78
	Paved parking lots, roofs, and driveways	98

### 3.3.3 Water Quality Volume and Flow

The proposed ponds are sized to treat and release the water quality storm events while allowing detention of larger events above the water quality volume elevation. The Water Quality Volume (WQV) was calculated for the project area as being equal to 0.36 inches of rainfall over 100% of the impervious areas draining to the ponds. Table 3 summarizes the WQV requirements and associated WQV water surface elevation within Ponds 1 and 2. Pond 3 does not serve a water quality control function.

**TABLE 3 WATER QUALITY SUMMARY**

<b>POND 1</b>		
<b>CONTRIBUTING DRAINAGE AREA</b>	<b>AREA (SF)</b>	<b>WQV (CUFT)</b>
SUB 01	50,965.20	1,528.96
SUB 03	75,358.80	2,260.76
SUB 04	118,483.20	3,554.50
SUB 05	75,358.80	2,260.76
SUB 09	111,513.60	3,345.41
<b>POND 1 REQUIRED WQV (CF)</b>		<b>12,950.39</b>
<b>WQV WATER SURFACE ELEV. (FT)</b>		<b>368.28</b>

<b>POND 2</b>		
<b>CONTRIBUTING DRAINAGE AREA</b>	<b>AREA (SF)</b>	<b>WQV (CUFT)</b>
SUB 02	50,965.20	1,528.96
<b>POND 1 REQUIRED WQV (CF)</b>		<b>1,528.96</b>
<b>WQV WATER SURFACE ELEV. (FT)</b>		<b>375.67</b>

### 3.4 Water Quantity Facility Design

When routing the ponds for the detention and water quantity requirements. It has been assumed that the WQV is retained in the basin such that the detention routing occurs assuming standing water in the basins up to the WQV water surface elevation. The facility routing results can be found in Appendix D.

#### 3.4.1 Detention Facility

The ponds are designed to detain post developed runoff volumes and release them at or below predeveloped peak rates. Ponds 1 will require a minimal amount of fill embankment but will be primarily constructed by excavating native soils. Pond 2 will be constructed almost entirely in native soil. Both surface basins will be constructed at 4:1 side slopes. All disturbed areas will be seeded for the establishment of permanent vegetative cover in the basins, on the side slopes, and around the basin berms that can be mowed. The pond outlet controls will be constructed in accordance with Oregon Department of Transportation (ODOT) Standard Detail DET1330-Water Quality Outlet Structure. Pond 3 is a subsurface detention pipe with a direct connection to Pond 1. Pond 3 is hydraulically connected to Pond 1 such that the two provide a coupled storage capacity and have the same hydraulic grade line. Ponds 1 and 2 will include a 20% over excavation below the outlet elevation to allow for sediment deposition. Pond 3 is protected from sediment buildup but a sumped manhole immediately upstream.

#### 3.4.2 Detention Access Road Design

A 15-foot wide access drive will be constructed at both Pond 1 and 2. Pond 3 is a subsurface detention pipe that will be access at proposed manhole (MH) number 4 in the existing gravel drive. The access drives extend past the inflow structures to each pond outflow location. Roads will be constructed of 3-inches of Class C aggregate over 8-inches of  $\frac{3}{4}$ -inch or smaller aggregate over compacted subgrade.

### 3.5 Water Quality Facility Design

Water Quality facilities are located in both Pond 1 and 2 as extended dry storage. WQVs were established assuming all contributing drainage areas are impervious. Additional areas of impervious have been included to account for the possibility of future development on site. The WQV is detained below the detention routing for larger storms and above the low flow orifice.

## 4.0 EXISTING CONDITIONS

### 4.1 General Description

The site consists of a mix of developed industrial property, a protected stream, and areas of unimproved and unmaintained compacted dirt and gravel, and undeveloped woods. The site is divided by Bear Creek which runs from east to west through the middle of the site. There is a single creek crossing on site over an existing 72-inch culvert in Bear Creek. The existing creek culvert will not be disturbed.

The developed portion of the site contains existing drainage inlets. The inlets are plugged, and the existing conveyance system is not mapped. The existing rooftops are drained via gutter and downspouts which connect to the existing conveyance system underground. The exact discharge locations are not mapped except for a single outfall west of the creek culvert. The upstream reaches of the pipe were not discovered during field surveys. Existing capture structures and conveyance will be plugged and abandoned during construction.

The majority of the site drains to bear creek. Drainage area Sub-06 drains directly east to the public road bypassing existing and proposed capture and conveyance and proposed treatment on site. Disturbances in this area will be minimal.

### 4.2 Soils

The NRCS Web Soil Survey Custom Soil Resource Report for City, State indicates that soil types and Hydrologic Soil Groups (HSG) are as follows: (Replace with soil types at the site)

17	Clackamas silt loam, 0 to 3 percent slopes Ksat 0.2 to 0.57 in/hr, HSG C/D
29	Dayton silt loam, 0 to 3 percent slopes Ksat 0.00 to 0.06 in/hr, HSG D
W	Water

A Soil Boundary Map can be seen in Appendix A.

### 4.3 Runoff Coefficients

The existing drainage areas were modeled as ungrazed meadow to establish predeveloped and allowable flow rates. The predeveloped drainage areas are summarized in Table 4. The drainage area maps can be found in Appendix B.

**TABLE 4 EXISTING DRAINAGE AREAS**

DRAINAGE AREA	CURVE NUMBER	AREA (ACRES)	TIME OF CONCENTRATION (MIN.)
Sub-01	78.00	1.39	16.19
Sub-02	78.00	1.90	24.16
Sub-03	78.00	1.73	24.30
Sub-04	78.00	2.72	35.03
Sub-05	78.00	0.20	5.00
Sub-06	78.00	0.70	33.79
Sub-07	78.00	0.61	13.06
Sub-08	71.00	1.01	5.00
Sub-09	71.00	1.82	48.66

#### 4.4 Discharge Locations

The site has been analyzed for peak runoff rates and volumes at four separate Discharge Locations. The locations receive runoff from impervious areas and areas that will be disturbed on site.

- Out 01 discharges at the downstream end of the existing 72-inch creek culvert
- Out 02 discharges at the proposed Pond 2 outfall
- Out 03 discharges into the public right of way east of the site from drainage areas Sub-06 only
- Out 04 discharges at the Pond 1 outfall

The Discharge Locations are shown in the drainage area maps in the Appendix. The predeveloped discharge characteristics are summarized in Table 5. The discharge calculations can be found in Appendix D.

**TABLE 5 PRE-DEVELOPED DISCHARGE**

DISCHARGE LOCATION	2-YR (CFS)	10-YR (CFS)	25-YR (CFS)
Out 01	0.41	1.07	1.60
Out 02	0.16	0.45	0.69
Out 03	0.04	0.13	0.20
Out 04	0.09	0.23	0.35

## 5.0 PROPOSED DEVELOPMENT

### 5.1 General Description

The proposed development includes the installation of drainage and stormwater management infrastructure, installation of a prefabricated building, utility installation, and pavement resurfacing. The existing buildings will be renovated, and the rain leaders connected to the new stormwater conveyance system or discharged above grade on paved/stable surfaces. Roof water discharged above grade will follow existing drainage patterns and will travel via surface flow to the new catch basins or directly to Pond 2. With the exception of drainage area Sub 06 and a few small bypass areas, the site runoff, from within areas of disturbance and new or existing impervious, will be conveyed to the new treatment ponds.



## 5.2 Runoff Coefficients

The proposed drainage areas were modeled as a mix of impervious cover and developed areas with between 50% and 75% grass cover to establish the post developed flow rates and volumes. The post developed drainage areas are summarized in Table 5. The drainage area maps can be found in Appendix B.

**TABLE 6 PROPOSED DRAINAGE AREAS**

DRAINAGE AREA	CURVE NUMBER	AREA (ACRES)	TIME OF CONCENTRATION (MIN.)
Sub-01 <sup>1</sup>	98.00	1.17	16.19
Sub-01_Bypass	95.82	0.22	16.30
Sub-02 <sup>2</sup>	96.20	1.73	24.16
Sub-02_Bypass	89.00	0.20	5.00
Sub-03 <sup>1</sup>	98.00	1.73	24.30
Sub-04 <sup>1</sup>	98.00	2.72	34.54
Sub-05 <sup>1</sup>	98.00	0.20	5.00
Sub-06	98.00	0.66	33.55
Sub-07 <sup>1</sup>	89.00	0.61	21.26
Sub-08	79.00	1.01	5.00
Sub-09 <sup>1</sup>	84.55	1.82	48.86

1. To Pond 1

2. To Pond 2

## 5.3 Discharge Locations

The predeveloped discharge characteristics are summarized in Table 7.

**TABLE 7 POST-DEVELOPED DISCHARGE**

DISCHARGE LOCATION	2-YR (CFS)	10-YR (CFS)	25-YR (CFS)
Out 01	0.31	0.49	0.58
Out 02 <sup>1</sup>	0.16	0.35	0.46
Out 03 <sup>2</sup>	0.33	0.46	0.52
Out 04 <sup>3</sup>	0.02	0.03	0.03

1. From Pond 2

2. Unmitigated bypass from existing paved area that will not be disturbed

3. From Pond 1

## 5.4 Pond Routing Results

As seen in the Tables 5 and 7, the pond provides enough attenuation for the design storms. The post developed flows meet the City of Molalla criteria. Additional pond routing results are summarized in Table 8. The pond routing and discharge calculations can be found in Appendix D.

**TABLE 8 STORMWATER ROUTING RESULT**

POND	WQV (CUFT)	WQV WATER SURFACE ELEV. (FT)	25-YR WATER SURFACE ELEV. (FT)	100-YR WATER SURFACE ELV. (FT)
POND 1	12,950.39	368.28	369.82	370.15
POND 2	1,528.96	1,528.96	378.29	378.31

## 5.5 Onsite Conveyance Calculations

The onsite capture and conveyance infrastructure has been sized to contain the 25-year storm event within the pipes and structures with at least 1-foot of freeboard. The conveyance to Pond 1 flows beneath Bear Creek and will hold water as it is lower than the outfall. The conveyance is designed with a minimum 1-percent slope and a sumped collection manhole downstream to allow for the passage and removal of sediment. Standing water up to the pipe outfall was assumed for the hydraulic calculations.

The conveyance calculations are summarized in Table 9. The proposed conveyance drawing can be found in Appendix C. The conveyance calculations can be found in Appendix D.

**TABLE 9 CONVEYANCE CALCULATION RESULTS**

U.S. STRCTR.	D.S. STRCTR.	PIPE DIAM. (IN)	25-YR PEAK DESIGN FLOW (CFS)	PIPE CAPACITY (CFS)	FLOW DEPTH (FT)
CB3	MH4	24.000	4.68	6.11	1.31
CB7	Out-04	12.000	0.04	2.92	0.08
CB10	Out-02	10.00	0.26	1.32	0.25

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## **APPENDIX A SOIL REPORT**



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Clackamas County Area, Oregon**



# Soil Map

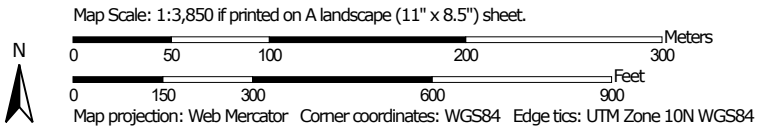
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.



### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)


**Soils**


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

**Water Features**

 Streams and Canals


**Transportation**

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon  
 Survey Area Data: Version 16, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 19, 2015—Sep 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
17	Clackamas silt loam	21.0	35.2%
29	Dayton silt loam	24.3	40.8%
79B	Sawtell silt loam, 0 to 8 percent slopes	7.6	12.8%
79C	Sawtell silt loam, 8 to 15 percent slopes	4.0	6.7%
W	Water	2.7	4.6%
<b>Totals for Area of Interest</b>		<b>59.6</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

## Custom Soil Resource Report

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Clackamas County Area, Oregon

### 17—Clackamas silt loam

#### Map Unit Setting

*National map unit symbol:* 223h  
*Elevation:* 150 to 700 feet  
*Mean annual precipitation:* 40 to 60 inches  
*Mean annual air temperature:* 52 to 54 degrees F  
*Frost-free period:* 165 to 210 days  
*Farmland classification:* Prime farmland if drained

#### Map Unit Composition

*Clackamas and similar soils:* 85 percent  
*Minor components:* 4 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Clackamas

##### Setting

*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed gravelly alluvium

##### Typical profile

*H1 - 0 to 7 inches:* silt loam  
*H2 - 7 to 36 inches:* silty clay loam  
*H3 - 36 to 60 inches:* extremely gravelly silty clay loam

##### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* About 6 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water capacity:* Moderate (about 6.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 2w  
*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* C/D  
*Forage suitability group:* Somewhat Poorly Drained (G002XY005OR)  
*Other vegetative classification:* Somewhat Poorly Drained (G002XY005OR)  
*Hydric soil rating:* No

#### Minor Components

##### Conser

*Percent of map unit:* 4 percent  
*Landform:* Terraces  
*Landform position (three-dimensional):* Tread

## Custom Soil Resource Report

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Poorly Drained (G002XY006OR)  
*Hydric soil rating:* Yes

### 29—Dayton silt loam

#### Map Unit Setting

*National map unit symbol:* 2242  
*Elevation:* 150 to 400 feet  
*Mean annual precipitation:* 40 to 50 inches  
*Mean annual air temperature:* 52 to 54 degrees F  
*Frost-free period:* 165 to 210 days  
*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Dayton, thick surface, and similar soils:* 90 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Dayton, Thick Surface

##### Setting

*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Stratified glaciolacustrine deposits

##### Typical profile

*H1 - 0 to 7 inches:* silt loam  
*H2 - 7 to 21 inches:* silty clay loam  
*H3 - 21 to 60 inches:* clay

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 12 to 24 inches to abrupt textural change  
*Drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water capacity:* Low (about 4.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 4w  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* D  
*Forage suitability group:* Poorly Drained (G002XY006OR)  
*Other vegetative classification:* Poorly Drained (G002XY006OR)

## Custom Soil Resource Report

*Hydric soil rating:* Yes

### Minor Components

#### Concord

*Percent of map unit:* 3 percent

*Landform:* Terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Poorly Drained (G002XY006OR)

*Hydric soil rating:* Yes

#### Huberly

*Percent of map unit:* 2 percent

*Landform:* Swales on terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Poorly Drained (G002XY006OR)

*Hydric soil rating:* Yes

## 79B—Sawtell silt loam, 0 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 2275

*Elevation:* 150 to 500 feet

*Mean annual precipitation:* 40 to 55 inches

*Mean annual air temperature:* 50 to 54 degrees F

*Frost-free period:* 165 to 210 days

*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Sawtell and similar soils:* 90 percent

*Minor components:* 4 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Sawtell

#### Setting

*Landform:* Terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Old gravelly alluvium

#### Typical profile

*H1 - 0 to 13 inches:* silt loam

*H2 - 13 to 20 inches:* gravelly clay loam

*H3 - 20 to 43 inches:* very gravelly clay loam

*H4 - 43 to 60 inches:* very gravelly clay

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 0 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* About 18 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water capacity:* Moderate (about 7.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* 2w  
*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* C  
*Forage suitability group:* Moderately Well Drained < 15% Slopes (G002XY004OR)  
*Other vegetative classification:* Moderately Well Drained < 15% Slopes (G002XY004OR)  
*Hydric soil rating:* No

### Minor Components

#### Dayton

*Percent of map unit:* 3 percent  
*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Poorly Drained (G002XY006OR)  
*Hydric soil rating:* Yes

#### Concord

*Percent of map unit:* 1 percent  
*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Poorly Drained (G002XY006OR)  
*Hydric soil rating:* Yes

## 79C—Sawtell silt loam, 8 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* 2276  
*Elevation:* 150 to 500 feet  
*Mean annual precipitation:* 40 to 55 inches  
*Mean annual air temperature:* 50 to 54 degrees F  
*Frost-free period:* 165 to 210 days  
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Sawtell and similar soils: 90 percent*

*Minor components: 2 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Sawtell**

**Setting**

*Landform: Terraces*

*Landform position (three-dimensional): Riser*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Old gravelly alluvium*

**Typical profile**

*H1 - 0 to 13 inches: silt loam*

*H2 - 13 to 20 inches: gravelly clay loam*

*H3 - 20 to 43 inches: very gravelly clay loam*

*H4 - 43 to 60 inches: very gravelly clay*

**Properties and qualities**

*Slope: 8 to 15 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Moderately well drained*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)*

*Depth to water table: About 18 to 36 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Available water capacity: Moderate (about 7.7 inches)*

**Interpretive groups**

*Land capability classification (irrigated): 3e*

*Land capability classification (nonirrigated): 3e*

*Hydrologic Soil Group: C*

*Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)*

*Other vegetative classification: Moderately Well Drained < 15% Slopes (G002XY004OR)*

*Hydric soil rating: No*

**Minor Components**

**Concord**

*Percent of map unit: 2 percent*

*Landform: Terraces*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Other vegetative classification: Poorly Drained (G002XY006OR)*

*Hydric soil rating: Yes*

## **W—Water**

### **Map Unit Composition**

*Water: 100 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Water**

#### **Interpretive groups**

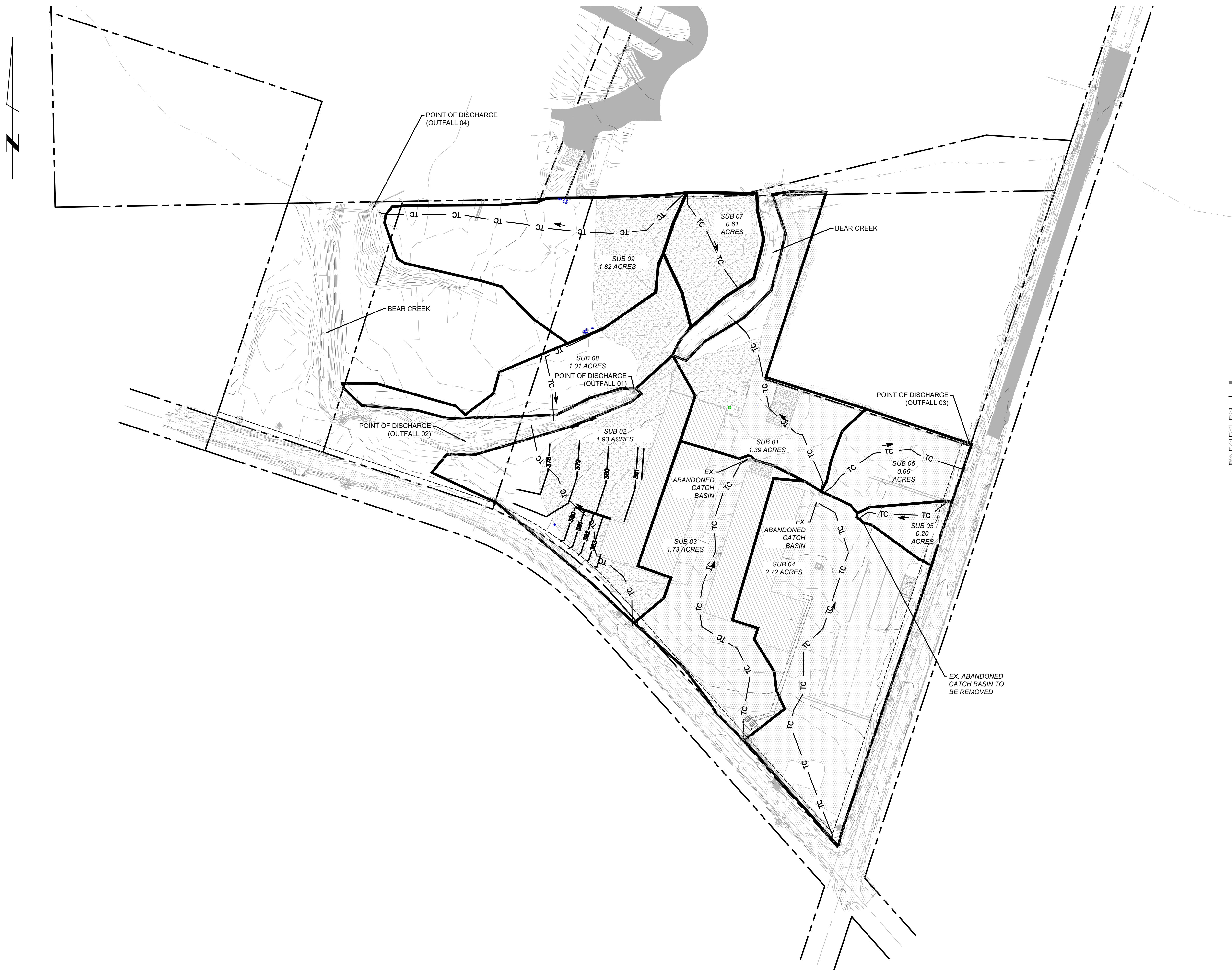
*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 8*

*Hydric soil rating: Yes*



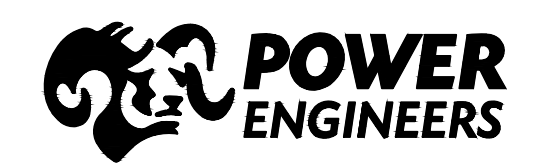
## **APPENDIX B DRAINAGE AREA MAPS**



**LEGEND:**

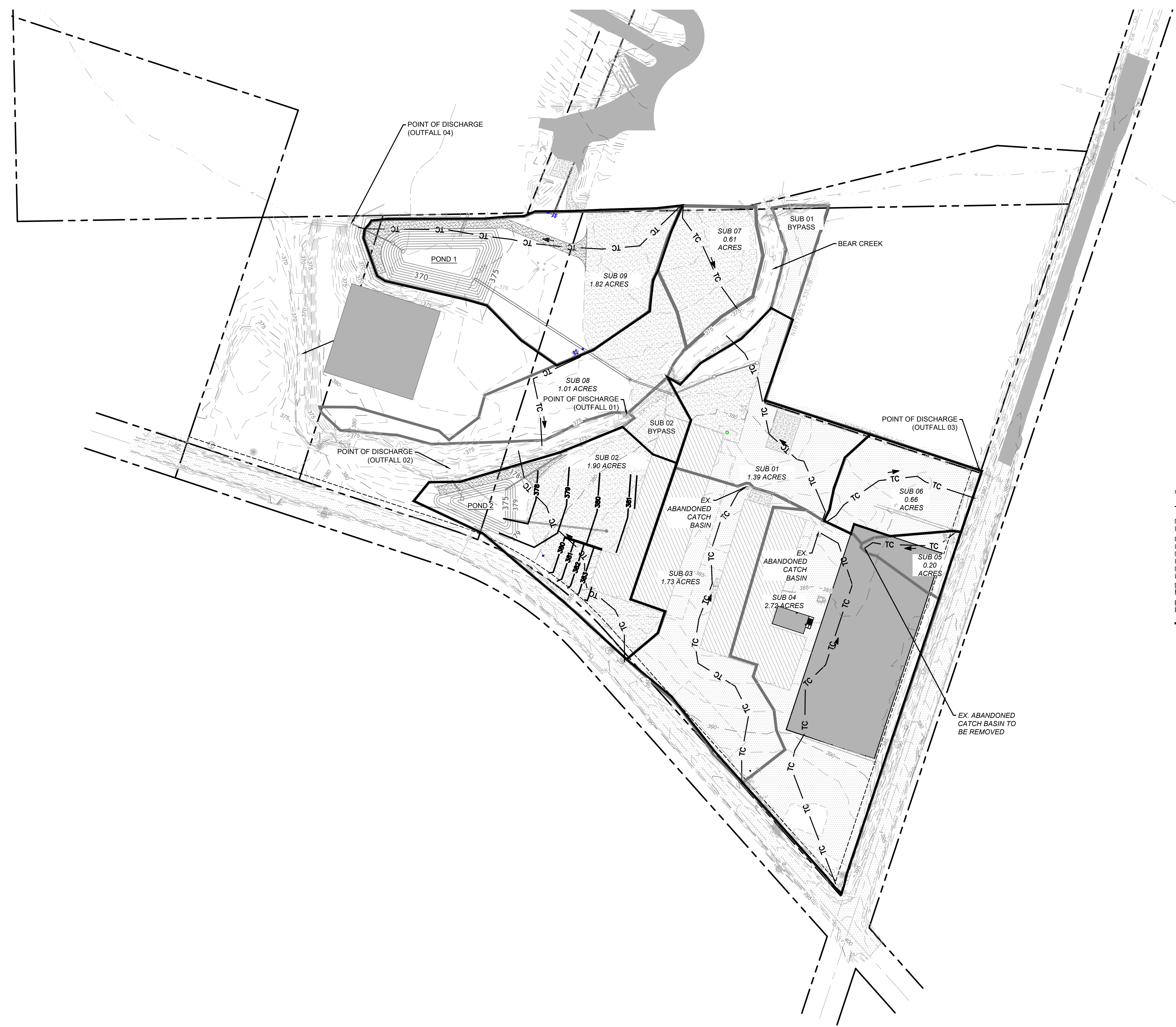
	EX. DRAINAGE AREA BOUNDARY
	TIME OF CONCENTRATION FLOW PATH
	EX. IMPERVIOUS ASPHALT
	EX. IMPERVIOUS ROOF AREA
	EX. IMPERVIOUS COMPACTED GRAVEL
	EX. IMPERVIOUS CONCRETE

EXISTING DRAINAGE AREAS  
1"=80'



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EXISTING DRAINAGE AREAS

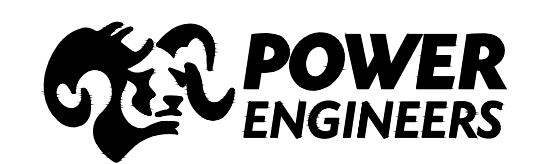
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**LEGEND:**

	EX. DRAINAGE AREA BOUNDARY
	TIME OF CONCENTRATION FLOW PATH
	EX. IMPERVIOUS ASPHALT
	EX. IMPERVIOUS ROOF AREA
	EX. IMPERVIOUS COMPACTED GRAVEL
	EX. IMPERVIOUS CONCRETE
	PROP. GRAVEL POND ACCESS
	PROP. IMPERVIOUS ROOF AREA
	PROP. POND 1/POND 2 CONTRIBUTING DRAINAGE AREA BOUNDARY

PROPOSED DRAINAGE AREAS  
1"=80'



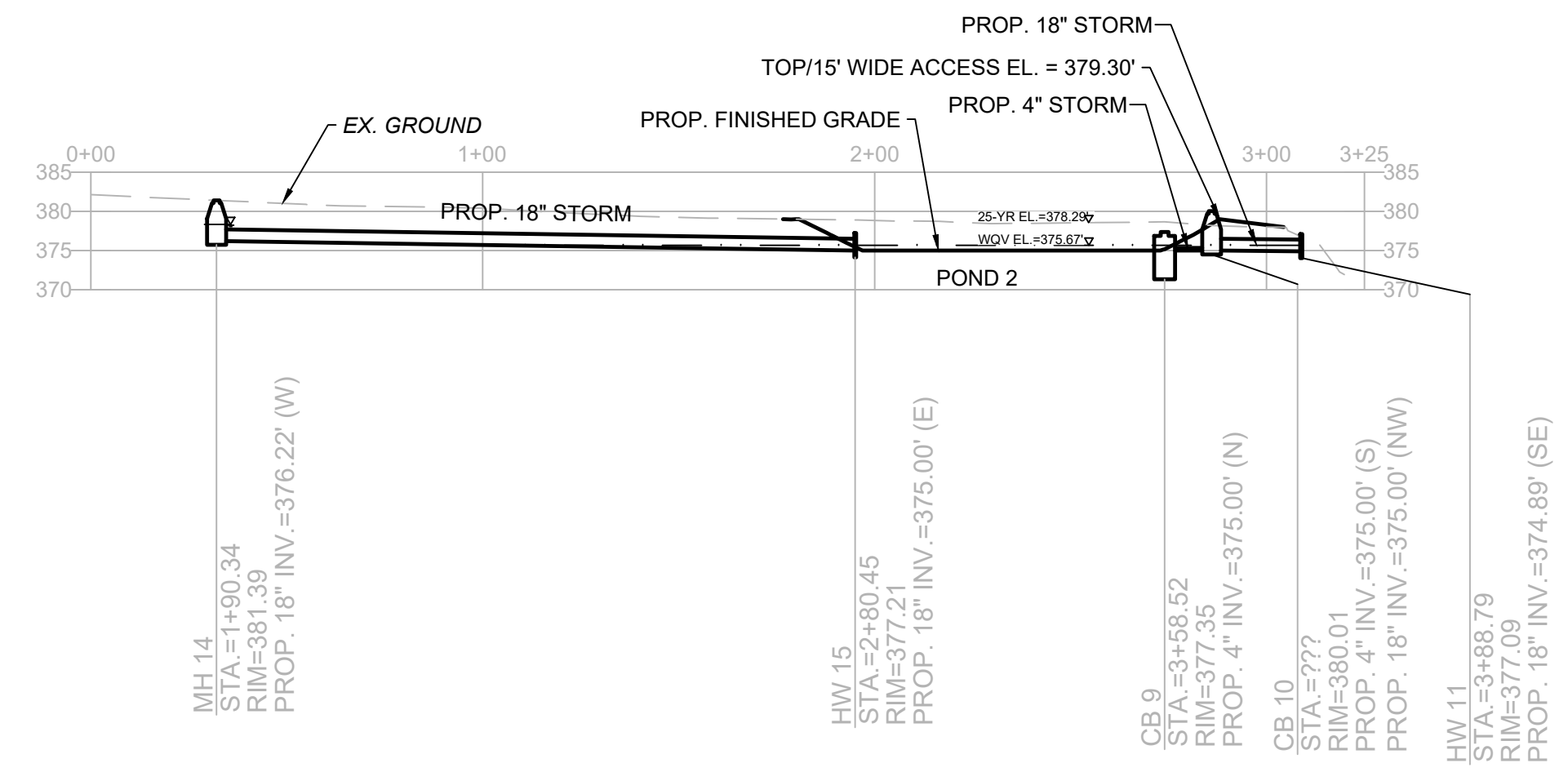
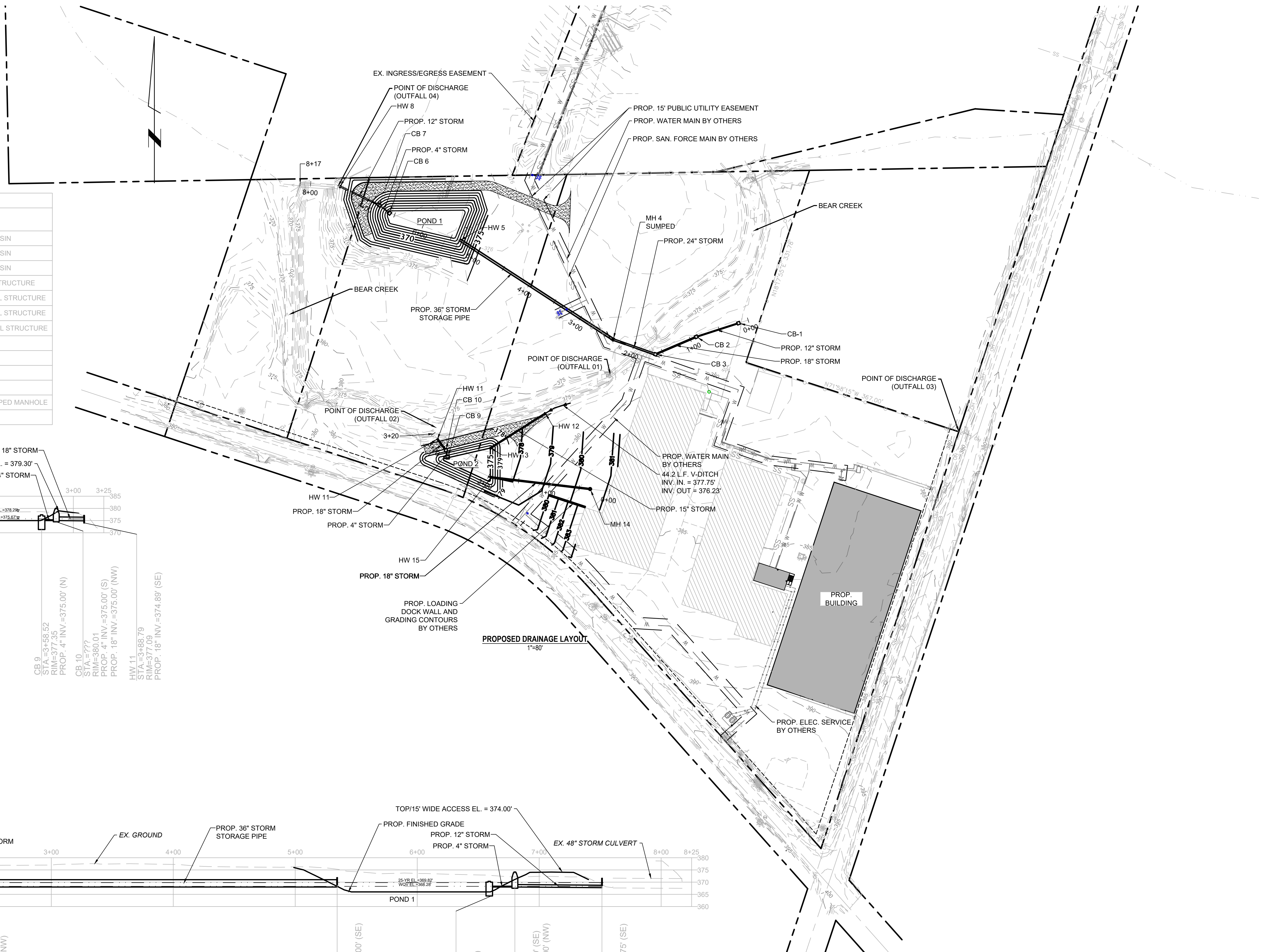
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PROPOSED DRAINAGE AREAS

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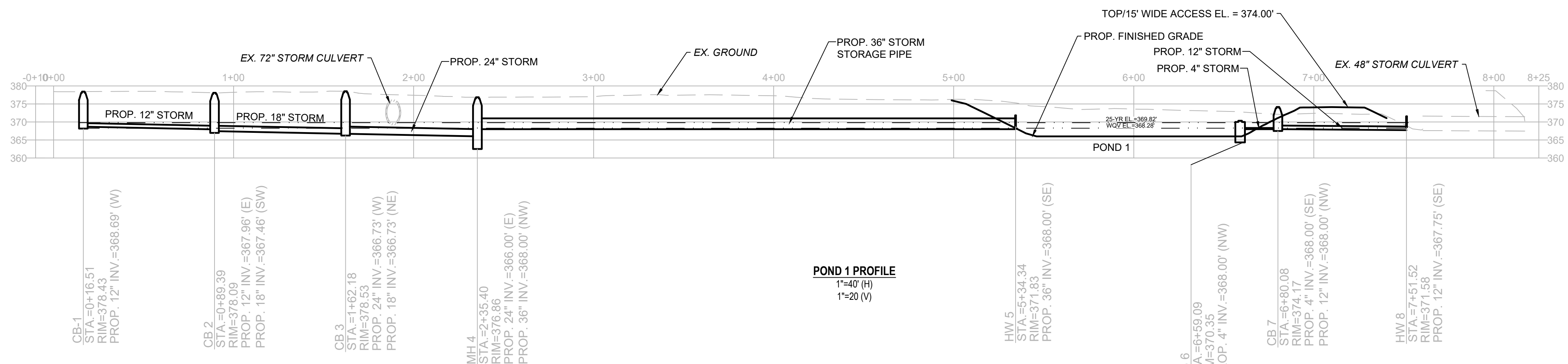
## **APPENDIX C    PROPOSED DRAINAGE**

PIPE TABLE					
NAME	SIZE	LENGTH	SLOPE	U.S. INV. ELEV.	D.S. INV. ELEV.
4 IN PVC	4"	20.99'	0.00%	368.00	368.00
12 IN HDPE	12"	71.43'	0.35%	368.00	367.75
PVC 4 IN	4"	12.00'	0.00%	375.00	375.00
24 IN HDPE	24"	73.22'	1.00%	366.73	366.00
36 IN HDPE STORAGE PIPE	36"	298.93'	0.00%	368.00	368.00
12 HDPE	12"	72.88'	1.00%	368.69	367.96
HDPE 18 IN	18"	72.79'	1.00%	367.46	366.73
18 IN HDPE	18"	22.84'	0.50%	375.00	374.89
HDPE	18"	162.97'	0.75%	376.22	375.00

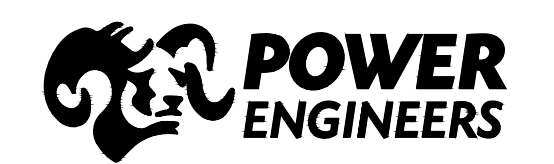
STRUCTURE TABLE				
STRUCTURE NAME:	NORTHING	EASTING	RIM/GRATE ELEV.	STRUCTURE DESCRIPTION
CB-1	6567.87'	8834.41'	378.43'	ODOT STRM CATCH BASIN
CB 2	6545.43'	8765.07'	378.09'	ODOT STRM CATCH BASIN
CB 3	6516.80'	8698.15'	378.53'	ODOT STRM CATCH BASIN
CB 6	6748.56'	8261.79'	370.35'	CB 6 WQ OUTLET CONTROL STRUCTURE
CB 7	6761.49'	8245.25'	374.17'	CB 7 ODOT WQ OUTLET CONTROL STRUCTURE
CB 9	6347.88'	8357.38'	377.35'	CB 9 ODOT WQ OUTLET CONTROL STRUCTURE
CB 10	6359.53'	8354.48'	380.01'	CB 10 ODOT WQ OUTLET CONTROL STRUCTURE
HW 5	6703.87'	8378.37'	371.83'	CONC. HEADWALL
HW 8	6792.11'	8180.71'	371.58'	CONC. HEADWALL
HW 11	6377.67'	8340.61'	377.09'	CONC. HEADWALL
HW 15	6314.99'	8429.09'	377.21'	CONC. HEADWALL
MH 4	6541.02'	8629.05'	376.86'	ODOT POLLUTOIN CONTROL SUMPED MANHOLE
MH 14	6295.89'	8590.94'	381.39'	ODOT STRM MH



**POND 2 PROFILE**  
1"=40' (H)  
1"=20' (V)

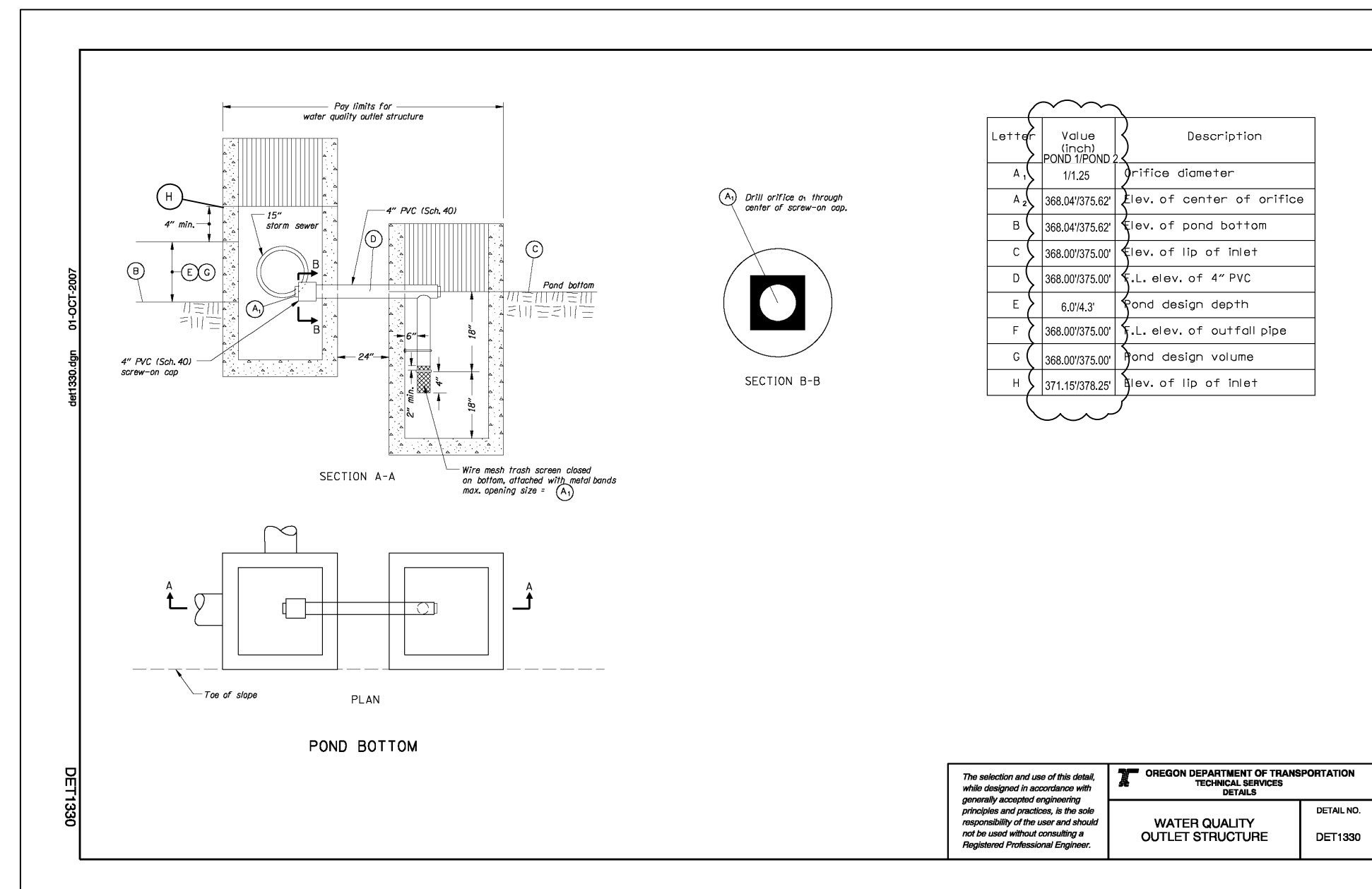
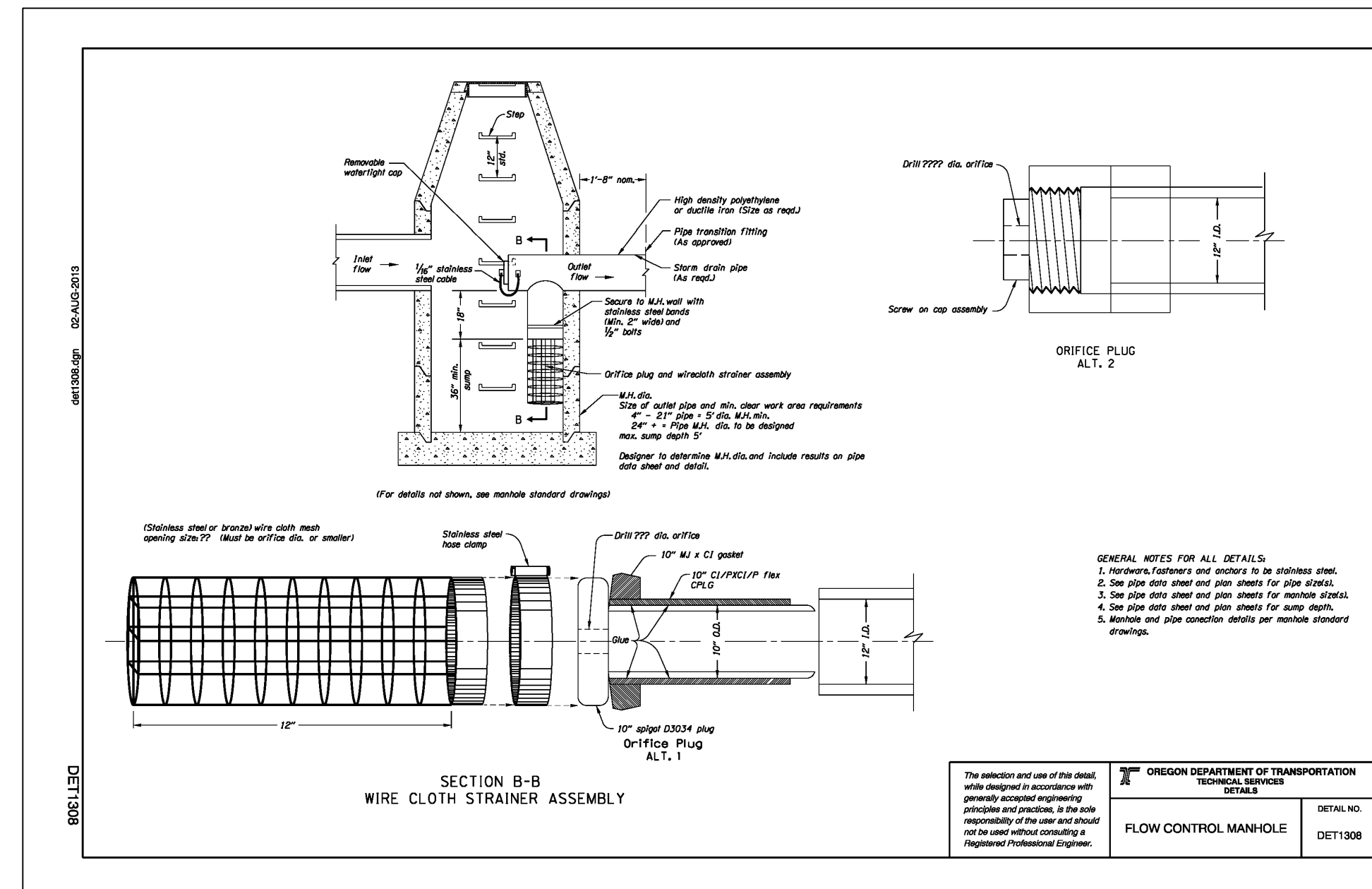
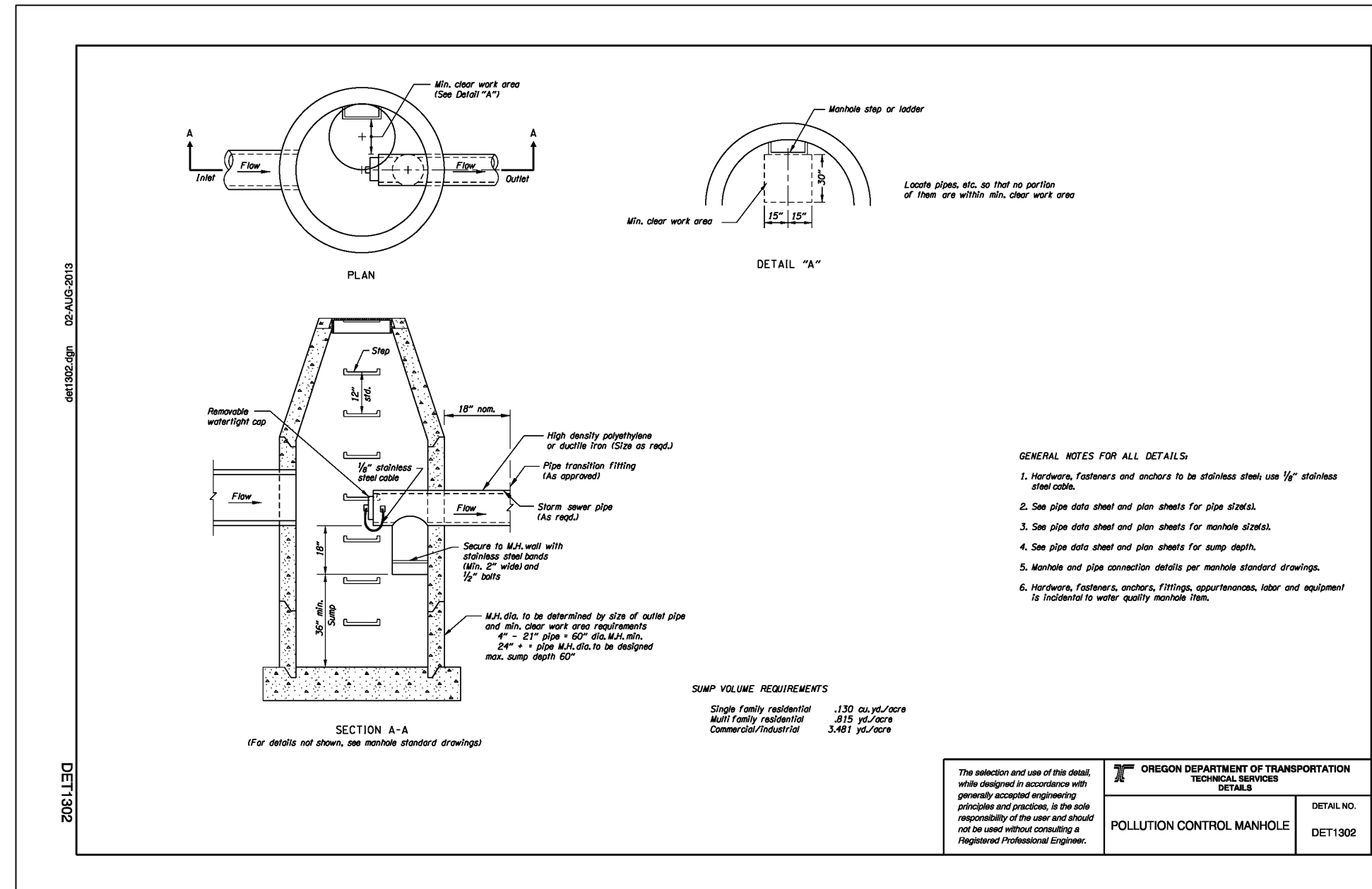


**POND 1 PROFILE**  
1"=40' (H)  
1"=20' (V)

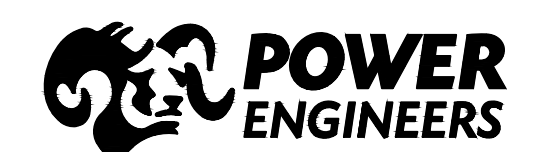


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PROPOSED DRAINAGE LAYOUT				

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- GENERAL NOTES:**
- ALL DISTURBED AREAS WILL BE RESTORED TO EXISTING CONDITIONS OR BETTER. GRAVEL POND ACCESS DRIVES WILL BE CREATED HOWEVER NO OTHER NEW IMPERVIOUS SURFACE WILL BE CREATED.
  - POND SLOPES AND ALL DAYLIGHT SLOPES SHALL BE GRADED AT 4(H):1(V)
  - ALL DISTURBED AREAS THAT ARE NOT RESURFACED WITH GRAVEL OR PAVEMENT WILL BE TOPSOILED AND PERMANENTLY SEEDED FOR FINAL STABILIZATION.
  - THE CONTRACTOR SHALL PROVIDE ADEQUATE EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION FOR COMPLIANCE WITH THE REQUIREMENTS OF THE DEQ CONSTRUCTION STORMWATER GENERAL PERMIT 1200-C.
  - POND ACCESS DRIVES SHALL BE CONSTRUCTED OF 3" CLASS C AC; OVER 8" OF 3/4"-0" COMPACTED CRUSHED AGGREGATE OVER FIRM SUBGRADE.
  - CRUSHED AGGREGATE AND SUBGRADE SHALL BE COMPACTED TO 95% OF MAX. DRY DENSITY PER AASHTO T-180.
  - DRAINAGE STRUCTURES AND PIPING SHALL BE PER ODOT STANDARDS AND SPECIFICATIONS UNLESS APPROVED OTHERWISE.
  - WHEN EXISTING DRAINAGE STRUCTURES OR PIPING ARE DISCOVERED IN THE FIELD THE STRUCTURES AND PIPE SHALL BE CUT AND REMOVED TO WITHIN 2-FEET OF THE SURFACE OR CONFLICT. AUXILIARY VOID SPACES PUMPED FULL OF CEMENTITIOUS GROUT AND SEALED/PLUGGED WITH 3,000 PSI CONCRETE AT LEAST 6-INCHES THICK.
  - EXISTING BUILDING DOWNSPOUTS ARE TO BE CUT ABOVE GRADE AND MODIFIED SUCH THAT ALL EXISTING AND PROPOSED DOWNSPOUTS ARE SET TO DISCHARGE AT GRADE ONTO HARD, NON-ERODIBLE SURFACE AWAY FROM THE BUILDING.
  - ALTERNATIVELY NEW AND EXISTING DOWNSPOUTS MAY BE PIPED/RE-PIPED TO THE PROPOSED CONVEYANCE AND PONDS IN COMPLIANCE WITH THE PLUMBING CODE.
  - CONSTRUCTION SHALL BE PHASED SO THAT THE LEAST POSSIBLE AMOUNT OF AREA IS DISTURBED AT ANY ONE TIME. PHASE CONSTRUCTION SO THAT AREAS CAN BE COMPLETED AND STABILIZED BEFORE OTHER AREAS OF WORK ARE DISTURBED.



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DRAINAGE DETAILS

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## **APPENDIX D DRAINAGE CALCULATIONS**

**Project Description**

File Name ..... PreExisting.SPF

**Project Options**

Flow Units ..... CFS  
 Elevation Type ..... Elevation  
 Hydrology Method ..... SCS TR-55  
 Time of Concentration (TOC) Method ..... SCS TR-55  
 Link Routing Method ..... Kinematic Wave  
 Enable Overflow Ponding at Nodes ..... YES  
 Skip Steady State Analysis Time Periods ..... NO

**Analysis Options**

Start Analysis On ..... Jul 02, 2021 00:00:00  
 End Analysis On ..... Jul 03, 2021 00:00:00  
 Start Reporting On ..... Jul 02, 2021 00:00:00  
 Antecedent Dry Days ..... 0 days  
 Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss  
 Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss  
 Reporting Time Step ..... 0 00:05:00 days hh:mm:ss  
 Routing Time Step ..... 30 seconds

**Number of Elements**

Qty

Rain Gages ..... 1  
 Subbasins..... 9  
 Nodes..... 5  
     *Junctions* ..... 1  
     *Outfalls* ..... 4  
     *Flow Diversions* ..... 0  
     *Inlets* ..... 0  
     *Storage Nodes* ..... 0  
 Links..... 1  
     *Channels* ..... 0  
     *Pipes* ..... 1  
     *Pumps* ..... 0  
     *Orifices* ..... 0  
     *Weirs* ..... 0  
     *Outlets* ..... 0  
 Pollutants ..... 0  
 Land Uses ..... 0

**Rainfall Details**

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	2	Cumulative	inches	Oregon	Clackamas	2	2.65	SCS Type IA 24-hr



## Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-01	1.39	78.00	2.65	0.89	1.23	0.22	0 00:16:11
2	Sub-02	1.90	78.00	2.65	0.89	1.69	0.28	0 00:24:09
3	Sub-03	1.73	78.00	2.65	0.89	1.53	0.26	0 00:24:18
4	Sub-04	2.72	78.00	2.65	0.89	2.41	0.37	0 00:35:01
5	Sub-05	0.20	78.00	2.65	0.89	0.18	0.03	0 00:05:00
6	Sub-06	0.70	78.00	2.65	0.89	0.62	0.09	0 00:33:47
7	Sub-07	0.61	78.00	2.65	0.89	0.54	0.10	0 00:13:03
8	Sub-08	1.01	71.00	2.65	0.57	0.57	0.07	0 00:05:00
9	Sub-09	1.82	71.00	2.65	0.57	1.03	0.09	0 00:48:39

## Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft <sup>2</sup> )	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	0.00	6.00	0.00	6.00	0.00	0.92	370.13	0.00	5.74	0 00:00	0.00	0.00
2	Out-01	Outfall	0.00					0.92	369.66					
3	Out-02	Outfall	0.00					0.34	0.00					
4	Out-03	Outfall	0.00					0.09	0.00					
5	Out-04	Outfall	0.00					0.09	0.00					

## Link Summary

SN ID	Element Type	From (Inlet Node)	To (Outlet Node)	Length  (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Total Time Surcharged (min)	
1	Link-01	Pipe	Jun-01	Out-01	100.00	369.87	369.40	0.47	72.00	0.0150	0.92	251.63	2.09	0.26	0.00

## Subbasin Hydrology

### Subbasin : Sub-01

#### Input Data

Area (ac) ..... 1.39  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

#### Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.39	D	78.00
Composite Area & Weighted CN	1.39		78.00

#### Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 n = Manning's roughness  
 L<sub>f</sub> = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 S<sub>f</sub> = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 \* (S<sub>f</sub><sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (S<sub>f</sub><sup>0.5</sup>) (paved surface)  
 V = 15.0 \* (S<sub>f</sub><sup>0.5</sup>) (grassed waterway surface)  
 V = 10.0 \* (S<sub>f</sub><sup>0.5</sup>) (nearly bare & untilled surface)  
 V = 9.0 \* (S<sub>f</sub><sup>0.5</sup>) (cultivated straight rows surface)  
 V = 7.0 \* (S<sub>f</sub><sup>0.5</sup>) (short grass pasture surface)  
 V = 5.0 \* (S<sub>f</sub><sup>0.5</sup>) (woodland surface)  
 V = 2.5 \* (S<sub>f</sub><sup>0.5</sup>) (forest w/heavy litter surface)  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where:

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3})) * (S_f^{0.5}) / n$$

R = A<sub>q</sub> / W<sub>p</sub>  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 A<sub>q</sub> = Flow Area (ft<sup>2</sup>)  
 W<sub>p</sub> = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)  
 n = Manning's roughness

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.31	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	53	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	0.25	0.00	0.00
Total TOC (min) .....	16.19		

**Subbasin Runoff Results**

Total Rainfall (in) .....	2.65
Total Runoff (in) .....	0.89
Peak Runoff (cfs) .....	0.22
Weighted Curve Number .....	78.00
Time of Concentration (days hh:mm:ss) .....	0 00:16:11

**Subbasin : Sub-02**

**Input Data**

Area (ac) ..... 1.90  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.76	D	78.00
Composite Area & Weighted CN	1.76		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	219	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.47	0.00	0.00
Total TOC (min) .....	24.16		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.65  
 Total Runoff (in) ..... 0.89  
 Peak Runoff (cfs) ..... 0.28  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:10

**Subbasin : Sub-03**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.73	D	78.00
Composite Area & Weighted CN	1.73		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	.11	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	239	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.60	0.00	0.00
Total TOC (min) .....	24.30		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.65  
 Total Runoff (in) ..... 0.89  
 Peak Runoff (cfs) ..... 0.26  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:18

**Subbasin : Sub-04**

**Input Data**

Area (ac) ..... 2.72  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	2.72	D	78.00
Composite Area & Weighted CN	2.72		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	.2	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	327	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	2.28	0.00	0.00
Computed Flow Time (min) :	2.39	0.00	0.00
Total TOC (min) .....	35.03		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.65  
 Total Runoff (in) ..... 0.89  
 Peak Runoff (cfs) ..... 0.37  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:35:02



**Subbasin : Sub-05**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.20	D	78.00
Composite Area & Weighted CN	0.20		78.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.65  
 Total Runoff (in) ..... 0.89  
 Peak Runoff (cfs) ..... 0.03  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-06**

**Input Data**

Area (ac) ..... 0.70  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.30	D	78.00
Composite Area & Weighted CN	0.30		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	79	0.00	0.00
Slope (%) :	.5	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.14	0.00	0.00
Computed Flow Time (min) :	1.15	0.00	0.00
Total TOC (min) .....	33.79		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.65  
 Total Runoff (in) ..... 0.89  
 Peak Runoff (cfs) ..... 0.09  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:33:47

**Subbasin : Sub-07**

**Input Data**

Area (ac) ..... 0.61  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.61	D	78.00
Composite Area & Weighted CN	0.61		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	191	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	13.06	0.00	0.00
Total TOC (min) .....	13.06		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.65  
 Total Runoff (in) ..... 0.89  
 Peak Runoff (cfs) ..... 0.10  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:13:04

**Subbasin : Sub-08**

**Input Data**

Area (ac) ..... 1.01  
 Weighted Curve Number ..... 71.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.01	C	71.00
Composite Area & Weighted CN	1.01		71.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.65  
 Total Runoff (in) ..... 0.57  
 Peak Runoff (cfs) ..... 0.07  
 Weighted Curve Number ..... 71.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-09**

**Input Data**

Area (ac) ..... 1.82  
 Weighted Curve Number ..... 71.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.82	C	71.00
Composite Area & Weighted CN	1.82		71.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.85	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.11	0.00	0.00
Computed Flow Time (min) :	46.57	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	248	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.98	0.00	0.00
Computed Flow Time (min) :	2.09	0.00	0.00
Total TOC (min) .....	48.66		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.65  
 Total Runoff (in) ..... 0.57  
 Peak Runoff (cfs) ..... 0.09  
 Weighted Curve Number ..... 71.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:48:40

**Junction Input**

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft <sup>2</sup> )	Minimum Pipe Cover (in)
1 Jun-01	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

## Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 Jun-01	0.92	0.92	370.13	370.13	0.00	5.74	369.99	369.99	0 08:15	0 00:00	0.00	0.00

**Pipe Input**

SN Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1 Link-01	100.00	369.87	369.87	369.40	369.40	0.47	0.4700	CIRCULAR	72.000	72.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1



## Pipe Results

SN Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1 Link-01	0.92	0 08:15	251.63	0.00	2.09	0.80	0.26	0.04	0.00		Calculated

## Project Description

File Name ..... PreExisting.SPF

## Project Options

Flow Units ..... CFS  
 Elevation Type ..... Elevation  
 Hydrology Method ..... SCS TR-55  
 Time of Concentration (TOC) Method ..... SCS TR-55  
 Link Routing Method ..... Kinematic Wave  
 Enable Overflow Ponding at Nodes ..... YES  
 Skip Steady State Analysis Time Periods ..... NO

## Analysis Options

Start Analysis On ..... Jul 02, 2021 00:00:00  
 End Analysis On ..... Jul 03, 2021 00:00:00  
 Start Reporting On ..... Jul 02, 2021 00:00:00  
 Antecedent Dry Days ..... 0 days  
 Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss  
 Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss  
 Reporting Time Step ..... 0 00:05:00 days hh:mm:ss  
 Routing Time Step ..... 30 seconds

## Number of Elements

	Qty
Rain Gages .....	1
Subbasins.....	9
Nodes.....	5
<i>Junctions</i> .....	1
<i>Outfalls</i> .....	4
<i>Flow Diversions</i> .....	0
<i>Inlets</i> .....	0
<i>Storage Nodes</i> .....	0
Links.....	1
<i>Channels</i> .....	0
<i>Pipes</i> .....	1
<i>Pumps</i> .....	0
<i>Orifices</i> .....	0
<i>Weirs</i> .....	0
<i>Outlets</i> .....	0
Pollutants .....	0
Land Uses .....	0

## Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	10	Cumulative	inches	Oregon	Clackamas	10	3.45	SCS Type IA 24-hr

## Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-01	1.39	78.00	3.45	1.46	2.03	0.42	0 00:16:11
2	Sub-02	1.90	78.00	3.45	1.46	2.77	0.54	0 00:24:09
3	Sub-03	1.73	78.00	3.45	1.46	2.52	0.49	0 00:24:18
4	Sub-04	2.72	78.00	3.45	1.46	3.97	0.70	0 00:35:01
5	Sub-05	0.20	78.00	3.45	1.46	0.29	0.06	0 00:05:00
6	Sub-06	0.70	78.00	3.45	1.46	1.02	0.18	0 00:33:47
7	Sub-07	0.61	78.00	3.45	1.46	0.89	0.19	0 00:13:03
8	Sub-08	1.01	71.00	3.45	1.03	1.04	0.19	0 00:05:00
9	Sub-09	1.82	71.00	3.45	1.03	1.88	0.23	0 00:48:39

**Node Summary**

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft <sup>2</sup> )	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	0.00	6.00	0.00	6.00	0.00	1.77	370.23	0.00	5.64	0 00:00	0.00	0.00
2	Out-01	Outfall	0.00					1.77	369.76					
3	Out-02	Outfall	0.00					0.69	0.00					
4	Out-03	Outfall	0.00					0.18	0.00					
5	Out-04	Outfall	0.00					0.23	0.00					

## Link Summary

SN ID	Element Type	From (Inlet Node)	To (Outlet Node)	Length  (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Total Time Surcharged (min)	
1	Link-01	Pipe	Jun-01	Out-01	100.00	369.87	369.40	0.47	72.00	0.0150	1.77	251.63	2.57	0.36	0.00

## Subbasin Hydrology

### Subbasin : Sub-01

#### Input Data

Area (ac) ..... 1.39  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

#### Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.39	D	78.00
Composite Area & Weighted CN	1.39		78.00

#### Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 n = Manning's roughness  
 L<sub>f</sub> = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 S<sub>f</sub> = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 \* (S<sub>f</sub><sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (S<sub>f</sub><sup>0.5</sup>) (paved surface)  
 V = 15.0 \* (S<sub>f</sub><sup>0.5</sup>) (grassed waterway surface)  
 V = 10.0 \* (S<sub>f</sub><sup>0.5</sup>) (nearly bare & untilled surface)  
 V = 9.0 \* (S<sub>f</sub><sup>0.5</sup>) (cultivated straight rows surface)  
 V = 7.0 \* (S<sub>f</sub><sup>0.5</sup>) (short grass pasture surface)  
 V = 5.0 \* (S<sub>f</sub><sup>0.5</sup>) (woodland surface)  
 V = 2.5 \* (S<sub>f</sub><sup>0.5</sup>) (forest w/heavy litter surface)  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where:

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3})) * (S_f^{0.5}) / n$$

R = A<sub>q</sub> / W<sub>p</sub>  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 A<sub>q</sub> = Flow Area (ft<sup>2</sup>)  
 W<sub>p</sub> = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)  
 n = Manning's roughness

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.31	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	53	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	0.25	0.00	0.00
Total TOC (min) .....	16.19		

**Subbasin Runoff Results**

Total Rainfall (in) .....	3.45
Total Runoff (in) .....	1.46
Peak Runoff (cfs) .....	0.42
Weighted Curve Number .....	78.00
Time of Concentration (days hh:mm:ss) .....	0 00:16:11

**Subbasin : Sub-02**

**Input Data**

Area (ac) ..... 1.90  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.76	D	78.00
Composite Area & Weighted CN	1.76		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	219	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.47	0.00	0.00
Total TOC (min) .....	24.16		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.46  
 Peak Runoff (cfs) ..... 0.54  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:10



**Subbasin : Sub-03**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.73	D	78.00
Composite Area & Weighted CN	1.73		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	.11	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	239	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.60	0.00	0.00
Total TOC (min) .....	24.30		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.46  
 Peak Runoff (cfs) ..... 0.49  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:18

**Subbasin : Sub-04**

**Input Data**

Area (ac) ..... 2.72  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	2.72	D	78.00
Composite Area & Weighted CN	2.72		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.2	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	327	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	2.28	0.00	0.00
Computed Flow Time (min) :	2.39	0.00	0.00
Total TOC (min) .....	35.03		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.46  
 Peak Runoff (cfs) ..... 0.70  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:35:02

**Subbasin : Sub-05**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.20	D	78.00
Composite Area & Weighted CN	0.20		78.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.46  
 Peak Runoff (cfs) ..... 0.06  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-06**

**Input Data**

Area (ac) ..... 0.70  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.30	D	78.00
Composite Area & Weighted CN	0.30		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	79	0.00	0.00
Slope (%) :	.5	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.14	0.00	0.00
Computed Flow Time (min) :	1.15	0.00	0.00
Total TOC (min) .....	33.79		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.46  
 Peak Runoff (cfs) ..... 0.18  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:33:47

**Subbasin : Sub-07**

**Input Data**

Area (ac) ..... 0.61  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.61	D	78.00
Composite Area & Weighted CN	0.61		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	191	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	13.06	0.00	0.00
Total TOC (min) .....	13.06		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.46  
 Peak Runoff (cfs) ..... 0.19  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:13:04

**Subbasin : Sub-08**

**Input Data**

Area (ac) ..... 1.01  
 Weighted Curve Number ..... 71.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.01	C	71.00
Composite Area & Weighted CN	1.01		71.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.03  
 Peak Runoff (cfs) ..... 0.19  
 Weighted Curve Number ..... 71.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-09**

**Input Data**

Area (ac) ..... 1.82  
 Weighted Curve Number ..... 71.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.82	C	71.00
Composite Area & Weighted CN	1.82		71.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.85	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.11	0.00	0.00
Computed Flow Time (min) :	46.57	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	248	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.98	0.00	0.00
Computed Flow Time (min) :	2.09	0.00	0.00
Total TOC (min) .....	48.66		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.03  
 Peak Runoff (cfs) ..... 0.23  
 Weighted Curve Number ..... 71.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:48:40

**Junction Input**

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft <sup>2</sup> )	Minimum Pipe Cover (in)
1 Jun-01	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00



### Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 Jun-01	1.77	1.77	370.23	370.23	0.00	5.64	370.02	370.02	0 08:10	0 00:00	0.00	0.00

**Pipe Input**

SN Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1 Link-01	100.00	369.87	369.87	369.40	369.40	0.47	0.4700	CIRCULAR	72.000	72.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

## Pipe Results

SN Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1 Link-01	1.77	0 08:10	251.63	0.01	2.57	0.65	0.36	0.06	0.00		Calculated

## Project Description

File Name ..... PreExisting.SPF

## Project Options

Flow Units ..... CFS  
 Elevation Type ..... Elevation  
 Hydrology Method ..... SCS TR-55  
 Time of Concentration (TOC) Method ..... SCS TR-55  
 Link Routing Method ..... Kinematic Wave  
 Enable Overflow Ponding at Nodes ..... YES  
 Skip Steady State Analysis Time Periods ..... NO

## Analysis Options

Start Analysis On ..... Jul 02, 2021 00:00:00  
 End Analysis On ..... Jul 03, 2021 00:00:00  
 Start Reporting On ..... Jul 02, 2021 00:00:00  
 Antecedent Dry Days ..... 0 days  
 Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss  
 Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss  
 Reporting Time Step ..... 0 00:05:00 days hh:mm:ss  
 Routing Time Step ..... 30 seconds

## Number of Elements

Qty  
 Rain Gages ..... 1  
 Subbasins..... 9  
 Nodes..... 5  
     *Junctions* ..... 1  
     *Outfalls* ..... 4  
     *Flow Diversions* ..... 0  
     *Inlets* ..... 0  
     *Storage Nodes* ..... 0  
 Links..... 1  
     *Channels* ..... 0  
     *Pipes* ..... 1  
     *Pumps* ..... 0  
     *Orifices* ..... 0  
     *Weirs* ..... 0  
     *Outlets* ..... 0  
 Pollutants ..... 0  
 Land Uses ..... 0

## Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	25	Cumulative	inches	Oregon	Clackamas	25	4.00	SCS Type IA 24-hr

## Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-01	1.39	78.00	4.00	1.89	2.62	0.58	0 00:16:11
2	Sub-02	1.90	78.00	4.00	1.89	3.59	0.74	0 00:24:09
3	Sub-03	1.73	78.00	4.00	1.89	3.26	0.67	0 00:24:18
4	Sub-04	2.72	78.00	4.00	1.89	5.13	0.96	0 00:35:01
5	Sub-05	0.20	78.00	4.00	1.89	0.38	0.09	0 00:05:00
6	Sub-06	0.70	78.00	4.00	1.89	1.32	0.25	0 00:33:47
7	Sub-07	0.61	78.00	4.00	1.89	1.15	0.26	0 00:13:03
8	Sub-08	1.01	71.00	4.00	1.39	1.41	0.28	0 00:05:00
9	Sub-09	1.82	71.00	4.00	1.39	2.54	0.36	0 00:48:39

## Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft <sup>2</sup> )	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	0.00	6.00	0.00	6.00	0.00	2.44	370.29	0.00	5.58	0 00:00	0.00	0.00
2	Out-01	Outfall	0.00					2.43	369.82					
3	Out-02	Outfall	0.00					0.97	0.00					
4	Out-03	Outfall	0.00					0.25	0.00					
5	Out-04	Outfall	0.00					0.35	0.00					

## Link Summary

SN ID	Element Type	From (Inlet Node)	To (Outlet Node)	Length  (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Total Time Surcharged (min)	
1	Link-01	Pipe	Jun-01	Out-01	100.00	369.87	369.40	0.47	72.00	0.0150	2.43	251.63	2.82	0.42	0.00

## Subbasin Hydrology

### Subbasin : Sub-01

#### Input Data

Area (ac) ..... 1.39  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

#### Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.39	D	78.00
Composite Area & Weighted CN	1.39		78.00

#### Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 n = Manning's roughness  
 L<sub>f</sub> = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 S<sub>f</sub> = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 \* (S<sub>f</sub><sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (S<sub>f</sub><sup>0.5</sup>) (paved surface)  
 V = 15.0 \* (S<sub>f</sub><sup>0.5</sup>) (grassed waterway surface)  
 V = 10.0 \* (S<sub>f</sub><sup>0.5</sup>) (nearly bare & untilled surface)  
 V = 9.0 \* (S<sub>f</sub><sup>0.5</sup>) (cultivated straight rows surface)  
 V = 7.0 \* (S<sub>f</sub><sup>0.5</sup>) (short grass pasture surface)  
 V = 5.0 \* (S<sub>f</sub><sup>0.5</sup>) (woodland surface)  
 V = 2.5 \* (S<sub>f</sub><sup>0.5</sup>) (forest w/heavy litter surface)  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where:

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 \* (R<sup>2/3</sup>)) \* (S<sub>f</sub><sup>0.5</sup>) / n  
 R = A<sub>q</sub> / W<sub>p</sub>  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 A<sub>q</sub> = Flow Area (ft<sup>2</sup>)  
 W<sub>p</sub> = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)  
 n = Manning's roughness



Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.31	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	53	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	0.25	0.00	0.00
Total TOC (min) .....	16.19		

**Subbasin Runoff Results**

Total Rainfall (in) .....	4.00
Total Runoff (in) .....	1.89
Peak Runoff (cfs) .....	0.58
Weighted Curve Number .....	78.00
Time of Concentration (days hh:mm:ss) .....	0 00:16:11

**Subbasin : Sub-02**

**Input Data**

Area (ac) ..... 1.90  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.76	D	78.00
Composite Area & Weighted CN	1.76		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	219	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.47	0.00	0.00
Total TOC (min) .....	24.16		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.00  
 Total Runoff (in) ..... 1.89  
 Peak Runoff (cfs) ..... 0.74  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:10

**Subbasin : Sub-03**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.73	D	78.00
Composite Area & Weighted CN	1.73		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	.11	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	239	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.60	0.00	0.00
Total TOC (min) .....	24.30		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.00  
 Total Runoff (in) ..... 1.89  
 Peak Runoff (cfs) ..... 0.67  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:18

**Subbasin : Sub-04**

**Input Data**

Area (ac) ..... 2.72  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	2.72	D	78.00
Composite Area & Weighted CN	2.72		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.2	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	327	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	2.28	0.00	0.00
Computed Flow Time (min) :	2.39	0.00	0.00
Total TOC (min) .....	35.03		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.00  
 Total Runoff (in) ..... 1.89  
 Peak Runoff (cfs) ..... 0.96  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:35:02

**Subbasin : Sub-05**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.20	D	78.00
Composite Area & Weighted CN	0.20		78.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.00  
 Total Runoff (in) ..... 1.89  
 Peak Runoff (cfs) ..... 0.09  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-06**

**Input Data**

Area (ac) ..... 0.70  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.30	D	78.00
Composite Area & Weighted CN	0.30		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	79	0.00	0.00
Slope (%) :	.5	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.14	0.00	0.00
Computed Flow Time (min) :	1.15	0.00	0.00
Total TOC (min) .....	33.79		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.00  
 Total Runoff (in) ..... 1.89  
 Peak Runoff (cfs) ..... 0.25  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:33:47

**Subbasin : Sub-07**

**Input Data**

Area (ac) ..... 0.61  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.61	D	78.00
Composite Area & Weighted CN	0.61		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	191	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	13.06	0.00	0.00
Total TOC (min) .....	13.06		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.00  
 Total Runoff (in) ..... 1.89  
 Peak Runoff (cfs) ..... 0.26  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:13:04

**Subbasin : Sub-08**

**Input Data**

Area (ac) ..... 1.01  
 Weighted Curve Number ..... 71.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.01	C	71.00
Composite Area & Weighted CN	1.01		71.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.00  
 Total Runoff (in) ..... 1.39  
 Peak Runoff (cfs) ..... 0.28  
 Weighted Curve Number ..... 71.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00



**Subbasin : Sub-09**

**Input Data**

Area (ac) ..... 1.82  
 Weighted Curve Number ..... 71.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.82	C	71.00
Composite Area & Weighted CN	1.82		71.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.85	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.11	0.00	0.00
Computed Flow Time (min) :	46.57	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	248	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.98	0.00	0.00
Computed Flow Time (min) :	2.09	0.00	0.00
Total TOC (min) .....	48.66		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.00  
 Total Runoff (in) ..... 1.39  
 Peak Runoff (cfs) ..... 0.36  
 Weighted Curve Number ..... 71.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:48:40

**Junction Input**

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft <sup>2</sup> )	Minimum Pipe Cover (in)
1 Jun-01	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

**Junction Results**

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 Jun-01	2.44	2.44	370.29	370.29	0.00	5.58	370.04	370.04	0 08:10	0 00:00	0.00	0.00

Pipe Input

SN Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1 Link-01	100.00	369.87	369.87	369.40	369.40	0.47	0.4700	CIRCULAR	72.000	72.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

## Pipe Results

SN Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1 Link-01	2.43	0 08:10	251.63	0.01	2.82	0.59	0.42	0.07	0.00		Calculated

## Project Description

File Name ..... PreExisting.SPF

## Project Options

Flow Units ..... CFS  
 Elevation Type ..... Elevation  
 Hydrology Method ..... SCS TR-55  
 Time of Concentration (TOC) Method ..... SCS TR-55  
 Link Routing Method ..... Kinematic Wave  
 Enable Overflow Ponding at Nodes ..... YES  
 Skip Steady State Analysis Time Periods ..... NO

## Analysis Options

Start Analysis On ..... Jul 02, 2021 00:00:00  
 End Analysis On ..... Jul 03, 2021 00:00:00  
 Start Reporting On ..... Jul 02, 2021 00:00:00  
 Antecedent Dry Days ..... 0 days  
 Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss  
 Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss  
 Reporting Time Step ..... 0 00:05:00 days hh:mm:ss  
 Routing Time Step ..... 30 seconds

## Number of Elements

	Qty
Rain Gages .....	1
Subbasins.....	9
Nodes.....	5
<i>Junctions</i> .....	1
<i>Outfalls</i> .....	4
<i>Flow Diversions</i> .....	0
<i>Inlets</i> .....	0
<i>Storage Nodes</i> .....	0
Links.....	1
<i>Channels</i> .....	0
<i>Pipes</i> .....	1
<i>Pumps</i> .....	0
<i>Orifices</i> .....	0
<i>Weirs</i> .....	0
<i>Outlets</i> .....	0
Pollutants .....	0
Land Uses .....	0

## Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	100	Cumulative	inches	Oregon	Clackamas	100	4.50	SCS Type IA 24-hr

## Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-01	1.39	78.00	4.50	2.29	3.19	0.73	0 00:16:11
2	Sub-02	1.90	78.00	4.50	2.29	4.36	0.93	0 00:24:09
3	Sub-03	1.73	78.00	4.50	2.29	3.97	0.85	0 00:24:18
4	Sub-04	2.72	78.00	4.50	2.29	6.24	1.21	0 00:35:01
5	Sub-05	0.20	78.00	4.50	2.29	0.46	0.11	0 00:05:00
6	Sub-06	0.70	78.00	4.50	2.29	1.60	0.31	0 00:33:47
7	Sub-07	0.61	78.00	4.50	2.29	1.40	0.32	0 00:13:03
8	Sub-08	1.01	71.00	4.50	1.75	1.76	0.38	0 00:05:00
9	Sub-09	1.82	71.00	4.50	1.75	3.18	0.48	0 00:48:39

### Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft <sup>2</sup> )	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	0.00	6.00	0.00	6.00	0.00	3.07	370.34	0.00	5.53	0 00:00	0.00	0.00
2	Out-01	Outfall	0.00					3.07	369.86					
3	Out-02	Outfall	0.00					1.25	0.00					
4	Out-03	Outfall	0.00					0.31	0.00					
5	Out-04	Outfall	0.00					0.48	0.00					



## Link Summary

SN ID	Element Type	From (Inlet Node)	To (Outlet Node)	Length  (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Total Time Surcharged (min)	
1	Link-01	Pipe	Jun-01	Out-01	100.00	369.87	369.40	0.47	72.00	0.0150	3.07	251.63	3.03	0.46	0.00

## Subbasin Hydrology

### Subbasin : Sub-01

#### Input Data

Area (ac) ..... 1.39  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

#### Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.39	D	78.00
Composite Area & Weighted CN	1.39		78.00

#### Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 n = Manning's roughness  
 L<sub>f</sub> = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 S<sub>f</sub> = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 \* (S<sub>f</sub><sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (S<sub>f</sub><sup>0.5</sup>) (paved surface)  
 V = 15.0 \* (S<sub>f</sub><sup>0.5</sup>) (grassed waterway surface)  
 V = 10.0 \* (S<sub>f</sub><sup>0.5</sup>) (nearly bare & untilled surface)  
 V = 9.0 \* (S<sub>f</sub><sup>0.5</sup>) (cultivated straight rows surface)  
 V = 7.0 \* (S<sub>f</sub><sup>0.5</sup>) (short grass pasture surface)  
 V = 5.0 \* (S<sub>f</sub><sup>0.5</sup>) (woodland surface)  
 V = 2.5 \* (S<sub>f</sub><sup>0.5</sup>) (forest w/heavy litter surface)  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where:

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 \* (R<sup>2/3</sup>) \* (S<sub>f</sub><sup>0.5</sup>)) / n  
 R = A<sub>q</sub> / W<sub>p</sub>  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 A<sub>q</sub> = Flow Area (ft<sup>2</sup>)  
 W<sub>p</sub> = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)  
 n = Manning's roughness

	Subarea	Subarea	Subarea
	A	B	C
<b>Sheet Flow Computations</b>			
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.31	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
<b>Shallow Concentrated Flow Computations</b>			
	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	53	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	0.25	0.00	0.00
Total TOC (min) .....	16.19		

**Subbasin Runoff Results**

Total Rainfall (in) .....	4.50
Total Runoff (in) .....	2.29
Peak Runoff (cfs) .....	0.73
Weighted Curve Number .....	78.00
Time of Concentration (days hh:mm:ss) .....	0 00:16:11

**Subbasin : Sub-02**

**Input Data**

Area (ac) ..... 1.90  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.76	D	78.00
Composite Area & Weighted CN	1.76		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	.11	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	219	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.47	0.00	0.00
Total TOC (min) .....	24.16		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 2.29  
 Peak Runoff (cfs) ..... 0.93  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:10

**Subbasin : Sub-03**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.73	D	78.00
Composite Area & Weighted CN	1.73		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	239	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.60	0.00	0.00
Total TOC (min) .....	24.30		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 2.29  
 Peak Runoff (cfs) ..... 0.85  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:18

**Subbasin : Sub-04**

**Input Data**

Area (ac) ..... 2.72  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	2.72	D	78.00
Composite Area & Weighted CN	2.72		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.2	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	327	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	2.28	0.00	0.00
Computed Flow Time (min) :	2.39	0.00	0.00
Total TOC (min) .....	35.03		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 2.29  
 Peak Runoff (cfs) ..... 1.21  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:35:02

**Subbasin : Sub-05**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.20	D	78.00
Composite Area & Weighted CN	0.20		78.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 2.29  
 Peak Runoff (cfs) ..... 0.11  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-06**

**Input Data**

Area (ac) ..... 0.70  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.30	D	78.00
Composite Area & Weighted CN	0.30		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	79	0.00	0.00
Slope (%) :	.5	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.14	0.00	0.00
Computed Flow Time (min) :	1.15	0.00	0.00
Total TOC (min) .....	33.79		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 2.29  
 Peak Runoff (cfs) ..... 0.31  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:33:47



**Subbasin : Sub-07**

**Input Data**

Area (ac) ..... 0.61  
 Weighted Curve Number ..... 78.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	0.61	D	78.00
Composite Area & Weighted CN	0.61		78.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	191	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.24	0.00	0.00
Computed Flow Time (min) :	13.06	0.00	0.00
Total TOC (min) .....	13.06		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 2.29  
 Peak Runoff (cfs) ..... 0.32  
 Weighted Curve Number ..... 78.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:13:04

**Subbasin : Sub-08**

**Input Data**

Area (ac) ..... 1.01  
 Weighted Curve Number ..... 71.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.01	C	71.00
Composite Area & Weighted CN	1.01		71.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 1.75  
 Peak Runoff (cfs) ..... 0.38  
 Weighted Curve Number ..... 71.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-09**

**Input Data**

Area (ac) ..... 1.82  
 Weighted Curve Number ..... 71.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Meadow, non-grazed	1.82	C	71.00
Composite Area & Weighted CN	1.82		71.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.85	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.11	0.00	0.00
Computed Flow Time (min) :	46.57	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	248	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.98	0.00	0.00
Computed Flow Time (min) :	2.09	0.00	0.00
Total TOC (min) .....	48.66		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 1.75  
 Peak Runoff (cfs) ..... 0.48  
 Weighted Curve Number ..... 71.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:48:40

**Junction Input**

SN Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft <sup>2</sup> )	Minimum Pipe Cover (in)
1 Jun-01	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

### Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 Jun-01	3.07	3.07	370.34	370.34	0.00	5.53	370.06	370.06	0 08:10	0 00:00	0.00	0.00

Pipe Input

SN Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1 Link-01	100.00	369.87	369.87	369.40	369.40	0.47	0.4700	CIRCULAR	72.000	72.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

## Pipe Results

SN Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1 Link-01	3.07	0 08:10	251.63	0.01	3.03	0.55	0.46	0.08	0.00		Calculated

## Project Description

File Name ..... Proposed.SPF

## Project Options

Flow Units ..... CFS  
 Elevation Type ..... Elevation  
 Hydrology Method ..... SCS TR-55  
 Time of Concentration (TOC) Method ..... SCS TR-55  
 Link Routing Method ..... Kinematic Wave  
 Enable Overflow Ponding at Nodes ..... YES  
 Skip Steady State Analysis Time Periods ..... NO

## Analysis Options

Start Analysis On ..... Jul 02, 2021 00:00:00  
 End Analysis On ..... Jul 03, 2021 00:00:00  
 Start Reporting On ..... Jul 02, 2021 00:00:00  
 Antecedent Dry Days ..... 0 days  
 Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss  
 Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss  
 Reporting Time Step ..... 0 00:05:00 days hh:mm:ss  
 Routing Time Step ..... 30 seconds

## Number of Elements

	Qty
Rain Gages .....	1
Subbasins.....	11
Nodes.....	12
<i>Junctions</i> .....	5
<i>Outfalls</i> .....	4
<i>Flow Diversions</i> .....	0
<i>Inlets</i> .....	0
<i>Storage Nodes</i> .....	3
Links.....	10
<i>Channels</i> .....	0
<i>Pipes</i> .....	6
<i>Pumps</i> .....	0
<i>Orifices</i> .....	4
<i>Weirs</i> .....	0
<i>Outlets</i> .....	0
Pollutants .....	0
Land Uses .....	0

## Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	2	Cumulative	inches	Oregon	Clackamas	2	2.50	SCS Type IA 24-hr



## Subbasin Summary

SN	Subbasin ID	Area	Weighted Curve Number	Total Rainfall	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ac)		(in)	(in)	(ac-in)	(cfs)	(days hh:mm:ss)
1	Sub-01	1.17	98.00	2.50	2.27	2.66	0.66	0 00:16:11
2	Sub-01_Bypass	0.22	95.82	2.50	2.04	0.45	0.11	0 00:16:18
3	Sub-02	1.73	96.20	2.50	2.08	3.60	0.86	0 00:24:09
4	Sub-02_Bypass	0.20	89.00	2.50	1.45	0.29	0.07	0 00:05:00
5	Sub-03	1.73	98.00	2.50	2.27	3.93	0.93	0 00:24:18
6	Sub-04	2.72	98.00	2.50	2.27	6.18	1.35	0 00:34:32
7	Sub-05	0.20	98.00	2.50	2.27	0.45	0.12	0 00:05:00
8	Sub-06	0.66	98.00	2.50	2.27	1.50	0.33	0 00:33:32
9	Sub-07	0.61	89.00	2.50	1.45	0.89	0.20	0 00:21:15
10	Sub-08	1.01	79.00	2.50	0.84	0.85	0.17	0 00:05:00
11	Sub-09	1.82	84.55	2.50	1.15	2.09	0.35	0 00:48:51

## Node Summary

SN	Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
			(ft)	(ft)	(ft)	(ft)	(ft <sup>2</sup> )	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1	CB10	Junction	375.00	379.00	0.00	0.00	0.00	0.07	375.13	0.00	3.87	0 00:00	0.00	0.00
2	CB3	Junction	367.00	379.17	368.00	0.00	0.00	2.94	367.98	0.00	11.19	0 00:00	0.00	0.00
3	CB7	Junction	368.42	374.00	368.42	0.00	0.00	0.03	368.49	0.00	5.51	0 00:00	0.00	0.00
4	Jun-01	Junction	369.87	380.00	0.00	6.00	0.00	0.31	370.03	0.00	9.97	0 00:00	0.00	0.00
5	MH4	Junction	366.93	376.86	368.00	0.00	0.00	2.94	368.00	0.00	8.86	0 00:00	0.00	0.00
6	Out-01	Outfall	369.40					0.31	369.56					
7	Out-02	Outfall	374.00					0.29	375.02					
8	Out-03	Outfall	369.00					0.33	369.00					
9	Out-04	Outfall	367.00					0.03	367.82					
10	Pond_1	Storage Node	366.00	374.00	368.28		0.00	0.35	369.02				0.00	0.00
11	Pond_2	Storage Node	375.00	379.30	375.67		0.00	0.86	377.84				0.00	0.00
12	Pond_3	Storage Node	368.00	371.00	0.00		0.00	2.94	371.00				12.52	1210.00

## Subbasin Hydrology

### Subbasin : Sub-01

#### Input Data

Area (ac) ..... 1.17  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

#### Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.17	D	98.00
Composite Area & Weighted CN	1.17		98.00

#### Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 n = Manning's roughness  
 L<sub>f</sub> = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 S<sub>f</sub> = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 \* (S<sub>f</sub><sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (S<sub>f</sub><sup>0.5</sup>) (paved surface)  
 V = 15.0 \* (S<sub>f</sub><sup>0.5</sup>) (grassed waterway surface)  
 V = 10.0 \* (S<sub>f</sub><sup>0.5</sup>) (nearly bare & untilled surface)  
 V = 9.0 \* (S<sub>f</sub><sup>0.5</sup>) (cultivated straight rows surface)  
 V = 7.0 \* (S<sub>f</sub><sup>0.5</sup>) (short grass pasture surface)  
 V = 5.0 \* (S<sub>f</sub><sup>0.5</sup>) (woodland surface)  
 V = 2.5 \* (S<sub>f</sub><sup>0.5</sup>) (forest w/heavy litter surface)  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where:

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3})) * (S_f^{0.5}) / n$$

R = A<sub>q</sub> / W<sub>p</sub>  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 A<sub>q</sub> = Flow Area (ft<sup>2</sup>)  
 W<sub>p</sub> = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)  
 n = Manning's roughness

	Subarea	Subarea	Subarea
	A	B	C
<b>Sheet Flow Computations</b>			
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.31	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
<b>Shallow Concentrated Flow Computations</b>			
	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	53	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	0.25	0.00	0.00
Total TOC (min) .....	16.19		

**Subbasin Runoff Results**

Total Rainfall (in) .....	2.50
Total Runoff (in) .....	2.27
Peak Runoff (cfs) .....	0.66
Weighted Curve Number .....	98.00
Time of Concentration (days hh:mm:ss) .....	0 00:16:11

**Subbasin : Sub-01\_Bypass**

**Input Data**

Area (ac) ..... 0.22  
 Weighted Curve Number ..... 95.82  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.20	C	98.00
> 75% grass cover, Good	0.02	C	74.00
Composite Area & Weighted CN	0.22		95.82

**Time of Concentration**

User-Defined TOC override (minutes): 16.3

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 2.04  
 Peak Runoff (cfs) ..... 0.11  
 Weighted Curve Number ..... 95.82  
 Time of Concentration (days hh:mm:ss) ..... 0 00:16:18

**Subbasin : Sub-02**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 96.20  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.58	D	98.00
> 75% grass cover, Good	0.18	D	80.00
Composite Area & Weighted CN	1.76		96.20

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	219	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.47	0.00	0.00
Total TOC (min) .....	24.16		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 2.08  
 Peak Runoff (cfs) ..... 0.86  
 Weighted Curve Number ..... 96.20  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:10

**Subbasin : Sub-02\_Bypass**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 89.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Gravel roads	0.20	C	89.00
Composite Area & Weighted CN	0.20		89.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 1.45  
 Peak Runoff (cfs) ..... 0.07  
 Weighted Curve Number ..... 89.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-03**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	1.73	D	98.00
Composite Area & Weighted CN	1.73		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
	Manning's Roughness :	.11	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
	Flow Length (ft) :	239	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.60	0.00	0.00
Total TOC (min) .....	24.30		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 2.27  
 Peak Runoff (cfs) ..... 0.93  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:18



**Subbasin : Sub-04**

**Input Data**

Area (ac) ..... 2.72  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	2.72	D	98.00
Composite Area & Weighted CN	2.72		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.2	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	327	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.90	0.00	0.00
Total TOC (min) .....	34.54		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 2.27  
 Peak Runoff (cfs) ..... 1.35  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:34:32

**Subbasin : Sub-05**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.20	D	98.00
Composite Area & Weighted CN	0.20		98.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 2.27  
 Peak Runoff (cfs) ..... 0.12  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-06**

**Input Data**

Area (ac) ..... 0.66  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.70	D	98.00
Composite Area & Weighted CN	0.70		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	79	0.00	0.00
Slope (%) :	.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	1.44	0.00	0.00
Computed Flow Time (min) :	0.91	0.00	0.00
Total TOC (min) .....	33.55		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 2.27  
 Peak Runoff (cfs) ..... 0.33  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:33:33

**Subbasin : Sub-07**

**Input Data**

Area (ac) ..... 0.61  
 Weighted Curve Number ..... 89.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Gravel roads	0.61	C	89.00
Composite Area & Weighted CN	0.61		89.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	191	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.0	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	21.26	0.00	0.00
Total TOC (min) .....	21.26		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 1.45  
 Peak Runoff (cfs) ..... 0.20  
 Weighted Curve Number ..... 89.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:21:16

**Subbasin : Sub-08**

**Input Data**

Area (ac) ..... 1.01  
 Weighted Curve Number ..... 79.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
50 - 75% grass cover, Fair	1.01	C	79.00
Composite Area & Weighted CN	1.01		79.00

**Time of Concentration**

User-Defined TOC override (minutes): 5.00

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 0.84  
 Peak Runoff (cfs) ..... 0.17  
 Weighted Curve Number ..... 79.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-09**

**Input Data**

Area (ac) ..... 1.82  
 Weighted Curve Number ..... 84.55  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	1.02	C	74.00
Paved parking & roofs	0.80	D	98.00
Composite Area & Weighted CN	1.82		84.55

**Time of Concentration**

User-Defined TOC override (minutes): 48.86

**Subbasin Runoff Results**

Total Rainfall (in) ..... 2.50  
 Total Runoff (in) ..... 1.15  
 Peak Runoff (cfs) ..... 0.35  
 Weighted Curve Number ..... 84.55  
 Time of Concentration (days hh:mm:ss) ..... 0 00:48:52

## Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft <sup>2</sup> )	Minimum Pipe Cover (in)
1	CB10	375.00	379.00	4.00	0.00	-375.00	0.00	-379.00	0.00	0.00
2	CB3	367.00	379.17	12.17	368.00	1.00	0.00	-379.17	0.00	0.00
3	CB7	368.42	374.00	5.58	368.42	0.00	0.00	-374.00	0.00	0.00
4	Jun-01	369.87	380.00	10.13	0.00	-369.87	6.00	-374.00	0.00	0.00
5	MH4	366.93	376.86	9.93	368.00	1.07	0.00	-376.86	0.00	0.00

## Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB10	0.07	0.00	375.13	0.13	0.00	3.87	375.12	0.12	1 00:00	0 00:00	0.00	0.00
2 CB3	2.94	2.94	367.98	0.98	0.00	11.19	367.38	0.38	0 08:10	0 00:00	0.00	0.00
3 CB7	0.03	0.00	368.49	0.07	0.00	5.51	368.48	0.06	1 00:00	0 00:00	0.00	0.00
4 Jun-01	0.31	0.31	370.03	0.16	0.00	9.97	369.93	0.06	0 08:10	0 00:00	0.00	0.00
5 MH4	2.94	0.00	368.00	1.07	0.00	8.86	368.00	1.07	0 00:00	0 00:00	0.00	0.00



## Pipe Input

SN Element ID	Length	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	No. of Barrels
1 EX_CULVERT	100.00	369.87	369.40	0.47	0.4700	CIRCULAR	72.00	72.00	0.0150	0.5000	0.5000	0.0000	0.00	1
2 Link-10	72.00	367.00	365.86	1.14	1.5800	CIRCULAR	24.00	24.00	0.0150	0.5000	0.5000	0.0000	0.00	1
3 Link-17	75.17	368.00	367.75	0.25	0.3300	CIRCULAR	12.00	12.00	0.0150	0.5000	0.5000	0.0000	0.00	1
4 Link-20	22.84	375.00	374.89	0.11	0.4800	CIRCULAR	9.96	9.96	0.0150	0.5000	0.5000	0.0000	0.00	1
5 Link-22	4.00	368.00	368.00	0.00	0.0000	Dummy	0.00	0.00	0.0150	0.5000	0.5000	0.0000	0.00	1
6 Link-23	194.20	368.00	368.00	0.00	0.0000	Dummy	0.00	0.00	0.0150	0.5000	0.5000	0.0000	0.00	1

## Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow Velocity	Travel Time	Peak Flow Depth	Total Time Surcharged	Froude Number
	(cfs)	(days hh:mm)	(cfs)	(ft/sec)	(min)	(ft)	(min)	
1 EX_CULVERT	0.31	0 08:10	251.63	1.51	1.10	0.16	0.00	
2 Link-10	2.94	0 08:10	6.11	1.93	0.62	0.98	0.00	
3 Link-17	0.03	1 00:00	2.92	1.15	1.09	0.07	0.00	
4 Link-20	0.07	1 00:00	1.32	1.28	0.30	0.13	0.00	
5 Link-22	0.00	0 00:00	0.00	0.00		0.13	0.00	
6 Link-23	2.94	0 08:10	0.00	0.00		0.13	0.00	

## Storage Nodes

### Storage Node : Pond\_1

#### Input Data

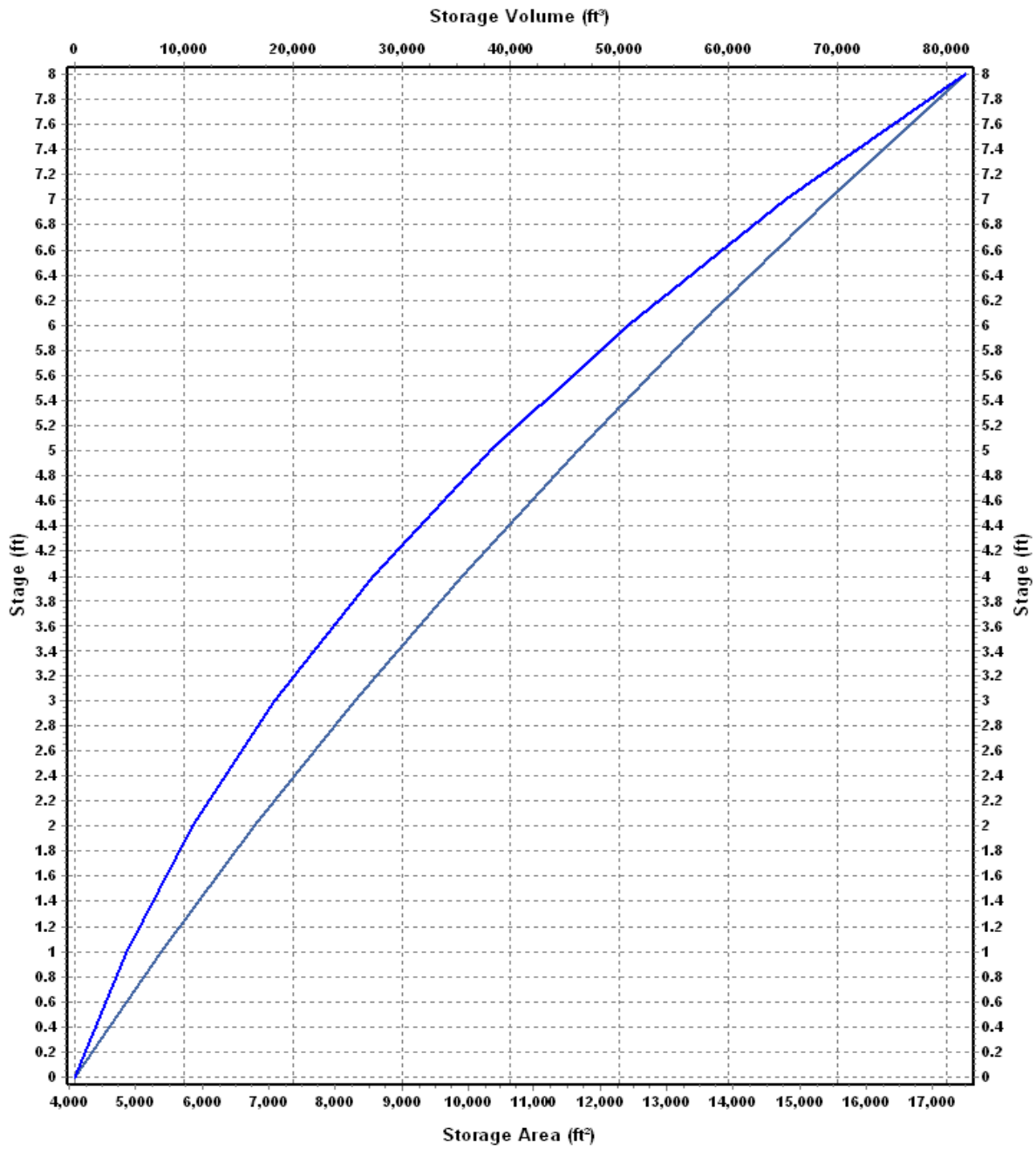
Invert Elevation (ft) ..... 366.00  
 Max (Rim) Elevation (ft) ..... 374.00  
 Max (Rim) Offset (ft) ..... 8.00  
 Initial Water Elevation (ft) ..... 368.28  
 Initial Water Depth (ft) ..... 2.28  
 Ponded Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

#### Storage Area Volume Curves

Storage Curve : Storage-01

Stage	Storage Area	Storage Volume
(ft)	(ft <sup>2</sup> )	(ft <sup>3</sup> )
0	4087	0.000
1	5376	4731.50
2	6775	10807.00
3	8285	18337.00
4	9906	27432.50
5	11673	38222.00
6	13479	50798.00
7	15432	65253.50
8	17490	81714.50

### Storage Area Volume Curves



— Storage Area    — Storage Volume

**Storage Node : Pond\_1 (continued)**

**Outflow Orifices**

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Link-02	Side	CIRCULAR	No	1.00			368.00	0.61
2	Link-16	Bottom	Rectangular	No		24.00	24.00	371.15	0.63

**Output Summary Results**

Peak Inflow (cfs) .....	0.35
Peak Lateral Inflow (cfs) .....	0.35
Peak Outflow (cfs) .....	0.03
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	369.02
Max HGL Depth Attained (ft) .....	3.02
Average HGL Elevation Attained (ft) .....	368.60
Average HGL Depth Attained (ft) .....	2.6
Time of Max HGL Occurrence (days hh:mm) .....	1 00:00
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0.00

**Storage Node : Pond\_2****Input Data**

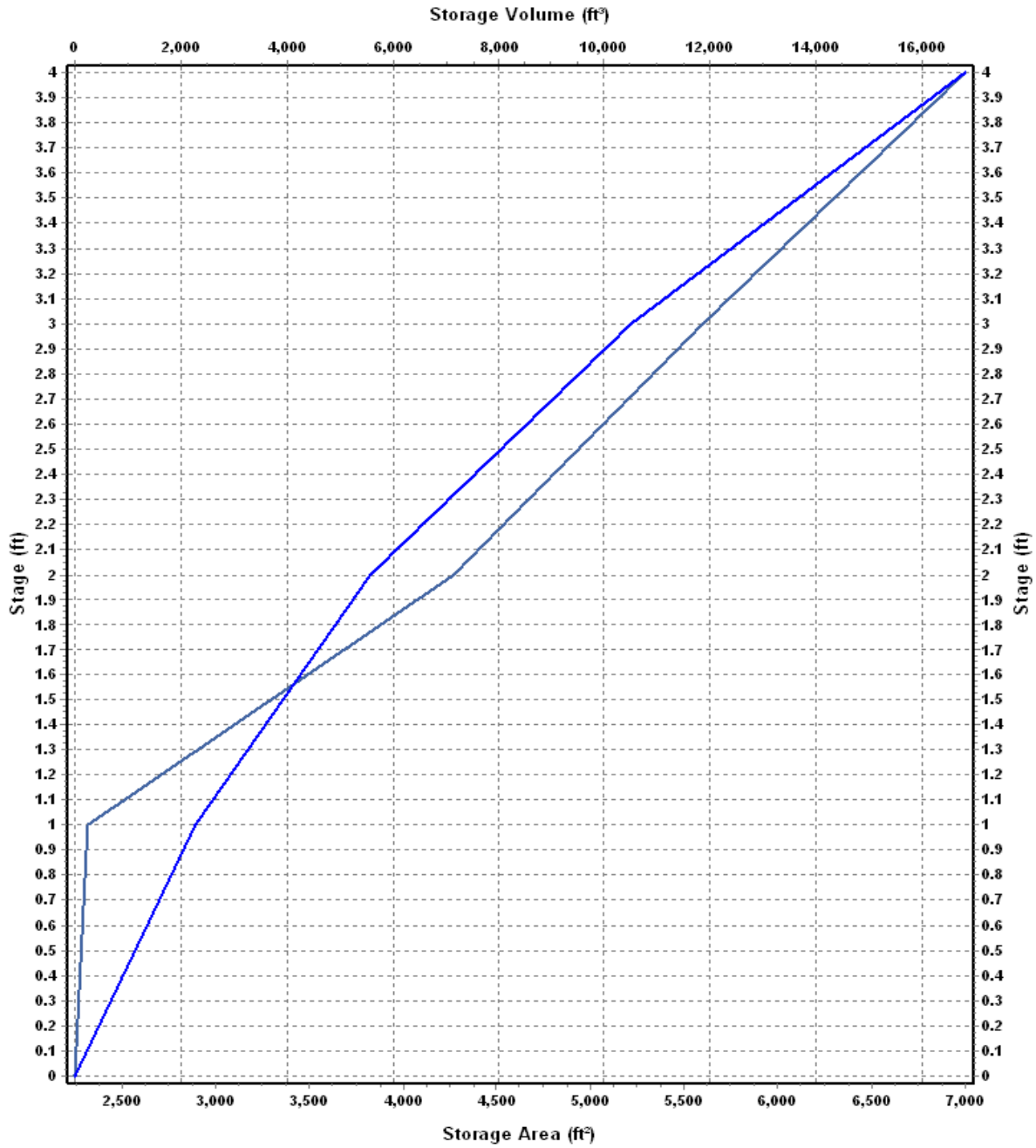
Invert Elevation (ft) ..... 375.00  
 Max (Rim) Elevation (ft) ..... 379.30  
 Max (Rim) Offset (ft) ..... 4.30  
 Initial Water Elevation (ft) ..... 375.67  
 Initial Water Depth (ft) ..... 0.67  
 Poned Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

**Storage Area Volume Curves**

Storage Curve : Storage-02

Stage	Storage Area	Storage Volume
(ft)	(ft <sup>2</sup> )	(ft <sup>3</sup> )
0	2250	0.000
1	2317	2283.50
2	4270	5577.00
3	5600	10512.00
4	6998	16811.00

### Storage Area Volume Curves



— Storage Area — Storage Volume

**Storage Node : Pond\_2 (continued)**

**Outflow Orifices**

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Link-18	Side	CIRCULAR	No	1.25			375.00	0.61
2	Link-19	Bottom	Rectangular	No		24.00	24.00	378.25	0.63

**Output Summary Results**

Peak Inflow (cfs) .....	0.86
Peak Lateral Inflow (cfs) .....	0.86
Peak Outflow (cfs) .....	0.07
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	377.84
Max HGL Depth Attained (ft) .....	2.84
Average HGL Elevation Attained (ft) .....	376.95
Average HGL Depth Attained (ft) .....	1.95
Time of Max HGL Occurrence (days hh:mm) .....	1 00:00
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0.00



**Storage Node : Pond\_3****Input Data**

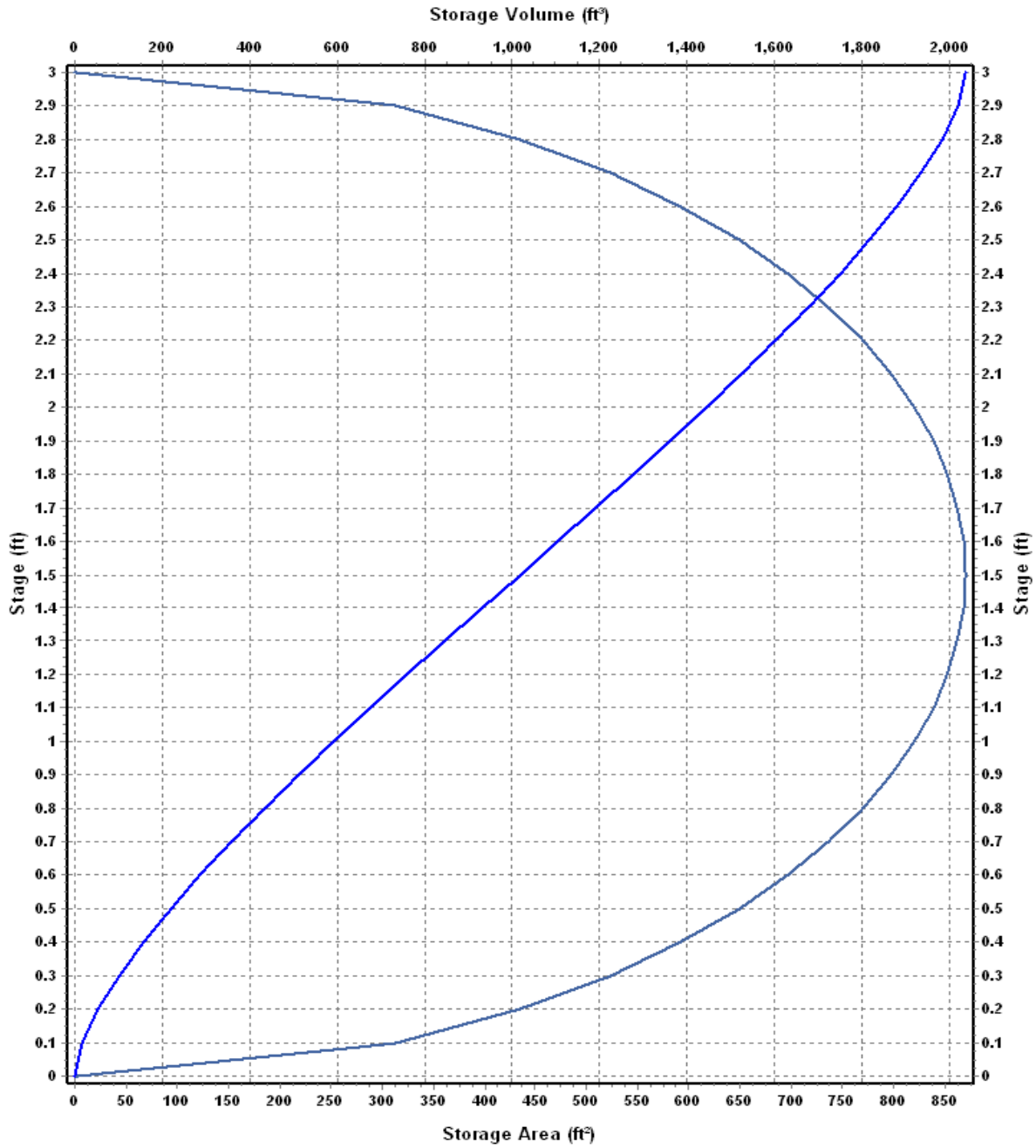
Invert Elevation (ft) ..... 368.00  
 Max (Rim) Elevation (ft) ..... 371.00  
 Max (Rim) Offset (ft) ..... 3.00  
 Initial Water Elevation (ft) ..... 0.00  
 Initial Water Depth (ft) ..... -368.00  
 Poned Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

**Storage Area Volume Curves**

Storage Curve : Storage-03

Stage	Storage Area	Storage Volume
(ft)	(ft <sup>2</sup> )	(ft <sup>3</sup> )
0	0.0000	0.000
0.1	312.3396	15.62
0.2	434.0323	52.94
0.3	522.0000	100.74
0.4	591.4863	156.41
0.5	648.4597	218.41
0.6	696.0000	285.63
0.7	735.9375	357.23
0.8	769.4570	432.50
0.9	797.3682	510.84
1	820.2439	591.72
1.1	838.4963	674.66
1.2	852.4224	759.21
1.3	862.2320	844.94
1.4	868.0645	931.45
1.5	870.0000	1018.35
1.6	868.0645	1105.25
1.7	862.2320	1191.76
1.8	852.4224	1277.49
1.9	838.4963	1362.04
2	820.2439	1444.98
2.1	797.3682	1525.86
2.2	769.4570	1604.20
2.3	735.9375	1679.47
2.4	696.0000	1751.07
2.5	648.4597	1818.29
2.6	591.4863	1880.29
2.7	522.0000	1935.96
2.8	434.0323	1983.76
2.9	312.3396	2021.08
3	0.0000	2036.70

### Storage Area Volume Curves



— Storage Area — Storage Volume

**Storage Node : Pond\_3 (continued)****Output Summary Results**

Peak Inflow (cfs) .....	2.94
Peak Lateral Inflow (cfs) .....	0.00
Peak Outflow (cfs) .....	0.00
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	371.00
Max HGL Depth Attained (ft) .....	3
Average HGL Elevation Attained (ft) .....	370.64
Average HGL Depth Attained (ft) .....	2.64
Time of Max HGL Occurrence (days hh:mm) .....	0 04:09
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	12.52
Total Time Flooded (min) .....	1210
Total Retention Time (sec) .....	0.00

## Project Description

File Name ..... Proposed.SPF

## Project Options

Flow Units ..... CFS  
 Elevation Type ..... Elevation  
 Hydrology Method ..... SCS TR-55  
 Time of Concentration (TOC) Method ..... SCS TR-55  
 Link Routing Method ..... Kinematic Wave  
 Enable Overflow Ponding at Nodes ..... YES  
 Skip Steady State Analysis Time Periods ..... NO

## Analysis Options

Start Analysis On ..... Jul 02, 2021 00:00:00  
 End Analysis On ..... Jul 03, 2021 00:00:00  
 Start Reporting On ..... Jul 02, 2021 00:00:00  
 Antecedent Dry Days ..... 0 days  
 Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss  
 Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss  
 Reporting Time Step ..... 0 00:05:00 days hh:mm:ss  
 Routing Time Step ..... 30 seconds

## Number of Elements

Qty  
 Rain Gages ..... 1  
 Subbasins..... 11  
 Nodes..... 12  
     *Junctions* ..... 5  
     *Outfalls* ..... 4  
     *Flow Diversions* ..... 0  
     *Inlets* ..... 0  
     *Storage Nodes* ..... 3  
 Links..... 10  
     *Channels* ..... 0  
     *Pipes* ..... 6  
     *Pumps* ..... 0  
     *Orifices* ..... 4  
     *Weirs* ..... 0  
     *Outlets* ..... 0  
 Pollutants ..... 0  
 Land Uses ..... 0

## Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	10	Cumulative	inches	Oregon	Clackamas	10	3.45	SCS Type IA 24-hr

## Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-01	1.17	98.00	3.45	3.22	3.76	0.93	0 00:16:11
2	Sub-01_Bypass	0.22	95.82	3.45	2.98	0.65	0.16	0 00:16:18
3	Sub-02	1.73	96.20	3.45	3.02	5.22	1.24	0 00:24:09
4	Sub-02_Bypass	0.20	89.00	3.45	2.31	0.46	0.12	0 00:05:00
5	Sub-03	1.73	98.00	3.45	3.22	5.57	1.30	0 00:24:18
6	Sub-04	2.72	98.00	3.45	3.22	8.75	1.88	0 00:34:32
7	Sub-05	0.20	98.00	3.45	3.22	0.64	0.16	0 00:05:00
8	Sub-06	0.66	98.00	3.45	3.22	2.12	0.46	0 00:33:32
9	Sub-07	0.61	89.00	3.45	2.31	1.41	0.34	0 00:21:15
10	Sub-08	1.01	79.00	3.45	1.53	1.54	0.35	0 00:05:00
11	Sub-09	1.82	84.55	3.45	1.94	3.53	0.64	0 00:48:51

**Node Summary**

SN	Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
			(ft)	(ft)	(ft)	(ft)	(ft <sup>2</sup> )	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1	CB10	Junction	375.00	379.00	0.00	0.00	0.00	0.19	375.22	0.00	3.78	0 00:00	0.00	0.00
2	CB3	Junction	367.00	379.17	368.00	0.00	0.00	4.13	368.20	0.00	10.97	0 00:00	0.00	0.00
3	CB7	Junction	368.42	374.00	368.42	0.00	0.00	0.03	368.49	0.00	5.51	0 00:00	0.00	0.00
4	Jun-01	Junction	369.87	380.00	0.00	6.00	0.00	0.49	370.07	0.00	9.93	0 00:00	0.00	0.00
5	MH4	Junction	366.93	376.86	368.00	0.00	0.00	4.13	368.13	0.00	8.73	0 00:00	0.00	0.00
6	Out-01	Outfall	369.40					0.49	369.60					
7	Out-02	Outfall	374.00					0.52	375.11					
8	Out-03	Outfall	369.00					0.46	369.00					
9	Out-04	Outfall	367.00					0.03	367.82					
10	Pond_1	Storage Node	366.00	374.00	368.28		0.00	0.64	369.56				0.00	0.00
11	Pond_2	Storage Node	375.00	379.30	375.67		0.00	1.24	378.28				0.00	0.00
12	Pond_3	Storage Node	368.00	371.00	0.00		0.00	4.13	371.00				17.98	1259.00

## Link Summary

SN	Element ID	Element Type	From (Inlet Node)	To (Outlet Node)	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow Velocity	Peak Flow Depth	Total Time Surcharged
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)	(ft/sec)	(ft)	(min)
1	EX_CULVERT	Pipe	Jun-01	Out-01	100.00	369.87	369.40	0.47	72.00	0.0150	0.49	251.63	1.74	0.20	0.00
2	Link-10	Pipe	CB3	MH4	72.00	367.00	365.86	1.58	24.00	0.0150	4.13	6.11	2.09	1.20	0.00
3	Link-17	Pipe	CB7	Out-04	75.17	368.00	367.75	0.33	12.00	0.0150	0.03	2.92	1.24	0.07	0.00
4	Link-20	Pipe	CB10	Out-02	22.84	375.00	374.89	0.48	10.00	0.0150	0.19	1.32	1.72	0.22	0.00
5	Link-22	Pipe	Pond_3	Pond_1	4.00	368.00	368.00	0.00	0.00	0.0150	0.00	0.00	0.00	0.22	0.00
6	Link-23	Pipe	MH4	Pond_3	194.20	368.00	368.00	0.00	0.00	0.0150	4.13	0.00	0.00	0.22	0.00
7	Link-02	Orifice	Pond_1	CB7		366.00	368.42		1.00		0.03				
8	Link-16	Orifice	Pond_1	CB7		366.00	368.42		24.00		0.00				
9	Link-18	Orifice	Pond_2	CB10		375.00	375.00		1.25		0.08				
10	Link-19	Orifice	Pond_2	CB10		375.00	375.00		24.00		0.12				

## Subbasin Hydrology

### Subbasin : Sub-01

#### Input Data

Area (ac) ..... 1.17  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

#### Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.17	D	98.00
Composite Area & Weighted CN	1.17		98.00

#### Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 n = Manning's roughness  
 L<sub>f</sub> = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 S<sub>f</sub> = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 \* (S<sub>f</sub><sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (S<sub>f</sub><sup>0.5</sup>) (paved surface)  
 V = 15.0 \* (S<sub>f</sub><sup>0.5</sup>) (grassed waterway surface)  
 V = 10.0 \* (S<sub>f</sub><sup>0.5</sup>) (nearly bare & untilled surface)  
 V = 9.0 \* (S<sub>f</sub><sup>0.5</sup>) (cultivated straight rows surface)  
 V = 7.0 \* (S<sub>f</sub><sup>0.5</sup>) (short grass pasture surface)  
 V = 5.0 \* (S<sub>f</sub><sup>0.5</sup>) (woodland surface)  
 V = 2.5 \* (S<sub>f</sub><sup>0.5</sup>) (forest w/heavy litter surface)  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where:

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 \* (R<sup>2/3</sup>) \* (S<sub>f</sub><sup>0.5</sup>)) / n  
 R = A<sub>q</sub> / W<sub>p</sub>  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 A<sub>q</sub> = Flow Area (ft<sup>2</sup>)  
 W<sub>p</sub> = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)  
 n = Manning's roughness



Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.31	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	53	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	0.25	0.00	0.00
Total TOC (min) .....	16.19		

**Subbasin Runoff Results**

Total Rainfall (in) .....	3.45
Total Runoff (in) .....	3.22
Peak Runoff (cfs) .....	0.93
Weighted Curve Number .....	98.00
Time of Concentration (days hh:mm:ss) .....	0 00:16:11

**Subbasin : Sub-01\_Bypass**

**Input Data**

Area (ac) ..... 0.22  
 Weighted Curve Number ..... 95.82  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.20	C	98.00
> 75% grass cover, Good	0.02	C	74.00
Composite Area & Weighted CN	0.22		95.82

**Time of Concentration**

User-Defined TOC override (minutes): 16.3

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 2.98  
 Peak Runoff (cfs) ..... 0.16  
 Weighted Curve Number ..... 95.82  
 Time of Concentration (days hh:mm:ss) ..... 0 00:16:18

**Subbasin : Sub-02**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 96.20  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.58	D	98.00
> 75% grass cover, Good	0.18	D	80.00
Composite Area & Weighted CN	1.76		96.20

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	219	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.47	0.00	0.00
Total TOC (min) .....	24.16		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 3.02  
 Peak Runoff (cfs) ..... 1.24  
 Weighted Curve Number ..... 96.20  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:10

**Subbasin : Sub-02\_Bypass**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 89.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Gravel roads	0.20	C	89.00
Composite Area & Weighted CN	0.20		89.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 2.31  
 Peak Runoff (cfs) ..... 0.12  
 Weighted Curve Number ..... 89.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-03**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	1.73	D	98.00
Composite Area & Weighted CN	1.73		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	239	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.60	0.00	0.00
Total TOC (min) .....	24.30		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 3.22  
 Peak Runoff (cfs) ..... 1.30  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:18

**Subbasin : Sub-04**

**Input Data**

Area (ac) ..... 2.72  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	2.72	D	98.00
Composite Area & Weighted CN	2.72		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.2	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	327	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.90	0.00	0.00
Total TOC (min) .....	34.54		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 3.22  
 Peak Runoff (cfs) ..... 1.88  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:34:32

**Subbasin : Sub-05**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.20	D	98.00
Composite Area & Weighted CN	0.20		98.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 3.22  
 Peak Runoff (cfs) ..... 0.16  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-06**

**Input Data**

Area (ac) ..... 0.66  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.70	D	98.00
Composite Area & Weighted CN	0.70		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	79	0.00	0.00
Slope (%) :	.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	1.44	0.00	0.00
Computed Flow Time (min) :	0.91	0.00	0.00
Total TOC (min) .....	33.55		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 3.22  
 Peak Runoff (cfs) ..... 0.46  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:33:33



**Subbasin : Sub-07**

**Input Data**

Area (ac) ..... 0.61  
 Weighted Curve Number ..... 89.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Gravel roads	0.61	C	89.00
Composite Area & Weighted CN	0.61		89.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	191	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.0	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	21.26	0.00	0.00
Total TOC (min) .....	21.26		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 2.31  
 Peak Runoff (cfs) ..... 0.34  
 Weighted Curve Number ..... 89.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:21:16

**Subbasin : Sub-08**

**Input Data**

Area (ac) ..... 1.01  
 Weighted Curve Number ..... 79.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
50 - 75% grass cover, Fair	1.01	C	79.00
Composite Area & Weighted CN	1.01		79.00

**Time of Concentration**

User-Defined TOC override (minutes): 5.00

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.53  
 Peak Runoff (cfs) ..... 0.35  
 Weighted Curve Number ..... 79.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-09**

**Input Data**

Area (ac) ..... 1.82  
 Weighted Curve Number ..... 84.55  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	1.02	C	74.00
Paved parking & roofs	0.80	D	98.00
Composite Area & Weighted CN	1.82		84.55

**Time of Concentration**

User-Defined TOC override (minutes): 48.86

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.45  
 Total Runoff (in) ..... 1.94  
 Peak Runoff (cfs) ..... 0.64  
 Weighted Curve Number ..... 84.55  
 Time of Concentration (days hh:mm:ss) ..... 0 00:48:52

## Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft <sup>2</sup> )	Minimum Pipe Cover (in)
1	CB10	375.00	379.00	4.00	0.00	-375.00	0.00	-379.00	0.00	0.00
2	CB3	367.00	379.17	12.17	368.00	1.00	0.00	-379.17	0.00	0.00
3	CB7	368.42	374.00	5.58	368.42	0.00	0.00	-374.00	0.00	0.00
4	Jun-01	369.87	380.00	10.13	0.00	-369.87	6.00	-374.00	0.00	0.00
5	MH4	366.93	376.86	9.93	368.00	1.07	0.00	-376.86	0.00	0.00

**Junction Results**

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB10	0.19	0.00	375.22	0.22	0.00	3.78	375.15	0.15	0 15:17	0 00:00	0.00	0.00
2 CB3	4.13	4.13	368.20	1.20	0.00	10.97	367.45	0.45	0 08:10	0 00:00	0.00	0.00
3 CB7	0.03	0.00	368.49	0.07	0.00	5.51	368.48	0.06	1 00:00	0 00:00	0.00	0.00
4 Jun-01	0.49	0.49	370.07	0.20	0.00	9.93	369.95	0.08	0 08:10	0 00:00	0.00	0.00
5 MH4	4.13	0.00	368.13	1.20	0.00	8.73	368.00	1.07	0 08:10	0 00:00	0.00	0.00

## Pipe Input

SN Element ID	Length	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	No. of Barrels
1 EX_CULVERT	100.00	369.87	369.40	0.47	0.4700	CIRCULAR	72.00	72.00	0.0150	0.5000	0.5000	0.0000	0.00	1
2 Link-10	72.00	367.00	365.86	1.14	1.5800	CIRCULAR	24.00	24.00	0.0150	0.5000	0.5000	0.0000	0.00	1
3 Link-17	75.17	368.00	367.75	0.25	0.3300	CIRCULAR	12.00	12.00	0.0150	0.5000	0.5000	0.0000	0.00	1
4 Link-20	22.84	375.00	374.89	0.11	0.4800	CIRCULAR	9.96	9.96	0.0150	0.5000	0.5000	0.0000	0.00	1
5 Link-22	4.00	368.00	368.00	0.00	0.0000	Dummy	0.00	0.00	0.0150	0.5000	0.5000	0.0000	0.00	1
6 Link-23	194.20	368.00	368.00	0.00	0.0000	Dummy	0.00	0.00	0.0150	0.5000	0.5000	0.0000	0.00	1

## Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow Velocity	Travel Time	Peak Flow Depth	Total Time Surcharged	Froude Number
	(cfs)	(days hh:mm)	(cfs)	(ft/sec)	(min)	(ft)	(min)	
1 EX_CULVERT	0.49	0 08:10	251.63	1.74	0.96	0.20	0.00	
2 Link-10	4.13	0 08:10	6.11	2.09	0.57	1.20	0.00	
3 Link-17	0.03	1 00:00	2.92	1.24	1.01	0.07	0.00	
4 Link-20	0.19	0 15:17	1.32	1.72	0.22	0.22	0.00	
5 Link-22	0.00	0 00:00	0.00	0.00		0.22	0.00	
6 Link-23	4.13	0 08:10	0.00	0.00		0.22	0.00	

## Storage Nodes

### Storage Node : Pond\_1

#### Input Data

Invert Elevation (ft) ..... 366.00  
 Max (Rim) Elevation (ft) ..... 374.00  
 Max (Rim) Offset (ft) ..... 8.00  
 Initial Water Elevation (ft) ..... 368.28  
 Initial Water Depth (ft) ..... 2.28  
 Ponded Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

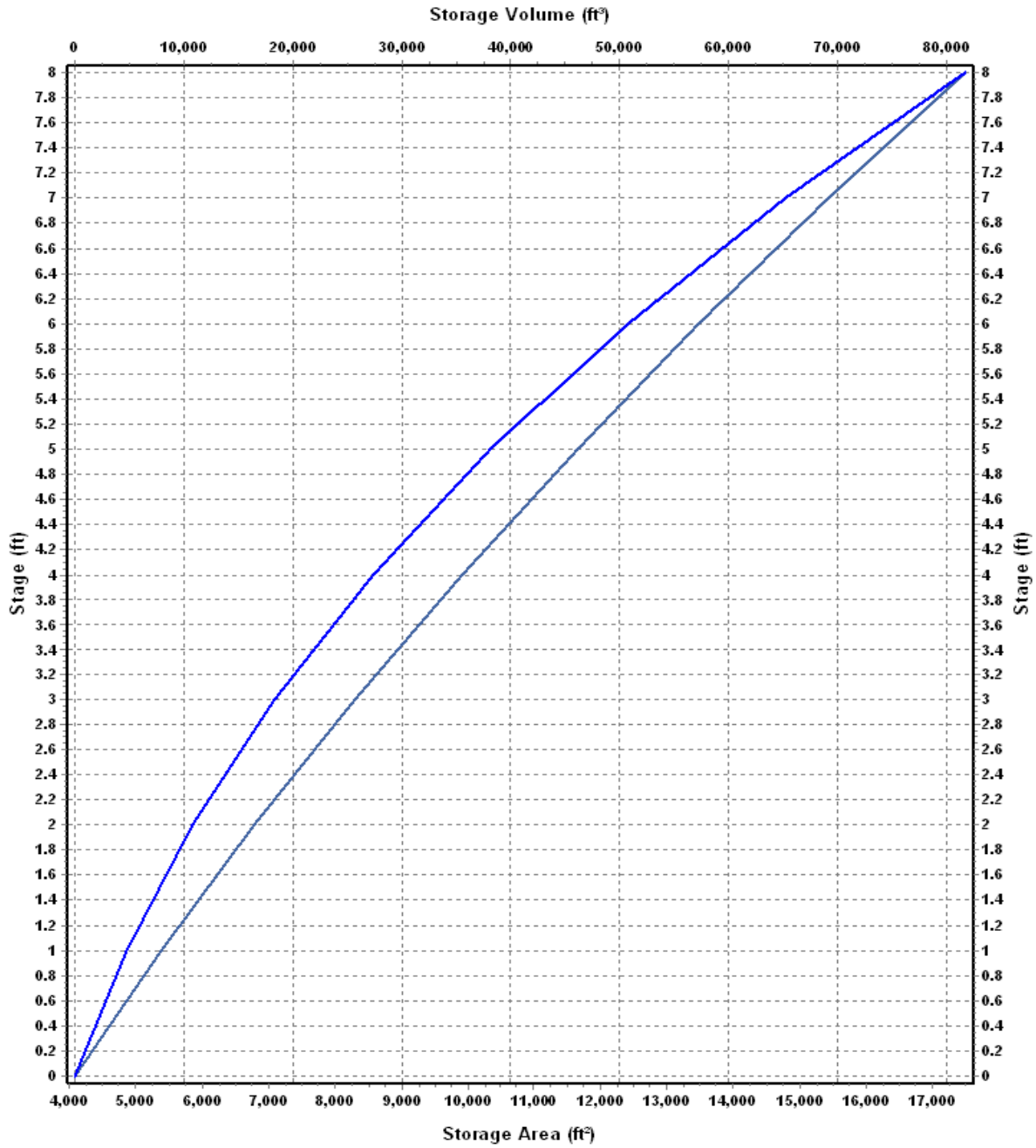
#### Storage Area Volume Curves

Storage Curve : Storage-01

Stage	Storage Area	Storage Volume
(ft)	(ft <sup>2</sup> )	(ft <sup>3</sup> )
0	4087	0.000
1	5376	4731.50
2	6775	10807.00
3	8285	18337.00
4	9906	27432.50
5	11673	38222.00
6	13479	50798.00
7	15432	65253.50
8	17490	81714.50



### Storage Area Volume Curves



— Storage Area    — Storage Volume

**Storage Node : Pond\_1 (continued)**

**Outflow Orifices**

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Link-02	Side	CIRCULAR	No	1.00			368.00	0.61
2	Link-16	Bottom	Rectangular	No		24.00	24.00	371.15	0.63

**Output Summary Results**

Peak Inflow (cfs) .....	0.64
Peak Lateral Inflow (cfs) .....	0.64
Peak Outflow (cfs) .....	0.03
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	369.56
Max HGL Depth Attained (ft) .....	3.56
Average HGL Elevation Attained (ft) .....	368.87
Average HGL Depth Attained (ft) .....	2.87
Time of Max HGL Occurrence (days hh:mm) .....	1 00:00
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0.00

**Storage Node : Pond\_2**

**Input Data**

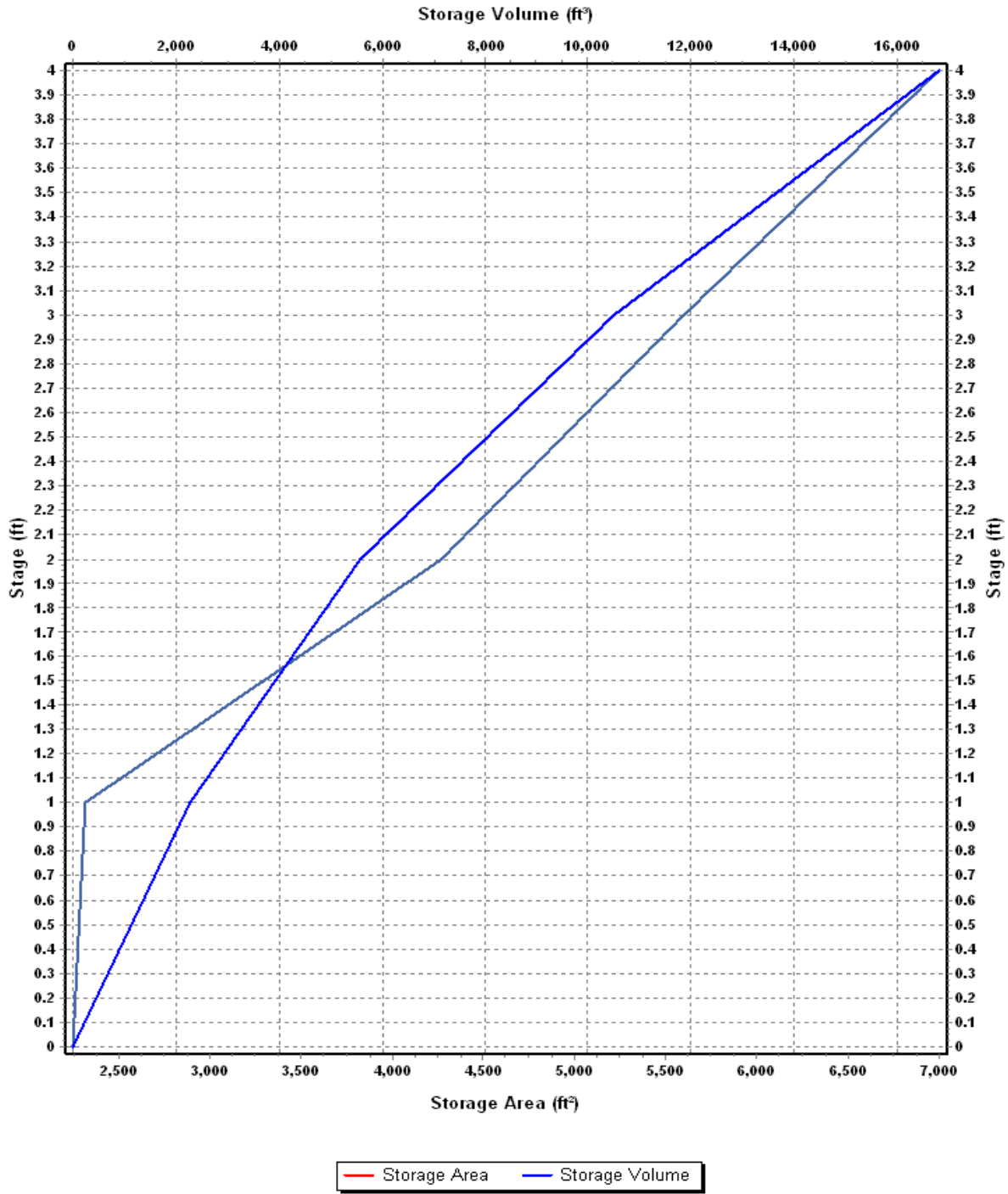
Invert Elevation (ft) ..... 375.00  
 Max (Rim) Elevation (ft) ..... 379.30  
 Max (Rim) Offset (ft) ..... 4.30  
 Initial Water Elevation (ft) ..... 375.67  
 Initial Water Depth (ft) ..... 0.67  
 Ponded Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

**Storage Area Volume Curves**

Storage Curve : Storage-02

Stage (ft)	Storage Area (ft <sup>2</sup> )	Storage Volume (ft <sup>3</sup> )
0	2250	0.000
1	2317	2283.50
2	4270	5577.00
3	5600	10512.00
4	6998	16811.00

### Storage Area Volume Curves



**Storage Node : Pond\_2 (continued)**

**Outflow Orifices**

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Link-18	Side	CIRCULAR	No	1.25			375.00	0.61
2	Link-19	Bottom	Rectangular	No		24.00	24.00	378.25	0.63

**Output Summary Results**

Peak Inflow (cfs) .....	1.24
Peak Lateral Inflow (cfs) .....	1.24
Peak Outflow (cfs) .....	0.19
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	378.28
Max HGL Depth Attained (ft) .....	3.28
Average HGL Elevation Attained (ft) .....	377.40
Average HGL Depth Attained (ft) .....	2.4
Time of Max HGL Occurrence (days hh:mm) .....	0 15:17
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0.00

**Storage Node : Pond\_3**

**Input Data**

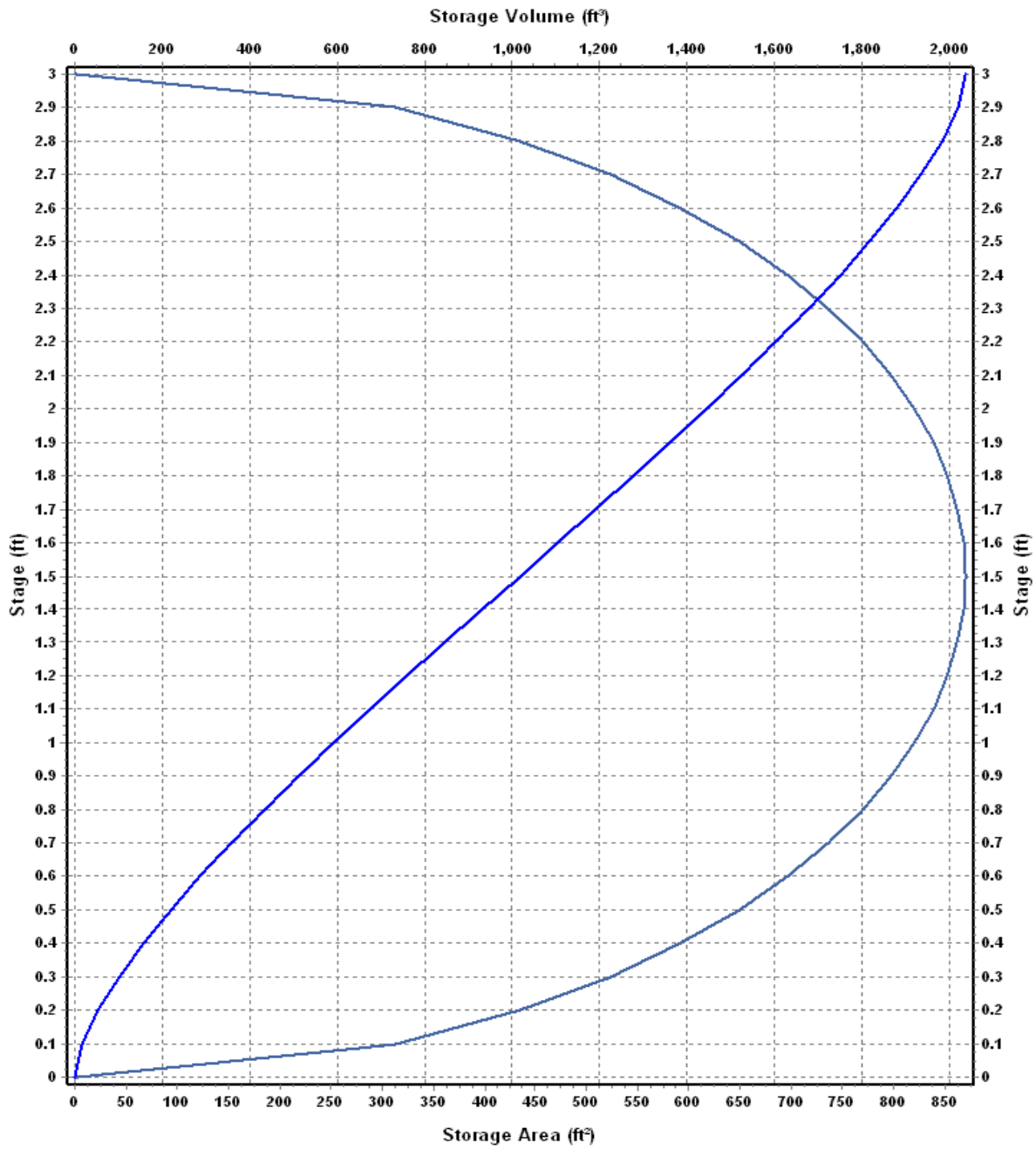
Invert Elevation (ft) ..... 368.00  
 Max (Rim) Elevation (ft) ..... 371.00  
 Max (Rim) Offset (ft) ..... 3.00  
 Initial Water Elevation (ft) ..... 0.00  
 Initial Water Depth (ft) ..... -368.00  
 Poned Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

**Storage Area Volume Curves**

Storage Curve : Storage-03

Stage (ft)	Storage Area (ft <sup>2</sup> )	Storage Volume (ft <sup>3</sup> )
0	0.0000	0.000
0.1	312.3396	15.62
0.2	434.0323	52.94
0.3	522.0000	100.74
0.4	591.4863	156.41
0.5	648.4597	218.41
0.6	696.0000	285.63
0.7	735.9375	357.23
0.8	769.4570	432.50
0.9	797.3682	510.84
1	820.2439	591.72
1.1	838.4963	674.66
1.2	852.4224	759.21
1.3	862.2320	844.94
1.4	868.0645	931.45
1.5	870.0000	1018.35
1.6	868.0645	1105.25
1.7	862.2320	1191.76
1.8	852.4224	1277.49
1.9	838.4963	1362.04
2	820.2439	1444.98
2.1	797.3682	1525.86
2.2	769.4570	1604.20
2.3	735.9375	1679.47
2.4	696.0000	1751.07
2.5	648.4597	1818.29
2.6	591.4863	1880.29
2.7	522.0000	1935.96
2.8	434.0323	1983.76
2.9	312.3396	2021.08
3	0.0000	2036.70

### Storage Area Volume Curves



— Storage Area — Storage Volume

**Storage Node : Pond\_3 (continued)****Output Summary Results**

Peak Inflow (cfs) .....	4.13
Peak Lateral Inflow (cfs) .....	0.00
Peak Outflow (cfs) .....	0.00
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	371.00
Max HGL Depth Attained (ft) .....	3
Average HGL Elevation Attained (ft) .....	370.71
Average HGL Depth Attained (ft) .....	2.71
Time of Max HGL Occurrence (days hh:mm) .....	0 03:20
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	17.98
Total Time Flooded (min) .....	1259
Total Retention Time (sec) .....	0.00



## Project Description

File Name ..... Proposed.SPF

## Project Options

Flow Units ..... CFS  
 Elevation Type ..... Elevation  
 Hydrology Method ..... SCS TR-55  
 Time of Concentration (TOC) Method ..... SCS TR-55  
 Link Routing Method ..... Kinematic Wave  
 Enable Overflow Ponding at Nodes ..... YES  
 Skip Steady State Analysis Time Periods ..... NO

## Analysis Options

Start Analysis On ..... Jul 02, 2021 00:00:00  
 End Analysis On ..... Jul 03, 2021 00:00:00  
 Start Reporting On ..... Jul 02, 2021 00:00:00  
 Antecedent Dry Days ..... 0 days  
 Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss  
 Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss  
 Reporting Time Step ..... 0 00:05:00 days hh:mm:ss  
 Routing Time Step ..... 30 seconds

## Number of Elements

Qty  
 Rain Gages ..... 1  
 Subbasins..... 11  
 Nodes..... 12  
     *Junctions* ..... 5  
     *Outfalls* ..... 4  
     *Flow Diversions* ..... 0  
     *Inlets* ..... 0  
     *Storage Nodes* ..... 3  
 Links..... 10  
     *Channels* ..... 0  
     *Pipes* ..... 6  
     *Pumps* ..... 0  
     *Orifices* ..... 4  
     *Weirs* ..... 0  
     *Outlets* ..... 0  
 Pollutants ..... 0  
 Land Uses ..... 0

## Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	25	Cumulative	inches	Oregon	Clackamas	25	3.90	SCS Type IA 24-hr

## Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-01	1.17	98.00	3.90	3.67	4.29	1.05	0 00:16:11
2	Sub-01_Bypass	0.22	95.82	3.90	3.42	0.75	0.19	0 00:16:18
3	Sub-02	1.73	96.20	3.90	3.46	5.99	1.42	0 00:24:09
4	Sub-02_Bypass	0.20	89.00	3.90	2.73	0.55	0.14	0 00:05:00
5	Sub-03	1.73	98.00	3.90	3.67	6.34	1.47	0 00:24:18
6	Sub-04	2.72	98.00	3.90	3.67	9.97	2.14	0 00:34:32
7	Sub-05	0.20	98.00	3.90	3.67	0.73	0.18	0 00:05:00
8	Sub-06	0.66	98.00	3.90	3.67	2.42	0.52	0 00:33:32
9	Sub-07	0.61	89.00	3.90	2.73	1.66	0.40	0 00:21:15
10	Sub-08	1.01	79.00	3.90	1.88	1.90	0.45	0 00:05:00
11	Sub-09	1.82	84.55	3.90	2.33	4.24	0.79	0 00:48:51

## Node Summary

SN	Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
			(ft)	(ft)	(ft)	(ft)	(ft <sup>2</sup> )	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1	CB10	Junction	375.00	379.00	0.00	0.00	0.00	0.26	375.25	0.00	3.75	0 00:00	0.00	0.00
2	CB3	Junction	367.00	379.17	368.00	0.00	0.00	4.69	368.31	0.00	10.86	0 00:00	0.00	0.00
3	CB7	Junction	368.42	374.00	368.42	0.00	0.00	0.04	368.50	0.00	5.50	0 00:00	0.00	0.00
4	Jun-01	Junction	369.87	380.00	0.00	6.00	0.00	0.58	370.08	0.00	9.92	0 00:00	0.00	0.00
5	MH4	Junction	366.93	376.86	368.00	0.00	0.00	4.68	368.24	0.00	8.62	0 00:00	0.00	0.00
6	Out-01	Outfall	369.40					0.58	369.61					
7	Out-02	Outfall	374.00					0.65	375.14					
8	Out-03	Outfall	369.00					0.52	369.00					
9	Out-04	Outfall	367.00					0.04	367.83					
10	Pond_1	Storage Node	366.00	374.00	368.28		0.00	0.78	369.82				0.00	0.00
11	Pond_2	Storage Node	375.00	379.30	375.67		0.00	1.42	378.29				0.00	0.00
12	Pond_3	Storage Node	368.00	371.00	0.00		0.00	4.68	371.00				20.57	1274.00

## Link Summary

SN	Element ID	Element Type	From (Inlet Node)	To (Outlet Node)	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow Velocity	Peak Flow Depth	Total Time Surcharged
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)	(ft/sec)	(ft)	(min)
1	EX_CULVERT	Pipe	Jun-01	Out-01	100.00	369.87	369.40	0.47	72.00	0.0150	0.58	251.63	1.83	0.21	0.00
2	Link-10	Pipe	CB3	MH4	72.00	367.00	365.86	1.58	24.00	0.0150	4.68	6.11	2.15	1.31	0.00
3	Link-17	Pipe	CB7	Out-04	75.17	368.00	367.75	0.33	12.00	0.0150	0.04	2.92	1.27	0.08	0.00
4	Link-20	Pipe	CB10	Out-02	22.84	375.00	374.89	0.48	10.00	0.0150	0.26	1.32	1.89	0.25	0.00
5	Link-22	Pipe	Pond_3	Pond_1	4.00	368.00	368.00	0.00	0.00	0.0150	0.00	0.00	0.00	0.25	0.00
6	Link-23	Pipe	MH4	Pond_3	194.20	368.00	368.00	0.00	0.00	0.0150	4.68	0.00	0.00	0.25	0.00
7	Link-02	Orifice	Pond_1	CB7		366.00	368.42		1.00		0.04				
8	Link-16	Orifice	Pond_1	CB7		366.00	368.42		24.00		0.00				
9	Link-18	Orifice	Pond_2	CB10		375.00	375.00		1.25		0.08				
10	Link-19	Orifice	Pond_2	CB10		375.00	375.00		24.00		0.19				

## Subbasin Hydrology

### Subbasin : Sub-01

#### Input Data

Area (ac) ..... 1.17  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

#### Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.17	D	98.00
Composite Area & Weighted CN	1.17		98.00

#### Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 n = Manning's roughness  
 L<sub>f</sub> = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 S<sub>f</sub> = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 \* (S<sub>f</sub><sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (S<sub>f</sub><sup>0.5</sup>) (paved surface)  
 V = 15.0 \* (S<sub>f</sub><sup>0.5</sup>) (grassed waterway surface)  
 V = 10.0 \* (S<sub>f</sub><sup>0.5</sup>) (nearly bare & untilled surface)  
 V = 9.0 \* (S<sub>f</sub><sup>0.5</sup>) (cultivated straight rows surface)  
 V = 7.0 \* (S<sub>f</sub><sup>0.5</sup>) (short grass pasture surface)  
 V = 5.0 \* (S<sub>f</sub><sup>0.5</sup>) (woodland surface)  
 V = 2.5 \* (S<sub>f</sub><sup>0.5</sup>) (forest w/heavy litter surface)  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where:

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 \* (R<sup>2/3</sup>) \* (S<sub>f</sub><sup>0.5</sup>)) / n  
 R = A<sub>q</sub> / W<sub>p</sub>  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 A<sub>q</sub> = Flow Area (ft<sup>2</sup>)  
 W<sub>p</sub> = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)  
 n = Manning's roughness

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.31	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	53	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	0.25	0.00	0.00
Total TOC (min) .....	16.19		

**Subbasin Runoff Results**

Total Rainfall (in) .....	3.90
Total Runoff (in) .....	3.67
Peak Runoff (cfs) .....	1.05
Weighted Curve Number .....	98.00
Time of Concentration (days hh:mm:ss) .....	0 00:16:11

**Subbasin : Sub-01\_Bypass**

**Input Data**

Area (ac) ..... 0.22  
 Weighted Curve Number ..... 95.82  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.20	C	98.00
> 75% grass cover, Good	0.02	C	74.00
Composite Area & Weighted CN	0.22		95.82

**Time of Concentration**

User-Defined TOC override (minutes): 16.3

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 3.42  
 Peak Runoff (cfs) ..... 0.19  
 Weighted Curve Number ..... 95.82  
 Time of Concentration (days hh:mm:ss) ..... 0 00:16:18

**Subbasin : Sub-02**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 96.20  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.58	D	98.00
> 75% grass cover, Good	0.18	D	80.00
Composite Area & Weighted CN	1.76		96.20

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	219	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.47	0.00	0.00
Total TOC (min) .....	24.16		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 3.46  
 Peak Runoff (cfs) ..... 1.42  
 Weighted Curve Number ..... 96.20  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:10



**Subbasin : Sub-02\_Bypass**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 89.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Gravel roads	0.20	C	89.00
Composite Area & Weighted CN	0.20		89.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 2.73  
 Peak Runoff (cfs) ..... 0.14  
 Weighted Curve Number ..... 89.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-03**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	1.73	D	98.00
Composite Area & Weighted CN	1.73		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	239	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.60	0.00	0.00
Total TOC (min) .....	24.30		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 3.67  
 Peak Runoff (cfs) ..... 1.47  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:18

**Subbasin : Sub-04**

**Input Data**

Area (ac) ..... 2.72  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	2.72	D	98.00
Composite Area & Weighted CN	2.72		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.2	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	327	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.90	0.00	0.00
Total TOC (min) .....	34.54		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 3.67  
 Peak Runoff (cfs) ..... 2.14  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:34:32

**Subbasin : Sub-05**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.20	D	98.00
Composite Area & Weighted CN	0.20		98.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 3.67  
 Peak Runoff (cfs) ..... 0.18  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-06**

**Input Data**

Area (ac) ..... 0.66  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.70	D	98.00
Composite Area & Weighted CN	0.70		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	79	0.00	0.00
Slope (%) :	.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	1.44	0.00	0.00
Computed Flow Time (min) :	0.91	0.00	0.00
Total TOC (min) .....	33.55		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 3.67  
 Peak Runoff (cfs) ..... 0.52  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:33:33

**Subbasin : Sub-07**

**Input Data**

Area (ac) ..... 0.61  
 Weighted Curve Number ..... 89.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Gravel roads	0.61	C	89.00
Composite Area & Weighted CN	0.61		89.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	191	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.0	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	21.26	0.00	0.00
Total TOC (min) .....	21.26		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 2.73  
 Peak Runoff (cfs) ..... 0.40  
 Weighted Curve Number ..... 89.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:21:16

**Subbasin : Sub-08**

**Input Data**

Area (ac) ..... 1.01  
 Weighted Curve Number ..... 79.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
50 - 75% grass cover, Fair	1.01	C	79.00
Composite Area & Weighted CN	1.01		79.00

**Time of Concentration**

User-Defined TOC override (minutes): 5.00

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 1.88  
 Peak Runoff (cfs) ..... 0.45  
 Weighted Curve Number ..... 79.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-09**

**Input Data**

Area (ac) ..... 1.82  
 Weighted Curve Number ..... 84.55  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	1.02	C	74.00
Paved parking & roofs	0.80	D	98.00
Composite Area & Weighted CN	1.82		84.55

**Time of Concentration**

User-Defined TOC override (minutes): 48.86

**Subbasin Runoff Results**

Total Rainfall (in) ..... 3.90  
 Total Runoff (in) ..... 2.33  
 Peak Runoff (cfs) ..... 0.79  
 Weighted Curve Number ..... 84.55  
 Time of Concentration (days hh:mm:ss) ..... 0 00:48:52



## Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft <sup>2</sup> )	Minimum Pipe Cover (in)
1	CB10	375.00	379.00	4.00	0.00	-375.00	0.00	-379.00	0.00	0.00
2	CB3	367.00	379.17	12.17	368.00	1.00	0.00	-379.17	0.00	0.00
3	CB7	368.42	374.00	5.58	368.42	0.00	0.00	-374.00	0.00	0.00
4	Jun-01	369.87	380.00	10.13	0.00	-369.87	6.00	-374.00	0.00	0.00
5	MH4	366.93	376.86	9.93	368.00	1.07	0.00	-376.86	0.00	0.00

## Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB10	0.26	0.00	375.25	0.25	0.00	3.75	375.17	0.17	0 11:55	0 00:00	0.00	0.00
2 CB3	4.69	4.69	368.31	1.31	0.00	10.86	367.49	0.49	0 08:10	0 00:00	0.00	0.00
3 CB7	0.04	0.00	368.50	0.08	0.00	5.50	368.48	0.06	1 00:00	0 00:00	0.00	0.00
4 Jun-01	0.58	0.58	370.08	0.21	0.00	9.92	369.96	0.09	0 08:10	0 00:00	0.00	0.00
5 MH4	4.68	0.00	368.24	1.31	0.00	8.62	368.00	1.07	0 08:10	0 00:00	0.00	0.00

## Pipe Input

SN Element ID	Length	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	No. of Barrels
1 EX_CULVERT	100.00	369.87	369.40	0.47	0.4700	CIRCULAR	72.00	72.00	0.0150	0.5000	0.5000	0.0000	0.00	1
2 Link-10	72.00	367.00	365.86	1.14	1.5800	CIRCULAR	24.00	24.00	0.0150	0.5000	0.5000	0.0000	0.00	1
3 Link-17	75.17	368.00	367.75	0.25	0.3300	CIRCULAR	12.00	12.00	0.0150	0.5000	0.5000	0.0000	0.00	1
4 Link-20	22.84	375.00	374.89	0.11	0.4800	CIRCULAR	9.96	9.96	0.0150	0.5000	0.5000	0.0000	0.00	1
5 Link-22	4.00	368.00	368.00	0.00	0.0000	Dummy	0.00	0.00	0.0150	0.5000	0.5000	0.0000	0.00	1
6 Link-23	194.20	368.00	368.00	0.00	0.0000	Dummy	0.00	0.00	0.0150	0.5000	0.5000	0.0000	0.00	1

## Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow Velocity	Travel Time	Peak Flow Depth	Total Time Surcharged	Froude Number
	(cfs)	(days hh:mm)	(cfs)	(ft/sec)	(min)	(ft)	(min)	
1 EX_CULVERT	0.58	0 08:10	251.63	1.83	0.91	0.21	0.00	
2 Link-10	4.68	0 08:10	6.11	2.15	0.56	1.31	0.00	
3 Link-17	0.04	1 00:00	2.92	1.27	0.99	0.08	0.00	
4 Link-20	0.26	0 11:55	1.32	1.89	0.20	0.25	0.00	
5 Link-22	0.00	0 00:00	0.00	0.00		0.25	0.00	
6 Link-23	4.68	0 08:10	0.00	0.00		0.25	0.00	

## Storage Nodes

### Storage Node : Pond\_1

#### Input Data

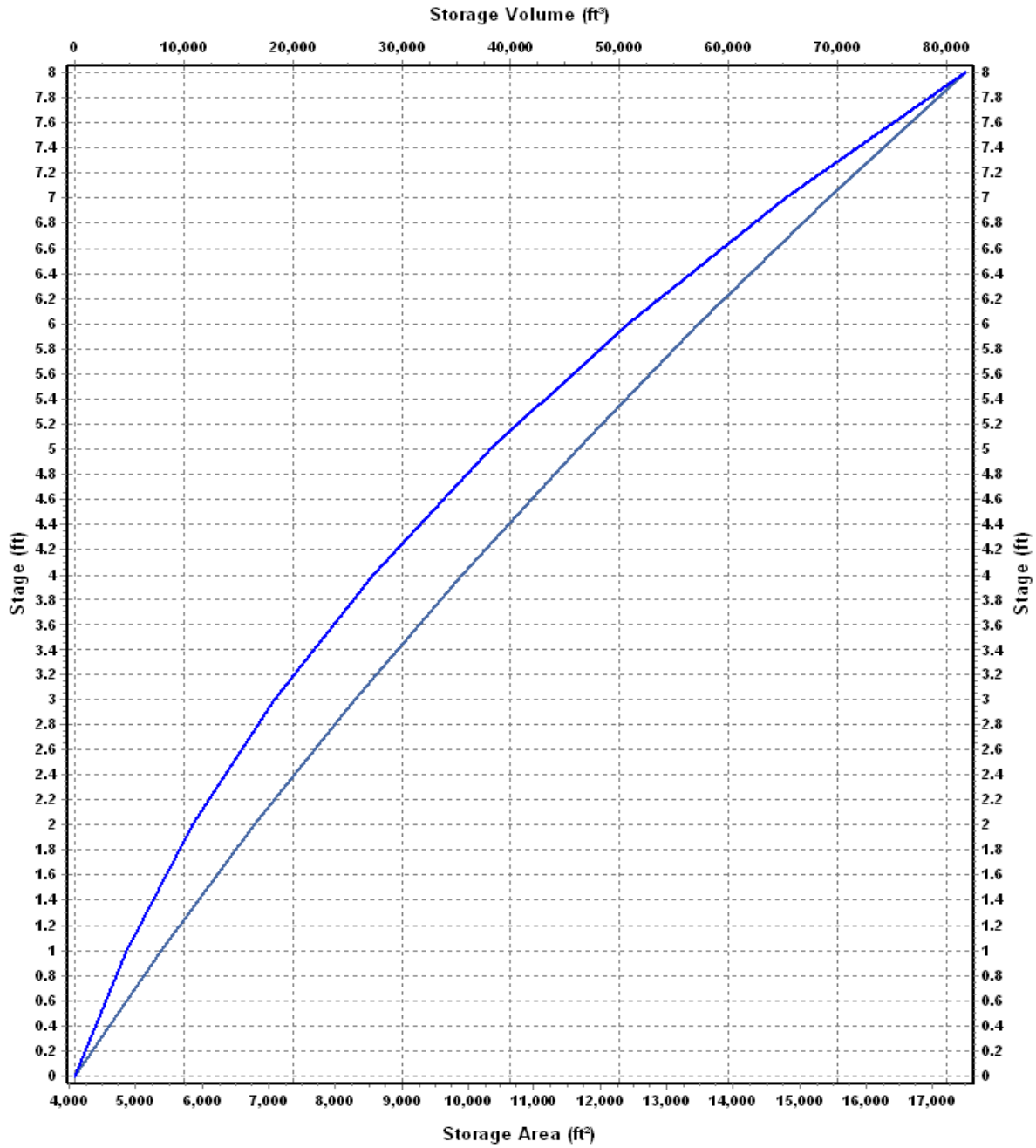
Invert Elevation (ft) ..... 366.00  
 Max (Rim) Elevation (ft) ..... 374.00  
 Max (Rim) Offset (ft) ..... 8.00  
 Initial Water Elevation (ft) ..... 368.28  
 Initial Water Depth (ft) ..... 2.28  
 Ponded Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

#### Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft <sup>2</sup> )	Storage Volume (ft <sup>3</sup> )
0	4087	0.000
1	5376	4731.50
2	6775	10807.00
3	8285	18337.00
4	9906	27432.50
5	11673	38222.00
6	13479	50798.00
7	15432	65253.50
8	17490	81714.50

### Storage Area Volume Curves



— Storage Area    — Storage Volume

**Storage Node : Pond\_1 (continued)**

**Outflow Orifices**

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Link-02	Side	CIRCULAR	No	1.00			368.00	0.61
2	Link-16	Bottom	Rectangular	No		24.00	24.00	371.15	0.63

**Output Summary Results**

Peak Inflow (cfs) .....	0.78
Peak Lateral Inflow (cfs) .....	0.78
Peak Outflow (cfs) .....	0.04
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	369.82
Max HGL Depth Attained (ft) .....	3.82
Average HGL Elevation Attained (ft) .....	369.01
Average HGL Depth Attained (ft) .....	3.01
Time of Max HGL Occurrence (days hh:mm) .....	1 00:00
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0.00

**Storage Node : Pond\_2**

**Input Data**

Invert Elevation (ft) ..... 375.00  
 Max (Rim) Elevation (ft) ..... 379.30  
 Max (Rim) Offset (ft) ..... 4.30  
 Initial Water Elevation (ft) ..... 375.67  
 Initial Water Depth (ft) ..... 0.67  
 Ponded Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

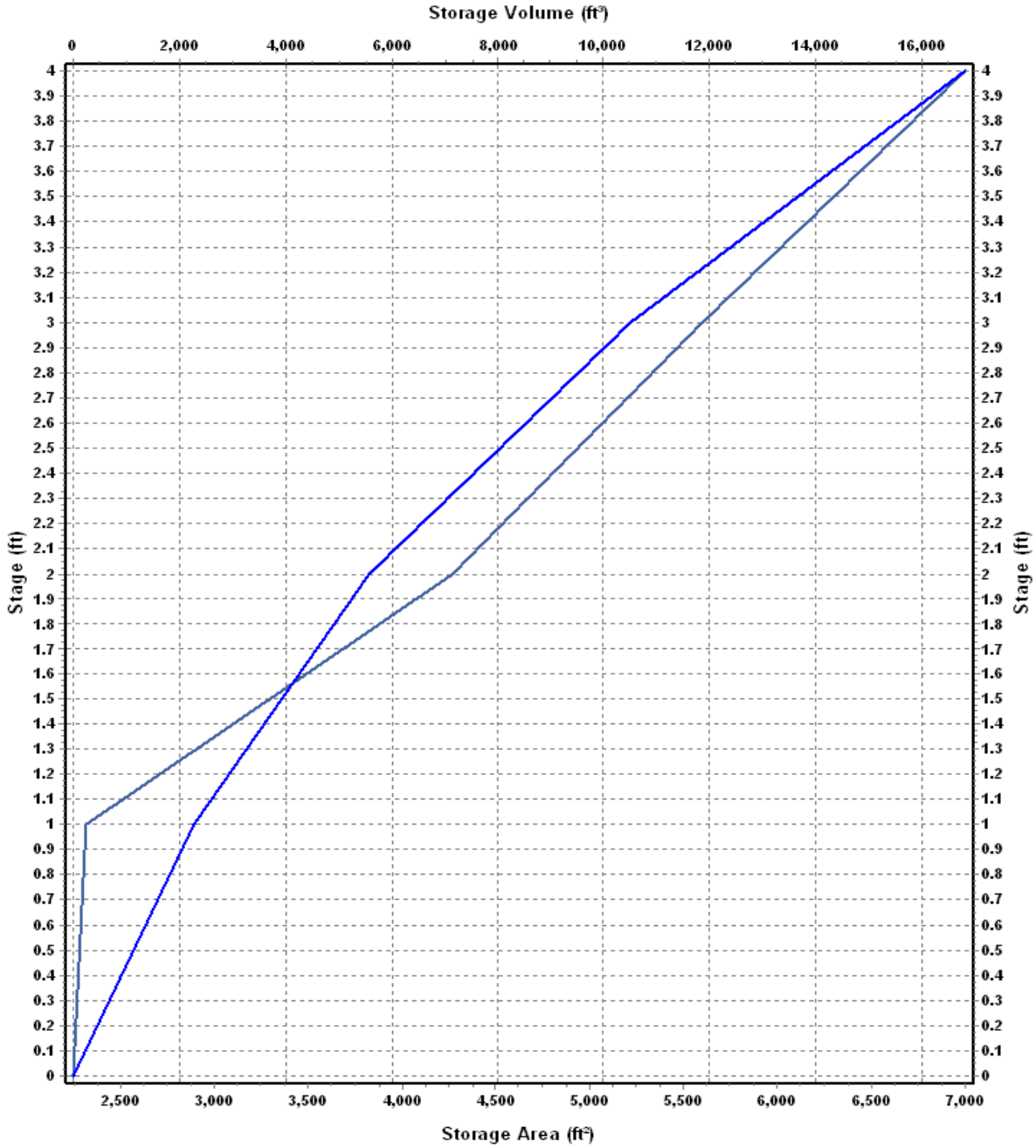
**Storage Area Volume Curves**

Storage Curve : Storage-02

Stage (ft)	Storage Area (ft <sup>2</sup> )	Storage Volume (ft <sup>3</sup> )
0	2250	0.000
1	2317	2283.50
2	4270	5577.00
3	5600	10512.00
4	6998	16811.00



### Storage Area Volume Curves



— Storage Area    — Storage Volume

**Storage Node : Pond\_2 (continued)**

**Outflow Orifices**

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Link-18	Side	CIRCULAR	No	1.25			375.00	0.61
2	Link-19	Bottom	Rectangular	No		24.00	24.00	378.25	0.63

**Output Summary Results**

Peak Inflow (cfs) .....	1.42
Peak Lateral Inflow (cfs) .....	1.42
Peak Outflow (cfs) .....	0.26
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	378.29
Max HGL Depth Attained (ft) .....	3.29
Average HGL Elevation Attained (ft) .....	377.48
Average HGL Depth Attained (ft) .....	2.48
Time of Max HGL Occurrence (days hh:mm) .....	0 11:55
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0.00

**Storage Node : Pond\_3**

**Input Data**

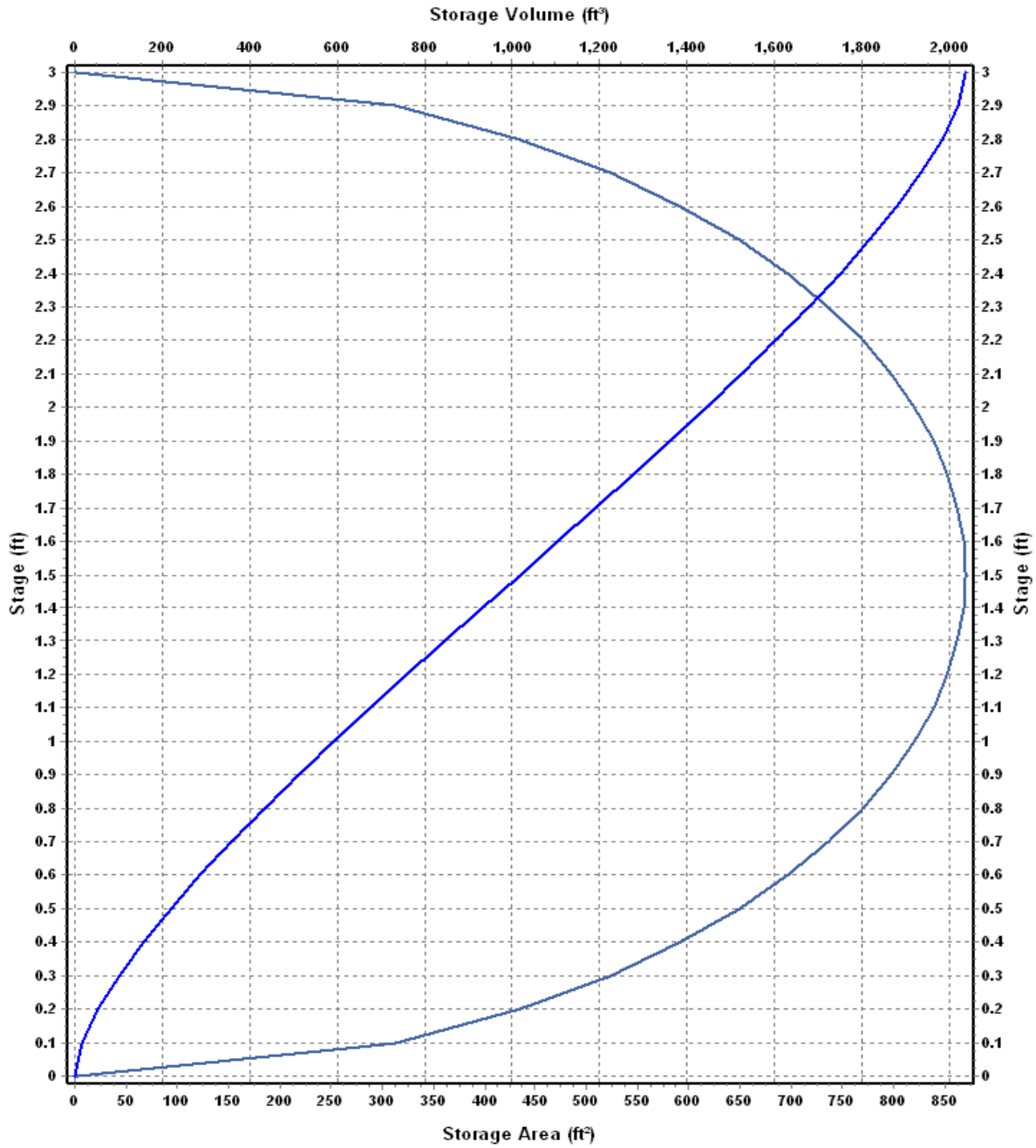
Invert Elevation (ft) ..... 368.00  
 Max (Rim) Elevation (ft) ..... 371.00  
 Max (Rim) Offset (ft) ..... 3.00  
 Initial Water Elevation (ft) ..... 0.00  
 Initial Water Depth (ft) ..... -368.00  
 Poned Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

**Storage Area Volume Curves**

Storage Curve : Storage-03

Stage (ft)	Storage Area (ft <sup>2</sup> )	Storage Volume (ft <sup>3</sup> )
0	0.0000	0.000
0.1	312.3396	15.62
0.2	434.0323	52.94
0.3	522.0000	100.74
0.4	591.4863	156.41
0.5	648.4597	218.41
0.6	696.0000	285.63
0.7	735.9375	357.23
0.8	769.4570	432.50
0.9	797.3682	510.84
1	820.2439	591.72
1.1	838.4963	674.66
1.2	852.4224	759.21
1.3	862.2320	844.94
1.4	868.0645	931.45
1.5	870.0000	1018.35
1.6	868.0645	1105.25
1.7	862.2320	1191.76
1.8	852.4224	1277.49
1.9	838.4963	1362.04
2	820.2439	1444.98
2.1	797.3682	1525.86
2.2	769.4570	1604.20
2.3	735.9375	1679.47
2.4	696.0000	1751.07
2.5	648.4597	1818.29
2.6	591.4863	1880.29
2.7	522.0000	1935.96
2.8	434.0323	1983.76
2.9	312.3396	2021.08
3	0.0000	2036.70

### Storage Area Volume Curves



— Storage Area    — Storage Volume

**Storage Node : Pond\_3 (continued)****Output Summary Results**

Peak Inflow (cfs) .....	4.68
Peak Lateral Inflow (cfs) .....	0.00
Peak Outflow (cfs) .....	0.00
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	371.00
Max HGL Depth Attained (ft) .....	3
Average HGL Elevation Attained (ft) .....	370.74
Average HGL Depth Attained (ft) .....	2.74
Time of Max HGL Occurrence (days hh:mm) .....	0 03:05
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	20.57
Total Time Flooded (min) .....	1274
Total Retention Time (sec) .....	0.00

## Project Description

File Name ..... Proposed.SPF

## Project Options

Flow Units ..... CFS  
 Elevation Type ..... Elevation  
 Hydrology Method ..... SCS TR-55  
 Time of Concentration (TOC) Method ..... SCS TR-55  
 Link Routing Method ..... Kinematic Wave  
 Enable Overflow Ponding at Nodes ..... YES  
 Skip Steady State Analysis Time Periods ..... NO

## Analysis Options

Start Analysis On ..... Jul 02, 2021 00:00:00  
 End Analysis On ..... Jul 03, 2021 00:00:00  
 Start Reporting On ..... Jul 02, 2021 00:00:00  
 Antecedent Dry Days ..... 0 days  
 Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss  
 Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss  
 Reporting Time Step ..... 0 00:05:00 days hh:mm:ss  
 Routing Time Step ..... 30 seconds

## Number of Elements

Qty  
 Rain Gages ..... 1  
 Subbasins..... 11  
 Nodes..... 12  
     *Junctions* ..... 5  
     *Outfalls* ..... 4  
     *Flow Diversions* ..... 0  
     *Inlets* ..... 0  
     *Storage Nodes* ..... 3  
 Links..... 10  
     *Channels* ..... 0  
     *Pipes* ..... 6  
     *Pumps* ..... 0  
     *Orifices* ..... 4  
     *Weirs* ..... 0  
     *Outlets* ..... 0  
 Pollutants ..... 0  
 Land Uses ..... 0

## Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	100	Cumulative	inches	Oregon	Clackamas	100	4.50	SCS Type IA 24-hr

## Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-01	1.17	98.00	4.50	4.26	4.99	1.22	0 00:16:11
2	Sub-01_Bypass	0.22	95.82	4.50	4.02	0.88	0.22	0 00:16:18
3	Sub-02	1.73	96.20	4.50	4.06	7.02	1.66	0 00:24:09
4	Sub-02_Bypass	0.20	89.00	4.50	3.30	0.66	0.17	0 00:05:00
5	Sub-03	1.73	98.00	4.50	4.26	7.38	1.70	0 00:24:18
6	Sub-04	2.72	98.00	4.50	4.26	11.60	2.48	0 00:34:32
7	Sub-05	0.20	98.00	4.50	4.26	0.85	0.21	0 00:05:00
8	Sub-06	0.66	98.00	4.50	4.26	2.81	0.60	0 00:33:32
9	Sub-07	0.61	89.00	4.50	3.30	2.01	0.49	0 00:21:15
10	Sub-08	1.01	79.00	4.50	2.38	2.40	0.58	0 00:05:00
11	Sub-09	1.82	84.55	4.50	2.87	5.22	0.99	0 00:48:51

## Node Summary

SN	Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
			(ft)	(ft)	(ft)	(ft)	(ft <sup>2</sup> )	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1	CB10	Junction	375.00	379.00	0.00	0.00	0.00	0.42	375.33	0.00	3.67	0 00:00	0.00	0.00
2	CB3	Junction	367.00	379.17	368.00	0.00	0.00	5.43	368.47	0.00	10.70	0 00:00	0.00	0.00
3	CB7	Junction	368.42	374.00	368.42	0.00	0.00	0.04	368.50	0.00	5.50	0 00:00	0.00	0.00
4	Jun-01	Junction	369.87	380.00	0.00	6.00	0.00	0.70	370.10	0.00	9.90	0 00:00	0.00	0.00
5	MH4	Junction	366.93	376.86	368.00	0.00	0.00	5.42	368.40	0.00	8.46	0 00:00	0.00	0.00
6	Out-01	Outfall	369.40					0.70	369.63					
7	Out-02	Outfall	374.00					0.82	375.22					
8	Out-03	Outfall	369.00					0.60	369.00					
9	Out-04	Outfall	367.00					0.04	367.83					
10	Pond_1	Storage Node	366.00	374.00	368.28		0.00	0.99	370.15				0.00	0.00
11	Pond_2	Storage Node	375.00	379.30	375.67		0.00	1.66	378.31				0.00	0.00
12	Pond_3	Storage Node	368.00	371.00	0.00		0.00	5.42	371.00				24.02	1289.00



## Link Summary

SN	Element ID	Element Type	From (Inlet Node)	To (Outlet Node)	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow Velocity	Peak Flow Depth	Total Time Surcharged
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)	(ft/sec)	(ft)	(min)
1	EX_CULVERT	Pipe	Jun-01	Out-01	100.00	369.87	369.40	0.47	72.00	0.0150	0.70	251.63	1.94	0.23	0.00
2	Link-10	Pipe	CB3	MH4	72.00	367.00	365.86	1.58	24.00	0.0150	5.42	6.11	2.20	1.47	0.00
3	Link-17	Pipe	CB7	Out-04	75.17	368.00	367.75	0.33	12.00	0.0150	0.04	2.92	1.30	0.08	0.00
4	Link-20	Pipe	CB10	Out-02	22.84	375.00	374.89	0.48	10.00	0.0150	0.42	1.32	2.15	0.33	0.00
5	Link-22	Pipe	Pond_3	Pond_1	4.00	368.00	368.00	0.00	0.00	0.0150	0.00	0.00	0.00	0.33	0.00
6	Link-23	Pipe	MH4	Pond_3	194.20	368.00	368.00	0.00	0.00	0.0150	5.42	0.00	0.00	0.33	0.00
7	Link-02	Orifice	Pond_1	CB7		366.00	368.42		1.00		0.04				
8	Link-16	Orifice	Pond_1	CB7		366.00	368.42		24.00		0.00				
9	Link-18	Orifice	Pond_2	CB10		375.00	375.00		1.25		0.08				
10	Link-19	Orifice	Pond_2	CB10		375.00	375.00		24.00		0.35				

## Subbasin Hydrology

### Subbasin : Sub-01

#### Input Data

Area (ac) ..... 1.17  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

#### Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.17	D	98.00
Composite Area & Weighted CN	1.17		98.00

#### Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 n = Manning's roughness  
 L<sub>f</sub> = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 S<sub>f</sub> = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 \* (S<sub>f</sub><sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (S<sub>f</sub><sup>0.5</sup>) (paved surface)  
 V = 15.0 \* (S<sub>f</sub><sup>0.5</sup>) (grassed waterway surface)  
 V = 10.0 \* (S<sub>f</sub><sup>0.5</sup>) (nearly bare & untilled surface)  
 V = 9.0 \* (S<sub>f</sub><sup>0.5</sup>) (cultivated straight rows surface)  
 V = 7.0 \* (S<sub>f</sub><sup>0.5</sup>) (short grass pasture surface)  
 V = 5.0 \* (S<sub>f</sub><sup>0.5</sup>) (woodland surface)  
 V = 2.5 \* (S<sub>f</sub><sup>0.5</sup>) (forest w/heavy litter surface)  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where:

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)

Channel Flow Equation :

$$V = (1.49 * (R^{2/3})) * (S_f^{0.5}) / n$$

R = A<sub>q</sub> / W<sub>p</sub>  
 T<sub>c</sub> = (L<sub>f</sub> / V) / (3600 sec/hr)

Where :

T<sub>c</sub> = Time of Concentration (hr)  
 L<sub>f</sub> = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 A<sub>q</sub> = Flow Area (ft<sup>2</sup>)  
 W<sub>p</sub> = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 S<sub>f</sub> = Slope (ft/ft)  
 n = Manning's roughness

	Subarea	Subarea	Subarea
	A	B	C
<b>Sheet Flow Computations</b>			
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	3	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.31	0.00	0.00
Computed Flow Time (min) :	15.94	0.00	0.00
<b>Shallow Concentrated Flow Computations</b>			
	A	B	C
Flow Length (ft) :	53	0.00	0.00
Slope (%) :	3	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	3.52	0.00	0.00
Computed Flow Time (min) :	0.25	0.00	0.00
Total TOC (min) .....	16.19		

**Subbasin Runoff Results**

Total Rainfall (in) .....	4.50
Total Runoff (in) .....	4.26
Peak Runoff (cfs) .....	1.22
Weighted Curve Number .....	98.00
Time of Concentration (days hh:mm:ss) .....	0 00:16:11

**Subbasin : Sub-01\_Bypass**

**Input Data**

Area (ac) ..... 0.22  
 Weighted Curve Number ..... 95.82  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.20	C	98.00
> 75% grass cover, Good	0.02	C	74.00
Composite Area & Weighted CN	0.22		95.82

**Time of Concentration**

User-Defined TOC override (minutes): 16.3

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 4.02  
 Peak Runoff (cfs) ..... 0.22  
 Weighted Curve Number ..... 95.82  
 Time of Concentration (days hh:mm:ss) ..... 0 00:16:18

**Subbasin : Sub-02**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 96.20  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.58	D	98.00
> 75% grass cover, Good	0.18	D	80.00
Composite Area & Weighted CN	1.76		96.20

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	219	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.47	0.00	0.00
Total TOC (min) .....	24.16		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 4.06  
 Peak Runoff (cfs) ..... 1.66  
 Weighted Curve Number ..... 96.20  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:10

**Subbasin : Sub-02\_Bypass**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 89.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Gravel roads	0.20	C	89.00
Composite Area & Weighted CN	0.20		89.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 3.30  
 Peak Runoff (cfs) ..... 0.17  
 Weighted Curve Number ..... 89.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-03**

**Input Data**

Area (ac) ..... 1.73  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	1.73	D	98.00
Composite Area & Weighted CN	1.73		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.11	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.22	0.00	0.00
Computed Flow Time (min) :	22.70	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	239	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.49	0.00	0.00
Computed Flow Time (min) :	1.60	0.00	0.00
Total TOC (min) .....	24.30		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 4.26  
 Peak Runoff (cfs) ..... 1.70  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:24:18

**Subbasin : Sub-04**

**Input Data**

Area (ac) ..... 2.72  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	2.72	D	98.00
Composite Area & Weighted CN	2.72		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.2	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	327	0.00	0.00
Slope (%) :	2	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	2.87	0.00	0.00
Computed Flow Time (min) :	1.90	0.00	0.00
Total TOC (min) .....	34.54		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 4.26  
 Peak Runoff (cfs) ..... 2.48  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:34:32



**Subbasin : Sub-05**

**Input Data**

Area (ac) ..... 0.20  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.20	D	98.00
Composite Area & Weighted CN	0.20		98.00

**Time of Concentration**

User-Defined TOC override (minutes): 5

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 4.26  
 Peak Runoff (cfs) ..... 0.21  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-06**

**Input Data**

Area (ac) ..... 0.66  
 Weighted Curve Number ..... 98.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.70	D	98.00
Composite Area & Weighted CN	0.70		98.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	300	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	2.65	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	32.64	0.00	0.00

Shallow Concentrated Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Flow Length (ft) :	79	0.00	0.00
Slope (%) :	.5	0.00	0.00
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	1.44	0.00	0.00
Computed Flow Time (min) :	0.91	0.00	0.00
Total TOC (min) .....	33.55		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 4.26  
 Peak Runoff (cfs) ..... 0.60  
 Weighted Curve Number ..... 98.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:33:33

**Subbasin : Sub-07**

**Input Data**

Area (ac) ..... 0.61  
 Weighted Curve Number ..... 89.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Gravel roads	0.61	C	89.00
Composite Area & Weighted CN	0.61		89.00

**Time of Concentration**

Sheet Flow Computations	Subarea	Subarea	Subarea
	A	B	C
Manning's Roughness :	.1	0.00	0.00
Flow Length (ft) :	191	0.00	0.00
Slope (%) :	2	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.0	0.00	0.00
Velocity (ft/sec) :	0.15	0.00	0.00
Computed Flow Time (min) :	21.26	0.00	0.00
Total TOC (min) .....	21.26		

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 3.30  
 Peak Runoff (cfs) ..... 0.49  
 Weighted Curve Number ..... 89.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:21:16

**Subbasin : Sub-08**

**Input Data**

Area (ac) ..... 1.01  
 Weighted Curve Number ..... 79.00  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
50 - 75% grass cover, Fair	1.01	C	79.00
Composite Area & Weighted CN	1.01		79.00

**Time of Concentration**

User-Defined TOC override (minutes): 5.00

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 2.38  
 Peak Runoff (cfs) ..... 0.58  
 Weighted Curve Number ..... 79.00  
 Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

**Subbasin : Sub-09**

**Input Data**

Area (ac) ..... 1.82  
 Weighted Curve Number ..... 84.55  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	1.02	C	74.00
Paved parking & roofs	0.80	D	98.00
Composite Area & Weighted CN	1.82		84.55

**Time of Concentration**

User-Defined TOC override (minutes): 48.86

**Subbasin Runoff Results**

Total Rainfall (in) ..... 4.50  
 Total Runoff (in) ..... 2.87  
 Peak Runoff (cfs) ..... 0.99  
 Weighted Curve Number ..... 84.55  
 Time of Concentration (days hh:mm:ss) ..... 0 00:48:52

## Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft <sup>2</sup> )	Minimum Pipe Cover (in)
1	CB10	375.00	379.00	4.00	0.00	-375.00	0.00	-379.00	0.00	0.00
2	CB3	367.00	379.17	12.17	368.00	1.00	0.00	-379.17	0.00	0.00
3	CB7	368.42	374.00	5.58	368.42	0.00	0.00	-374.00	0.00	0.00
4	Jun-01	369.87	380.00	10.13	0.00	-369.87	6.00	-374.00	0.00	0.00
5	MH4	366.93	376.86	9.93	368.00	1.07	0.00	-376.86	0.00	0.00

## Junction Results

SN Element ID	Peak Inflow	Peak Lateral Inflow	Max HGL Elevation Attained	Max HGL Depth Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Average HGL Elevation Attained	Average HGL Depth Attained	Time of Max HGL Occurrence	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(days hh:mm)	(ac-in)	(min)
1 CB10	0.42	0.00	375.33	0.33	0.00	3.67	375.19	0.19	0 10:02	0 00:00	0.00	0.00
2 CB3	5.43	5.43	368.47	1.47	0.00	10.70	367.53	0.53	0 08:10	0 00:00	0.00	0.00
3 CB7	0.04	0.00	368.50	0.08	0.00	5.50	368.49	0.07	1 00:00	0 00:00	0.00	0.00
4 Jun-01	0.70	0.70	370.10	0.23	0.00	9.90	369.96	0.09	0 08:10	0 00:00	0.00	0.00
5 MH4	5.42	0.00	368.40	1.47	0.00	8.46	368.01	1.08	0 08:10	0 00:00	0.00	0.00

## Pipe Input

SN Element ID	Length	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	No. of Barrels
1 EX_CULVERT	100.00	369.87	369.40	0.47	0.4700	CIRCULAR	72.00	72.00	0.0150	0.5000	0.5000	0.0000	0.00	1
2 Link-10	72.00	367.00	365.86	1.14	1.5800	CIRCULAR	24.00	24.00	0.0150	0.5000	0.5000	0.0000	0.00	1
3 Link-17	75.17	368.00	367.75	0.25	0.3300	CIRCULAR	12.00	12.00	0.0150	0.5000	0.5000	0.0000	0.00	1
4 Link-20	22.84	375.00	374.89	0.11	0.4800	CIRCULAR	9.96	9.96	0.0150	0.5000	0.5000	0.0000	0.00	1
5 Link-22	4.00	368.00	368.00	0.00	0.0000	Dummy	0.00	0.00	0.0150	0.5000	0.5000	0.0000	0.00	1
6 Link-23	194.20	368.00	368.00	0.00	0.0000	Dummy	0.00	0.00	0.0150	0.5000	0.5000	0.0000	0.00	1



## Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow Velocity	Travel Time	Peak Flow Depth	Total Time Surcharged	Froude Number
	(cfs)	(days hh:mm)	(cfs)	(ft/sec)	(min)	(ft)	(min)	
1 EX_CULVERT	0.70	0 08:10	251.63	1.94	0.86	0.23	0.00	
2 Link-10	5.42	0 08:10	6.11	2.20	0.55	1.47	0.00	
3 Link-17	0.04	1 00:00	2.92	1.30	0.96	0.08	0.00	
4 Link-20	0.42	0 10:02	1.32	2.15	0.18	0.33	0.00	
5 Link-22	0.00	0 00:00	0.00	0.00		0.33	0.00	
6 Link-23	5.42	0 08:10	0.00	0.00		0.33	0.00	

## Storage Nodes

### Storage Node : Pond\_1

#### Input Data

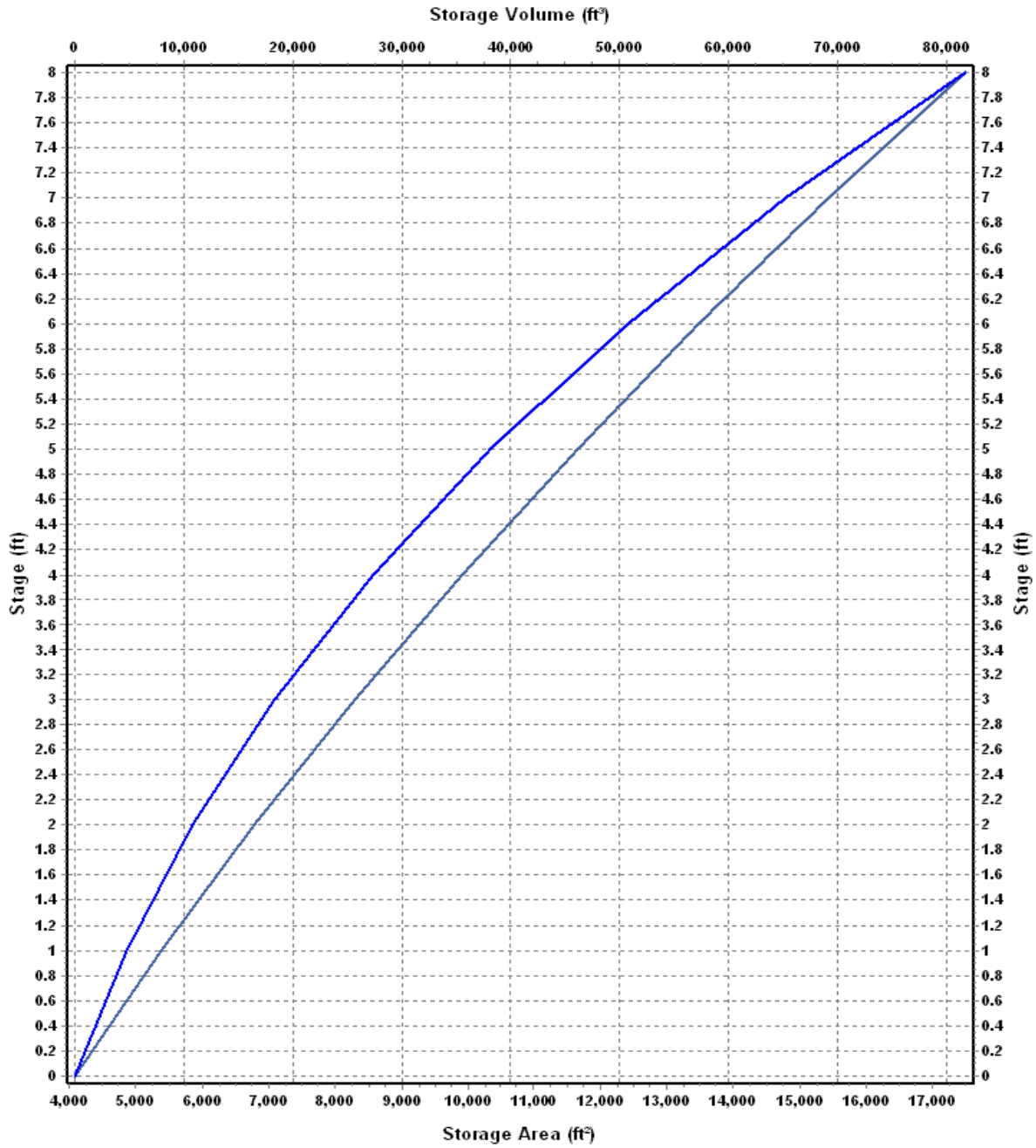
Invert Elevation (ft) ..... 366.00  
 Max (Rim) Elevation (ft) ..... 374.00  
 Max (Rim) Offset (ft) ..... 8.00  
 Initial Water Elevation (ft) ..... 368.28  
 Initial Water Depth (ft) ..... 2.28  
 Ponded Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

#### Storage Area Volume Curves

Storage Curve : Storage-01

Stage	Storage Area	Storage Volume
(ft)	(ft <sup>2</sup> )	(ft <sup>3</sup> )
0	4087	0.000
1	5376	4731.50
2	6775	10807.00
3	8285	18337.00
4	9906	27432.50
5	11673	38222.00
6	13479	50798.00
7	15432	65253.50
8	17490	81714.50

### Storage Area Volume Curves



— Storage Area    — Storage Volume

**Storage Node : Pond\_1 (continued)**

**Outflow Orifices**

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Link-02	Side	CIRCULAR	No	1.00			368.00	0.61
2	Link-16	Bottom	Rectangular	No		24.00	24.00	371.15	0.63

**Output Summary Results**

Peak Inflow (cfs) .....	0.99
Peak Lateral Inflow (cfs) .....	0.99
Peak Outflow (cfs) .....	0.04
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	370.15
Max HGL Depth Attained (ft) .....	4.15
Average HGL Elevation Attained (ft) .....	369.19
Average HGL Depth Attained (ft) .....	3.19
Time of Max HGL Occurrence (days hh:mm) .....	1 00:00
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0.00

**Storage Node : Pond\_2**

**Input Data**

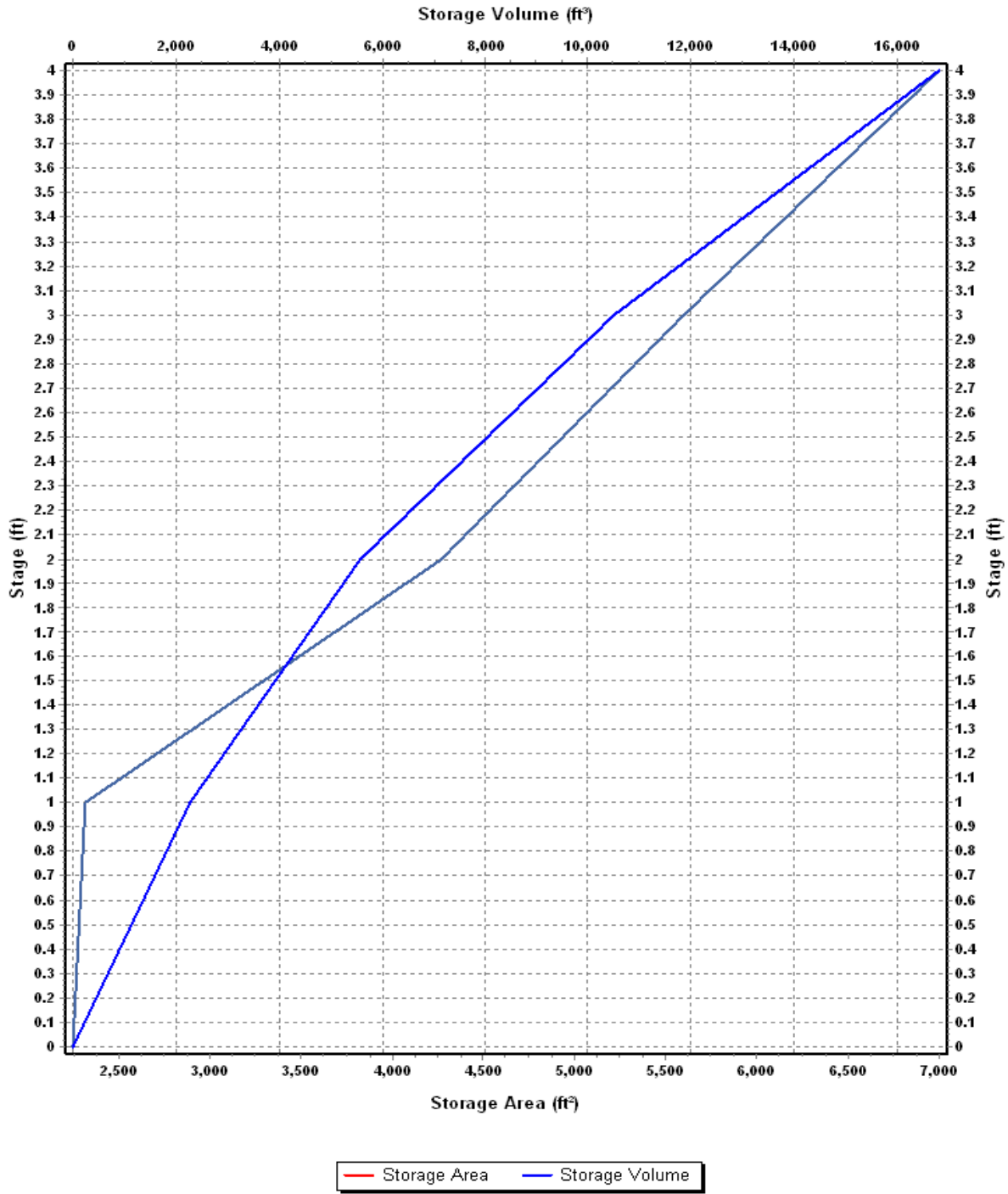
Invert Elevation (ft) ..... 375.00  
 Max (Rim) Elevation (ft) ..... 379.30  
 Max (Rim) Offset (ft) ..... 4.30  
 Initial Water Elevation (ft) ..... 375.67  
 Initial Water Depth (ft) ..... 0.67  
 Ponded Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

**Storage Area Volume Curves**

Storage Curve : Storage-02

Stage (ft)	Storage Area (ft <sup>2</sup> )	Storage Volume (ft <sup>3</sup> )
0	2250	0.000
1	2317	2283.50
2	4270	5577.00
3	5600	10512.00
4	6998	16811.00

### Storage Area Volume Curves



**Storage Node : Pond\_2 (continued)**

**Outflow Orifices**

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Link-18	Side	CIRCULAR	No	1.25			375.00	0.61
2	Link-19	Bottom	Rectangular	No		24.00	24.00	378.25	0.63

**Output Summary Results**

Peak Inflow (cfs) .....	1.66
Peak Lateral Inflow (cfs) .....	1.66
Peak Outflow (cfs) .....	0.42
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	378.31
Max HGL Depth Attained (ft) .....	3.31
Average HGL Elevation Attained (ft) .....	377.55
Average HGL Depth Attained (ft) .....	2.55
Time of Max HGL Occurrence (days hh:mm) .....	0 10:02
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0.00

**Storage Node : Pond\_3**

**Input Data**

Invert Elevation (ft) ..... 368.00  
 Max (Rim) Elevation (ft) ..... 371.00  
 Max (Rim) Offset (ft) ..... 3.00  
 Initial Water Elevation (ft) ..... 0.00  
 Initial Water Depth (ft) ..... -368.00  
 Poned Area (ft<sup>2</sup>) ..... 0.00  
 Evaporation Loss ..... 0.00

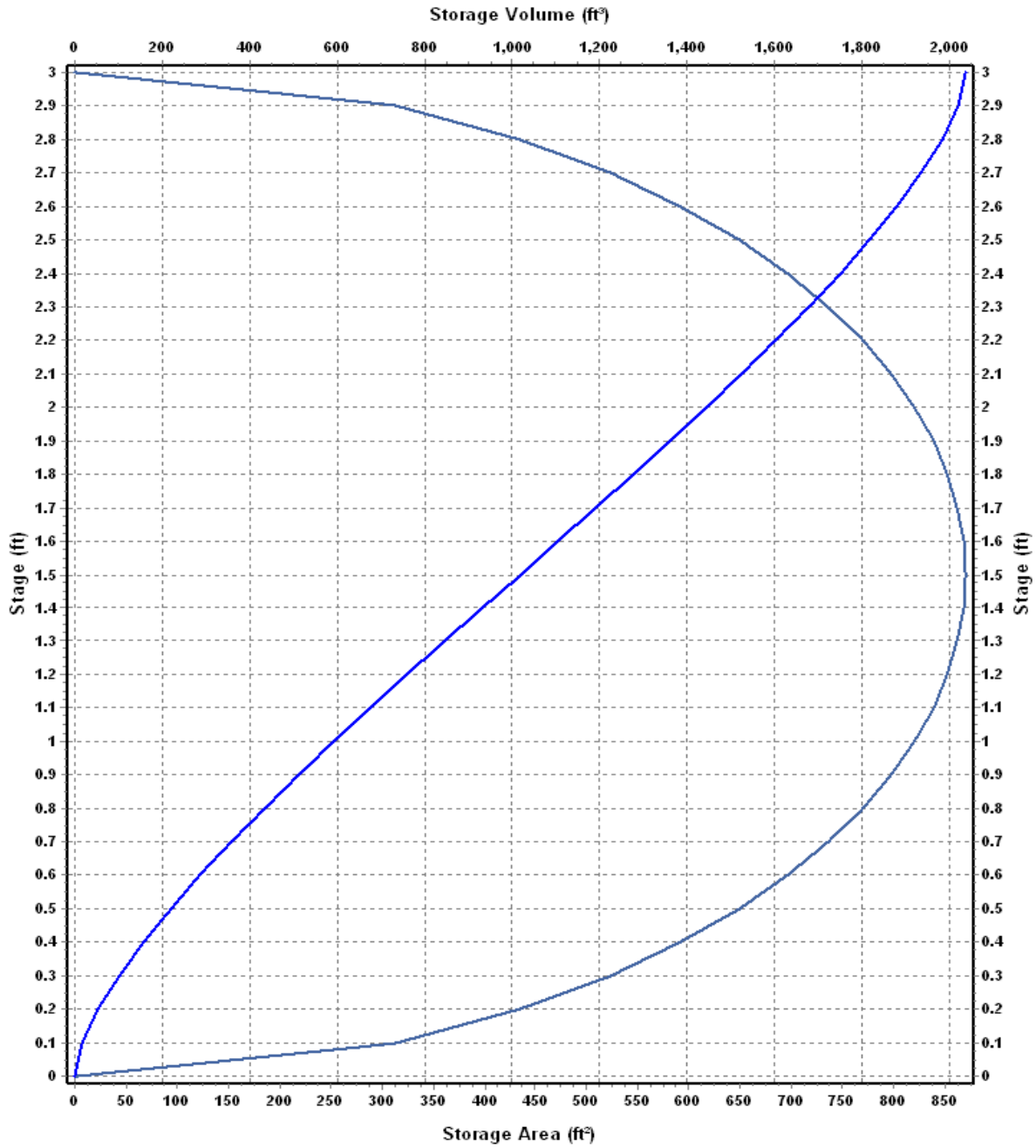
**Storage Area Volume Curves**

Storage Curve : Storage-03

Stage (ft)	Storage Area (ft <sup>2</sup> )	Storage Volume (ft <sup>3</sup> )
0	0.0000	0.000
0.1	312.3396	15.62
0.2	434.0323	52.94
0.3	522.0000	100.74
0.4	591.4863	156.41
0.5	648.4597	218.41
0.6	696.0000	285.63
0.7	735.9375	357.23
0.8	769.4570	432.50
0.9	797.3682	510.84
1	820.2439	591.72
1.1	838.4963	674.66
1.2	852.4224	759.21
1.3	862.2320	844.94
1.4	868.0645	931.45
1.5	870.0000	1018.35
1.6	868.0645	1105.25
1.7	862.2320	1191.76
1.8	852.4224	1277.49
1.9	838.4963	1362.04
2	820.2439	1444.98
2.1	797.3682	1525.86
2.2	769.4570	1604.20
2.3	735.9375	1679.47
2.4	696.0000	1751.07
2.5	648.4597	1818.29
2.6	591.4863	1880.29
2.7	522.0000	1935.96
2.8	434.0323	1983.76
2.9	312.3396	2021.08
3	0.0000	2036.70



### Storage Area Volume Curves



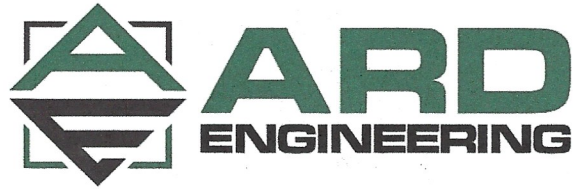
— Storage Area — Storage Volume

**Storage Node : Pond\_3 (continued)****Output Summary Results**

Peak Inflow (cfs) .....	5.42
Peak Lateral Inflow (cfs) .....	0.00
Peak Outflow (cfs) .....	0.00
Peak Exfiltration Flow Rate (cfm) .....	0.00
Max HGL Elevation Attained (ft) .....	371.00
Max HGL Depth Attained (ft) .....	3
Average HGL Elevation Attained (ft) .....	370.76
Average HGL Depth Attained (ft) .....	2.76
Time of Max HGL Occurrence (days hh:mm) .....	0 02:50
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.000
Total Flooded Volume (ac-in) .....	24.02
Total Time Flooded (min) .....	1289
Total Retention Time (sec) .....	0.00

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# DANSONS INDUSTRIAL TRAFFIC IMPACT STUDY

MOLALLA, OREGON



EXPIRES: 12/31/2021

**PREPARED FOR:**  
Dansons

**PREPARED BY:**  
Michael Ard, PE  
Ard Engineering

**DATE:**  
August 16, 2021



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## EXECUTIVE SUMMARY

1. Property located on the west side of Molalla Avenue north of Molalla Forest Road in Molalla, Oregon is proposed for development with a wood pellet manufacturing facility. The site will take access via driveways on Molalla Avenue and Molalla Forest Road. An easement connecting to the intersection of Section Street at Shaver Avenue north of the site may be used at some point in the future.
2. Upon completion of the proposed manufacturing use, the subject property is projected to generate up to 59 site trips during the morning peak hour, 64 trips during the evening peak hour, and 408 daily site trips. Overall, it is projected that 27 percent of site trips will be truck trips.
3. Based on the crash data, the study intersections are currently operating acceptably with respect to safety.
4. Based on the operational analysis, the study intersections are currently operating acceptably per the respective standards of the City of Molalla and the Oregon Department of Transportation. The study intersections are projected to continue to operate acceptably through 2023 either with or without the addition of site trips from the proposed development. No operational mitigations are recommended in conjunction with the proposed development.
5. Based on the queuing analysis, the projected queue lengths can safely be accommodated at the study intersections. No queuing-related mitigations are recommended in conjunction with the proposed development.
6. Based on the sight distance analysis, adequate sight distance is projected to be available in each direction for safe and efficient operation of the proposed access on Molalla Avenue even when accounting for high volumes of truck traffic. Adequate sight lines are also projected to be available for safe operation of the existing and proposed driveways on Molalla Forest Road. It is recommended that vegetation along the site frontage be cleared as needed to maximize sight lines for all three driveway locations. It is also recommended that vegetation be cleared from the southwest corner of the intersection of Molalla Avenue at Molalla Forest Road to provide a minimum of 500 feet of intersection sight distance to the south. No other sight distance mitigations are recommended in conjunction with the proposed development.
7. Based on the warrant analysis, no new turn lanes or traffic signals are recommended in conjunction with the proposed development.

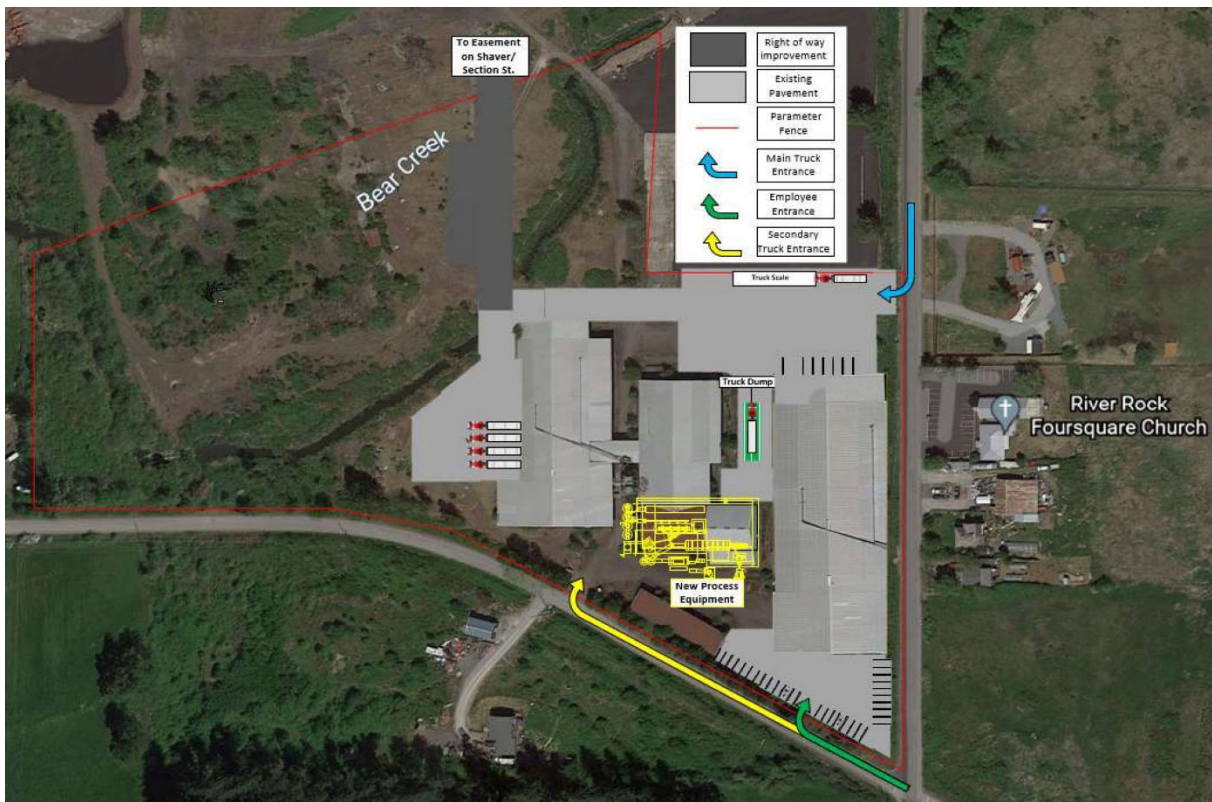


## PROJECT DESCRIPTION & LOCATION

A property located on the west side of Molalla Avenue north of Molalla Forest Road is proposed for development with a barbecue wood pellet manufacturing facility. The project site has an area of just over 16 acres. The proposed development will utilize an existing driveway on Molalla Forest Road at the south side of the property, a new driveway on Molalla Forest Road, and a new driveway intersecting Molalla Avenue at the east side of the site. A potential access within an easement may connect to the intersection of Section Street at Shaver Avenue to the north at some point in the future.

The project site is zoned M2 (Heavy Industrial). It was previously home to a light industrial/manufacturing facility, and the proposed development will re-use approximately 80,500 square feet of existing building space within the site. However, since the site has been vacant for several years the traffic impact analysis will treat all new and existing buildings within the site as new for purposes of assessing new traffic impacts attributable to the development. The project also includes 52,500 square feet of new floor space within a Raw Materials Storage (RMS) building proposed to be constructed within the site.

The diagram below shows the proposed development, including the building footprints, access driveways, and parking facilities.



**Figure 1 – Proposed Development and Site Access**



This report addresses the impacts of the proposed development on the surrounding transportation system. An operational and safety analysis was conducted for the proposed site access intersections as well as the nearby public intersections of:

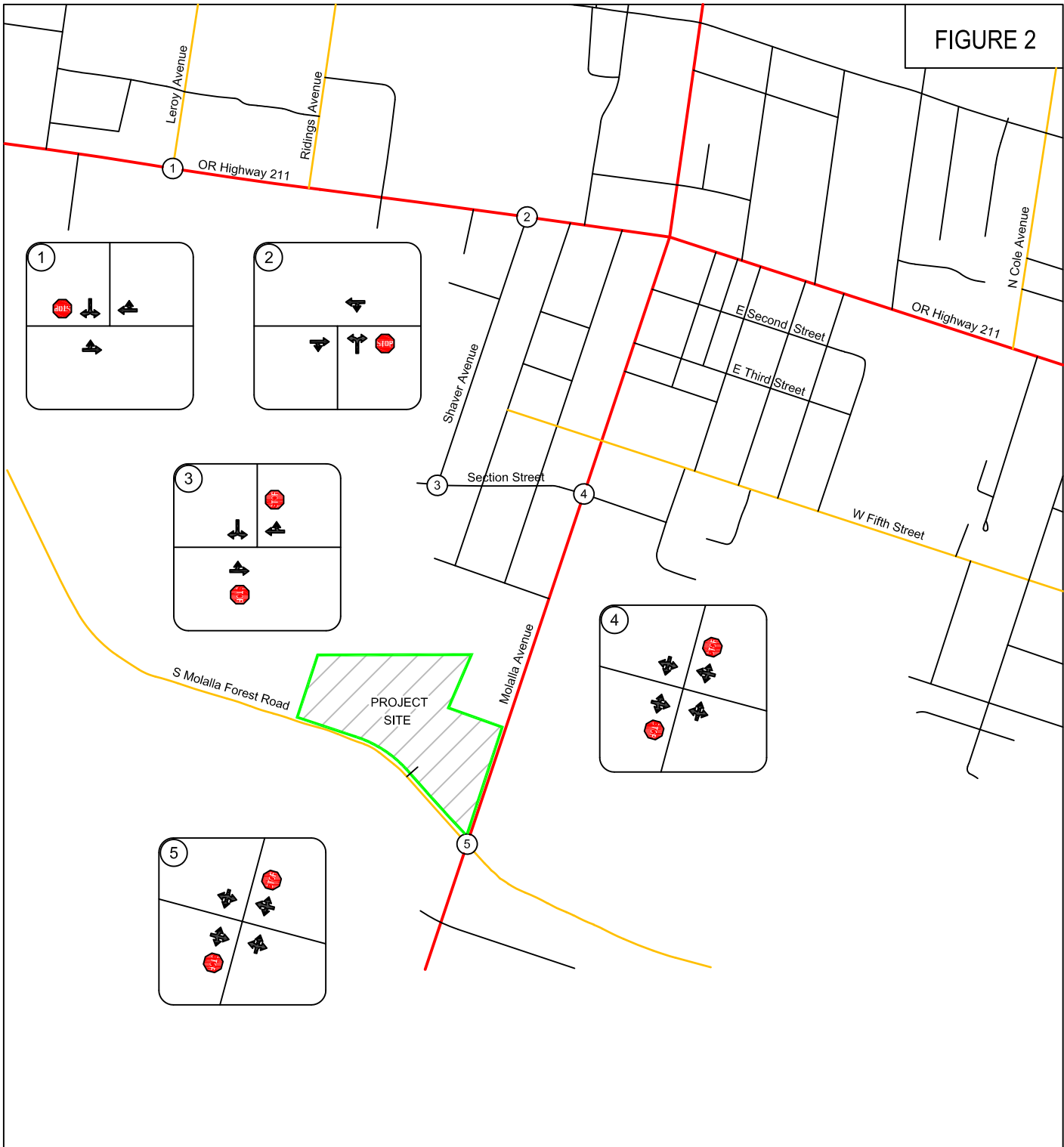
- Oregon Highway 211 (Woodburn Estacada Highway) at Leroy Avenue;
- Oregon Highway 211 (Woodburn Estacada Highway) at Shaver Avenue;
- Shaver Avenue at Section Street;
- Molalla Avenue at Section Street; and
- Molalla Avenue at Molalla Forest Road.

The purpose of this analysis is to determine whether the surrounding transportation system is capable of safely and efficiently supporting the proposed use and to identify any necessary improvements and mitigations.

A vicinity map displaying the project site, vicinity streets, and the study intersections including lane configurations is provided in Figure 2 on page 6.



FIGURE 2



**LEGEND**

- # Study Intersections
- STOP Stop Sign





## EXISTING CONDITIONS

Under existing conditions, the subject property has approximately 80,500 square feet of gross floor area within the buildings on the site. These buildings are currently unused and generate no meaningful traffic within the site or on the surrounding transportation system. There is an existing driveway serving the site located on Molalla Forest Road; however, the driveway is gated, and the property is not currently accessible.

The property is surrounded by existing industrial and residential uses to the north, and by low-density residential, agricultural, and undeveloped/forested lands to the west, south and east.

Oregon Highway 211 (Woodburn Estacada Highway/Main Street) is classified by the Oregon Department of Transportation as a District Highway, and by the City of Molalla as an Arterial. It has one through lane in each direction and added turn lanes at intersections. It has a posted speed limit of 35 mph in the vicinity of Leroy Avenue and 25 mph in the vicinity of Shaver Avenue. Partial sidewalks are in place on both sides of the roadway. Transit service is available along the roadway, with the nearest stops located at Leroy Avenue, Dixon Avenue, and Kennel Avenue.

Leroy Avenue is classified by the City of Molalla as a Major Collector. It has one through lane in each direction and is striped to prohibit passing. It has a statutory residential speed limit of 25 mph. A 20-mph school speed zone also applies from 7:00 AM to 5:00 PM on school days extending from approximately 350 feet north of Oregon Highway 211 to 100 feet north of Lynn Lane. Continuous sidewalks are in place along the west side of the roadway, and partial sidewalks are available along the east side. Some on-street parking is also available along the street.

Shaver Avenue is classified by the City of Molalla as a Local Street. It has one through lane in each direction with no centerline striping. Some on-street parking is available along the grass and gravel shoulders on both sides of the roadway.

Section Street is classified by the City of Molalla as a Local Street. It has one through lane in each direction with no centerline striping. Some on-street parking is available along both sides of the roadway.

Molalla Avenue is classified by the City of Molalla as an Arterial. It has a single travel lane in each direction. It has a posted speed limit of 25 mph in the vicinity of Section Street, which increases to 45 mph approximately 300 feet south of 7<sup>th</sup> Street. On-street parking and partial sidewalks are available on both sides of the street within the 25-mph zone. Transit service is available along Molalla Avenue with a stop located at 3<sup>rd</sup> Street. A transit shelter is also available on the north side of 5<sup>th</sup> Street approximately 200 feet east of Molalla Avenue in front of the Molalla Public Library.

Molalla Forest Road is classified by the City of Molalla as a Major Collector. It has a single travel lane in each direction with no centerline striping and a posted speed limit of 25 mph in the vicinity of Molalla Avenue. The roadway is currently gated west of the subject property to create a dead-end road.

The intersection of Oregon Highway 211 at Leroy Avenue is a T-intersection operating under stop control for the southbound Leroy Avenue approach. Through vehicles traveling along Highway 211 do not stop. All approaches have a single, shared travel lane for all turning movements.



The intersection of Oregon Highway 211 at Shaver Avenue is a T-intersection operating under stop control for the northbound Shaver Avenue approach. Through vehicles traveling along Highway 211 do not stop. All approaches have a single, shared travel lane for all turning movements.

The intersection of Shaver Avenue at Section Street is a four-way intersection controlled by stop signs on the eastbound and westbound Section Street approaches. Eastbound right-turns are permitted without stopping. The south and west legs of the intersection serve primarily as driveways for access to the properties in the vicinity, while the north and east legs are public streets. The south leg of the intersection is currently gated. Each intersection approach has a single, shared lane for all turning movements.

The intersection of Molalla Avenue at Section Street/6<sup>th</sup> Street is a four-way intersection controlled by stop signs on the eastbound Section Street and westbound 6<sup>th</sup> Street approaches. Through vehicles traveling along Molalla Avenue do not stop. Each approach has a single, shared lane for all turning movements.

The intersection of Molalla Avenue at Molalla Forest Road is a four-way intersection controlled by stop signs on the eastbound and westbound Molalla Forest Road approaches. Through vehicles traveling along Molalla Avenue do not stop. Each approach has a single, shared lane for all turning movements.



### ***TRAFFIC COUNT DATA***

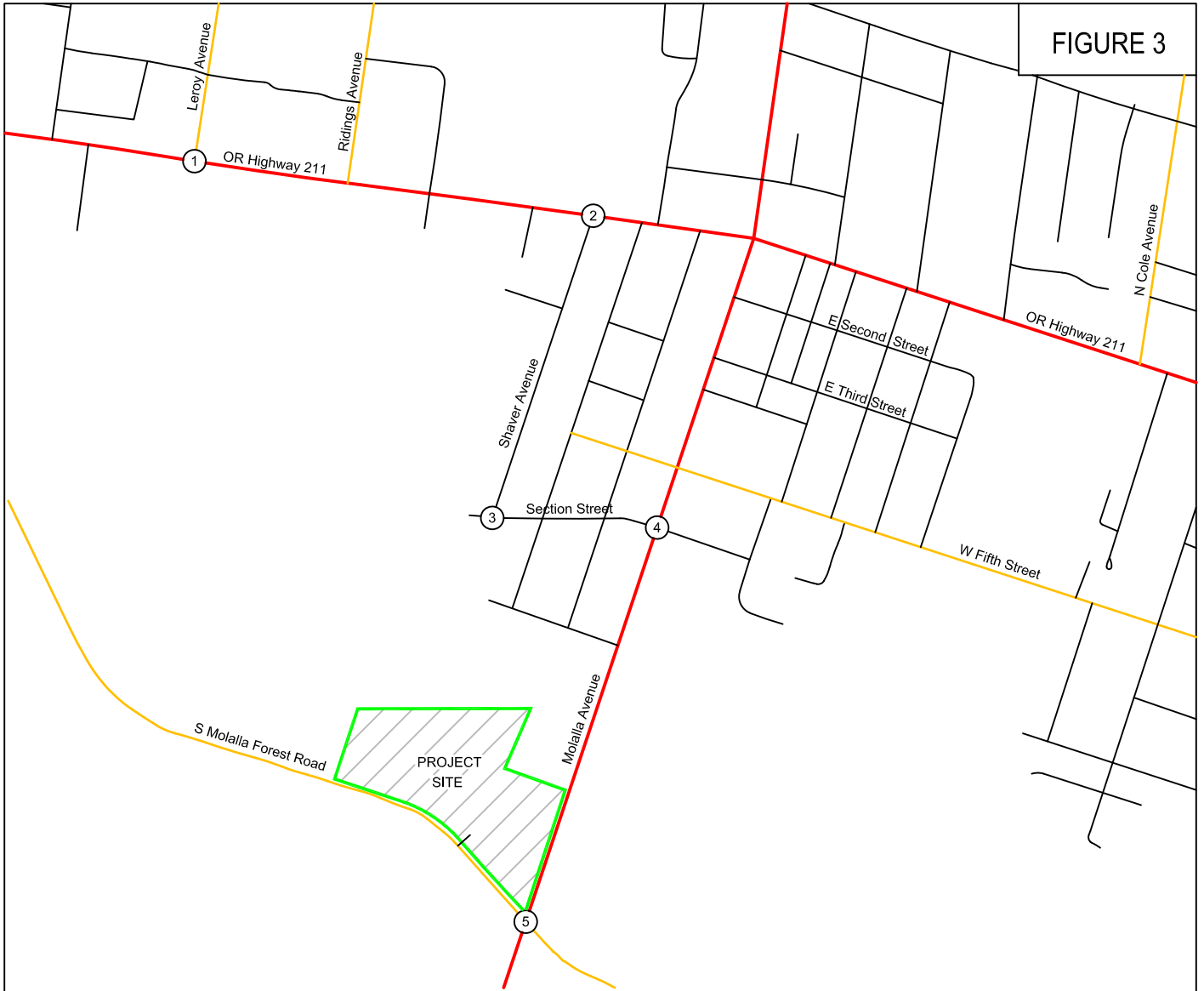
Traffic counts were conducted at the study intersections on Wednesday June 9<sup>th</sup>, 2021 from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. Data was used from the highest-volume hour during each analysis period. Since there were construction activities within the City of Molalla at the time of the traffic counts, historical count data collected for the prior Cascade Center Transportation Impact Analysis prepared by Kittelson and Associates in 2019 was used in conjunction with the highway traffic volume growth rate to determine the expected traffic volumes absent the ongoing construction activities. Since this historical count data also predates the COVID-19 pandemic, application of growth rates to the 2018 count data results in traffic volume projections that account for both the impact of construction activities and the COVID-19 pandemic. The appropriate annual growth rate was determined using data from ODOT's year 2039 Future Volumes Table, which shows model projections of future traffic levels at specific locations on each state highway. The data used for this analysis was for a point on Oregon Highway 211 approximately 500 feet east of Leroy Avenue, which is well centered within the relevant study area. The growth rate was calculated to be 2.57 percent per year (linear). Since the historical count data was collected in 2018, this growth rate was applied to the prior year 2018 traffic counts for a period of 3 years to represent current year 2021 traffic volumes.

Additionally, traffic volumes on Oregon Highway 211 experience seasonal variations due to long trip lengths and differing traffic characteristics by time of year. Accordingly, the count data was also adjusted to account for peak-season conditions (30<sup>th</sup>-highest hour volumes) in accordance with the methods described in the Oregon Department of Transportation's *Analysis Procedures Manual*. Using ODOT's ATR Characteristic table, an Automatic Traffic Recorder (ATR) station was identified which has similar seasonal trends, lane geometry and traffic volumes to the study location. ATR 24-001 was selected as closely matching the characteristics of Highway 211 in the site vicinity. In accordance with the procedures described in the *Analysis Procedures Manual*, a seasonal adjustment of 1.031 was applied to the historical count data from 2018 to represent the 30<sup>th</sup>-highest hour volumes at the intersection of Highway 211 and Leroy Avenue.

Based on the adjusted historical count data, it was determined that the current year 2021 traffic volumes should be increased by 42 percent during the morning peak hour and 18 percent during the evening peak hour to determine the expected year 2021 peak-season traffic volumes absent construction activities and the COVID-19 pandemic. These adjustments were therefore added to the year 2021 counts for the intersections other than Highway 211 at Leroy Avenue. Finally, the resulting through traffic volumes along Highway 211 at Shaver Avenue were balanced to match the eastbound and westbound volumes at the intersection of Highway 211 and Leroy Avenue to ensure consistency in the analysis.

Figure 3 on page 10 shows the resulting 30<sup>th</sup>-highest hour traffic volumes at the study intersections under year 2021 (existing) conditions during the morning and evening peak hours.

FIGURE 3



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**OPERATIONAL ANALYSIS**

An operational analysis was conducted for the study intersections using Synchro 11 software, with outputs calculated based on the *HIGHWAY CAPACITY MANUAL, 6<sup>th</sup> Edition*. The analysis was conducted for the weekday morning and evening peak hours.

The purpose of the existing conditions analysis is to establish how the study area intersections operate currently and allow for calibration of the operational analysis if required.

The results of the operational analysis are reported based on delay, Level of Service (LOS), and volume-to-capacity ratio (v/c). Delays are reported in seconds. Level of service is reported as a letter grade and can range from A to F, with level of service A representing nearly free-flow conditions and level of service F representing high delays and severe congestion. A report of level of service D generally indicates moderately high but tolerable delays, and typically occurs prior to reaching intersection capacity. For unsignalized intersections, the v/c represents the portion of the available intersection capacity that is being utilized on the worst intersection approach. For signalized intersections, it indicates the portion of the overall intersection’s capacity that is being used. A v/c ratio of 1.0 would indicate that the intersection is operating at capacity.

The Oregon Department of Transportation requires that the intersections of Highway 211 at Leroy Avenue and Oregon Highway 211 at Shaver Avenue operate with a v/c ratio of 0.95 or less for all approaches during the peak hours.

A summary of the existing conditions operational analysis is provided in Table 1 below. The reported delays and levels-of-service represent the approach lane which experiences the highest delays. The reported v/c ratios represent the highest ratio for any approach movement.

Based on the analysis, the study intersections are currently operating acceptably. Detailed capacity analysis worksheets are provided in the technical appendix.

**Table 1 - Operational Analysis Summary: Year 2021 Existing Conditions**

Intersection	AM Peak Hour			PM Peak Hour		
	Delay	LOS	v/c	Delay	LOS	v/c
Highway 211 at Leroy Avenue	20.0	C	0.37	23.0	C	0.31
Highway 211 at Shaver Avenue	23.3	C	0.13	36.9	E	0.17
Section Street at Shaver Avenue	5.0	A	0.03	5.0	A	0.09
Molalla Avenue at Section Street	10.0	B	0.03	11.1	B	0.05
Molalla Avenue at Molalla Forest Rd.	9.9	A	0.01	10.4	B	0.01



### ***CRASH DATA ANALYSIS***

Using data obtained from the Oregon Department of Transportation, a review of the five most recent years of available crash history (from January 2015 through December 2019) was performed for the study intersections. The crash data was evaluated based on the number, type, and severity of collisions, as well as the intersection crash rate. Crash rates allow comparison of relative safety risks at intersections with different lane configurations, volumes, and traffic control devices by accounting for both the number of crashes that occur during the study period and the number of vehicles that traveled through the intersection during that period. Crash rates are calculated using the standard assumption that evening peak hour volumes are approximately 10 percent of the average daily traffic volume at an intersection. The crash rates were compared to statewide crash rates for similar intersection types to identify any locations with crash rates in excess of the 90<sup>th</sup> percentile.

The intersection of Highway 211 at Leroy Avenue had six reported collisions during the five-year analysis period. These included four rear-end collisions and two turning movement collisions. The crashes resulted in four non-incapacitating injuries and ten reports of a “possible injury/complaint of pain”. The crash rate for the intersection was calculated to be 0.234 crashes per million entering vehicles. This is below the 90<sup>th</sup> percentile crash rate of 0.293 crashes per million entering vehicles for stop-controlled, three-way urban intersections in Oregon.

The intersection of Highway 211 at Shaver Avenue had three reported collisions during the five-year analysis period. These included two rear-end collisions and one backing collision. The crashes resulted in no serious injuries or fatalities, and two reports of a “possible injury/complaint of pain”. The crash rate for the intersection was calculated to be 0.123 crashes per million entering vehicles. Again, this is below the 90<sup>th</sup> percentile crash rate of 0.293 crashes per million entering vehicles for stop-controlled, three-way urban intersections in Oregon.

The intersections of Shaver Avenue at Section Street, Molalla Avenue at Section Street, and Molalla Avenue at Molalla Forest Road had no reported crashes during the five-year analysis period.

Based on the crash data, the study intersections are currently operating acceptably with respect to safety. No specific safety improvements are recommended for the study area intersections at this time.



## SITE TRIPS

### Proposed Development

The proposed industrial development will utilize the existing buildings within the site (approximately 80,500 square feet) for manufacturing. Additionally, the proposed development includes a new Raw Materials Storage building, which will add 52,500 square feet of warehouse storage space within the site. To estimate the number of trips that will be generated by the proposed industrial facilities, trip rates from the *TRIP GENERATION MANUAL, 10<sup>th</sup> EDITION* were used. Data from land-use codes 140, *Manufacturing*, and 150, *Warehousing*, were used. The trip estimates are based on the gross floor area of the proposed uses.

A summary of the trip generation calculations is provided in Table 2 below. Detailed trip generation worksheets are also included in the technical appendix.

**Table 2 - Proposed Development Trip Generation Summary**

	AM Peak Hour			PM Peak Hour			Daily Total
	In	Out	Total	In	Out	Total	
80,500 sf Manufacturing	44	6	50	7	47	54	316
52,500 sf Warehousing	7	2	9	3	7	10	92
<b>Total Site Trips</b>	<b>51</b>	<b>8</b>	<b>59</b>	<b>10</b>	<b>54</b>	<b>64</b>	<b>408</b>

Dansons anticipates 20-35 fiber supply trucks and 20-30 pellet trucks per day, which will enter and exit via the new driveway on Molalla Avenue. Assuming a total of approximately 55 trucks per day, this equates to 27 percent truck trips overall for the site. This truck percentage is within the range that would be expected for a mix of manufacturing and warehousing uses. Since the Danson data results in a higher overall truck percentage than using ITE average truck rates, the specific Danson's projections were used in the analysis.

### *TRIP DISTRIBUTION*

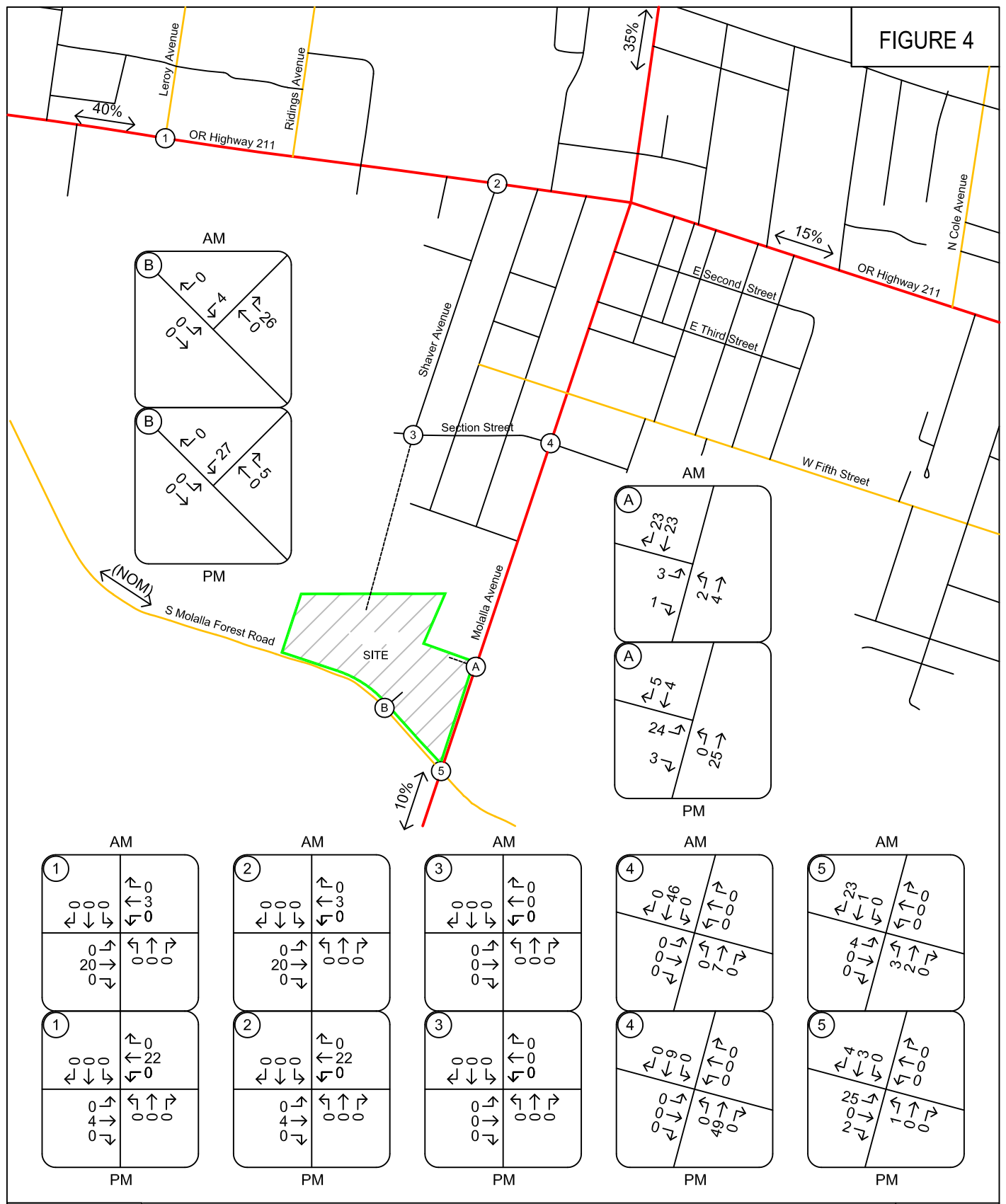
The directional distribution of site trips to and from the project site was estimated based the existing travel patterns in the site vicinity, as well as the locations of likely trip destinations and major transportation routes. Overall, 40 percent of the anticipated site trips are projected to travel to and from the west on Highway 211, 40 percent are projected to travel to and from the north on Molalla Avenue north of Highway 211, 10 percent are projected to travel to and from the east on Highway 211, and the remaining 10 percent of site trips are projected to travel to and from the south on Molalla Avenue.

Truck trips will utilize the new direct access to Molalla Avenue, as will some passenger vehicle trips when drivers are using the parking provided at the north end of the site. Employee trips will primarily utilize the new driveway on Molalla Forest Road. The existing driveway on Molalla Forest Road will remain in place but will only be used as a contractor entrance or for equipment delivery.

The trip distribution percentages and trip assignment for the proposed industrial development are shown in Figure 4 on page 14.



FIGURE 4



**TRAFFIC VOLUMES**  
 Proposed Development - Primary Site Trips  
 Morning and Evening Peak Hours



## **FUTURE CONDITIONS ANALYSIS**

### ***BACKGROUND VOLUMES***

To determine the expected impact of site trips on the study area intersections, it is necessary to compare traffic conditions both with and without the addition of the projected traffic from the proposed development. This comparison is made for future traffic conditions at the time of project completion. It is anticipated that the proposed use will be completed and occupied within two years. Accordingly, the analysis was conducted for year 2023 traffic conditions.

Prior to adding the projected site trips to the study intersections, the existing traffic volumes were adjusted to account for background traffic growth over time. Based on data from ODOT's Future Volume Tables, the growth rate for traffic volumes on Highway 211 in the site vicinity was calculated to be 2.57 percent per year (linear). Since this growth rate closely matches the city's overall growth rate of 2.5 percent per year, the calculated 2.57 percent growth rate was applied to all turning movements at the study intersections.

In addition to the background growth, future site trips associated with other anticipated developments within the City of Molalla were added to the background traffic volumes. These projects included the Cascade Center commercial development and the Colima Apartments residential development. The projected site trips for these in-process developments are shown in Figure 7 in the attached technical appendix.

With completion of the Cascade Center commercial development, some changes to the lane configuration and traffic control devices are anticipated at the intersection of Highway 211 and Leroy Avenue. The anticipated future intersection configurations for the study intersections (including the future site access driveway intersections) are shown in Figure 5 on page 16.

Figure 6 on page 17 shows the projected year 2023 background traffic volumes at the study intersections during the morning and evening peak hours.

### ***BACKGROUND VOLUMES PLUS SITE TRIPS***

Peak hour trips calculated to be generated by the proposed development were added to the projected year 2023 background traffic volumes to obtain the year 2023 total traffic volumes following completion of the proposed development. To maintain a conservative analysis, all site trips taking access via Molalla Forest Road were assumed to use a single point of access. To the extent that site trips are divided between the two accesses, actual performance will be better than indicated.

Figure 7 on page 18 shows the projected year 2023 peak hour volumes including background growth, previously approved development within the site vicinity, and site trips from the proposed development for the morning and evening peak hours.

FIGURE 5

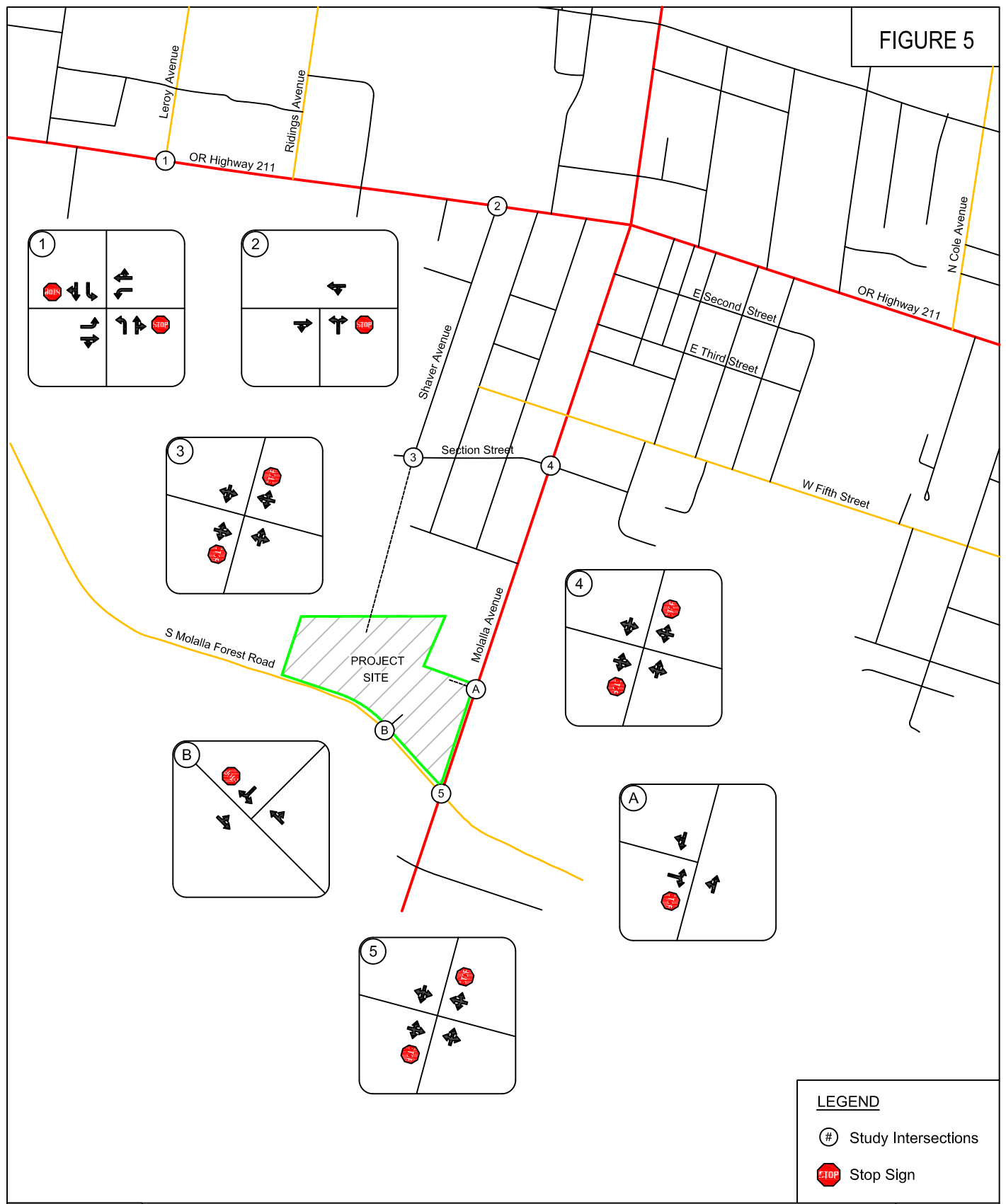
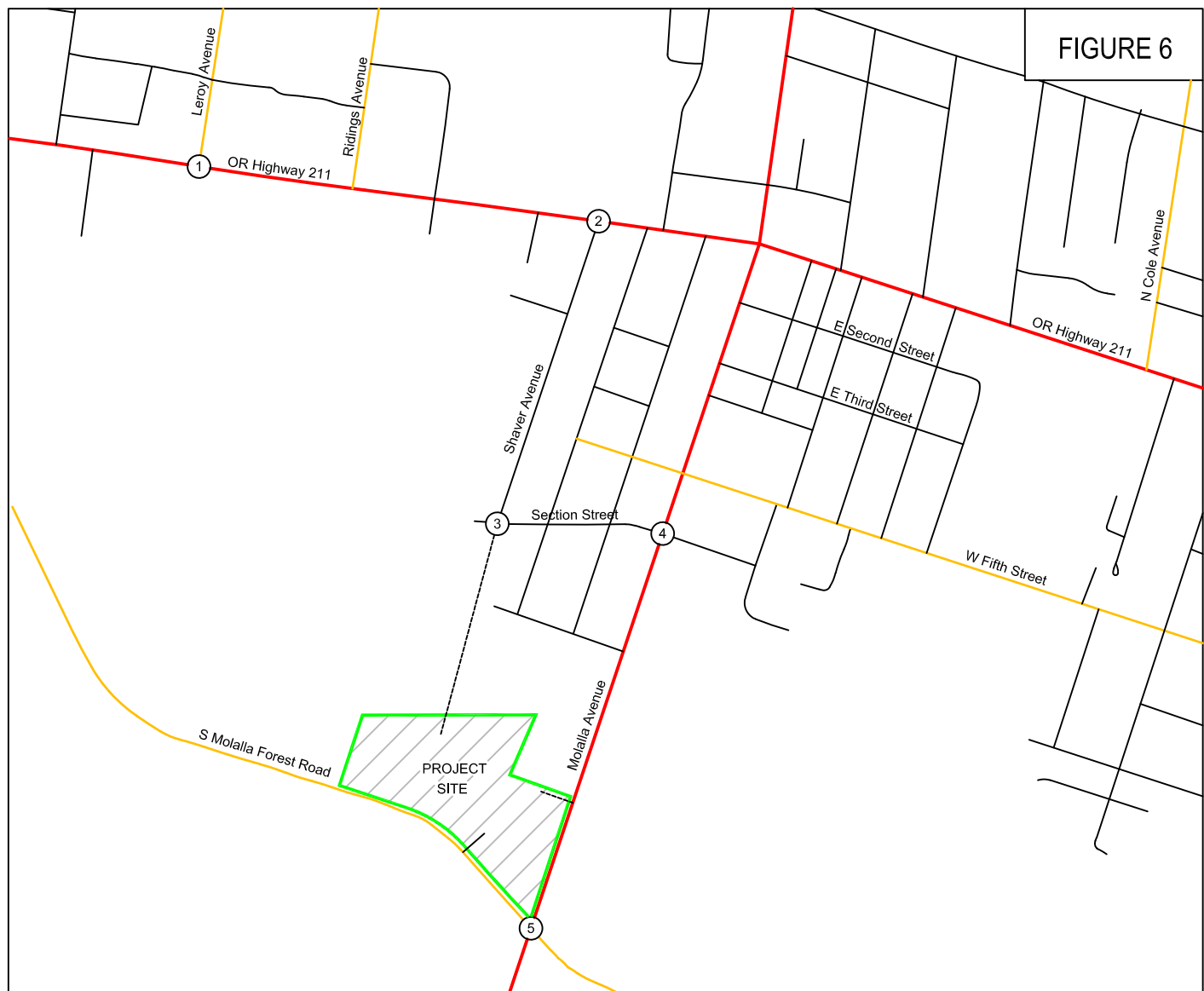


FIGURE 6



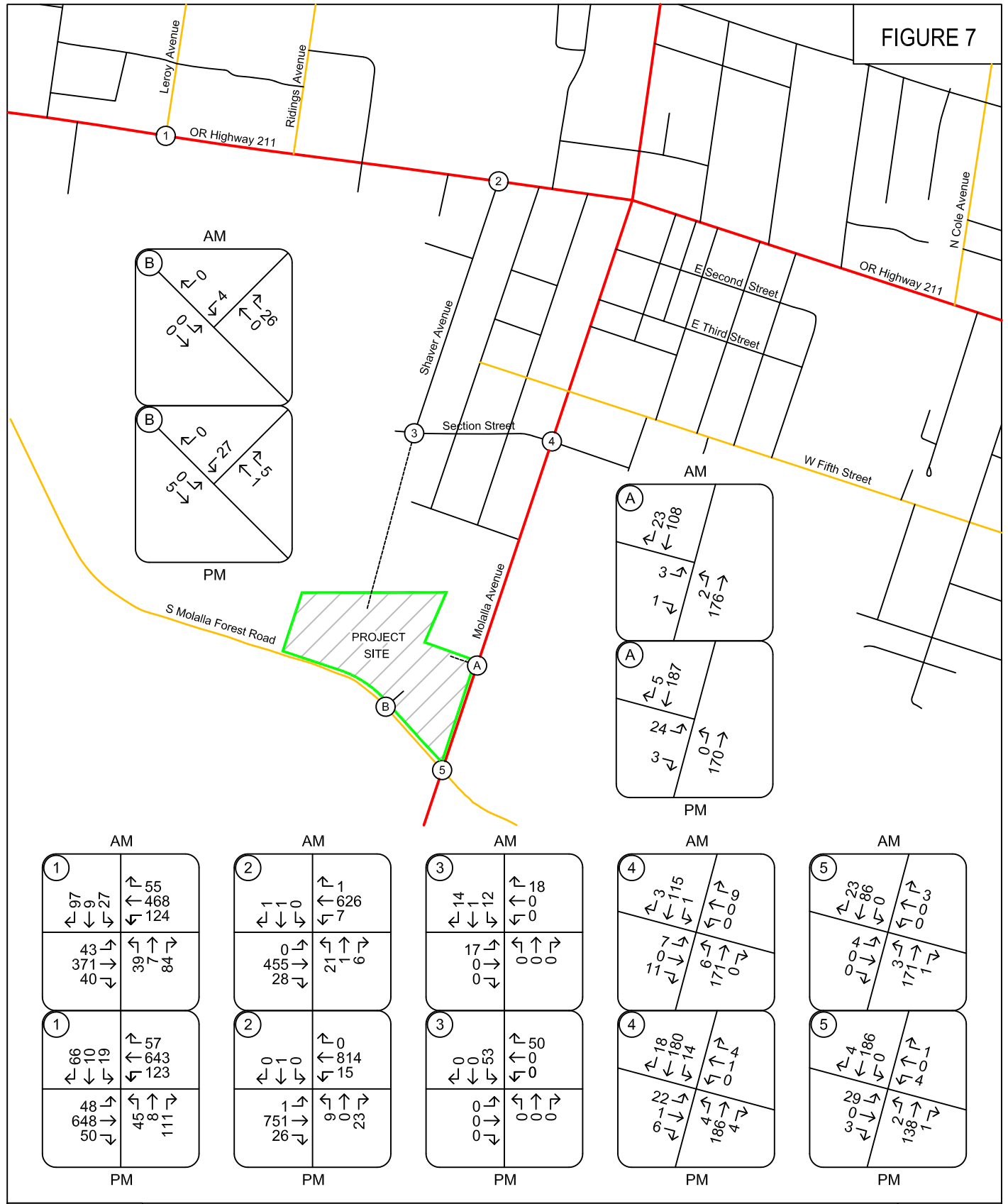
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FIGURE 7





**OPERATIONAL ANALYSIS**

The operational analysis for future traffic conditions was again conducted using Synchro analysis software, with outputs based on the analysis methodologies contained in the *HIGHWAY CAPACITY MANUAL*. The analysis was prepared for the intersections’ morning and evening peak hours.

The results of the operational analysis are summarized in Table 3 below. Detailed analysis worksheets are also included in the technical appendix.

**Table 3 - Operational Analysis Summary: Year 2023 Future Conditions**

Intersection	AM Peak Hour			PM Peak Hour		
	Delay	LOS	v/c	Delay	LOS	v/c
Highway 211 at Leroy Avenue						
2023 Background Conditions	189.3	F	0.83	489.4	F	1.44
2023 Background plus Site	209.6	F	0.88	538.9	F	1.53
Highway 211 at Shaver Avenue						
2023 Background Conditions	36.6	E	0.22	56.5	F	0.26
2023 Background plus Site	38.3	E	0.23	58.9	F	0.27
Shaver Avenue at Section Street						
2023 Background Conditions	5.0	A	0.04	5.0	A	0.09
2023 Background plus Site	5.0	A	0.04	5.0	A	0.09
Molalla Avenue at Section Street						
2023 Background Conditions	10.2	B	0.03	11.7	B	0.06
2023 Background plus Site	10.7	B	0.03	12.3	B	0.06
Molalla Avenue at Molalla Forest Rd.						
2023 Background Conditions	10.1	B	0.01	10.9	B	0.01
2023 Background plus Site	11.1	B	0.01	11.5	B	0.06
Molalla Avenue at Site Access						
2023 Background plus Site	11.3	B	0.01	12.2	B	0.06
Molalla Forest Road at Site Access						
2023 Background plus Site	8.6	A	0.01	8.7	A	0.03

The intersections operating under the jurisdiction of the City of Molalla are all projected to operate with low delays, at level of service B or better, and well within capacity. The two study intersections on Highway 211 operate under the jurisdiction of the Oregon Department of Transportation and are required to operate with a volume-to-capacity ratio of 0.95 or less. Although the intersection of Highway 211 at Shaver Avenue is projected to operate acceptably, the intersection of Highway 211 at Leroy Avenue is projected to operate with volumes on the critical northbound approach exceeding intersection capacity during the evening peak hour.

Notably, the northbound approach to Highway 211 at Leroy Avenue serves the Cascade Center project, which is currently under development. This site has multiple points of access, including an unsignalized driveway on Highway 211 at the west end of the site which forms a T-intersection. Since



a T-intersection has fewer conflicting movements than a four-way intersection and since there is a center two-way left-turn lane at this location with no conflicting traffic, this intersection can accommodate two-stage left turns. Two-stage left turns occur when drivers wait for a gap in the eastbound traffic flow, turn into the center median, stop, then wait for a gap in the westbound traffic prior to merging into the through travel lane. These turns experience significantly lower total delays than single-stage left turns since simultaneous gaps in both traffic streams are not needed. Accordingly, drivers would be expected to divert from the over-capacity intersection at Leroy Avenue to the T-intersection driveway, since this will provide the fastest travel route when exiting toward the west on the highway.

A supplementary analysis was conducted using the projected volume data from the Cascade Center Transportation Impact Analysis prepared by Kittelson and Associates to determine the likely balance of traffic volumes between the site accesses at Leroy Avenue and at the westerly T-intersection. The analysis was conducted assuming that if the average turning delay from the T-intersection plus the travel time within the site to the T-intersection is less than the average delay for the northbound left-turn movement at Leroy Avenue, some drivers will make this diversion.

If 15 drivers divert during the morning peak hour and 25 drivers divert during the evening peak hour from Leroy Avenue to the westerly T-intersection for their respective northbound left turns, operation of the intersection of Highway 211 at Leroy Avenue would be projected to operate with volume-to-capacity ratios of less than 0.95, meeting the requirements of ODOT’s performance standards. Based on this analysis, it is projected that the over-capacity condition previously projected for the evening peak hour in the primary analysis will not actually occur. A summary of the corrected operational analysis for the intersection of Highway 211 at Leroy Avenue is provided in Table 4 below.

**Table 4 - Rebalanced Operational Analysis Summary: Year 2023 Future Conditions**

Intersection	AM Peak Hour			PM Peak Hour		
	Delay	LOS	v/c	Delay	LOS	v/c
Highway 211 at Leroy Avenue						
2023 Background plus Site	132.6	F	0.54	306.1	F	0.77

Detailed operational analysis worksheets showing both the intersection of Highway 211 at Leroy Avenue and Highway 211 at the westerly Cascade Station access driveway (which is also projected to meet ODOT standards) are included in the attached technical appendix.

Based on the detailed analysis, all study intersections are projected to operate acceptably per the appropriate jurisdictional standards. No specific operational mitigations are recommended in conjunction with the proposed development.



### ***SITE CIRCULATION AND PARKING***

The proposed site plan includes three primary points of access. The existing driveway on Molalla Forest Road will serve only serve as a contractor entrance and for occasional equipment deliveries. The proposed new driveway on Molalla Forest Road will serve employee trips in passenger vehicles and connects to the parking lot on the south side of the site. The proposed new driveway on Molalla Avenue will provide access for truck trips, and will also serve passenger vehicles destined for the small parking lot located on the north side of the project site. The site access driveways will be connected within the site, allowing vehicles to circulate within the site to the other points of access if needed, without the need to re-enter the public streets.

Trucks entering the site can utilize the scales located on the north side of the driveway entrance and can travel to the loading dock at the west end of Building 1 (at the west side of the site) as well as the truck dump area between Building 2 and the new Raw Materials Storage (RMS) building at the east side of the site.

It should be noted that although the site layout allows a future connection to be made to the north via the intersection of Shaver Avenue at Section Street, this connection will not be constructed as part of the current development proposal.

The proposed site plan adequately accommodates on-site circulation and connectivity between the points of access and to the on-site parking facilities.

### ***QUEUING ANALYSIS***

A queuing analysis was conducted for year background plus site trips conditions to identify any potential concerns associated with queues either within the site or at the study area intersections. The analysis was performed using a Synchro/SimTraffic simulation, with results reported based on the 95<sup>th</sup> percentile queue lengths. The 95<sup>th</sup> percentile queue is the queue length which is exceeded during only 5 percent of the peak hour. Accommodating queues in excess of the 95<sup>th</sup> percentile length generally does not provide sufficient benefit to offset costs and justify the improvements.

Based on the queuing analysis, 95<sup>th</sup> percentile queue lengths of 4 to 5 vehicles (up to 111 feet) are projected on the northbound and southbound Leroy Avenue approaches to Highway 211. The projected 95<sup>th</sup> percentile queue lengths for all other study intersections are 3 vehicles or less (approximately 75 feet or less). No queuing-related mitigations are recommended in conjunction with the proposed development. Detailed queuing analysis worksheets are included in the attached technical appendix.

### ***INTERSECTION SIGHT DISTANCE ANALYSIS***

Intersection sight distance was measured for the existing and proposed site access driveways on Molalla Avenue and on Molalla Forest Road. The sight distance measurements are made from a position within the existing or proposed driveway, 15 feet behind the edge of the traveled way on the through street, and from a driver's eye height of 3.5 feet above the driveway surface elevation. The measurements are made to a driver's eye height of 3.5 feet above the surface of the oncoming travel lane.





The posted speed limit on Molalla Avenue in the vicinity of the proposed site access is 45 mph. Since this driveway will accommodate a relatively high volume of truck traffic, a minimum of 765 feet of intersection sight distance is desired in each direction for efficient operation of the intersection. While existing grass and blackberries adjacent to the driveway currently obstruct sight lines, clearing of limited vegetation within the site frontage is projected to result in sight lines in excess of 800 feet in each direction. Accordingly, adequate sight lines can be provided at the proposed access location on Molalla Avenue.

For the existing and proposed driveways on Molalla Forest Road, sight lines are also currently obstructed by vegetation along the site frontage. Upon clearing of vegetation, sight lines are projected to be continuous to the east to Molalla Avenue. Vehicles approaching from Molalla Avenue must slow to turn onto Molalla Forest Road. Based on the roadway geometry, it is projected that approach speeds at the limits of sight distance will be 25 mph or less, requiring a minimum of 155 feet of stopping sight distance for safe operation of the driveways. The nearest driveway is centered 268 feet west of Molalla Avenue, meaning that continuous sight lines to Molalla Avenue are more than adequate for safe operation of the existing and proposed driveways.

Looking to the west from the existing and proposed access locations and assuming clearing of vegetation as needed within the site frontage, sight distances will be limited by a horizontal curve on Molalla Forest Road west of the driveways. Intersection sight distance following the frontage improvements is projected to be 370 feet for the existing (west) driveway and 577 feet for the proposed new (east) driveway. These sight distances provide adequate stopping sight distance for safety for approach speeds of up to 45 mph for the existing (west) driveway and 60 mph for the proposed (east) driveway. Actual 85<sup>th</sup> percentile approach speeds are projected to be less than 40 mph based on the roadway geometry and pavement condition west of the site access driveways. Accordingly, the two proposed points of access on Molalla Forest Road can also operate safely.

It should also be noted that vegetation within the southwest corner of the intersection of Molalla Avenue at Molalla Forest Road currently obstructs sight lines to the south for vehicles approaching Molalla Avenue eastbound on Molalla Forest Road. Accordingly, vegetation should be cleared from the corner sufficient to provide a minimum of 500 feet of intersection sight distance to the south from an eastbound driver's eye position on Molalla Forest Road 15 feet behind the edge of Molalla Avenue.

Based on the detailed analysis, adequate sight distance is projected to be available in each direction for safe and efficient operation of the proposed access on Molalla Avenue even when accounting for high volumes of truck traffic. Adequate sight lines are also projected to be available for safe operation of the existing and proposed driveways on Molalla Forest Road. It is recommended that vegetation along the site frontage be cleared as needed to maximize sight lines for all three driveway locations. It is also recommended that vegetation be cleared from the southwest corner of the intersection of Molalla Avenue at Molalla Forest Road to provide a minimum of 500 feet of intersection sight distance to the south. No other sight distance mitigations are recommended in conjunction with the proposed development.



## **WARRANT ANALYSIS**

### ***TRAFFIC SIGNAL WARRANT ANALYSIS***

Traffic signal warrants were examined for the study intersections. Based on the projected traffic volumes, traffic signal warrants are not projected to be met for any of the unsignalized study intersections under any of the analysis scenarios. Detailed warrant analysis worksheets are provided in the attached technical appendix for the intersection of Highway 211 at Leroy Avenue. By inspection, all other study intersections have insufficient traffic volumes on the side-street approaches to meet signal warrants.

An additional warrant analysis was undertaken to determine whether a restriction on northbound left turns would divert enough traffic to meet signal warrants. Based on this additional analysis, side-street traffic volumes would remain approximately 4 percent below the threshold at which warrants would be satisfied.

Based on the detailed warrant analysis, no new traffic signals are recommended for the study intersections at this time.

### ***LEFT TURN LANE WARRANT ANALYSIS***

Left turn lane warrants were examined for the major-street approaches to the unsignalized study intersections. Left turn lane warrants are intended to evaluate whether a meaningful safety benefit may be expected if the turning vehicles are provided with a turn lane within the street, allowing left-turning drivers to move out of the through travel lane so that following vehicles may pass without conflicts.

The intersection of Highway 211 at Leroy Boulevard is already being widened to provide left-turn lanes in conjunction with the Cascade Center project.

The volume of through traffic on the major street at the intersection of Highway 211 and Shaver Avenue is high enough that any major street left-turn volume in excess of 10 vehicles will meet warrants at this intersection. Since there are 15 westbound left turns at the intersection under year 2023 background conditions, warrants are projected to be met for installation of a westbound left-turn lane. However, the proposed development adds no traffic to the westbound left-turn movement and does not impact the need for a left-turn lane. Accordingly, any requirement to install a left-turn lane in conjunction with the proposed development would lack a necessary nexus to the proposed development and would be disproportionate to the actual impact of the proposed development. Accordingly, no new left-turn lanes can be recommended for this intersection in conjunction with the proposed development.

By inspection, the traffic volumes at the intersection of Shaver Avenue and Section Street are insufficient to warrant installation of turn lanes.

Left-turn lane warrants are not projected to be met during either the morning or evening peak hours for the intersection of Molalla Avenue at Section Street through 2023 either with or without the addition of site trips from the proposed development.



Since the major-street left-turn volumes remain fewer than 10 vehicles per hour through 2023 during each of the peak hours either with or without the addition of site trips from the proposed development for all other study intersections, neither the intersection of Molalla Avenue at Molalla Forest Road nor either of the site access driveway intersections are projected to meet left-turn lane warrants under future conditions.

Based on the detailed analysis, no new left-turn lanes are recommended in conjunction with the proposed development.

### ***RIGHT TURN LANE WARRANT ANALYSIS***

Right turn lane warrants were also examined for the major-street approaches to the unsignalized study intersections. Right turn lane warrants are intended to evaluate whether a meaningful safety benefit may be expected if the turning vehicles are provided with a dedicated turn lane, allowing right-turning drivers to decelerate outside the through travel lane prior to making right turns.

It should be noted that installation of right-turns may not be appropriate on low-speed urban streets where speed differentials between through traffic and turning vehicles are minimal, and installation of dedicated right-turn lanes would increase crossing distances for pedestrians, thereby negating the intended safety benefits of the turn lanes. In the Cascade Center Transportation Impact Analysis, it was previously noted that right-turn lane warrants were projected to be satisfied for the intersection of Highway 211 at Leroy Avenue. However, ultimately it was decided that right-turn lanes would not be installed.

Based on the analysis right-turn lane warrants are projected to be met for the intersections of Highway 211 at Leroy Avenue and Highway 211 at Shaver Avenue under year 2023 background conditions. However, again the proposed development adds no trips to the respective right-turn movements at these intersections. Since it is unclear that installation of right-turn lanes is appropriate and any requirement for installation of right turn lanes at these intersections would be disproportionate to the actual impact of the proposed development, no new right-turn lanes are recommended for the intersections of Highway 211 at Leroy Avenue and Highway 211 at Shaver Avenue in conjunction with the proposed development.

Based on the analysis, right-turn lane warrants are not projected to be met for the other study intersections or the two site access driveways. Accordingly, no new right-turn lanes are recommended.



## CONCLUSIONS

Based on the crash data, the study intersections are currently operating acceptably with respect to safety.

Based on the operational analysis, the study intersections are currently operating acceptably per the respective standards of the City of Molalla and the Oregon Department of Transportation. The study intersections are projected to continue to operate acceptably through 2023 either with or without the addition of site trips from the proposed development. No operational mitigations are recommended in conjunction with the proposed development.

Based on the queuing analysis, the projected queue lengths can safely be accommodated at the study intersections. No queuing-related mitigations are recommended in conjunction with the proposed development.

Based on the sight distance analysis, adequate sight distance is projected to be available in each direction for safe and efficient operation of the proposed access on Molalla Avenue even when accounting for high volumes of truck traffic. Adequate sight lines are also projected to be available for safe operation of the existing and proposed driveways on Molalla Forest Road. It is recommended that vegetation along the site frontage be cleared as needed to maximize sight lines for all three driveway locations. It is also recommended that vegetation be cleared from the southwest corner of the intersection of Molalla Avenue at Molalla Forest Road to provide a minimum of 500 feet of intersection sight distance to the south. No other sight distance mitigations are recommended in conjunction with the proposed development.

Based on the warrant analysis, no new turn lanes or traffic signals are recommended in conjunction with the proposed development.



## **APPENDICES**

Appendix A – Turning Movement Count Data

Appendix B – ODOT Volume Adjustment Data

Appendix C – Existing Conditions Operational Analysis Worksheets

Appendix D – ODOT Crash Data

Appendix E – Site Trip Generation Worksheets and In-Process Trip Diagrams

Appendix F – Year 2023 Background Conditions Operational Analysis Worksheets

Appendix G – Year 2023 Total Traffic Conditions Operational Analysis Worksheets

Appendix H – Year 2023 Total Traffic Conditions Queuing Analysis Worksheets

Appendix I – Traffic Signal and Turn Lane Warrant Analysis Worksheets

Appendix A  
Turning Movement Count Data



Location: LEROY ST & HWY 211 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	4	0	1	0	5	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	2	0	0	0	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	3	0	8	1	12	7:10 AM	0	0	0	0	0	7:10 AM	0	4	0	0	4
7:15 AM	6	0	7	7	20	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	0	5	2	8	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	5	0	2	1	8	7:25 AM	0	0	0	0	0	7:25 AM	0	2	0	0	2
7:30 AM	7	0	6	1	14	7:30 AM	0	0	0	0	0	7:30 AM	0	1	0	0	1
7:35 AM	3	0	10	0	13	7:35 AM	0	0	0	0	0	7:35 AM	0	1	0	0	1
7:40 AM	3	0	3	0	6	7:40 AM	0	0	0	0	0	7:40 AM	0	3	0	0	3
7:45 AM	3	0	0	0	3	7:45 AM	0	0	0	0	0	7:45 AM	0	2	0	0	2
7:50 AM	3	0	7	0	10	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	5	0	5	0	10	7:55 AM	0	0	0	0	0	7:55 AM	0	2	0	0	2
8:00 AM	4	0	6	0	10	8:00 AM	0	0	0	0	0	8:00 AM	0	3	0	0	3
8:05 AM	5	0	4	0	9	8:05 AM	0	0	0	0	0	8:05 AM	1	3	0	0	4
8:10 AM	2	0	4	0	6	8:10 AM	0	0	0	0	0	8:10 AM	0	3	0	0	3
8:15 AM	6	0	4	1	11	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	2	0	2	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	3	0	2	0	5	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	1	1
8:30 AM	1	1	2	1	5	8:30 AM	0	0	0	0	0	8:30 AM	2	3	0	0	5
8:35 AM	4	1	2	1	8	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	4	1	7	1	13	8:40 AM	0	0	0	0	0	8:40 AM	0	2	0	0	2
8:45 AM	1	1	4	0	6	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	1	1
8:50 AM	2	0	1	0	3	8:50 AM	0	0	0	0	0	8:50 AM	1	0	0	0	1
8:55 AM	5	0	2	1	8	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	82	4	94	17	197	Count Total	0	0	0	0	0	Count Total	4	29	0	2	35
Peak Hour	45	0	54	12	111	Peak Hour	0	0	0	0	0	Peak Hour	0	15	0	0	15



Location: S MOLALLA AVE & S MOLALLA FOREST RD AM



ALL TRAFFIC DATA SERVICES

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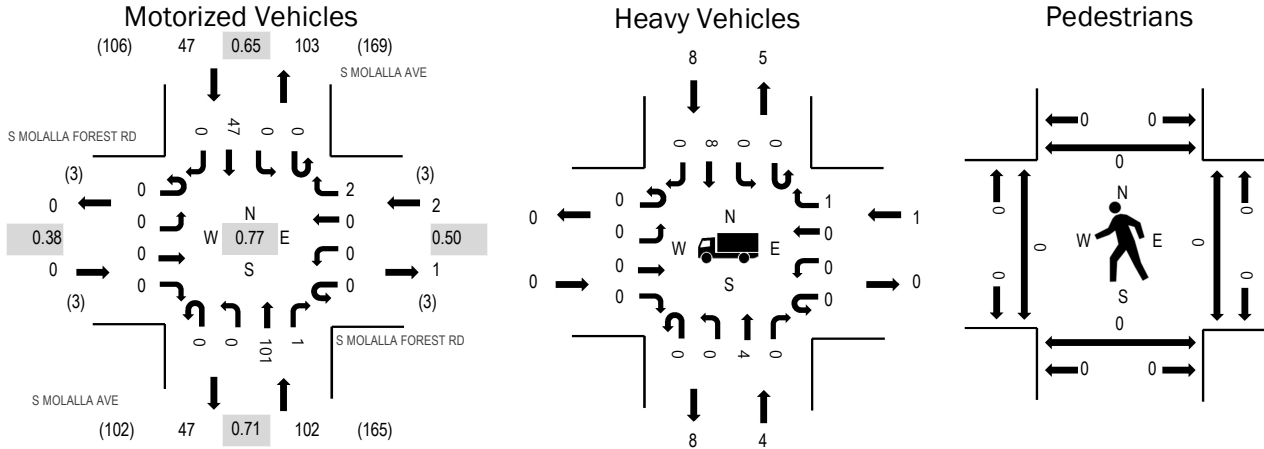
Location: S MOLALLA AVE & S MOLALLA FOREST RD AM

Date: Wednesday, June 9, 2021

Peak Hour: 07:10 AM - 08:10 AM

Peak 15-Minutes: 07:10 AM - 07:25 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.38
WB	50.0%	0.50
NB	3.9%	0.71
SB	17.0%	0.65
All	8.6%	0.77

Traffic Counts - Motorized Vehicles

Interval Start Time	S MOLALLA FOREST RD Eastbound				S MOLALLA FOREST RD Westbound				S MOLALLA AVE Northbound				S MOLALLA AVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	1	3	0	11	150
7:05 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	2	0	10	150
7:10 AM	0	0	0	0	0	0	0	0	0	0	15	0	0	0	3	0	18	151
7:15 AM	0	0	0	0	0	0	0	1	0	0	10	1	0	0	2	0	14	141
7:20 AM	0	0	0	0	0	0	0	0	0	0	10	0	0	0	7	0	17	138
7:25 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	2	0	9	129
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	10	130
7:35 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	6	0	13	128
7:40 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	3	0	11	127
7:45 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	4	0	13	126
7:50 AM	0	0	0	0	0	0	0	0	0	0	10	0	0	0	1	0	11	126
7:55 AM	0	0	0	0	0	0	0	1	0	0	5	0	0	0	7	0	13	130
8:00 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	3	0	11	127
8:05 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	3	0	11	
8:10 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	6	0	8	
8:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0	11	
8:20 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0	8	
8:25 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	3	0	10	
8:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	1	8	
8:35 AM	0	1	0	0	0	0	0	1	0	0	9	0	0	0	1	0	12	
8:40 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	10	
8:45 AM	0	1	0	0	0	0	0	0	0	0	5	0	0	0	6	1	13	
8:50 AM	0	0	0	1	0	0	0	0	0	0	4	0	0	1	8	1	15	
8:55 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	10	
Count Total	0	2	0	1	0	0	0	3	0	0	164	1	0	2	101	3	277	
Peak Hour	0	0	0	0	0	0	0	2	0	0	101	1	0	0	47	0	151	

Location: S MOLALLA AVE & S MOLALLA FOREST RD 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	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	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	0	1	0	1	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	1	0	3	4	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	1	1	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	0	0	2	2	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	1	1	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	1	0	0	1	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	1	1	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	1	1	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	2	2	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	1	0	1	2	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	1	0	0	1	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	0	0	2	2	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	1	1	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	1	1
Count Total	0	6	1	17	24	Count Total	0	0	0	0	0	Count Total	0	0	0	1	1
Peak Hour	0	4	1	8	13	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: S MOLALLA AVE & SECTION ST AM



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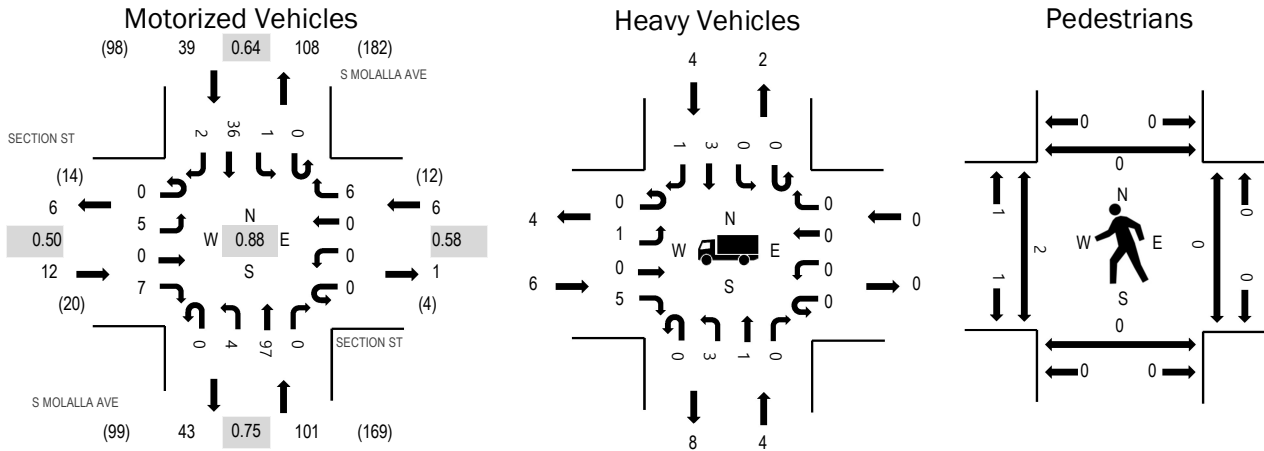
Location: S MOLALLA AVE & SECTION ST AM

Date: Wednesday, June 9, 2021

Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:10 AM - 07:25 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	50.0%	0.50
WB	0.0%	0.58
NB	4.0%	0.75
SB	10.3%	0.64
All	8.9%	0.88

Traffic Counts - Motorized Vehicles

Interval Start Time	SECTION ST Eastbound				SECTION ST Westbound				S MOLALLA AVE Northbound				S MOLALLA AVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	1	0	0	0	0	0	0	0	0	7	0	0	0	5	0	13	158
7:05 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	2	0	9	152
7:10 AM	0	0	0	0	0	0	0	0	0	1	9	0	0	0	2	0	12	157
7:15 AM	0	1	0	1	0	0	0	2	0	2	14	0	0	0	1	0	21	153
7:20 AM	0	0	0	1	0	0	0	0	0	1	7	0	0	0	3	0	12	143
7:25 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	1	2	0	11	142
7:30 AM	0	0	0	0	0	0	0	1	0	0	4	0	0	0	6	1	12	142
7:35 AM	0	0	0	3	0	0	0	1	0	0	7	0	0	0	3	0	14	141
7:40 AM	0	1	0	1	0	0	0	1	0	0	6	0	0	0	1	0	10	139
7:45 AM	0	1	0	0	0	0	0	0	0	0	11	0	0	0	4	0	16	139
7:50 AM	0	1	0	0	0	0	0	1	0	0	9	0	0	0	0	0	11	142
7:55 AM	0	0	0	1	0	0	0	0	0	0	8	0	0	0	7	1	17	145
8:00 AM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	2	0	7	141
8:05 AM	0	0	0	1	0	0	0	0	0	0	10	0	0	0	3	0	14	
8:10 AM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	5	0	8	
8:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	5	0	11	
8:20 AM	0	2	0	0	0	0	0	1	0	0	3	0	0	0	4	1	11	
8:25 AM	0	0	0	0	0	0	0	1	0	1	6	0	0	0	2	1	11	
8:30 AM	0	0	0	0	0	0	0	1	0	0	5	0	0	1	3	1	11	
8:35 AM	0	0	0	0	0	0	0	0	0	0	10	0	0	0	2	0	12	
8:40 AM	0	0	0	1	0	0	0	0	0	0	4	0	0	0	5	0	10	
8:45 AM	0	1	1	2	0	0	0	1	0	0	5	0	0	0	7	2	19	
8:50 AM	0	0	0	0	0	0	0	0	0	1	4	0	0	1	8	0	14	
8:55 AM	0	0	0	0	0	0	0	1	0	0	6	0	0	0	6	0	13	
Count Total	0	8	1	11	0	0	0	12	0	7	162	0	0	3	88	7	299	
Peak Hour	0	5	0	7	0	0	0	6	0	4	97	0	0	1	36	2	158	

Location: S MOLALLA AVE & SECTION ST 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	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	1	0	0	1	7:10 AM	0	0	0	0	0	7:10 AM	1	0	0	0	1
7:15 AM	1	2	0	0	3	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	1	0	0	2	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	2	2	7:30 AM	0	0	0	0	0	7:30 AM	1	0	0	0	1
7:35 AM	1	0	0	1	2	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	1	0	0	0	1	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	1	0	0	0	1	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	1	0	0	0	1	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	1	0	0	1	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	1	1	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	1	1	8:15 AM	0	0	0	0	0	8:15 AM	3	0	0	0	3
8:20 AM	0	0	0	1	1	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	1	0	0	1	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	1	1	2	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	1	0	0	0	1	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	2	0	0	2	4	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	1	1	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	9	7	1	12	29	Count Total	0	0	0	0	0	Count Total	5	0	0	0	5
Peak Hour	6	4	0	4	14	Peak Hour	0	0	0	0	0	Peak Hour	2	0	0	0	2

Location: SHAVER AVE & SECTION ST AM



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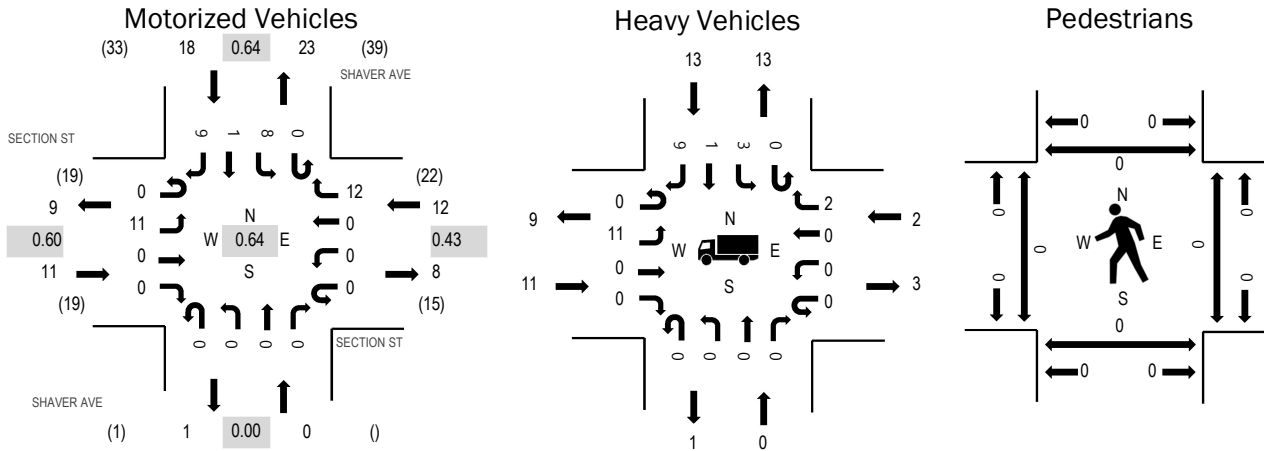
Location: SHAVER AVE & SECTION ST AM

Date: Wednesday, June 9, 2021

Peak Hour: 07:20 AM - 08:20 AM

Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	100.0%	0.60
WB	16.7%	0.43
NB	0.0%	0.00
SB	72.2%	0.64
All	63.4%	0.64

Traffic Counts - Motorized Vehicles

Interval Start Time	SECTION ST Eastbound				SECTION ST Westbound				SHAVER AVE Northbound				SHAVER AVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	36
7:05 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	35
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	38
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	39
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	41
7:25 AM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	39
7:30 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	1	5	40
7:35 AM	0	2	0	0	0	0	0	1	0	0	0	0	0	1	1	2	7	37
7:40 AM	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	4	35
7:45 AM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	4	37
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	36
7:55 AM	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	1	5	38
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	38
8:05 AM	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	
8:10 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:25 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	3	
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
8:35 AM	0	2	0	0	0	0	0	1	0	0	0	0	0	2	0	0	5	
8:40 AM	0	2	0	0	0	0	1	3	0	0	0	0	0	0	0	0	6	
8:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	3	
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	4	
8:55 AM	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	5	
Count Total	0	19	0	0	0	0	2	20	0	0	0	0	0	15	1	17	74	
Peak Hour	0	11	0	0	0	0	0	12	0	0	0	0	0	8	1	9	41	

Location: SHAVER AVE & SECTION ST 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	1	0	0	1	2	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	1	0	0	0	1	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	1	1	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	1	1	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	1	0	0	0	1	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	2	2	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	2	0	0	4	6	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	1	0	1	0	2	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	1	0	0	2	3	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	2	2	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	2	0	0	1	3	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	3	0	1	0	4	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	1	0	0	1	2	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	1	2	3	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	1	0	0	0	1	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	2	0	0	1	3	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	2	0	1	0	3	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	1	1	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	2	2	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	1	0	1	2	4	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	19	0	5	24	48	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	11	0	2	13	26	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Location: SHAVER AVE & HWY 211 AM



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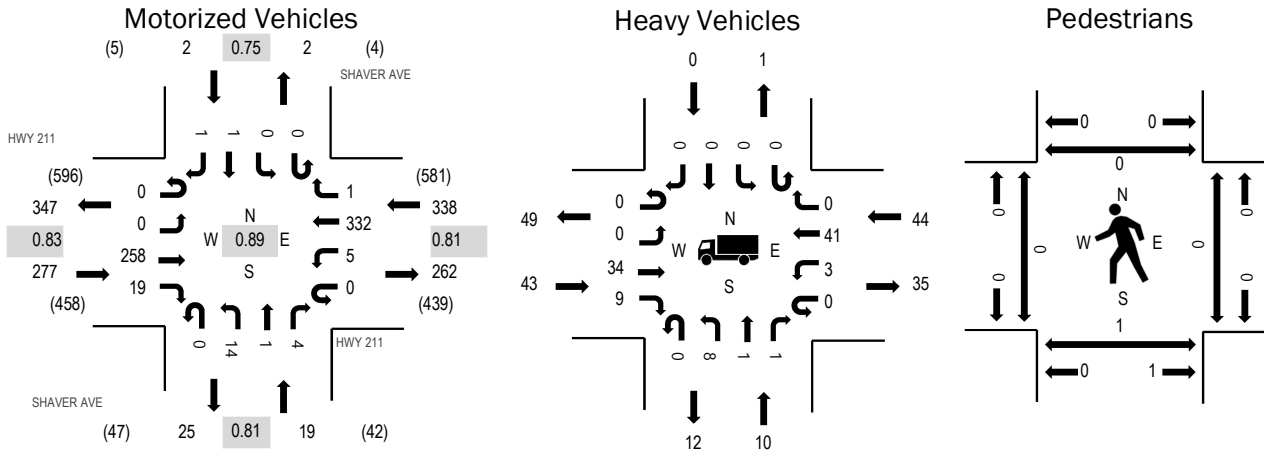
Location: SHAVER AVE & HWY 211 AM

Date: Wednesday, June 9, 2021

Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	15.5%	0.83
WB	13.0%	0.81
NB	52.6%	0.81
SB	0.0%	0.75
All	15.3%	0.89

Traffic Counts - Motorized Vehicles

Interval Start Time	HWY 211 Eastbound				HWY 211 Westbound				SHAVER AVE Northbound				SHAVER AVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	17	1	0	0	22	0	0	0	0	1	0	0	0	0	41	636
7:05 AM	0	0	21	3	0	0	30	0	0	1	0	0	0	0	0	0	55	629
7:10 AM	0	0	18	0	0	0	34	0	0	1	0	0	0	0	0	0	53	625
7:15 AM	0	0	22	1	0	2	38	0	0	2	0	0	0	0	0	0	65	619
7:20 AM	0	0	24	1	0	0	24	0	0	1	0	1	0	0	0	0	51	589
7:25 AM	0	0	18	1	0	0	24	0	0	0	1	0	0	0	0	0	44	569
7:30 AM	0	0	27	2	0	1	32	1	0	4	0	0	0	0	0	0	67	558
7:35 AM	0	0	33	1	0	0	27	0	0	1	0	0	0	0	1	0	63	526
7:40 AM	0	0	19	1	0	0	28	0	0	1	0	0	0	0	0	0	49	503
7:45 AM	0	0	20	2	0	1	22	0	0	0	0	0	0	0	0	0	45	492
7:50 AM	0	0	21	1	0	0	31	0	0	2	0	2	0	0	0	1	58	485
7:55 AM	0	0	18	5	0	1	20	0	0	1	0	0	0	0	0	0	45	450
8:00 AM	0	0	13	0	0	1	17	0	0	3	0	0	0	0	0	0	34	450
8:05 AM	0	0	18	2	0	0	30	0	0	0	0	0	0	0	1	0	51	
8:10 AM	0	0	16	1	0	1	27	0	0	1	1	0	0	0	0	0	47	
8:15 AM	0	0	9	0	0	2	21	0	0	2	0	1	0	0	0	0	35	
8:20 AM	0	0	10	0	0	0	18	0	0	2	0	1	0	0	0	0	31	
8:25 AM	0	0	18	0	0	1	12	0	0	2	0	0	0	0	0	0	33	
8:30 AM	0	1	12	2	0	2	17	0	0	1	0	0	0	0	0	0	35	
8:35 AM	0	0	12	2	0	0	23	0	0	0	0	2	0	1	0	0	40	
8:40 AM	0	0	17	2	0	0	17	0	0	2	0	0	0	0	0	0	38	
8:45 AM	0	0	15	2	0	0	18	0	0	0	0	3	0	0	0	0	38	
8:50 AM	0	0	10	0	0	1	11	0	0	1	0	0	0	0	0	0	23	
8:55 AM	0	0	18	1	0	0	24	0	0	0	0	1	0	0	1	0	45	
Count Total	0	1	426	31	0	13	567	1	0	28	2	12	0	1	3	1	1,086	
Peak Hour	0	0	258	19	0	5	332	1	0	14	1	4	0	0	1	1	636	

Location: SHAVER AVE & HWY 211 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	4	0	1	0	5	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	5	0	1	0	6	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	1	1	9	0	11	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	3	2	7	0	12	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	3	2	2	0	7	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	4	1	0	0	5	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	3	2	6	0	11	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	5	0	7	0	12	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	5	0	2	0	7	7:40 AM	0	0	0	0	0	7:40 AM	0	1	0	0	1
7:45 AM	2	0	1	0	3	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	2	1	5	0	8	7:50 AM	0	0	0	0	0	7:50 AM	0	1	0	0	1
7:55 AM	6	1	3	0	10	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	4	2	3	0	9	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	2	0	1	0	3	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	3	0	6	0	9	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	4	1	2	0	7	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	2	0	0	2	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	1	1	0	0	2	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	2	1	3	0	6	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	3	0	2	0	5	8:35 AM	0	0	0	0	0	8:35 AM	0	1	0	1	2
8:40 AM	2	0	4	0	6	8:40 AM	0	0	0	0	0	8:40 AM	0	1	0	0	1
8:45 AM	1	1	1	0	3	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	1	1	1	0	3	8:50 AM	0	0	0	0	0	8:50 AM	0	1	0	0	1
8:55 AM	3	0	1	1	5	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	69	19	68	1	157	Count Total	0	0	0	0	0	Count Total	0	5	0	1	6
Peak Hour	43	10	44	0	97	Peak Hour	0	0	0	0	0	Peak Hour	0	2	0	0	2





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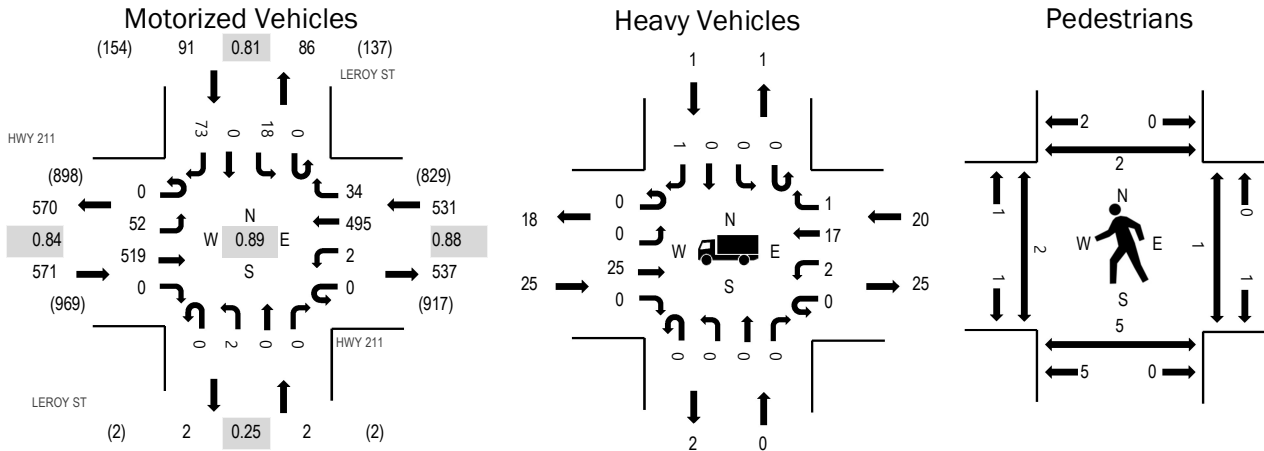
Location: LEROY ST & HWY 211 PM

Date: Wednesday, June 9, 2021

Peak Hour: 04:35 PM - 05:35 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.4%	0.84
WB	3.8%	0.88
NB	0.0%	0.25
SB	1.1%	0.81
All	3.8%	0.89

Traffic Counts - Motorized Vehicles

Interval Start Time	HWY 211 Eastbound				HWY 211 Westbound				LEROY ST Northbound			LEROY ST Southbound				Total	Rolling Hour	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right
4:00 PM	0	2	25	0	0	0	10	0	0	0	0	0	0	0	0	5	42	806
4:05 PM	0	3	16	0	0	0	14	2	0	0	0	0	0	1	0	3	39	854
4:10 PM	0	1	15	0	0	0	16	0	0	0	0	0	0	2	0	6	40	900
4:15 PM	0	4	26	0	0	0	0	0	0	0	0	0	0	0	0	5	35	968
4:20 PM	0	2	24	0	1	0	13	0	0	0	0	0	0	0	0	7	47	1,038
4:25 PM	0	3	38	0	0	0	16	0	0	0	0	0	0	1	0	8	66	1,099
4:30 PM	0	1	33	0	0	0	19	0	0	0	0	0	0	3	0	4	60	1,154
4:35 PM	0	0	45	0	0	2	50	0	0	0	0	0	0	1	0	9	107	1,195
4:40 PM	0	3	60	0	0	0	53	1	0	0	0	0	0	2	0	10	129	1,169
4:45 PM	0	4	37	0	0	0	29	1	0	0	0	0	0	0	0	7	78	1,128
4:50 PM	0	2	41	0	0	0	30	1	0	0	0	0	0	2	0	6	82	1,142
4:55 PM	0	0	42	0	0	0	26	3	0	1	0	0	0	2	0	7	81	1,138
5:00 PM	0	2	35	0	0	0	37	2	0	0	0	0	0	3	0	11	90	1,148
5:05 PM	0	5	30	0	0	0	38	7	0	1	0	0	0	0	0	4	85	
5:10 PM	0	10	38	0	0	0	52	1	0	0	0	0	0	1	0	6	108	
5:15 PM	0	6	51	0	0	0	41	3	0	0	0	0	0	1	0	3	105	
5:20 PM	0	7	50	0	0	0	43	4	0	0	0	0	0	1	0	3	108	
5:25 PM	0	8	47	0	0	0	53	9	0	0	0	0	0	1	0	3	121	
5:30 PM	0	5	43	0	0	0	43	2	0	0	0	0	0	4	0	4	101	
5:35 PM	0	3	32	0	0	0	37	6	0	0	0	0	0	1	0	2	81	
5:40 PM	0	3	36	0	0	0	40	2	0	0	0	0	0	2	0	5	88	
5:45 PM	0	2	47	0	0	0	37	2	0	0	0	0	0	2	0	2	92	
5:50 PM	0	5	37	0	0	0	30	4	0	0	0	0	0	1	0	1	78	
5:55 PM	0	3	37	0	0	0	46	3	0	0	0	0	0	0	0	2	91	
Count Total	0	84	885	0	1	2	773	53	0	2	0	0	0	31	0	123	1,954	
Peak Hour	0	52	519	0	0	2	495	34	0	2	0	0	0	18	0	73	1,195	

Location: LEROY ST & HWY 211 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	1	0	0	0	1	4:00 PM	1	0	0	0	1	4:00 PM	0	0	0	0	0
4:05 PM	3	0	3	0	6	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	3	2	5	4:10 PM	0	0	0	0	0	4:10 PM	0	0	1	2	3
4:15 PM	1	0	0	0	1	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	1	1
4:20 PM	3	0	5	0	8	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	1	1
4:25 PM	0	0	2	1	3	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	1	1	2
4:35 PM	0	0	5	0	5	4:35 PM	0	0	0	0	0	4:35 PM	0	2	1	0	3
4:40 PM	3	0	1	0	4	4:40 PM	0	0	0	0	0	4:40 PM	1	3	0	2	6
4:45 PM	3	0	0	1	4	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	1	1
4:50 PM	0	0	1	0	1	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	4	0	1	0	5	4:55 PM	0	0	0	0	0	4:55 PM	1	0	0	0	1
5:00 PM	2	0	2	0	4	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	2	0	1	0	3	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	3	0	2	0	5	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	1	1
5:15 PM	1	0	1	0	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	6	0	3	0	9	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	1	0	2	0	3	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	1	0	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	2	0	0	0	2	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	5	0	0	0	5	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	2	0	2	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	2	0	1	0	3	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	42	0	36	4	82	Count Total	1	0	0	0	1	Count Total	2	5	3	9	19
Peak Hour	25	0	20	1	46	Peak Hour	0	0	0	0	0	Peak Hour	2	5	1	4	12

Location: S MOLALLA AVE & S MOLALLA FOREST RD PM



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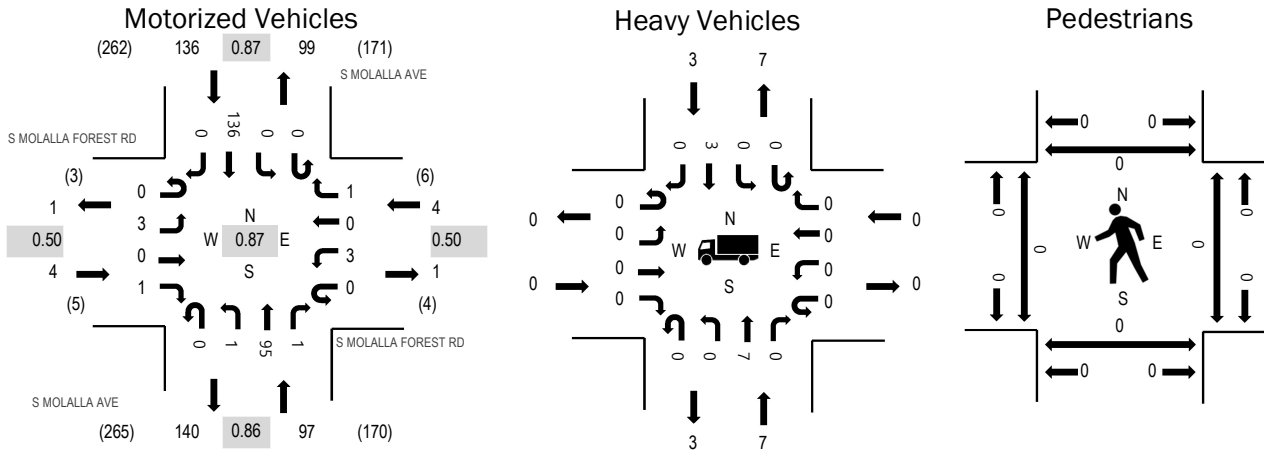
Location: S MOLALLA AVE & S MOLALLA FOREST RD PM

Date: Wednesday, June 9, 2021

Peak Hour: 04:10 PM - 05:10 PM

Peak 15-Minutes: 04:20 PM - 04:35 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.50
WB	0.0%	0.50
NB	7.2%	0.86
SB	2.2%	0.87
All	4.1%	0.87

Traffic Counts - Motorized Vehicles

Interval Start Time	S MOLALLA FOREST RD Eastbound				S MOLALLA FOREST RD Westbound				S MOLALLA AVE Northbound				S MOLALLA AVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	0	0	0	0	0	9	0	0	1	11	0	21	233
4:05 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	5	0	12	240
4:10 PM	0	2	0	0	0	0	0	0	0	0	8	0	0	0	13	0	23	241
4:15 PM	0	0	0	0	0	0	0	1	0	0	13	0	0	0	10	0	24	234
4:20 PM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	10	0	18	227
4:25 PM	0	0	0	0	0	1	0	0	0	0	7	0	0	0	16	0	24	234
4:30 PM	0	0	0	0	0	1	0	0	0	0	12	1	0	0	13	0	27	231
4:35 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	12	0	15	215
4:40 PM	0	0	0	1	0	0	0	0	0	0	7	0	0	0	12	0	20	212
4:45 PM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	16	209
4:50 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	12	0	18	208
4:55 PM	0	0	0	0	0	1	0	0	0	0	6	0	0	0	8	0	15	205
5:00 PM	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0	28	210
5:05 PM	0	1	0	0	0	0	0	0	0	0	4	0	0	0	8	0	13	
5:10 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	12	0	16	
5:15 PM	0	0	0	0	0	0	0	0	0	0	5	1	0	0	11	0	17	
5:20 PM	0	0	0	0	0	0	0	1	0	0	8	0	0	0	15	1	25	
5:25 PM	0	0	0	1	0	0	0	0	0	0	8	0	0	0	11	1	21	
5:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0	11	
5:35 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	8	0	12	
5:40 PM	0	0	0	0	0	1	0	0	0	0	4	0	0	0	12	0	17	
5:45 PM	0	0	0	0	0	0	0	0	0	0	7	1	0	0	7	0	15	
5:50 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	12	0	15	
5:55 PM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	12	0	20	
Count Total	0	3	0	2	0	4	0	2	0	1	166	3	0	1	259	2	443	
Peak Hour	0	3	0	1	0	3	0	1	0	1	95	1	0	0	136	0	241	

Location: S MOLALLA AVE & S MOLALLA FOREST RD 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	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	1	0	0	1	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	1	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	1	0	1	2	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	1	0	0	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	1	0	0	1	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	1	1	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	1	1	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	4	0	0	4	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	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	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	1	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	8	0	4	12	Count Total	0	0	0	1	1	Count Total	0	0	0	0	0
Peak Hour	0	7	0	3	10	Peak Hour	0	0	0	1	1	Peak Hour	0	0	0	0	0

Location: S MOLALLA AVE & SECTION ST PM



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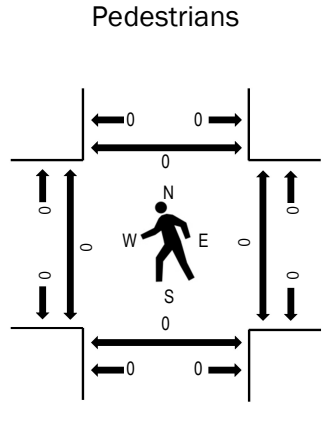
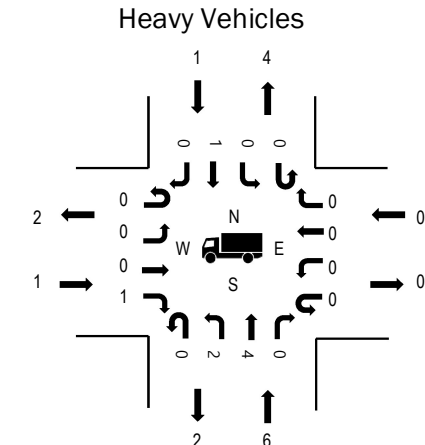
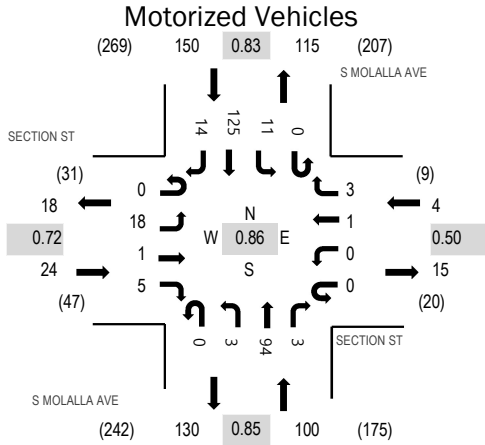
Location: S MOLALLA AVE & SECTION ST PM

Date: Wednesday, June 9, 2021

Peak Hour: 04:10 PM - 05:10 PM

Peak 15-Minutes: 04:10 PM - 04:25 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.2%	0.72
WB	0.0%	0.50
NB	6.0%	0.85
SB	0.7%	0.83
All	2.9%	0.86

Traffic Counts - Motorized Vehicles

Interval Start Time	SECTION ST Eastbound				SECTION ST Westbound				S MOLALLA AVE Northbound				S MOLALLA AVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	2	0	0	0	0	0	0	0	0	9	0	0	0	8	0	19	265
4:05 PM	0	3	0	0	0	0	0	0	0	0	7	0	0	0	6	0	16	272
4:10 PM	0	1	0	1	0	0	0	1	0	0	9	0	0	0	12	3	27	278
4:15 PM	0	0	0	0	0	0	0	0	0	0	11	2	0	0	12	3	28	269
4:20 PM	0	2	0	0	0	0	1	0	0	0	8	0	0	0	11	4	26	261
4:25 PM	0	3	0	1	0	0	0	0	0	2	5	0	0	1	12	0	24	257
4:30 PM	0	3	0	0	0	0	0	0	0	0	13	1	0	3	10	1	31	253
4:35 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	1	10	0	14	239
4:40 PM	0	2	0	1	0	0	0	0	0	0	7	0	0	1	7	1	19	240
4:45 PM	0	1	1	1	0	0	0	1	0	0	7	0	0	0	11	1	23	239
4:50 PM	0	2	0	1	0	0	0	0	0	0	5	0	0	0	10	0	18	230
4:55 PM	0	1	0	0	0	0	0	0	0	0	8	0	0	0	11	0	20	229
5:00 PM	0	2	0	0	0	0	0	0	0	0	14	0	0	0	10	0	26	235
5:05 PM	0	1	0	0	0	0	0	1	0	1	4	0	0	5	9	1	22	
5:10 PM	0	1	0	0	0	0	0	0	0	0	4	0	0	0	11	2	18	
5:15 PM	0	0	0	1	0	0	1	0	0	1	4	0	0	0	11	2	20	
5:20 PM	0	3	0	1	0	0	0	0	0	0	9	0	0	0	9	0	22	
5:25 PM	0	2	0	0	0	0	0	2	0	0	6	1	0	0	9	0	20	
5:30 PM	0	1	0	1	0	0	0	0	0	0	4	0	0	1	8	2	17	
5:35 PM	0	0	0	1	0	0	0	1	0	0	5	0	0	1	6	1	15	
5:40 PM	0	2	0	1	0	0	0	0	0	0	5	0	0	1	9	0	18	
5:45 PM	0	1	0	1	0	0	0	0	0	1	6	0	0	0	5	0	14	
5:50 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	12	0	17	
5:55 PM	0	1	0	1	0	0	0	1	0	0	8	0	0	1	11	3	26	
Count Total	0	34	1	12	0	0	2	7	0	5	166	4	0	15	230	24	500	
Peak Hour	0	18	1	5	0	0	1	3	0	3	94	3	0	11	125	14	278	

Location: S MOLALLA AVE & SECTION ST 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	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	1	0	0	1	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	1	0	0	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	1	1	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	1	0	0	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	1	0	0	1	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	1	1	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	3	0	0	3	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	1	0	0	1	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	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	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	1	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	1	1	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	1	7	0	3	11	Count Total	0	0	0	1	1	Count Total	0	0	0	0	0
Peak Hour	1	6	0	1	8	Peak Hour	0	0	0	1	1	Peak Hour	0	0	0	0	0

Location: SHAVER AVE & SECTION ST PM



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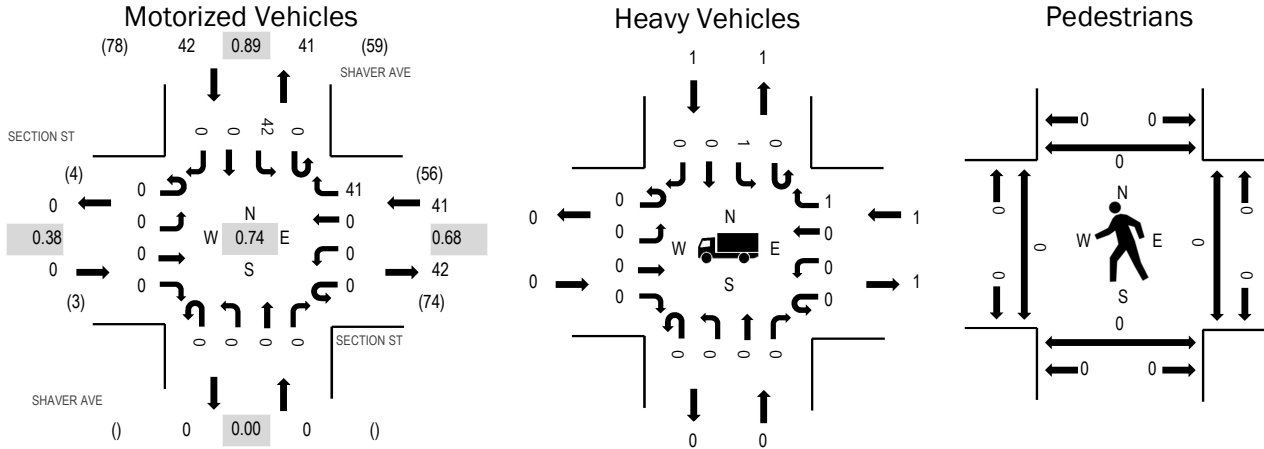
Location: SHAVER AVE & SECTION ST PM

Date: Wednesday, June 9, 2021

Peak Hour: 04:05 PM - 05:05 PM

Peak 15-Minutes: 04:20 PM - 04:35 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.38
WB	2.4%	0.68
NB	0.0%	0.00
SB	2.4%	0.89
All	2.4%	0.74

Traffic Counts - Motorized Vehicles

Interval Start Time	SECTION ST Eastbound				SECTION ST Westbound				SHAVER AVE Northbound				SHAVER AVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	77
4:05 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	2	0	0	6	83
4:10 PM	0	0	0	0	0	0	0	5	0	0	0	0	0	4	0	0	9	83
4:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	76
4:20 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	6	80
4:25 PM	0	0	0	0	0	0	0	8	0	0	0	0	0	5	0	0	13	83
4:30 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	5	0	0	9	75
4:35 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	4	71
4:40 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	6	70
4:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	8	0	0	11	66
4:50 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	4	60
4:55 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	4	59
5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	6	0	0	8	60
5:05 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	5	0	0	6	
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
5:15 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	2	0	1	7	
5:20 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	7	0	0	9	
5:25 PM	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	1	5	
5:30 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	3	0	0	5	
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	
5:40 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	
5:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	3	0	0	5	
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3	
5:55 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0	5	
Count Total	0	3	0	0	0	0	0	56	0	0	0	0	0	74	0	4	137	
Peak Hour	0	0	0	0	0	0	0	41	0	0	0	0	0	42	0	0	83	

Location: SHAVER AVE & SECTION ST 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	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	1	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	1	0	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	1	0	1	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	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	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	1	0	0	1	2	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	0	0	0	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	1	0	0	0	1	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	2	2
5:50 PM	0	0	0	2	2	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	3	0	2	5	10	Count Total	0	0	0	0	0	Count Total	0	0	0	2	2
Peak Hour	0	0	1	1	2	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



Location: SHAVER AVE & HWY 211 PM



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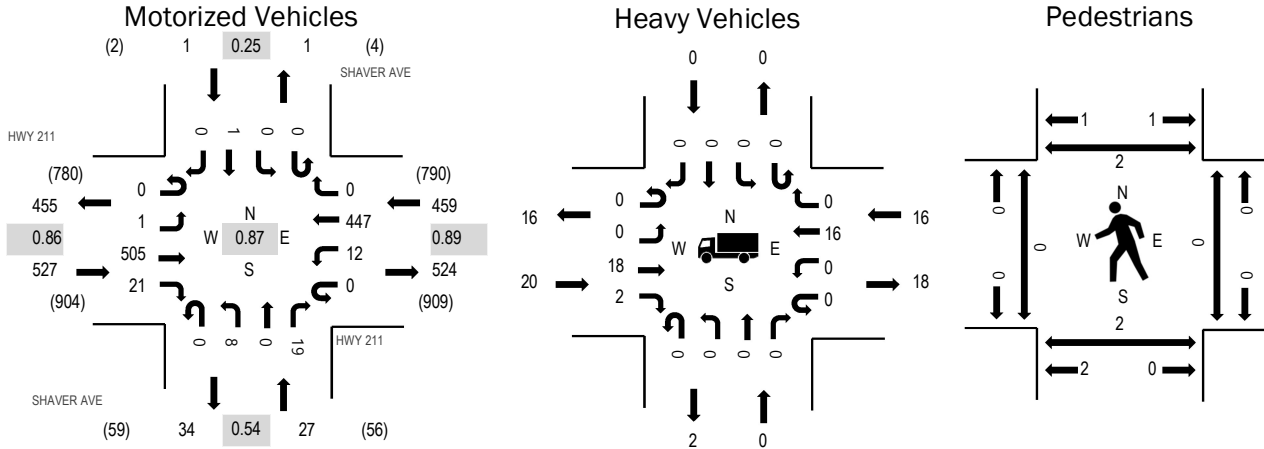
Location: SHAVER AVE & HWY 211 PM

Date: Wednesday, June 9, 2021

Peak Hour: 04:35 PM - 05:35 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.8%	0.86
WB	3.5%	0.89
NB	0.0%	0.54
SB	0.0%	0.25
All	3.6%	0.87

Traffic Counts - Motorized Vehicles

Interval Start Time	HWY 211 Eastbound				HWY 211 Westbound				SHAVER AVE Northbound				SHAVER AVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	16	1	0	1	19	0	0	0	0	4	0	0	0	0	41	738
4:05 PM	0	0	17	0	0	0	13	0	0	1	0	1	0	0	0	0	32	772
4:10 PM	0	1	30	4	0	1	5	0	0	0	0	6	0	0	0	0	47	814
4:15 PM	0	0	28	0	0	1	18	0	0	1	0	5	0	0	0	0	53	850
4:20 PM	0	0	17	1	0	1	24	0	0	0	0	1	0	1	0	0	45	887
4:25 PM	0	0	32	2	0	0	22	0	0	0	0	1	0	0	0	0	57	933
4:30 PM	0	0	44	0	0	1	17	0	0	1	0	0	0	0	0	0	63	987
4:35 PM	0	0	52	0	0	0	33	0	0	0	0	3	0	0	0	0	88	1,014
4:40 PM	0	0	52	5	0	2	35	0	0	2	0	1	0	0	0	0	97	1,009
4:45 PM	0	0	32	5	0	2	28	0	0	0	0	0	0	0	0	0	67	985
4:50 PM	0	0	32	0	0	1	35	0	0	0	0	1	0	0	0	0	69	1,000
4:55 PM	0	0	42	1	0	0	34	0	0	0	0	2	0	0	0	0	79	1,012
5:00 PM	0	0	33	4	0	0	36	0	0	0	0	2	0	0	0	0	75	1,014
5:05 PM	0	0	35	0	0	1	34	0	0	0	0	4	0	0	0	0	74	
5:10 PM	0	0	32	3	0	0	45	0	0	0	0	3	0	0	0	0	83	
5:15 PM	0	1	44	1	0	0	41	0	0	2	0	1	0	0	0	0	90	
5:20 PM	0	0	48	1	0	0	40	0	0	2	0	0	0	0	0	0	91	
5:25 PM	0	0	52	0	0	0	56	0	0	2	0	1	0	0	0	0	111	
5:30 PM	0	0	51	1	0	6	30	0	0	0	0	1	0	0	1	0	90	
5:35 PM	0	0	32	1	0	1	46	0	0	0	0	3	0	0	0	0	83	
5:40 PM	0	0	31	1	0	1	38	1	0	0	0	1	0	0	0	0	73	
5:45 PM	0	0	38	4	0	0	38	0	0	0	1	1	0	0	0	0	82	
5:50 PM	0	0	41	1	0	0	38	0	0	0	0	1	0	0	0	0	81	
5:55 PM	0	0	33	2	0	1	44	0	0	0	0	1	0	0	0	0	81	
Count Total	0	2	864	38	0	20	769	1	0	11	1	44	0	1	1	0	1,752	
Peak Hour	0	1	505	21	0	12	447	0	0	8	0	19	0	0	1	0	1,014	

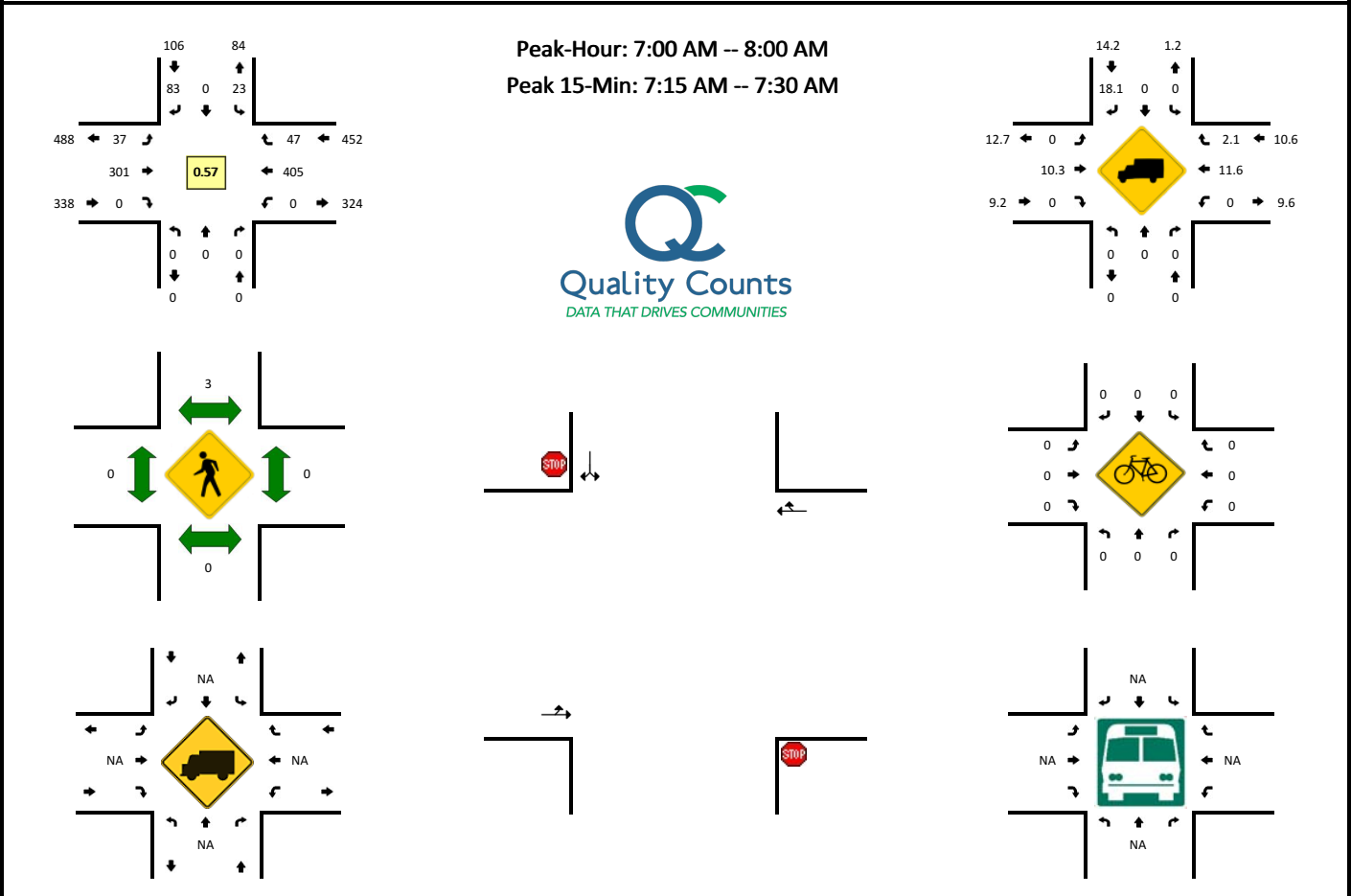
Location: SHAVER AVE & HWY 211 PM

**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	1	0	3	0	4	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	2	1	2	0	5	4:05 PM	0	0	1	0	1	4:05 PM	0	1	0	0	1
4:10 PM	4	0	0	0	4	4:10 PM	0	0	0	0	0	4:10 PM	0	1	0	0	1
4:15 PM	1	0	0	0	1	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	3	0	1	1	5	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	1	1	2	0	4	4:25 PM	0	0	0	0	0	4:25 PM	0	2	0	0	2
4:30 PM	0	0	1	0	1	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	1	0	2	0	3	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	1	1
4:40 PM	1	0	1	0	2	4:40 PM	0	0	1	0	1	4:40 PM	0	0	0	0	0
4:45 PM	2	0	0	0	2	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	1	0	2	0	3	4:50 PM	0	0	0	0	0	4:50 PM	0	1	0	0	1
4:55 PM	1	0	0	0	1	4:55 PM	0	0	0	0	0	4:55 PM	0	1	0	0	1
5:00 PM	3	0	1	0	4	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	2	0	1	0	3	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	1	1
5:10 PM	2	0	1	0	3	5:10 PM	0	0	0	0	0	5:10 PM	0	1	0	0	1
5:15 PM	0	0	2	0	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	5	0	3	0	8	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	1	0	2	0	3	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	0	1	0	2	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	1	0	0	2	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
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	3	0	0	0	3	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	0	3	0	4	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	1	0	0	0	1	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	39	3	28	1	71	Count Total	0	0	2	0	2	Count Total	0	7	0	2	9
Peak Hour	20	0	16	0	36	Peak Hour	0	0	1	0	1	Peak Hour	0	3	0	2	5

**LOCATION:** Leroy Ave -- OR-211  
**CITY/STATE:** Molalla, OR

**QC JOB #:** 14815609  
**DATE:** Tue, Oct 9 2018



5-Min Count Period Beginning At	Leroy Ave (Northbound)				Leroy Ave (Southbound)				OR-211 (Eastbound)				OR-211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	2	0	1	12	0	0	0	41	2	0	58	
6:05 AM	0	0	0	0	0	0	1	0	1	14	0	0	0	26	2	0	44	
6:10 AM	0	0	0	0	0	0	2	0	2	14	0	0	0	27	0	0	45	
6:15 AM	0	0	0	0	0	0	2	0	0	24	0	0	0	29	0	0	55	
6:20 AM	0	0	0	0	1	0	1	0	0	8	0	0	0	28	3	0	41	
6:25 AM	0	0	0	0	1	0	2	0	2	16	0	0	0	32	0	0	53	
6:30 AM	0	0	0	0	0	0	2	0	0	17	0	0	0	40	0	0	59	
6:35 AM	0	0	0	0	0	0	3	0	0	17	0	0	0	36	1	0	57	
6:40 AM	0	0	0	0	0	0	2	0	3	22	0	0	0	33	0	0	60	
6:45 AM	0	0	0	0	1	0	2	0	1	31	0	0	0	32	2	0	69	
6:50 AM	0	0	0	0	0	0	3	0	2	27	0	0	0	41	4	0	77	
6:55 AM	0	0	0	0	2	0	5	0	1	25	0	0	0	28	3	0	64	682
7:00 AM	0	0	0	0	0	0	4	0	2	29	0	0	0	26	4	0	65	689
7:05 AM	0	0	0	0	2	0	4	0	4	25	0	0	0	36	11	0	82	727
7:10 AM	0	0	0	0	1	0	6	0	6	27	0	0	0	28	5	0	73	755
7:15 AM	0	0	0	0	2	0	11	0	2	25	0	0	0	31	8	0	79	779
7:20 AM	0	0	0	0	2	0	15	0	6	23	0	0	0	46	9	0	101	839
7:25 AM	0	0	0	0	6	0	12	0	4	22	0	0	0	43	7	0	94	880
7:30 AM	0	0	0	0	2	0	14	0	5	19	0	0	0	37	1	0	78	899
7:35 AM	0	0	0	0	2	0	3	0	2	25	0	0	0	30	0	0	62	904
7:40 AM	0	0	0	0	0	0	6	0	4	21	0	0	0	36	0	0	67	911
7:45 AM	0	0	0	0	1	0	4	0	1	28	0	0	0	32	2	0	68	910
7:50 AM	0	0	0	0	2	0	1	0	1	27	0	0	0	30	0	0	61	894
7:55 AM	0	0	0	0	3	0	3	0	0	30	0	0	0	30	0	0	66	896
8:00 AM	0	0	0	0	1	0	0	0	3	16	0	0	0	32	0	0	52	883
8:05 AM	0	0	0	0	0	0	3	0	0	27	0	0	0	29	1	0	60	861
8:10 AM	0	0	0	0	0	0	3	0	0	22	0	0	0	31	2	0	58	846
8:15 AM	0	0	0	0	1	0	1	0	0	12	0	0	0	25	0	0	39	806
8:20 AM	0	0	0	0	0	0	4	0	3	30	0	0	0	27	3	0	67	772
8:25 AM	0	0	0	0	1	0	2	0	1	26	0	0	0	34	1	0	65	743
8:30 AM	0	0	0	0	1	0	5	0	3	20	0	0	0	26	0	0	55	720
8:35 AM	0	0	0	0	0	0	2	0	0	33	0	0	0	26	0	0	61	719
8:40 AM	0	0	0	0	0	0	1	0	3	18	0	0	0	41	4	0	67	719
8:45 AM	0	0	0	0	3	0	2	0	1	22	0	0	0	30	4	0	62	713
8:50 AM	0	0	0	0	0	0	8	0	0	31	0	0	0	26	3	0	68	720
8:55 AM	0	0	0	0	1	0	10	0	2	27	0	0	0	23	0	0	63	717

5-Min Count Period Beginning At	Leroy Ave (Northbound)				Leroy Ave (Southbound)				OR-211 (Eastbound)				OR-211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:00 AM	0	0	0	0	1	0	4	0	2	29	0	0	0	31	4	0	71	736
9:05 AM	0	0	0	0	0	0	3	0	3	29	0	0	0	23	2	0	60	736
9:10 AM	0	0	0	0	0	0	1	0	0	31	0	0	0	38	1	0	71	749
9:15 AM	0	0	0	0	1	0	2	0	2	19	0	0	0	28	1	0	53	763
9:20 AM	0	0	0	0	0	0	3	0	1	22	0	0	0	31	5	0	62	758
9:25 AM	0	0	0	0	4	0	4	0	2	23	0	0	0	32	0	0	65	758
9:30 AM	0	0	0	0	0	0	3	0	2	18	0	0	0	31	1	0	55	758
9:35 AM	0	0	0	0	0	0	3	0	0	19	0	0	0	31	2	0	55	752
9:40 AM	0	0	0	0	1	0	4	0	2	21	0	0	0	27	0	0	55	740
9:45 AM	0	0	0	0	2	0	4	0	0	27	0	0	0	29	2	0	64	742
9:50 AM	0	0	0	0	0	0	1	0	0	25	0	0	0	32	3	0	61	735
9:55 AM	0	0	0	0	0	0	0	0	0	29	0	0	0	45	1	0	75	747
10:00 AM	0	0	0	0	0	0	3	0	1	29	0	0	0	37	1	0	71	747
10:05 AM	0	0	0	0	0	0	0	0	1	24	0	0	0	29	1	0	55	742
10:10 AM	0	0	0	0	1	0	1	0	0	33	0	0	0	32	2	0	69	740
10:15 AM	0	0	0	0	1	0	1	0	1	25	0	0	0	40	1	0	69	756
10:20 AM	0	0	0	0	1	0	3	0	1	27	0	0	0	28	3	0	63	757
10:25 AM	0	0	0	0	1	0	4	0	2	31	0	0	0	30	3	0	71	763
10:30 AM	0	0	0	0	0	0	2	0	0	31	0	0	0	35	0	0	68	776
10:35 AM	0	0	0	0	1	0	2	0	0	22	0	0	0	45	2	0	72	793
10:40 AM	0	0	0	0	0	0	2	0	1	23	0	0	0	27	2	0	55	793
10:45 AM	0	0	0	0	1	0	1	0	2	22	0	0	0	42	6	0	74	803
10:50 AM	0	0	0	0	0	0	2	0	0	34	0	0	0	52	2	0	90	832
10:55 AM	0	0	0	0	0	0	1	0	0	32	0	0	0	49	2	0	84	841
11:00 AM	0	0	0	0	1	0	0	0	2	25	0	0	0	45	1	0	74	844
11:05 AM	0	0	0	0	2	0	3	0	1	25	0	0	0	44	1	0	76	865
11:10 AM	0	0	0	0	1	0	2	0	3	43	0	0	0	37	5	0	91	887
11:15 AM	0	0	0	0	4	0	2	0	0	35	0	0	0	47	2	0	90	908
11:20 AM	0	0	0	0	1	0	4	0	1	35	0	0	0	36	1	0	78	923
11:25 AM	0	0	0	0	0	0	3	0	2	31	0	0	0	31	1	0	68	920
11:30 AM	0	0	0	0	1	0	3	0	0	35	0	0	0	34	1	0	74	926
11:35 AM	0	0	0	0	1	0	1	0	3	34	0	0	0	46	0	0	85	939
11:40 AM	0	0	0	0	2	0	1	0	4	31	0	0	0	38	4	0	80	964
11:45 AM	0	0	0	0	1	0	5	0	0	29	0	0	0	44	4	0	83	973
11:50 AM	0	0	0	0	4	0	0	0	1	31	0	0	0	44	1	0	81	964
11:55 AM	0	0	0	0	1	0	0	0	2	33	0	0	0	35	5	0	76	956
12:00 PM	0	0	0	0	1	0	4	0	1	40	0	0	0	47	3	0	96	978
12:05 PM	0	0	0	0	1	0	3	0	3	35	0	0	0	40	2	0	84	986
12:10 PM	0	0	0	0	1	0	7	0	0	38	0	0	0	33	2	0	81	976
12:15 PM	0	0	0	0	1	0	2	0	3	34	0	0	0	40	0	0	80	966
12:20 PM	0	0	0	0	2	0	2	0	2	38	0	0	0	23	0	0	67	955
12:25 PM	0	0	0	0	3	0	3	0	1	38	0	0	0	36	2	0	83	970
12:30 PM	0	0	0	0	3	0	2	0	3	33	0	0	0	35	0	0	76	972
12:35 PM	0	0	0	0	1	0	0	0	1	47	0	0	0	34	1	0	84	971
12:40 PM	0	0	0	0	1	0	1	0	1	24	0	0	0	36	0	0	63	954
12:45 PM	0	0	0	0	1	0	2	0	5	33	0	0	0	37	5	0	83	954
12:50 PM	0	0	0	0	0	0	3	0	1	38	0	0	0	35	1	0	78	951
12:55 PM	0	0	0	0	3	0	1	0	1	31	0	0	0	46	1	0	83	958
1:00 PM	0	0	0	0	0	0	0	0	1	35	0	0	0	28	0	0	64	926
1:05 PM	0	0	0	0	1	0	0	0	3	32	0	0	0	41	5	0	82	924
1:10 PM	0	0	0	0	2	0	4	0	2	28	0	0	0	37	4	0	77	920
1:15 PM	0	0	0	0	1	0	2	0	1	44	0	0	0	30	1	0	79	919
1:20 PM	0	0	0	0	1	0	3	0	1	42	0	0	0	38	4	0	89	941
1:25 PM	0	0	0	0	1	0	2	0	0	35	0	0	0	41	3	0	82	940
1:30 PM	0	0	0	0	1	0	2	0	3	55	0	0	0	30	1	0	92	956
1:35 PM	0	0	0	0	2	0	3	0	3	34	0	0	0	42	1	0	85	957
1:40 PM	0	0	0	0	1	0	2	0	3	38	0	0	0	44	3	0	91	985
1:45 PM	0	0	0	0	1	0	3	0	0	27	0	0	0	33	1	0	65	967
1:50 PM	0	0	0	0	4	0	2	0	3	34	0	0	0	39	2	0	84	973
1:55 PM	0	0	0	0	1	0	2	0	4	26	0	0	0	31	3	0	67	957
2:00 PM	0	0	0	0	3	0	2	0	1	32	0	0	0	43	3	0	84	977
2:05 PM	0	0	0	0	0	0	3	0	2	33	0	0	0	32	3	0	73	968
2:10 PM	0	0	0	0	0	0	3	0	4	40	0	0	0	37	3	0	87	978
2:15 PM	0	0	0	0	3	0	1	0	2	32	0	0	0	38	7	0	83	982
2:20 PM	0	0	0	0	2	0	9	0	2	37	0	0	0	30	3	0	83	976
2:25 PM	0	0	0	0	4	0	10	0	0	39	0	0	0	29	3	0	85	979
2:30 PM	0	0	0	0	3	0	4	0	1	40	0	0	0	31	2	0	81	968
2:35 PM	0	0	0	0	3	0	1	0	1	37	0	0	0	46	3	0	91	974
2:40 PM	0	0	0	0	1	0	1	0	1	43	0	0	0	34	1	0	81	964
2:45 PM	0	0	0	0	2	0	5	0	1	36	0	0	0	40	3	0	87	986
2:50 PM	0	0	0	0	1	0	5	0	3	37	0	0	0	39	2	0	87	989
2:55 PM	0	0	0	0	0	0	6	0	1	39	0	0	0	60	2	0	108	1030
3:00 PM	0	0	0	0	2	0	1	0	3	39	0	0	0	39	4	0	88	1034
3:05 PM	0	0	0	0	2	0	3	0	1	33	0	0	0	46	1	0	86	1047

5-Min Count Period Beginning At	Leroy Ave (Northbound)				Leroy Ave (Southbound)				OR-211 (Eastbound)				OR-211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 PM	0	0	0	0	3	0	10	0	3	44	0	0	0	49	0	0	109	1069
3:15 PM	0	0	0	0	1	0	6	0	3	43	0	0	0	48	3	0	104	1090
3:20 PM	0	0	0	0	1	0	3	0	0	41	0	0	0	56	1	0	102	1109
3:25 PM	0	0	0	0	0	0	2	0	2	49	0	0	0	30	2	0	85	1109
3:30 PM	0	0	0	0	2	0	9	0	7	46	0	0	0	43	1	0	108	1136
3:35 PM	0	0	0	0	1	0	6	0	3	41	0	0	0	43	1	0	95	1140
3:40 PM	0	0	0	0	2	0	7	0	2	58	0	0	0	37	2	0	108	1167
3:45 PM	0	0	0	0	0	0	2	0	0	38	0	0	0	41	1	0	82	1162
3:50 PM	0	0	0	0	1	0	4	0	2	48	0	0	0	37	1	0	93	1168
3:55 PM	0	0	0	0	0	0	5	0	3	51	0	0	0	38	6	0	103	1163
4:00 PM	0	0	0	0	1	0	7	0	3	50	0	0	0	31	1	0	93	1168
4:05 PM	0	0	0	0	0	0	1	0	4	49	0	0	0	41	1	0	96	1178
4:10 PM	0	0	0	0	1	0	6	0	2	46	0	0	0	39	3	0	97	1166
4:15 PM	0	0	0	0	1	0	5	0	2	49	0	0	0	39	2	0	98	1160
4:20 PM	0	0	0	0	2	0	4	0	2	45	0	0	0	41	3	0	97	1155
4:25 PM	0	0	0	0	0	0	2	0	3	45	0	0	0	38	4	0	92	1162
4:30 PM	0	0	0	0	4	0	3	0	1	49	0	0	0	46	2	0	105	1159
4:35 PM	0	0	0	0	1	0	4	0	4	44	0	0	0	46	2	0	101	1165
4:40 PM	0	0	0	0	0	0	2	0	5	53	0	0	0	45	3	0	108	1165
4:45 PM	0	0	0	0	2	0	5	0	6	37	0	0	0	46	5	0	101	1184
4:50 PM	0	0	0	0	1	0	9	0	4	53	0	0	0	44	6	0	117	1208
4:55 PM	0	0	0	0	0	0	5	0	4	42	0	0	0	42	8	0	101	1206
5:00 PM	0	0	0	0	2	0	5	0	1	59	0	0	0	46	6	0	119	1232
5:05 PM	0	0	0	0	1	0	5	0	3	49	0	0	0	42	5	0	105	1241
5:10 PM	0	0	0	0	2	0	8	0	6	39	0	0	0	61	3	0	119	1263
5:15 PM	0	0	0	0	1	0	4	0	2	49	0	0	0	33	3	0	92	1257
5:20 PM	0	0	0	0	1	0	3	0	4	45	0	0	0	39	4	0	96	1256
5:25 PM	0	0	0	0	1	0	2	0	4	49	0	0	0	44	6	0	106	1270
5:30 PM	0	0	0	0	0	0	8	0	6	43	0	0	0	39	4	0	100	1265
5:35 PM	0	0	0	0	2	0	8	0	4	49	0	0	0	37	3	0	103	1267
5:40 PM	0	0	0	0	0	0	7	0	5	45	0	0	0	31	6	0	94	1253
5:45 PM	0	0	0	0	1	0	10	0	3	48	0	0	0	43	1	0	106	1258
5:50 PM	0	0	0	0	4	0	5	0	3	45	0	0	0	40	7	0	104	1245
5:55 PM	0	0	0	0	2	0	2	0	2	41	0	0	0	29	5	0	81	1225
6:00 PM	0	0	0	0	0	0	4	0	8	45	0	0	0	47	2	0	106	1212
6:05 PM	0	0	0	0	2	0	3	0	4	47	0	0	0	31	1	0	88	1195
6:10 PM	0	0	0	0	2	0	6	0	5	43	0	0	0	36	0	0	92	1168
6:15 PM	0	0	0	0	3	0	4	0	3	46	0	0	0	40	3	0	99	1175
6:20 PM	0	0	0	0	4	0	3	0	1	35	0	0	0	32	1	0	76	1155
6:25 PM	0	0	0	0	1	0	1	0	3	34	0	0	0	31	0	0	70	1119
6:30 PM	0	0	0	0	2	0	6	0	7	31	0	0	0	37	4	0	87	1106
6:35 PM	0	0	0	0	7	0	15	0	4	38	0	0	0	24	0	0	88	1091
6:40 PM	0	0	0	0	2	0	4	0	7	42	0	0	0	26	3	0	84	1081
6:45 PM	0	0	0	0	0	0	3	0	1	41	0	0	0	31	5	0	81	1056
6:50 PM	0	0	0	0	4	0	7	0	5	39	0	0	0	32	4	0	91	1043
6:55 PM	0	0	0	0	0	0	7	0	3	37	0	0	0	28	4	0	79	1041
7:00 PM	0	0	0	0	2	0	1	0	4	27	0	0	0	23	3	0	60	995
7:05 PM	0	0	0	0	9	0	12	0	3	23	0	0	0	18	3	0	68	975
7:10 PM	0	0	0	0	2	0	4	0	3	32	0	0	0	26	2	0	69	952
7:15 PM	0	0	0	0	3	0	1	0	1	28	0	0	0	30	2	0	65	918
7:20 PM	0	0	0	0	0	0	0	0	1	33	0	0	0	22	1	0	57	899
7:25 PM	0	0	0	0	0	0	2	0	2	23	0	0	0	18	2	0	47	876
7:30 PM	0	0	0	0	1	0	2	0	0	22	0	0	0	31	1	0	57	846
7:35 PM	0	0	0	0	0	0	2	0	0	14	0	0	0	27	5	0	48	806
7:40 PM	0	0	0	0	0	0	0	0	3	26	0	0	0	18	2	0	49	771
7:45 PM	0	0	0	0	2	0	1	0	2	18	0	0	0	18	1	0	42	732
7:50 PM	0	0	0	0	1	0	1	0	3	20	0	0	0	17	0	0	42	683
7:55 PM	0	0	0	0	2	0	1	0	2	7	0	0	0	14	0	0	26	630
8:00 PM	0	0	0	0	0	0	1	0	2	18	0	0	0	10	0	0	31	601
8:05 PM	0	0	0	0	1	0	2	0	1	17	0	0	0	16	2	0	39	572
8:10 PM	0	0	0	0	0	0	2	0	2	22	0	0	0	26	1	0	53	556
8:15 PM	0	0	0	0	1	0	2	0	2	15	0	0	0	16	1	0	37	528
8:20 PM	0	0	0	0	0	0	1	0	1	14	0	0	0	18	2	0	36	507
8:25 PM	0	0	0	0	0	0	2	0	3	19	0	0	0	11	0	0	35	495
8:30 PM	0	0	0	0	0	0	3	0	2	9	0	0	0	22	0	0	36	474
8:35 PM	0	0	0	0	0	0	1	0	2	18	0	0	0	18	0	0	39	465
8:40 PM	0	0	0	0	1	0	1	0	4	15	0	0	0	11	1	0	33	449
8:45 PM	0	0	0	0	0	0	1	0	1	16	0	0	0	23	1	0	42	449
8:50 PM	0	0	0	0	1	0	2	0	2	15	0	0	0	14	2	0	36	443
8:55 PM	0	0	0	0	1	0	2	0	2	14	0	0	0	21	2	0	42	459
9:00 PM	0	0	0	0	1	0	1	0	1	8	0	0	0	17	1	0	29	457
9:05 PM	0	0	0	0	0	0	2	0	0	9	0	0	0	9	0	0	20	438
9:10 PM	0	0	0	0	0	0	1	0	1	15	0	0	0	8	0	0	25	410
9:15 PM	0	0	0	0	1	0	0	0	4	17	0	0	0	14	0	0	36	409

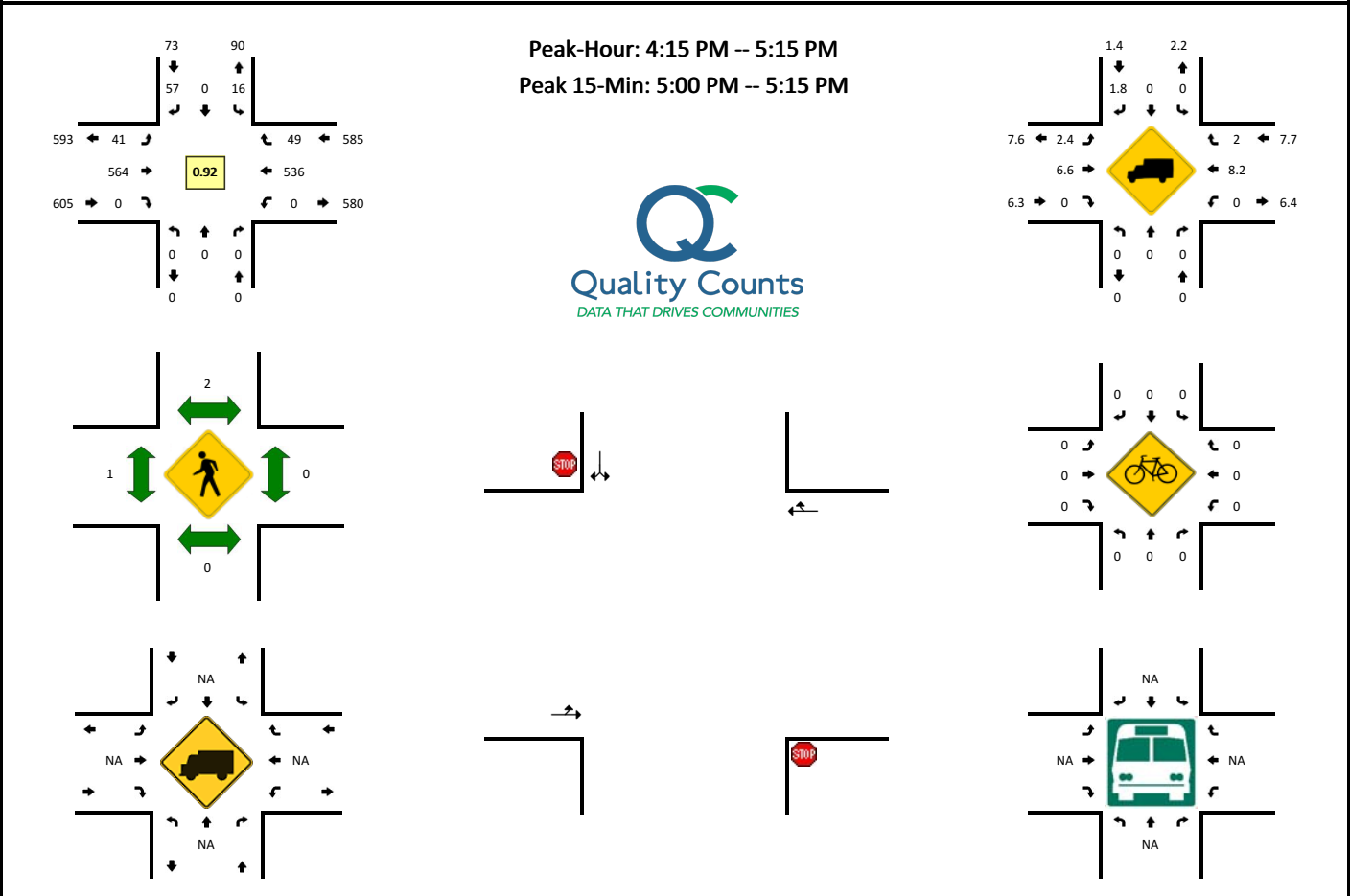
5-Min Count Period Beginning At	Leroy Ave (Northbound)				Leroy Ave (Southbound)				OR-211 (Eastbound)				OR-211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:20 PM	0	0	0	0	0	0	1	0	3	19	0	0	0	8	0	0	31	404
9:25 PM	0	0	0	0	0	0	1	0	0	18	0	0	0	6	0	0	25	394
9:30 PM	0	0	0	0	0	0	0	0	2	12	0	0	0	5	0	0	19	377
9:35 PM	0	0	0	0	0	0	0	0	1	8	0	0	0	9	1	0	19	357
9:40 PM	0	0	0	0	0	0	0	0	0	16	0	0	0	11	0	0	27	351
9:45 PM	0	0	0	0	1	0	1	0	0	7	0	0	0	8	0	0	17	326
9:50 PM	0	0	0	0	0	0	1	0	0	7	0	0	0	5	0	0	13	303
9:55 PM	0	0	0	0	0	0	2	0	1	9	0	0	0	4	1	0	17	278
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	40	0	152	0	48	280	0	0	0	480	96	0	1096	
Heavy Trucks	0	0	0	0	0	0	36	0	0	24	0	0	0	64	0	0	124	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		
<i>Comments:</i>																		

Report generated on 1/11/2019 9:16 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

**LOCATION:** Leroy Ave -- OR-211  
**CITY/STATE:** Molalla, OR

**QC JOB #:** 14815609  
**DATE:** Tue, Oct 9 2018



5-Min Count Period Beginning At	Leroy Ave (Northbound)				Leroy Ave (Southbound)				OR-211 (Eastbound)				OR-211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	2	0	1	12	0	0	0	41	2	0	58	
6:05 AM	0	0	0	0	0	0	1	0	1	14	0	0	0	26	2	0	44	
6:10 AM	0	0	0	0	0	0	2	0	2	14	0	0	0	27	0	0	45	
6:15 AM	0	0	0	0	0	0	2	0	0	24	0	0	0	29	0	0	55	
6:20 AM	0	0	0	0	1	0	1	0	0	8	0	0	0	28	3	0	41	
6:25 AM	0	0	0	0	1	0	2	0	2	16	0	0	0	32	0	0	53	
6:30 AM	0	0	0	0	0	0	2	0	0	17	0	0	0	40	0	0	59	
6:35 AM	0	0	0	0	0	0	3	0	0	17	0	0	0	36	1	0	57	
6:40 AM	0	0	0	0	0	0	2	0	3	22	0	0	0	33	0	0	60	
6:45 AM	0	0	0	0	1	0	2	0	1	31	0	0	0	32	2	0	69	
6:50 AM	0	0	0	0	0	0	3	0	2	27	0	0	0	41	4	0	77	
6:55 AM	0	0	0	0	2	0	5	0	1	25	0	0	0	28	3	0	64	682
7:00 AM	0	0	0	0	0	0	4	0	2	29	0	0	0	26	4	0	65	689
7:05 AM	0	0	0	0	2	0	4	0	4	25	0	0	0	36	11	0	82	727
7:10 AM	0	0	0	0	1	0	6	0	6	27	0	0	0	28	5	0	73	755
7:15 AM	0	0	0	0	2	0	11	0	2	25	0	0	0	31	8	0	79	779
7:20 AM	0	0	0	0	2	0	15	0	6	23	0	0	0	46	9	0	101	839
7:25 AM	0	0	0	0	6	0	12	0	4	22	0	0	0	43	7	0	94	880
7:30 AM	0	0	0	0	2	0	14	0	5	19	0	0	0	37	1	0	78	899
7:35 AM	0	0	0	0	2	0	3	0	2	25	0	0	0	30	0	0	62	904
7:40 AM	0	0	0	0	0	0	6	0	4	21	0	0	0	36	0	0	67	911
7:45 AM	0	0	0	0	1	0	4	0	1	28	0	0	0	32	2	0	68	910
7:50 AM	0	0	0	0	2	0	1	0	1	27	0	0	0	30	0	0	61	894
7:55 AM	0	0	0	0	3	0	3	0	0	30	0	0	0	30	0	0	66	896
8:00 AM	0	0	0	0	1	0	0	0	3	16	0	0	0	32	0	0	52	883
8:05 AM	0	0	0	0	0	0	3	0	0	27	0	0	0	29	1	0	60	861
8:10 AM	0	0	0	0	0	0	3	0	0	22	0	0	0	31	2	0	58	846
8:15 AM	0	0	0	0	1	0	1	0	0	12	0	0	0	25	0	0	39	806
8:20 AM	0	0	0	0	0	0	4	0	3	30	0	0	0	27	3	0	67	772
8:25 AM	0	0	0	0	1	0	2	0	1	26	0	0	0	34	1	0	65	743
8:30 AM	0	0	0	0	1	0	5	0	3	20	0	0	0	26	0	0	55	720
8:35 AM	0	0	0	0	0	0	2	0	0	33	0	0	0	26	0	0	61	719
8:40 AM	0	0	0	0	0	0	1	0	3	18	0	0	0	41	4	0	67	719
8:45 AM	0	0	0	0	3	0	2	0	1	22	0	0	0	30	4	0	62	713
8:50 AM	0	0	0	0	0	0	8	0	0	31	0	0	0	26	3	0	68	720
8:55 AM	0	0	0	0	1	0	10	0	2	27	0	0	0	23	0	0	63	717

5-Min Count Period Beginning At	Leroy Ave (Northbound)				Leroy Ave (Southbound)				OR-211 (Eastbound)				OR-211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:00 AM	0	0	0	0	1	0	4	0	2	29	0	0	0	31	4	0	71	736
9:05 AM	0	0	0	0	0	0	3	0	3	29	0	0	0	23	2	0	60	736
9:10 AM	0	0	0	0	0	0	1	0	0	31	0	0	0	38	1	0	71	749
9:15 AM	0	0	0	0	1	0	2	0	2	19	0	0	0	28	1	0	53	763
9:20 AM	0	0	0	0	0	0	3	0	1	22	0	0	0	31	5	0	62	758
9:25 AM	0	0	0	0	4	0	4	0	2	23	0	0	0	32	0	0	65	758
9:30 AM	0	0	0	0	0	0	3	0	2	18	0	0	0	31	1	0	55	758
9:35 AM	0	0	0	0	0	0	3	0	0	19	0	0	0	31	2	0	55	752
9:40 AM	0	0	0	0	1	0	4	0	2	21	0	0	0	27	0	0	55	740
9:45 AM	0	0	0	0	2	0	4	0	0	27	0	0	0	29	2	0	64	742
9:50 AM	0	0	0	0	0	0	1	0	0	25	0	0	0	32	3	0	61	735
9:55 AM	0	0	0	0	0	0	0	0	0	29	0	0	0	45	1	0	75	747
10:00 AM	0	0	0	0	0	0	3	0	1	29	0	0	0	37	1	0	71	747
10:05 AM	0	0	0	0	0	0	0	0	1	24	0	0	0	29	1	0	55	742
10:10 AM	0	0	0	0	1	0	1	0	0	33	0	0	0	32	2	0	69	740
10:15 AM	0	0	0	0	1	0	1	0	1	25	0	0	0	40	1	0	69	756
10:20 AM	0	0	0	0	1	0	3	0	1	27	0	0	0	28	3	0	63	757
10:25 AM	0	0	0	0	1	0	4	0	2	31	0	0	0	30	3	0	71	763
10:30 AM	0	0	0	0	0	0	2	0	0	31	0	0	0	35	0	0	68	776
10:35 AM	0	0	0	0	1	0	2	0	0	22	0	0	0	45	2	0	72	793
10:40 AM	0	0	0	0	0	0	2	0	1	23	0	0	0	27	2	0	55	793
10:45 AM	0	0	0	0	1	0	1	0	2	22	0	0	0	42	6	0	74	803
10:50 AM	0	0	0	0	0	0	2	0	0	34	0	0	0	52	2	0	90	832
10:55 AM	0	0	0	0	0	0	1	0	0	32	0	0	0	49	2	0	84	841
11:00 AM	0	0	0	0	1	0	0	0	2	25	0	0	0	45	1	0	74	844
11:05 AM	0	0	0	0	2	0	3	0	1	25	0	0	0	44	1	0	76	865
11:10 AM	0	0	0	0	1	0	2	0	3	43	0	0	0	37	5	0	91	887
11:15 AM	0	0	0	0	4	0	2	0	0	35	0	0	0	47	2	0	90	908
11:20 AM	0	0	0	0	1	0	4	0	1	35	0	0	0	36	1	0	78	923
11:25 AM	0	0	0	0	0	0	3	0	2	31	0	0	0	31	1	0	68	920
11:30 AM	0	0	0	0	1	0	3	0	0	35	0	0	0	34	1	0	74	926
11:35 AM	0	0	0	0	1	0	1	0	3	34	0	0	0	46	0	0	85	939
11:40 AM	0	0	0	0	2	0	1	0	4	31	0	0	0	38	4	0	80	964
11:45 AM	0	0	0	0	1	0	5	0	0	29	0	0	0	44	4	0	83	973
11:50 AM	0	0	0	0	4	0	0	0	1	31	0	0	0	44	1	0	81	964
11:55 AM	0	0	0	0	1	0	0	0	2	33	0	0	0	35	5	0	76	956
12:00 PM	0	0	0	0	1	0	4	0	1	40	0	0	0	47	3	0	96	978
12:05 PM	0	0	0	0	1	0	3	0	3	35	0	0	0	40	2	0	84	986
12:10 PM	0	0	0	0	1	0	7	0	0	38	0	0	0	33	2	0	81	976
12:15 PM	0	0	0	0	1	0	2	0	3	34	0	0	0	40	0	0	80	966
12:20 PM	0	0	0	0	2	0	2	0	2	38	0	0	0	23	0	0	67	955
12:25 PM	0	0	0	0	3	0	3	0	1	38	0	0	0	36	2	0	83	970
12:30 PM	0	0	0	0	3	0	2	0	3	33	0	0	0	35	0	0	76	972
12:35 PM	0	0	0	0	1	0	0	0	1	47	0	0	0	34	1	0	84	971
12:40 PM	0	0	0	0	1	0	1	0	1	24	0	0	0	36	0	0	63	954
12:45 PM	0	0	0	0	1	0	2	0	5	33	0	0	0	37	5	0	83	954
12:50 PM	0	0	0	0	0	0	3	0	1	38	0	0	0	35	1	0	78	951
12:55 PM	0	0	0	0	3	0	1	0	1	31	0	0	0	46	1	0	83	958
1:00 PM	0	0	0	0	0	0	0	0	1	35	0	0	0	28	0	0	64	926
1:05 PM	0	0	0	0	1	0	0	0	3	32	0	0	0	41	5	0	82	924
1:10 PM	0	0	0	0	2	0	4	0	2	28	0	0	0	37	4	0	77	920
1:15 PM	0	0	0	0	1	0	2	0	1	44	0	0	0	30	1	0	79	919
1:20 PM	0	0	0	0	1	0	3	0	1	42	0	0	0	38	4	0	89	941
1:25 PM	0	0	0	0	1	0	2	0	0	35	0	0	0	41	3	0	82	940
1:30 PM	0	0	0	0	1	0	2	0	3	55	0	0	0	30	1	0	92	956
1:35 PM	0	0	0	0	2	0	3	0	3	34	0	0	0	42	1	0	85	957
1:40 PM	0	0	0	0	1	0	2	0	3	38	0	0	0	44	3	0	91	985
1:45 PM	0	0	0	0	1	0	3	0	0	27	0	0	0	33	1	0	65	967
1:50 PM	0	0	0	0	4	0	2	0	3	34	0	0	0	39	2	0	84	973
1:55 PM	0	0	0	0	1	0	2	0	4	26	0	0	0	31	3	0	67	957
2:00 PM	0	0	0	0	3	0	2	0	1	32	0	0	0	43	3	0	84	977
2:05 PM	0	0	0	0	0	0	3	0	2	33	0	0	0	32	3	0	73	968
2:10 PM	0	0	0	0	0	0	3	0	4	40	0	0	0	37	3	0	87	978
2:15 PM	0	0	0	0	3	0	1	0	2	32	0	0	0	38	7	0	83	982
2:20 PM	0	0	0	0	2	0	9	0	2	37	0	0	0	30	3	0	83	976
2:25 PM	0	0	0	0	4	0	10	0	0	39	0	0	0	29	3	0	85	979
2:30 PM	0	0	0	0	3	0	4	0	1	40	0	0	0	31	2	0	81	968
2:35 PM	0	0	0	0	3	0	1	0	1	37	0	0	0	46	3	0	91	974
2:40 PM	0	0	0	0	1	0	1	0	1	43	0	0	0	34	1	0	81	964
2:45 PM	0	0	0	0	2	0	5	0	1	36	0	0	0	40	3	0	87	986
2:50 PM	0	0	0	0	1	0	5	0	3	37	0	0	0	39	2	0	87	989
2:55 PM	0	0	0	0	0	0	6	0	1	39	0	0	0	60	2	0	108	1030
3:00 PM	0	0	0	0	2	0	1	0	3	39	0	0	0	39	4	0	88	1034
3:05 PM	0	0	0	0	2	0	3	0	1	33	0	0	0	46	1	0	86	1047



5-Min Count Period Beginning At	Leroy Ave (Northbound)				Leroy Ave (Southbound)				OR-211 (Eastbound)				OR-211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 PM	0	0	0	0	3	0	10	0	3	44	0	0	0	49	0	0	109	1069
3:15 PM	0	0	0	0	1	0	6	0	3	43	0	0	0	48	3	0	104	1090
3:20 PM	0	0	0	0	1	0	3	0	0	41	0	0	0	56	1	0	102	1109
3:25 PM	0	0	0	0	0	0	2	0	2	49	0	0	0	30	2	0	85	1109
3:30 PM	0	0	0	0	2	0	9	0	7	46	0	0	0	43	1	0	108	1136
3:35 PM	0	0	0	0	1	0	6	0	3	41	0	0	0	43	1	0	95	1140
3:40 PM	0	0	0	0	2	0	7	0	2	58	0	0	0	37	2	0	108	1167
3:45 PM	0	0	0	0	0	0	2	0	0	38	0	0	0	41	1	0	82	1162
3:50 PM	0	0	0	0	1	0	4	0	2	48	0	0	0	37	1	0	93	1168
3:55 PM	0	0	0	0	0	0	5	0	3	51	0	0	0	38	6	0	103	1163
4:00 PM	0	0	0	0	1	0	7	0	3	50	0	0	0	31	1	0	93	1168
4:05 PM	0	0	0	0	0	0	1	0	4	49	0	0	0	41	1	0	96	1178
4:10 PM	0	0	0	0	1	0	6	0	2	46	0	0	0	39	3	0	97	1166
4:15 PM	0	0	0	0	1	0	5	0	2	49	0	0	0	39	2	0	98	1160
4:20 PM	0	0	0	0	2	0	4	0	2	45	0	0	0	41	3	0	97	1155
4:25 PM	0	0	0	0	0	0	2	0	3	45	0	0	0	38	4	0	92	1162
4:30 PM	0	0	0	0	4	0	3	0	1	49	0	0	0	46	2	0	105	1159
4:35 PM	0	0	0	0	1	0	4	0	4	44	0	0	0	46	2	0	101	1165
4:40 PM	0	0	0	0	0	0	2	0	5	53	0	0	0	45	3	0	108	1165
4:45 PM	0	0	0	0	2	0	5	0	6	37	0	0	0	46	5	0	101	1184
4:50 PM	0	0	0	0	1	0	9	0	4	53	0	0	0	44	6	0	117	1208
4:55 PM	0	0	0	0	0	0	5	0	4	42	0	0	0	42	8	0	101	1206
5:00 PM	0	0	0	0	2	0	5	0	1	59	0	0	0	46	6	0	119	1232
5:05 PM	0	0	0	0	1	0	5	0	3	49	0	0	0	42	5	0	105	1241
5:10 PM	0	0	0	0	2	0	8	0	6	39	0	0	0	61	3	0	119	1263
5:15 PM	0	0	0	0	1	0	4	0	2	49	0	0	0	33	3	0	92	1257
5:20 PM	0	0	0	0	1	0	3	0	4	45	0	0	0	39	4	0	96	1256
5:25 PM	0	0	0	0	1	0	2	0	4	49	0	0	0	44	6	0	106	1270
5:30 PM	0	0	0	0	0	0	8	0	6	43	0	0	0	39	4	0	100	1265
5:35 PM	0	0	0	0	2	0	8	0	4	49	0	0	0	37	3	0	103	1267
5:40 PM	0	0	0	0	0	0	7	0	5	45	0	0	0	31	6	0	94	1253
5:45 PM	0	0	0	0	1	0	10	0	3	48	0	0	0	43	1	0	106	1258
5:50 PM	0	0	0	0	4	0	5	0	3	45	0	0	0	40	7	0	104	1245
5:55 PM	0	0	0	0	2	0	2	0	2	41	0	0	0	29	5	0	81	1225
6:00 PM	0	0	0	0	0	0	4	0	8	45	0	0	0	47	2	0	106	1212
6:05 PM	0	0	0	0	2	0	3	0	4	47	0	0	0	31	1	0	88	1195
6:10 PM	0	0	0	0	2	0	6	0	5	43	0	0	0	36	0	0	92	1168
6:15 PM	0	0	0	0	3	0	4	0	3	46	0	0	0	40	3	0	99	1175
6:20 PM	0	0	0	0	4	0	3	0	1	35	0	0	0	32	1	0	76	1155
6:25 PM	0	0	0	0	1	0	1	0	3	34	0	0	0	31	0	0	70	1119
6:30 PM	0	0	0	0	2	0	6	0	7	31	0	0	0	37	4	0	87	1106
6:35 PM	0	0	0	0	7	0	15	0	4	38	0	0	0	24	0	0	88	1091
6:40 PM	0	0	0	0	2	0	4	0	7	42	0	0	0	26	3	0	84	1081
6:45 PM	0	0	0	0	0	0	3	0	1	41	0	0	0	31	5	0	81	1056
6:50 PM	0	0	0	0	4	0	7	0	5	39	0	0	0	32	4	0	91	1043
6:55 PM	0	0	0	0	0	0	7	0	3	37	0	0	0	28	4	0	79	1041
7:00 PM	0	0	0	0	2	0	1	0	4	27	0	0	0	23	3	0	60	995
7:05 PM	0	0	0	0	9	0	12	0	3	23	0	0	0	18	3	0	68	975
7:10 PM	0	0	0	0	2	0	4	0	3	32	0	0	0	26	2	0	69	952
7:15 PM	0	0	0	0	3	0	1	0	1	28	0	0	0	30	2	0	65	918
7:20 PM	0	0	0	0	0	0	0	0	1	33	0	0	0	22	1	0	57	899
7:25 PM	0	0	0	0	0	0	2	0	2	23	0	0	0	18	2	0	47	876
7:30 PM	0	0	0	0	1	0	2	0	0	22	0	0	0	31	1	0	57	846
7:35 PM	0	0	0	0	0	0	2	0	0	14	0	0	0	27	5	0	48	806
7:40 PM	0	0	0	0	0	0	0	0	3	26	0	0	0	18	2	0	49	771
7:45 PM	0	0	0	0	2	0	1	0	2	18	0	0	0	18	1	0	42	732
7:50 PM	0	0	0	0	1	0	1	0	3	20	0	0	0	17	0	0	42	683
7:55 PM	0	0	0	0	2	0	1	0	2	7	0	0	0	14	0	0	26	630
8:00 PM	0	0	0	0	0	0	1	0	2	18	0	0	0	10	0	0	31	601
8:05 PM	0	0	0	0	1	0	2	0	1	17	0	0	0	16	2	0	39	572
8:10 PM	0	0	0	0	0	0	2	0	2	22	0	0	0	26	1	0	53	556
8:15 PM	0	0	0	0	1	0	2	0	2	15	0	0	0	16	1	0	37	528
8:20 PM	0	0	0	0	0	0	1	0	1	14	0	0	0	18	2	0	36	507
8:25 PM	0	0	0	0	0	0	2	0	3	19	0	0	0	11	0	0	35	495
8:30 PM	0	0	0	0	0	0	3	0	2	9	0	0	0	22	0	0	36	474
8:35 PM	0	0	0	0	0	0	1	0	2	18	0	0	0	18	0	0	39	465
8:40 PM	0	0	0	0	1	0	1	0	4	15	0	0	0	11	1	0	33	449
8:45 PM	0	0	0	0	0	0	1	0	1	16	0	0	0	23	1	0	42	449
8:50 PM	0	0	0	0	1	0	2	0	2	15	0	0	0	14	2	0	36	443
8:55 PM	0	0	0	0	1	0	2	0	2	14	0	0	0	21	2	0	42	459
9:00 PM	0	0	0	0	1	0	1	0	1	8	0	0	0	17	1	0	29	457
9:05 PM	0	0	0	0	0	0	2	0	0	9	0	0	0	9	0	0	20	438
9:10 PM	0	0	0	0	0	0	1	0	1	15	0	0	0	8	0	0	25	410
9:15 PM	0	0	0	0	1	0	0	0	4	17	0	0	0	14	0	0	36	409

5-Min Count Period Beginning At	Leroy Ave (Northbound)				Leroy Ave (Southbound)				OR-211 (Eastbound)				OR-211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:20 PM	0	0	0	0	0	0	1	0	3	19	0	0	0	8	0	0	31	404
9:25 PM	0	0	0	0	0	0	1	0	0	18	0	0	0	6	0	0	25	394
9:30 PM	0	0	0	0	0	0	0	0	2	12	0	0	0	5	0	0	19	377
9:35 PM	0	0	0	0	0	0	0	0	1	8	0	0	0	9	1	0	19	357
9:40 PM	0	0	0	0	0	0	0	0	0	16	0	0	0	11	0	0	27	351
9:45 PM	0	0	0	0	1	0	1	0	0	7	0	0	0	8	0	0	17	326
9:50 PM	0	0	0	0	0	0	1	0	0	7	0	0	0	5	0	0	13	303
9:55 PM	0	0	0	0	0	0	2	0	1	9	0	0	0	4	1	0	17	278
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	20	0	72	0	40	588	0	0	0	596	56	0	1372	
Heavy Trucks	0	0	0	0	0	0	0	0	0	44	0	0	0	20	0	0	64	
Pedestrians			0				4				0				0		4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		
<i>Comments:</i>																		

Report generated on 1/11/2019 9:18 AM

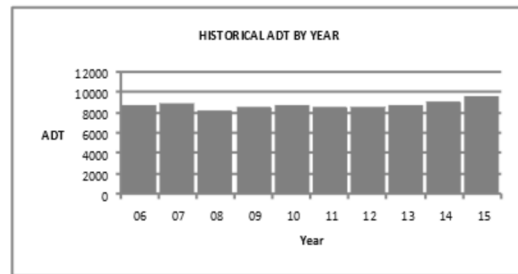
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Appendix B  
ODOT Traffic Volume Adjustment Data

<b>Location:</b>	I-84; MP 353.47; OLD OREGON TRAIL NO. 6; 1.47 miles south of Baker-Malheur County Line	<b>Site Name:</b>	Huntington (23-016)
		<b>Installed:</b>	October, 1967

**HISTORICAL TRAFFIC DATA**

Year	ADT	Percent of ADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2006	8784	176	13.4	12.1	11.3	10.9
2007	8902	156	14.5	12.1	11.5	11.2
2008	8182	163	16.0	13.4	11.6	11.1
2009	8528	162	13.3	12.0	11.4	11.2
2010	8744	166	13.5	12.1	11.8	11.5
2011	8580	178	14.1	12.5	11.9	11.4
2012	8614	154	15.4	12.4	11.6	11.4
2013	8762	170	15.1	13.3	12.1	11.7
2014	9028	166	15.3	13.5	12.1	11.7
2015	9685	153	15.0	12.3	11.5	11.3



**2015 TRAFFIC DATA**

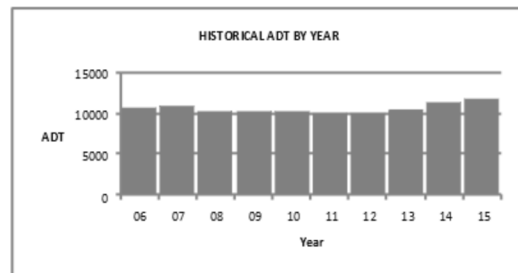
	Average Weekday Traffic	Percent of ADT	Average Daily Traffic	Percent of ADT
January	6847	71	6771	70
February	7595	78	7584	78
March	8999	93	9442	97
April	9256	96	9530	98
May	9965	103	10210	105
June	11255	116	11742	121
July	11974	124	12266	127
August	11280	116	11745	121
September	10586	109	10812	112
October	9658	100	9871	102
November	8586	89	8874	92
December	7438	77	7376	76

For Vehicle Classification data near this ATR, please go to the following web page:  
<https://gis.odot.state.or.us/TransGIS/>

<b>Location:</b>	OR99E; MP 34.03; PACIFIC HIGHWAY EAST NO. 81; 0.11 miles south of NE Belle Pass Rd	<b>Site Name:</b>	Woodburn (24-001)
		<b>Installed:</b>	January, 1937

**HISTORICAL TRAFFIC DATA**

Year	ADT	Percent of ADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2006	10748	128	13.4	11.2	10.9	10.7
2007	10954	126	13.0	11.8	11.3	11.1
2008	10254	128	11.9	11.4	11.2	11.0
2009	10264	139	15.9	11.0	10.6	10.4
2010	10224	131	13.4	11.6	11.3	11.1
2011	10147	126	14.7	11.9	11.4	11.2
2012	10050	***	***	***	***	***
2013	10573	125	12.5	11.9	11.7	11.5
2014	11292	135	14.3	12.3	11.8	11.5
2015	11775	127	14.5	11.7	11.3	11.0



**2015 TRAFFIC DATA**

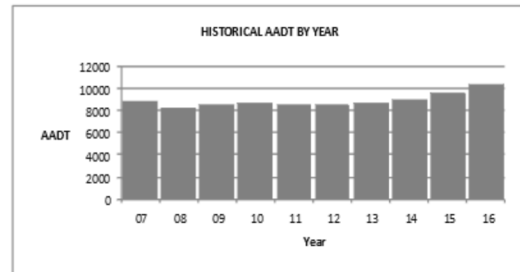
	Average Weekday Traffic	Percent of ADT	Average Daily Traffic	Percent of ADT
January	10843	92	10281	87
February	11380	97	10990	93
March	11931	101	11533	98
April	12175	103	11978	102
May	12426	106	12344	105
June	13277	113	12921	110
July	13250	113	12646	107
August	12869	109	12581	107
September	12362	105	12195	104
October	12348	105	12306	105
November	11550	98	10939	93
December	11345	96	10586	90

For Vehicle Classification data near this ATR, please go to the following web page:  
<https://gis.odot.state.or.us/TransGIS/>

<b>Location:</b>	I-84; MP 353.47; OLD OREGON TRAIL NO. 6; 1.47 miles south of Baker-Malheur County Line	<b>Site Name:</b>	Huntington (23-016)
		<b>Installed:</b>	October, 1967

**HISTORICAL TRAFFIC DATA**

Year	AADT	Percent of AADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2007	8902	156	14.5	12.1	11.5	11.2
2008	8182	163	16.0	13.4	11.6	11.1
2009	8528	162	13.3	12.0	11.4	11.2
2010	8744	166	13.5	12.1	11.8	11.5
2011	8580	178	14.1	12.5	11.9	11.4
2012	8614	154	15.4	12.4	11.6	11.4
2013	8762	170	15.1	13.3	12.1	11.7
2014	9028	166	15.3	13.5	12.1	11.7
2015	9685	153	15.0	12.3	11.5	11.3
2016	10390	173	14.3	12.6	12.0	11.6



**2016 TRAFFIC DATA**

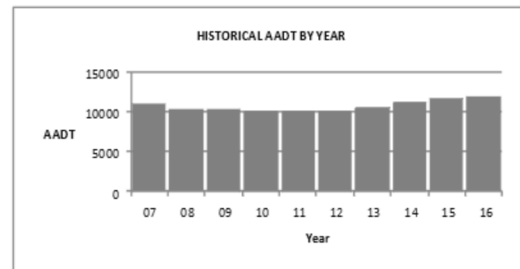
	Average Weekday Traffic	Percent of AADT	Average Daily Traffic	Percent of AADT
January	7000	67	6906	66
February	7690	74	7796	75
March	9366	90	9801	94
April	9794	94	10240	99
May	10956	105	11205	108
June	12386	119	12777	123
July	13014	125	12804	123
August	12650	122	13078	126
September	11617	112	11903	115
October	10489	101	10751	103
November	9712	93	10000	96
December	7905	76	7424	71

For Vehicle Classification data near your project, please go to the following web page:  
<https://gis.odot.state.or.us/TransGIS/>

<b>Location:</b>	OR99E; MP 34.03; PACIFIC HIGHWAY EAST NO. 81; 0.11 miles south of NE Belle Pass1 Rd	<b>Site Name:</b>	Woodburn (24-001)
		<b>Installed:</b>	January, 1937

**HISTORICAL TRAFFIC DATA**

Year	AADT	Percent of AADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2007	10954	126	13.0	11.8	11.3	11.1
2008	10254	128	11.9	11.4	11.2	11.0
2009	10264	139	15.9	11.0	10.6	10.4
2010	10224	131	13.4	11.6	11.3	11.1
2011	10147	126	14.7	11.9	11.4	11.2
2012	10050	***	***	***	***	***
2013	10573	125	12.5	11.9	11.7	11.5
2014	11292	135	14.3	12.3	11.8	11.5
2015	11775	127	14.5	11.7	11.3	11.0
2016	12007	126	12.3	11.5	11.2	11.1



**2016 TRAFFIC DATA**

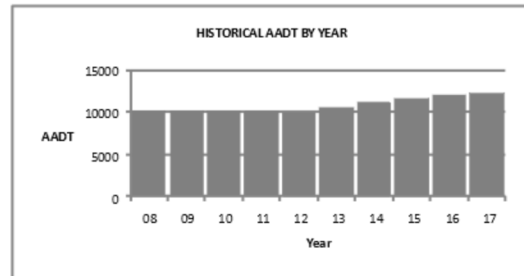
	Average Weekday Traffic	Percent of AADT	Average Daily Traffic	Percent of AADT
January	11261	94	10390	87
February	11752	98	11288	94
March	12129	101	11628	97
April	12747	106	12610	105
May	12816	107	12739	106
June	13316	111	13087	109
July	13014	108	12804	107
August	13050	109	12855	107
September	12753	106	12573	105
October	12503	104	12336	103
November	12083	101	11382	95
December	10949	91	10392	87

For Vehicle Classification data near your project, please go to the following web page:  
<https://gis.odot.state.or.us/TransGIS/>

<b>Location:</b>	OR99E; MP 34.03; PACIFIC HIGHWAY EAST NO. 81; 0.11 miles south of NE Belle Passi Rd	<b>Site Name:</b>	Woodburn (24-001)
		<b>Installed:</b>	January, 1937

#### HISTORICAL TRAFFIC DATA

Year	AADT	Percent of AADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2008	10254	128	11.9	11.4	11.2	11.0
2009	10264	139	15.9	11.0	10.6	10.4
2010	10224	131	13.4	11.6	11.3	11.1
2011	10147	126	14.7	11.9	11.4	11.2
2012	10050	***	***	***	***	***
2013	10573	125	12.5	11.9	11.7	11.5
2014	11292	135	14.3	12.3	11.8	11.5
2015	11775	127	14.5	11.7	11.3	11.0
2016	12007	126	12.3	11.5	11.2	11.1
2017	12378	137	13.0	11.8	11.5	11.3



#### 2017 TRAFFIC DATA

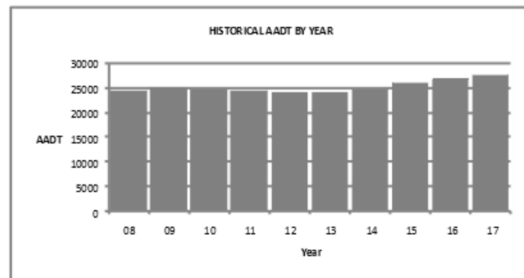
	Average Weekday Traffic	Percent of AADT	Average Daily Traffic	Percent of AADT
January	10715	87	10148	82
February	11734	95	11179	90
March	12178	98	11745	95
April	12790	103	12614	102
May	12898	104	12796	103
June	13466	109	13019	105
July	14036	113	13769	111
August	14424	117	13961	113
September	13441	109	13234	107
October	13264	107	13273	107
November	12319	100	11720	95
December	11492	93	11073	89

For Vehicle Classification data near your project, please go to the following web page:  
[https://www.oregon.gov/ODOT/Data/Documents/TVT\\_2017.xlsx](https://www.oregon.gov/ODOT/Data/Documents/TVT_2017.xlsx)

<b>Location:</b>	OR22; MP 2.82; NORTH SANTIAM HIGHWAY NO. 162; 0.91 mile east of Lancaster Drive Interchange	<b>Site Name:</b>	North Santiam (24-004)
		<b>Installed:</b>	January, 1967

#### HISTORICAL TRAFFIC DATA

Year	AADT	Percent of AADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2008	24427	134	11.2	10.6	10.4	10.3
2009	25014	135	10.8	10.5	10.3	10.2
2010	24911	134	10.8	10.5	10.3	10.2
2011	24313	137	10.9	10.6	10.4	10.2
2012	24107	135	11.2	10.7	10.5	10.3
2013	24180	***	***	***	***	***
2014	24675	136	11.4	10.7	10.4	10.4
2015	26065	136	10.9	10.3	10.1	9.9
2016	27036	134	10.8	10.2	10.1	10.0
2017	27746	133	11.2	10.2	10.0	9.9



#### 2017 TRAFFIC DATA

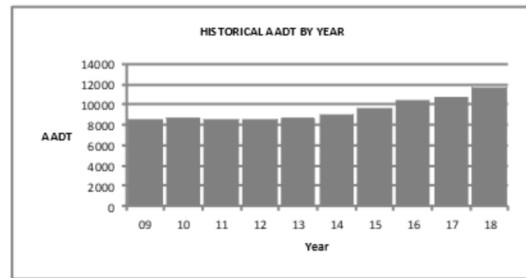
	Average Weekday Traffic	Percent of AADT	Average Daily Traffic	Percent of AADT
January	24420	88	22619	82
February	26158	94	24850	90
March	27039	97	26055	94
April	28176	102	27419	99
May	29628	107	29186	105
June	30914	111	30383	110
July	32161	116	32181	116
August	31661	114	31045	112
September	29653	107	29152	105
October	29174	105	28023	101
November	28001	101	26423	95
December	26844	97	25610	92

For Vehicle Classification data near your project, please go to the following web page:  
[https://www.oregon.gov/ODOT/Data/Documents/TVT\\_2017.xlsx](https://www.oregon.gov/ODOT/Data/Documents/TVT_2017.xlsx)

<b>Location:</b>	I-84; MP 353.47; OLD OREGON TRAIL NO. 6; 1.47 miles south of Baker-Malheur County Line	<b>Site Name:</b>	Huntington (23-016)
		<b>Installed:</b>	October, 1967

**HISTORICAL TRAFFIC DATA**

Year	AADT	Percent of AADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2009	8528	162	13.3	12.0	11.4	11.2
2010	8744	166	13.5	12.1	11.8	11.5
2011	8580	178	14.1	12.5	11.9	11.4
2012	8614	154	15.4	12.4	11.6	11.4
2013	8762	170	15.1	13.3	12.1	11.7
2014	9028	166	15.3	13.5	12.1	11.7
2015	9685	153	15.0	12.3	11.5	11.3
2016	10390	173	14.3	12.6	12.0	11.6
2017	10737	163	19.1	13.3	12.2	11.8
2018	11772	***	***	***	***	***



**2018 TRAFFIC DATA**

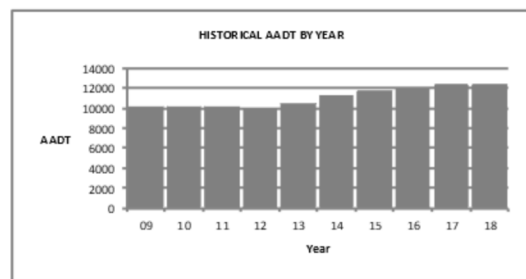
	Average Weekday Traffic	Percent of AADT	Average Daily Traffic	Percent of AADT
January	8429	72	8218	70
February	9099	77	8951	76
March	10265	87	10491	89
April	11457	97	11661	99
May	12334	105	12583	107
June	13571	115	14156	120
July	13862	118	14553	124
August	13922	118	14251	121
September	12900	110	13500	115
October	12500	106	12700	108
November	10500	89	11000	93
December	9400	80	9200	78

For Vehicle Classification data near your project, please go to the following web page:  
[https://www.oregon.gov/ODOT/Data/Documents/TVT\\_2018.xlsx](https://www.oregon.gov/ODOT/Data/Documents/TVT_2018.xlsx)

<b>Location:</b>	OR99E; MP 34.03; PACIFIC HIGHWAY EAST NO. 81; 0.11 miles south of NE Belle Passi Rd	<b>Site Name:</b>	Woodburn (24-001)
		<b>Installed:</b>	January, 1937

**HISTORICAL TRAFFIC DATA**

Year	AADT	Percent of AADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2009	10264	139	15.9	11.0	10.6	10.4
2010	10224	131	13.4	11.6	11.3	11.1
2011	10147	126	14.7	11.9	11.4	11.2
2012	10050	***	***	***	***	***
2013	10573	125	12.5	11.9	11.7	11.5
2014	11292	135	14.3	12.3	11.8	11.5
2015	11775	127	14.5	11.7	11.3	11.0
2016	12007	126	12.3	11.5	11.2	11.1
2017	12378	137	13.0	11.8	11.5	11.3
2018	12460	130	12.3	11.8	11.5	11.3



**2018 TRAFFIC DATA**

	Average Weekday Traffic	Percent of AADT	Average Daily Traffic	Percent of AADT
January	11394	91	10961	88
February	11932	96	11416	92
March	12419	100	11977	96
April	13097	105	12737	102
May	13218	106	13028	105
June	13525	109	13139	105
July	13638	109	13349	107
August	13636	109	13394	107
September	13262	106	13134	105
October	13174	106	13348	107
November	12515	100	11908	96
December	11528	93	11126	89

For Vehicle Classification data near your project, please go to the following web page:  
[https://www.oregon.gov/ODOT/Data/Documents/TVT\\_2018.xlsx](https://www.oregon.gov/ODOT/Data/Documents/TVT_2018.xlsx)

<b>Location</b>	OR99E; MP 34.03; PACIFIC HIGHWAY EAST NO. 81; 0.11 miles south of NE Belle Passi Rd	<b>Site Name</b> Woodburn (24-001)
		<b>Installed</b> January, 1937

Year	HISTORICAL ANNUAL TRAFFIC DATA						
	Annual Average Daily Traffic (AADT)	Critical Values as percent of Annual Average Daily Traffic (AADT)					
		Max Day	Max Hour	10th Hour	20th Hour	30th Hour	30th Hour
2010	10224	131	13.4	11.6	11.3	11.1	11.1
2011	10147	126	14.7	11.9	11.4	11.2	11.2
2012	10050	***	***	***	***	***	***
2013	10573	125	12.5	11.9	11.7	11.5	11.5
2014	11292	135	14.3	12.3	11.8	11.5	11.5
2015	11775	127	14.5	11.7	11.3	11.0	11.0
2016	12007	126	12.3	11.5	11.2	11.1	11.1
2017	12378	137	13.0	11.8	11.5	11.3	11.3
2018	12460	130	12.3	11.8	11.5	11.3	11.3
2019	13031	142	14.1	11.4	11.2	11.1	11.1

Month	2019 SEASONAL TRAFFIC DATA					
	Weekday			Daily		
	Average	% AADT	Average	% AADT	Average	% AADT
January	11522	88	11087	85		
February	11619	89	11195	86		
March	12531	96	12165	93		
April	13335	102	13139	101		
May	13563	104	13366	103		
June	15249	117	14541	112		
July	14889	114	14491	111		
August	14640	112	14341	110		
September	14221	109	13923	107		
October	14397	110	14351	110		
November	12838	99	12296	94		
December	12059	93	11474	88		



Site id	HWY	MP	DIR	HS	Description	2017	2018	2019	2039	RSQ
3446	161	0.15	1		0.15 mile east of Pacific Highway East (OR99E) and Hillsboro-Silverton Highway (OR214)			8000	11100	MODEL
3447	161	2.63	1		1.15 miles west of S Meridian Road, Marion-Clackamas County Line			7000	8900	0.5903
3448	161	5.20	1		0.05 mile east of Barlow Road			5800	6300	MODEL
3449	161	7.69	1		0.10 mile east of S Canby-Marquam Road			5800	7900	MODEL
3450	161	11.26	1		0.05 mile west of Cascade Highway South (OR213)			6100	8800	MODEL
3451	161	11.36	1		0.05 mile east of Cascade Highway South (OR213)			12600	18800	MODEL
3452	161	12.25	1		0.09 mile east of LeRoy Avenue			13600	20600	MODEL
3453	161	13.27	1		0.02 mile west of Stowers Lane			8400	11500	MODEL
3454	161	13.67	1		0.24 mile northeast of S Mathias Road			5700	7500	MODEL
3455	161	15.41	1		On Meadowbrook Bridge at Molalla River			5800	7600	MODEL
3457	161	16.34	1		0.03 mile north of Meadowbrook Road			6300	8800	MODEL
3458	161	18.23	1		At Cedardale, 0.19 mile east of S Paveletz Road			5300	7600	MODEL
3460	161	21.20	1		0.02 mile east of Wall Street at Colton			4600	6500	MODEL
3461	161	21.69	1		0.02 mile northeast of Schieffer Road			3600	5100	MODEL
3014	161	24.23	1		Colton Automatic Traffic Recorder, Sta. 03-014, 3.05 miles northeast of Wall Street			3100	4400	MODEL
3463	161	26.43	1		0.02 mile north of S Highland Road			3100	4500	MODEL
3464	161	28.79	1		0.02 mile north of Hillock Burn Road			3600	5200	MODEL
3465	161	30.73	1		0.02 mile north of Day Hill Road (South Jct.)			3800	5700	MODEL
3466	161	32.55	1		0.02 mile north of Hayden Road			6900	10400	MODEL
3467	161	33.20	1		0.02 mile east of Day Hill Road (North Jct.)			7500	10500	MODEL
3468	161	33.40	1		0.09 mile south of Clackamas Highway (OR224), south city limits of Estacada			7400	10400	MODEL

Appendix C  
Existing Conditions Operational Analysis Worksheets

HCM 6th TWSC  
1: Highway 211 & Leroy Avenue

06/27/2021

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	41	334	450	52	26	92
Future Vol, veh/h	41	334	450	52	26	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	16	16	15	15	22	22
Mvmt Flow	49	398	536	62	31	110

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	598	0	-	0	1063 567
Stage 1	-	-	-	-	567 -
Stage 2	-	-	-	-	496 -
Critical Hdwy	4.26	-	-	-	6.62 6.42
Critical Hdwy Stg 1	-	-	-	-	5.62 -
Critical Hdwy Stg 2	-	-	-	-	5.62 -
Follow-up Hdwy	2.344	-	-	-	3.698 3.498
Pot Cap-1 Maneuver	914	-	-	-	227 487
Stage 1	-	-	-	-	530 -
Stage 2	-	-	-	-	573 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	914	-	-	-	211 487
Mov Cap-2 Maneuver	-	-	-	-	211 -
Stage 1	-	-	-	-	493 -
Stage 2	-	-	-	-	573 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	20
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	914	-	-	-	378
HCM Lane V/C Ratio	0.053	-	-	-	0.372
HCM Control Delay (s)	9.2	0	-	-	20
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	1.7

HCM 6th TWSC  
2: Shaver Avenue & Highway 211

06/27/2021

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	333	27	7	481	1	20	1	6	0	1	1
Future Vol, veh/h	0	333	27	7	481	1	20	1	6	0	1	1
Conflicting Peds, #/hr	0	0	1	1	0	0	1	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	16	16	16	13	13	13	53	53	53	2	2	2
Mvmt Flow	0	374	30	8	540	1	22	1	7	0	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	541	0	0	405	0	0	949	947	391	951	962	542
Stage 1	-	-	-	-	-	-	390	390	-	557	557	-
Stage 2	-	-	-	-	-	-	559	557	-	394	405	-
Critical Hdwy	4.26	-	-	4.23	-	-	7.63	7.03	6.73	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.63	6.03	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.63	6.03	-	6.12	5.52	-
Follow-up Hdwy	2.344	-	-	2.317	-	-	3.977	4.477	3.777	3.518	4.018	3.318
Pot Cap-1 Maneuver	961	-	-	1097	-	-	196	215	559	240	256	540
Stage 1	-	-	-	-	-	-	543	528	-	515	512	-
Stage 2	-	-	-	-	-	-	433	438	-	631	598	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	961	-	-	1096	-	-	193	213	558	234	253	539
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	213	-	234	253	-
Stage 1	-	-	-	-	-	-	542	527	-	515	507	-
Stage 2	-	-	-	-	-	-	426	434	-	621	597	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			23.3			15.5		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	227	961	-	-	1096	-	-	344
HCM Lane V/C Ratio	0.134	-	-	-	0.007	-	-	0.007
HCM Control Delay (s)	23.3	0	-	-	8.3	0	-	15.5
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0

HCM 6th TWSC  
3: Shaver Avenue & Section Street

06/27/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	0	0	0	0	17	0	0	0	11	1	13
Future Vol, veh/h	16	0	0	0	0	17	0	0	0	11	1	13
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	64	64	64	64	64	64	64	64	64
Heavy Vehicles, %	100	100	100	17	17	17	2	2	2	72	72	72
Mvmt Flow	25	0	0	0	0	27	0	0	0	17	2	20

Major/Minor	Minor2		Minor1			Major1			Major2		
Conflicting Flow All	60	46	12	46	56	0	22	0	0	0	0
Stage 1	46	46	-	0	0	-	-	-	-	-	-
Stage 2	14	0	-	46	56	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.27	6.67	6.37	4.12	-	-	4.82	-
Critical Hdwy Stg 1	7.1	6.5	-	6.27	5.67	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.27	5.67	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.653	4.153	3.453	2.218	-	-	2.848	-
Pot Cap-1 Maneuver	741	689	843	919	807	-	1593	-	-	-	-
Stage 1	768	698	-	-	-	-	-	-	-	-	-
Stage 2	803	-	-	931	820	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	689	843	919	807	-	1593	-	-	-	-
Mov Cap-2 Maneuver	-	689	-	919	807	-	-	-	-	-	-
Stage 1	768	698	-	-	-	-	-	-	-	-	-
Stage 2	803	-	-	931	820	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0	
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	-	-	-
HCM Lane LOS	A	-	-	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

HCM 6th TWSC  
4: Molalla Avenue & Section Street

06/27/2021

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	10	0	0	9	6	138	0	1	51	3
Future Vol, veh/h	7	0	10	0	0	9	6	138	0	1	51	3
Conflicting Peds, #/hr	2	0	2	0	0	0	2	0	0	0	0	2
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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	50	50	50	2	2	2	4	4	4	10	10	10
Mvmt Flow	8	0	11	0	0	10	7	157	0	1	58	3

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	242	235	64	240	236	159	63	0	0	157	0	0
Stage 1	64	64	-	171	171	-	-	-	-	-	-	-
Stage 2	178	171	-	69	65	-	-	-	-	-	-	-
Critical Hdwy	7.6	7	6.7	7.12	6.52	6.22	4.14	-	-	4.2	-	-
Critical Hdwy Stg 1	6.6	6	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	6	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.45	3.75	3.518	4.018	3.318	2.236	-	-	2.29	-	-
Pot Cap-1 Maneuver	623	590	881	714	665	886	1527	-	-	1375	-	-
Stage 1	839	756	-	831	757	-	-	-	-	-	-	-
Stage 2	724	675	-	941	841	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	611	585	878	700	660	884	1524	-	-	1375	-	-
Mov Cap-2 Maneuver	611	585	-	700	660	-	-	-	-	-	-	-
Stage 1	833	754	-	827	753	-	-	-	-	-	-	-
Stage 2	711	672	-	926	838	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	9.1	0.3	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	744	884	1375	-	-
HCM Lane V/C Ratio	0.004	-	-	0.026	0.012	0.001	-	-
HCM Control Delay (s)	7.4	0	-	10	9.1	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th TWSC  
 5: Molalla Avenue & Molalla Forest Road

06/27/2021

Intersection												
Int Delay, s/veh	0.1											
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	143	1	0	67	0	0	0	0	0	0	3
Future Vol, veh/h	0	143	1	0	67	0	0	0	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	4	4	4	17	17	17	0	0	0	50	50	50
Mvmt Flow	0	186	1	0	87	0	0	0	0	0	0	4

Major/Minor	Major1		Major2		Minor2			Minor1				
Conflicting Flow All	87	0	0	187	0	0	276	274	87	274	274	187
Stage 1	-	-	-	-	-	-	87	87	-	187	187	-
Stage 2	-	-	-	-	-	-	189	187	-	87	87	-
Critical Hdwy	4.14	-	-	4.27	-	-	7.1	6.5	6.2	7.6	7	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.6	6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.6	6	-
Follow-up Hdwy	2.236	-	-	2.353	-	-	3.5	4	3.3	3.95	4.45	3.75
Pot Cap-1 Maneuver	1496	-	-	1302	-	-	680	637	977	592	560	746
Stage 1	-	-	-	-	-	-	926	827	-	715	663	-
Stage 2	-	-	-	-	-	-	817	749	-	815	738	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1496	-	-	1302	-	-	677	637	977	592	560	746
Mov Cap-2 Maneuver	-	-	-	-	-	-	677	637	-	592	560	-
Stage 1	-	-	-	-	-	-	926	827	-	715	663	-
Stage 2	-	-	-	-	-	-	813	749	-	815	738	-

Approach	NB	SB	SE	NW
HCM Control Delay, s	0	0	0	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBL	NBT	NBRNWLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	1496	-	-	746	-	1302	-
HCM Lane V/C Ratio	-	-	-	0.005	-	-	-
HCM Control Delay (s)	0	-	-	9.9	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC  
1: Highway 211 & Leroy Avenue

06/27/2021

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	46	627	596	54	18	63
Future Vol, veh/h	46	627	596	54	18	63
Conflicting Peds, #/hr	4	0	0	3	3	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	1	1
Mvmt Flow	50	682	648	59	20	68

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	711	0	-	0	1467 686
Stage 1	-	-	-	-	682 -
Stage 2	-	-	-	-	785 -
Critical Hdwy	4.14	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.236	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	879	-	-	-	142 449
Stage 1	-	-	-	-	504 -
Stage 2	-	-	-	-	451 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	876	-	-	-	128 446
Mov Cap-2 Maneuver	-	-	-	-	128 -
Stage 1	-	-	-	-	456 -
Stage 2	-	-	-	-	449 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	23
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	876	-	-	-	287
HCM Lane V/C Ratio	0.057	-	-	-	0.307
HCM Control Delay (s)	9.4	0	-	-	23
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	1.3



HCM 6th TWSC  
2: Shaver Avenue & Highway 211

06/27/2021

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	619	25	14	641	0	9	0	22	0	1	0
Future Vol, veh/h	1	619	25	14	641	0	9	0	22	0	1	0
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	4	4	4	2	2	2	2	2	2
Mvmt Flow	1	711	29	16	737	0	10	0	25	0	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	739	0	0	742	0	0	1502	1501	730	1513	1515	741
Stage 1	-	-	-	-	-	-	730	730	-	771	771	-
Stage 2	-	-	-	-	-	-	772	771	-	742	744	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	858	-	-	856	-	-	100	122	422	98	119	416
Stage 1	-	-	-	-	-	-	414	428	-	393	410	-
Stage 2	-	-	-	-	-	-	392	410	-	408	421	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	856	-	-	854	-	-	96	117	420	89	114	414
Mov Cap-2 Maneuver	-	-	-	-	-	-	96	117	-	89	114	-
Stage 1	-	-	-	-	-	-	412	426	-	391	396	-
Stage 2	-	-	-	-	-	-	378	396	-	382	419	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			25.4			36.9		
HCM LOS							D			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	212	856	-	-	854	-	-	114
HCM Lane V/C Ratio	0.168	0.001	-	-	0.019	-	-	0.01
HCM Control Delay (s)	25.4	9.2	0	-	9.3	0	-	36.9
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0

HCM 6th TWSC  
3: Shaver Avenue & Section Street

06/27/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	48	0	0	0	50	0	0
Future Vol, veh/h	0	0	0	0	0	48	0	0	0	50	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	65	0	0	0	68	0	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	169	136	0	136	136	0	0	0	0	0	0	0
Stage 1	136	136	-	0	0	-	-	-	-	-	-	-
Stage 2	33	0	-	136	136	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	795	755	-	835	755	-	-	-	-	-	-	-
Stage 1	867	784	-	-	-	-	-	-	-	-	-	-
Stage 2	983	-	-	867	784	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	-	755	-	-	755	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	755	-	-	755	-	-	-	-	-	-	-
Stage 1	867	784	-	-	-	-	-	-	-	-	-	-
Stage 2	983	-	-	867	784	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0		0	
HCM LOS	A	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	-	-	-
HCM Lane LOS	A	-	-	A	-	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-	-	-	-

HCM 6th TWSC  
4: Molalla Avenue & Section Street

06/27/2021

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	1	6	0	1	4	4	111	4	13	148	17
Future Vol, veh/h	21	1	6	0	1	4	4	111	4	13	148	17
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	2	2	2	6	6	6	1	1	1
Mvmt Flow	24	1	7	0	1	5	5	129	5	15	172	20

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	357	356	182	358	364	132	192	0	0	134	0	0
Stage 1	212	212	-	142	142	-	-	-	-	-	-	-
Stage 2	145	144	-	216	222	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.12	6.52	6.22	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.518	4.018	3.318	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	595	567	855	597	564	917	1358	-	-	1457	-	-
Stage 1	786	723	-	861	779	-	-	-	-	-	-	-
Stage 2	853	774	-	786	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	584	558	855	584	555	917	1358	-	-	1457	-	-
Mov Cap-2 Maneuver	584	558	-	584	555	-	-	-	-	-	-	-
Stage 1	783	714	-	858	776	-	-	-	-	-	-	-
Stage 2	844	771	-	769	711	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	9.5	0.3	0.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1358	-	-	625	811	1457	-	-
HCM Lane V/C Ratio	0.003	-	-	0.052	0.007	0.01	-	-
HCM Control Delay (s)	7.7	0	-	11.1	9.5	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 6th TWSC  
 5: Molalla Avenue & Molalla Forest Road

06/27/2021

Intersection												
Int Delay, s/veh	0.4											
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	112	1	0	160	1	4	0	1	4	0	1
Future Vol, veh/h	1	112	1	0	160	1	4	0	1	4	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	129	1	0	184	1	5	0	1	5	0	1

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	185	0	0	130	0	0	317	317	185	317	317	130
Stage 1	-	-	-	-	-	-	185	185	-	132	132	-
Stage 2	-	-	-	-	-	-	132	132	-	185	185	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1455	-	-	636	599	857	636	599	920
Stage 1	-	-	-	-	-	-	817	747	-	871	787	-
Stage 2	-	-	-	-	-	-	871	787	-	817	747	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1360	-	-	1455	-	-	635	598	857	635	598	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	635	598	-	635	598	-
Stage 1	-	-	-	-	-	-	816	747	-	870	786	-
Stage 2	-	-	-	-	-	-	869	786	-	816	747	-

Approach	NB	SB	SE	NW
HCM Control Delay, s	0.1	0	10.4	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBL	NBT	NBR	NWLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	1360	-	-	677	670	1455	-	-
HCM Lane V/C Ratio	0.001	-	-	0.008	0.009	-	-	-
HCM Control Delay (s)	7.6	0	-	10.4	10.4	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Appendix D  
ODOT Crash Data

CDS380  
06/22/2021

OREGON... DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING  
LEROY AVE at MAIN ST, City of Molalla, Clackamas County, 01/01/2015 to 12/31/2019

1 - 4 of 6 Crash records shown.

CITY OF MOLALLA, CLACKAMAS COUNTY

SER#	P R J S W DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	RD CHAR	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT. EVENT	CAUSE	
INVEST	E A U I C O DAY	DIST	FIRST STREET	(MEDIAN)		DIRECT	INT-REL	ANDBT	SURF	COLL	OWNER	FROM	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT. EVENT	CAUSE	
RD DPT	E L G N H R TIME	FROM	SECOND STREET	LESS	TRAF-	UNLOC?	D C S V L K LAT	LONG	DRVMY	LIGHT	SVRTY	VH TYPE	TO	TURN-R						
01201	N N N 04/10/2018	17	LEROY AVE	3-LEG	N	INTER	N	CLR	ANGL-STP	01	NONE	0	TURN-R						02	
NO RPT	TU	0	MAIN ST		PRVTE	W -S													018	00
N	1P				PSNGR CAR	01	DRVR	NONE	29	F	OR-Y	OR<25							000	02
N	45 8 55.83	-122.35																		
N	21.2																			
00871	N N N 03/09/2018	16	LEROY AVE	3-LEG	N	INTER	N	RAIN	ANGL-OTH	01	NONE	0	STRGHT						02	
COUNTY	FR		MAIN ST		PRVTE	E -W													000	00
N	7A				PSNGR CAR	01	DRVR	INJB	33	F	OR-Y	OR<25							000	00
N	45 8 55.79	-122.35																		
N	21.09																			
00645	Y N N 02/19/2015	16	LEROY AVE	3-LEG	N	INTER	N	CLR	S-1STOP	01	NONE	0	STRGHT						013	01,07,29
CITY	TH		MAIN ST		PRVTE	W -E													000	00
N	6P				PSNGR CAR	01	DRVR	INJC	18	M	OR-Y	OR<25							047,043,026	038
N	45 8 55.77	-122.35																		
N	21.09																			
02552	N N N 06/07/2016	16	LEROY AVE	3-LEG	N	INTER	N	CLR	S-1STOP	01	NONE	0	STRGHT						07,29	
CITY	TU		MAIN ST		PRVTE	W -E													000	00
N	9A				PSNGR CAR	01	DRVR	NONE	29	F	OR-Y	OR<25							043,026	000
N	45 8 55.77	-122.35																		
N	21.09																			

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 assure 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.



CDS380  
06/22/2021

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING  
SHAWER AVE at MAIN ST, City of Molalla, Clackamas County, 01/01/2015 to 12/31/2019

1 - 3 of 3 Crash records shown.

SER#	P R J S W DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	TRLR QTY	OWNER	MOVE	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT. EVENT	CAUSE																					
INVEST	E A U I C O DAY	DIST	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	RNDBT	SURF	COLL	TRAF-	LESS	TRAF-	CONTL	(#LANES)	3-LEG	N	CLD	S-1STOP	01	NONE	0	STRGHT	SE-NW	01	DRVR	NONE	30	F	OR-Y	OR<25											
RD DFT	E L G N H R TIME	FROM	SECOND STREET	LOCNT	LOCN	INTER	SE	06	0	UNKNOWN	N	DRY	REAR	INJ	DAY	INJ	PSNGR	CAR	02	NONE	0	STOP	SE-NW	01	DRVR	NONE	63	F	OR-Y	OR<25	011	013	000	000	00	07					
UNLOC?	D C S V L K LAT	LONG	16	MAIN ST	16	MAIN ST	16	52.54	-122.34	49.95	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500	016100100500		
05465	N N N N N N 12/21/2017	TH	SHAWER AVE	SE	06	0	UNKNOWN	N	DRY	REAR	INJ	PSNGR	CAR	02	NONE	0	STOP	SE-NW	01	DRVR	NONE	30	F	OR-Y	OR<25	011	013	000	000	000	000	000	000	000	000	000	000	000	07		
N	45 8 52.54	-122.34	016100100500																																						
N	45 8 52.54	-122.34	49.95																																						
00527	N N N N N N 02/10/2015	19	MAIN ST	INTER	3-LEG	N	CLR	O-1STOP	01	LOG	1	BACK	01	DRVR	NONE	25	M	OR-Y	OR<25	011	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	10		
NONE	TU	0	SHAWER AVE	SW	06	0	STOP	SIGN	N	DRY	BACK	PRVTE	NE-SW	01	DRVR	NONE	25	M	OR-Y	OR<25	011	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
N	8A	45 8 52.54	-122.34																																						
N	45 8 52.54	-122.34	49.95																																						
00442	N N N N N N 02/04/2015	16	MAIN ST	INTER	3-LEG	N	CLR	S-1STOP	01	NONE	0	STRGHT	01	DRVR	NONE	30	M	OR-Y	OR<25	026	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	29	
NO RPT	WE		SHAWER AVE	NW	06	0	UNKNOWN	N	DRY	REAR	PDO	PSNGR	CAR	02	NONE	0	STOP	NW-SE	01	DRVR	NONE	35	M	OR-Y	OR<25	011	013	000	000	000	000	000	000	000	000	000	000	000	000	000	000
N	4P	45 8 52.54	-122.34																																						
N	45 8 52.54	-122.34	49.95																																						

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT  
 URBAN NON-SYSTEM CRASH LISTING  
**SHAVER AVE at SECTION ST, City of Molalla, Clackamas County, 01/01/2015 to 12/31/2019**

CDS380  
 06/22/2021

CITY OF MOLALLA, CLACKAMAS COUNTY

SER#	INVEST	RD DFT	UNLOC?	D M	R J S W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	TRLR QTY	MOVE	PH TYPE	SVRTY	E X RES	LOC	ACT EVENT	CAUSE
								FIRST STREET	DIRECT	(MEDIAN)		RNDBT	SURF	COLL	OWNER		FROM						
								SECOND STREET		LESS	TRAF-	DRVMY	LIGHT	SVRTY	VH TYPE		TO						
								LRS	LOCIN	(#LANES)	CONTL												

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

SECTION 01 at MOLALLA AVE, City of Molalla, Clackamas County, 01/01/2015 to 12/31/2019

CDS380  
06/22/2021

CITY OF MOLALLA, CLACKAMAS COUNTY

SER#	INVEST	RD DFT	UNLOC?	D C S V L K LAT	CLASS	DIST	FROM	LONG	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	COLL	SVRTY	DRVMY	LIGHT	SVRTY	VH TYPE	SPCL USE	TRLR QTY	OWNER	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE

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.

Appendix E  
Site Trip Generation Worksheets and In-Process Trip Diagrams

# Trip Generation Calculation Worksheet



Land Use Description: Manufacturing  
ITE Land Use Code: 140  
Independent Variable: Gross Floor Area  
Quantity: 80.5 Thousand Square Feet

## Summary of ITE Trip Generation Data

### **AM Peak Hour of Adjacent Street Traffic**

Trip Rate: 0.62 trips per ksf  
Directional Distribution: 88% Entering 12% Exiting

### **PM Peak Hour of Adjacent Street Traffic**

Trip Rate: 0.67 trips per ksf  
Directional Distribution: 13% Entering 87% Exiting

### **Total Weekday Traffic**

Trip Rate: 3.93 trips per ksf  
Directional Distribution: 50% Entering 50% Exiting

## Site Trip Generation Calculations

80.5 ksf Manufacturing

	Entering	Exiting	Total
AM Peak Hour	44	6	50
PM Peak Hour	7	47	54
Weekday	158	158	316

# Trip Generation Calculation Worksheet



Land Use Description: Warehousing  
ITE Land Use Code: 150  
Independent Variable: Gross Floor Area  
Quantity: 52.500 Thousand Square Feet

## Summary of ITE Trip Generation Data

### **AM Peak Hour of Adjacent Street Traffic**

Trip Rate: 0.17 trips per ksf  
Directional Distribution: 77% Entering 23% Exiting

### **PM Peak Hour of Adjacent Street Traffic**

Trip Rate: 0.19 trips per ksf  
Directional Distribution: 27% Entering 73% Exiting

### **Total Weekday Traffic**

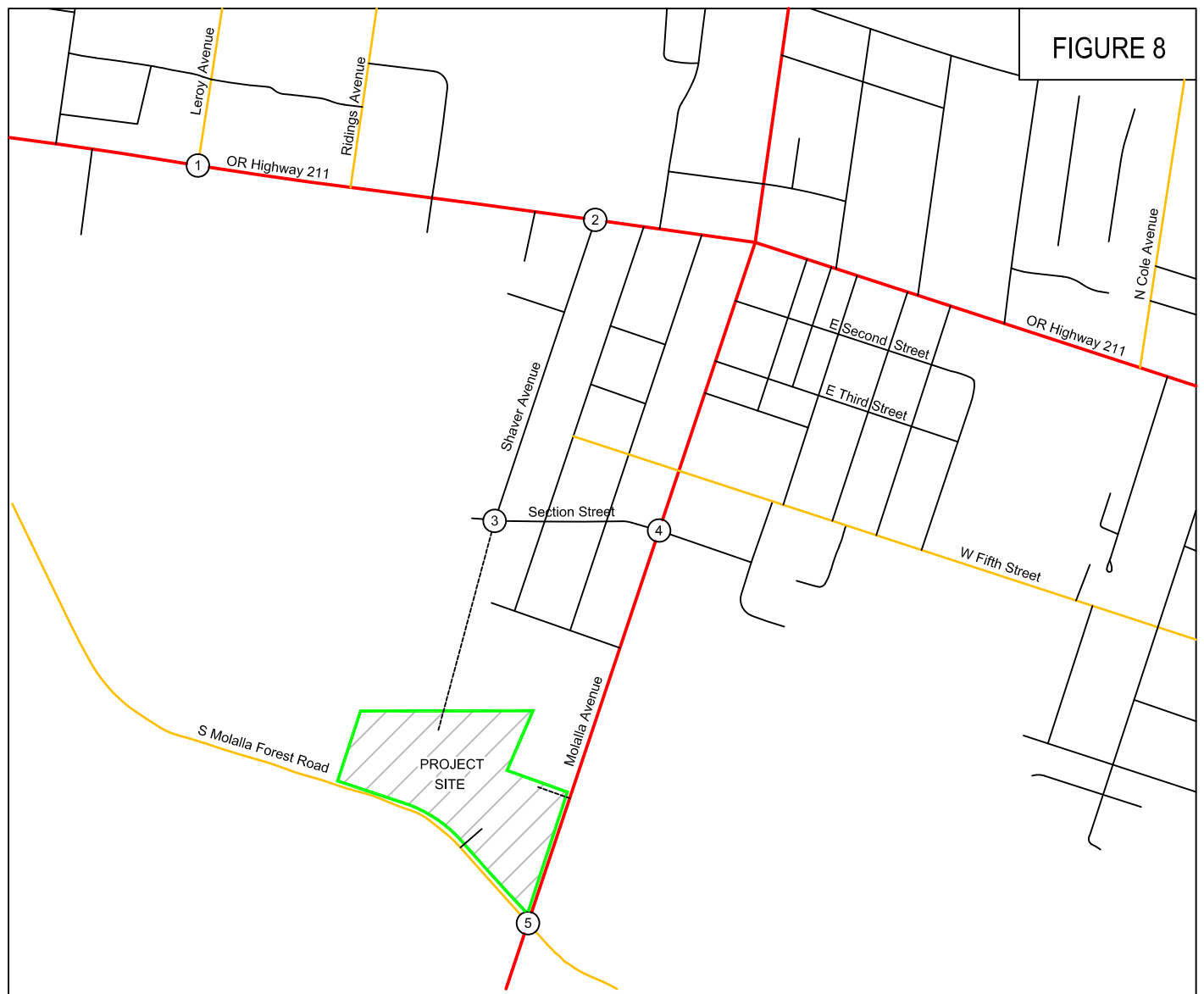
Trip Rate: 1.74 trips per ksf  
Directional Distribution: 50% Entering 50% Exiting

## Site Trip Generation Calculations

52.500 ksf Warehousing

	Entering	Exiting	Total
AM Peak Hour	7	2	9
PM Peak Hour	3	7	10
Weekday	46	46	92

FIGURE 8



AM		AM		AM		AM		AM																																																																																																					
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TRAFFIC VOLUMES  
 In-Process Development - Site Trips  
 Morning and Evening Peak Hours

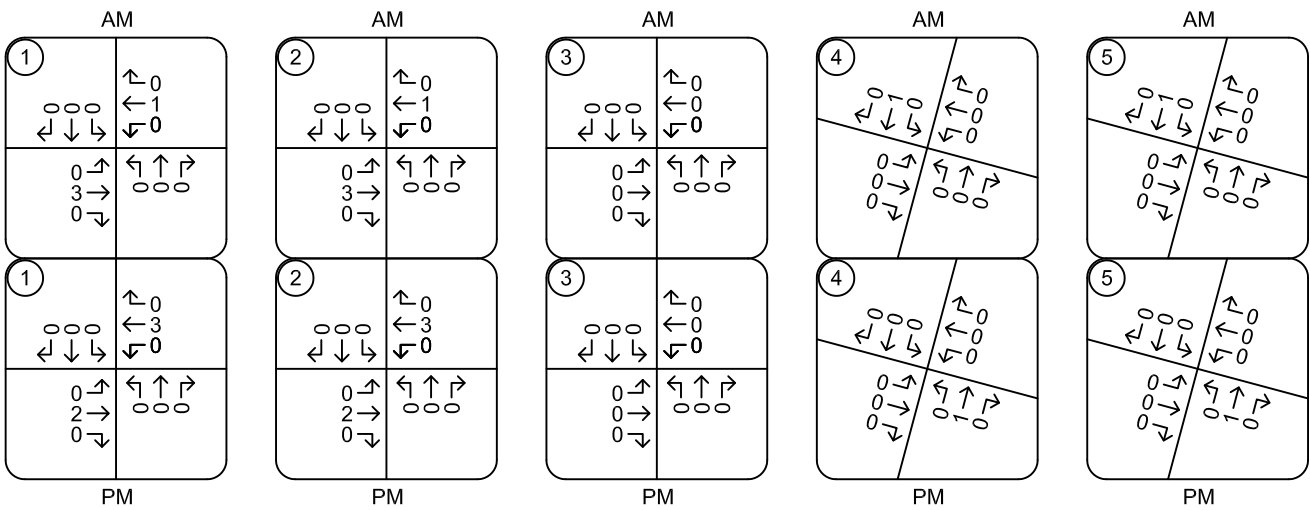
FIGURE 9



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FIGURE 10





Appendix F  
Year 2023 Background Conditions Operational Analysis Worksheets

HCM 6th TWSC  
1: Leroy Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	11.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Vol, veh/h	43	351	40	124	465	55	39	7	84	27	9	97
Future Vol, veh/h	43	351	40	124	465	55	39	7	84	27	9	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	10	2	2	12	2	2	2	2	2	2	18
Mvmt Flow	52	428	49	151	567	67	48	9	102	33	11	118

Major/Minor	Major1		Major2		Minor1			Minor2				
Conflicting Flow All	634	0	0	477	0	0	1524	1493	453	1515	1484	601
Stage 1	-	-	-	-	-	-	557	557	-	903	903	-
Stage 2	-	-	-	-	-	-	967	936	-	612	581	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.462
Pot Cap-1 Maneuver	949	-	-	1085	-	-	97	123	607	98	125	472
Stage 1	-	-	-	-	-	-	515	512	-	332	356	-
Stage 2	-	-	-	-	-	-	306	344	-	480	500	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	949	-	-	1085	-	-	57	100	607	65	102	472
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	100	-	65	102	-
Stage 1	-	-	-	-	-	-	487	484	-	314	307	-
Stage 2	-	-	-	-	-	-	190	296	-	370	473	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	1.7	68	38
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	57	437	949	-	-	1085	-	-	65	361
HCM Lane V/C Ratio	0.834	0.254	0.055	-	-	0.139	-	-	0.507	0.358
HCM Control Delay (s)	189.3	16	9	-	-	8.9	-	-	107.3	20.4
HCM Lane LOS	F	C	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	3.7	1	0.2	-	-	0.5	-	-	2	1.6

HCM 6th TWSC  
2: Shaver Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	435	28	7	623	1	21	1	6	0	1	1
Future Vol, veh/h	0	435	28	7	623	1	21	1	6	0	1	1
Conflicting Peds, #/hr	0	0	1	1	0	0	1	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	16	16	16	13	13	13	53	53	53	2	2	2
Mvmt Flow	0	489	31	8	700	1	24	1	7	0	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	701	0	0	521	0	0	1225	1223	507	1227	1238	702
Stage 1	-	-	-	-	-	-	506	506	-	717	717	-
Stage 2	-	-	-	-	-	-	719	717	-	510	521	-
Critical Hdwy	4.26	-	-	4.23	-	-	7.63	7.03	6.73	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.63	6.03	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.63	6.03	-	6.12	5.52	-
Follow-up Hdwy	2.344	-	-	2.317	-	-	3.977	4.477	3.777	3.518	4.018	3.318
Pot Cap-1 Maneuver	835	-	-	992	-	-	123	144	476	155	176	438
Stage 1	-	-	-	-	-	-	465	464	-	421	434	-
Stage 2	-	-	-	-	-	-	349	366	-	546	532	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	835	-	-	991	-	-	121	142	475	150	174	438
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	142	-	150	174	-
Stage 1	-	-	-	-	-	-	465	464	-	421	428	-
Stage 2	-	-	-	-	-	-	342	361	-	536	531	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			36.6			19.6		
HCM LOS							E			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	145	835	-	-	991	-	-	249
HCM Lane V/C Ratio	0.217	-	-	-	0.008	-	-	0.009
HCM Control Delay (s)	36.6	0	-	-	8.7	0	-	19.6
HCM Lane LOS	E	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0

HCM 6th TWSC  
3: Shaver Avenue & Section Street

07/23/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	0	0	0	0	18	0	0	0	12	1	14
Future Vol, veh/h	17	0	0	0	0	18	0	0	0	12	1	14
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	64	64	64	64	64	64	64	64	64
Heavy Vehicles, %	100	100	100	17	17	17	2	2	2	72	72	72
Mvmt Flow	27	0	0	0	0	28	0	0	0	19	2	22

Major/Minor	Minor2		Minor1			Major1			Major2		
Conflicting Flow All	65	51	13	51	62	0	24	0	0	0	0
Stage 1	51	51	-	0	0	-	-	-	-	-	-
Stage 2	14	0	-	51	62	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.27	6.67	6.37	4.12	-	-	4.82	-
Critical Hdwy Stg 1	7.1	6.5	-	6.27	5.67	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.27	5.67	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.653	4.153	3.453	2.218	-	-	2.848	-
Pot Cap-1 Maneuver	735	684	841	912	801	-	1591	-	-	-	-
Stage 1	763	694	-	-	-	-	-	-	-	-	-
Stage 2	803	-	-	925	815	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	684	841	912	801	-	1591	-	-	-	-
Mov Cap-2 Maneuver	-	684	-	912	801	-	-	-	-	-	-
Stage 1	763	694	-	-	-	-	-	-	-	-	-
Stage 2	803	-	-	925	815	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0			
HCM LOS	-			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	-	-	-
HCM Lane LOS	A	-	-	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

HCM 6th TWSC  
4: Molalla Avenue & Section Street

07/23/2021

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	11	0	0	9	6	164	0	1	69	3
Future Vol, veh/h	7	0	11	0	0	9	6	164	0	1	69	3
Conflicting Peds, #/hr	2	0	2	0	0	0	2	0	0	0	0	2
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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	50	50	50	2	2	2	4	4	4	10	10	10
Mvmt Flow	8	0	13	0	0	10	7	186	0	1	78	3

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	291	284	84	290	285	188	83	0	0	186	0	0
Stage 1	84	84	-	200	200	-	-	-	-	-	-	-
Stage 2	207	200	-	90	85	-	-	-	-	-	-	-
Critical Hdwy	7.6	7	6.7	7.12	6.52	6.22	4.14	-	-	4.2	-	-
Critical Hdwy Stg 1	6.6	6	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	6	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.45	3.75	3.518	4.018	3.318	2.236	-	-	2.29	-	-
Pot Cap-1 Maneuver	576	552	858	662	624	854	1501	-	-	1342	-	-
Stage 1	818	740	-	802	736	-	-	-	-	-	-	-
Stage 2	697	654	-	917	824	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	564	548	855	648	619	852	1498	-	-	1342	-	-
Mov Cap-2 Maneuver	564	548	-	648	619	-	-	-	-	-	-	-
Stage 1	812	738	-	798	732	-	-	-	-	-	-	-
Stage 2	684	651	-	901	822	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.2		9.3		0.3		0.1	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1498	-	-	712	852	1342	-	-
HCM Lane V/C Ratio	0.005	-	-	0.029	0.012	0.001	-	-
HCM Control Delay (s)	7.4	0	-	10.2	9.3	7.7	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th TWSC  
 5: Molalla Avenue & Molalla Forest Road

07/23/2021

Intersection												
Int Delay, s/veh	0.1											
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	169	1	0	85	0	0	0	0	0	0	3
Future Vol, veh/h	0	169	1	0	85	0	0	0	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	4	4	4	17	17	17	0	0	0	50	50	50
Mvmt Flow	0	219	1	0	110	0	0	0	0	0	0	4

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	110	0	0	220	0	0	332	330	110	330	330	220
Stage 1	-	-	-	-	-	-	110	110	-	220	220	-
Stage 2	-	-	-	-	-	-	222	220	-	110	110	-
Critical Hdwy	4.14	-	-	4.27	-	-	7.1	6.5	6.2	7.6	7	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.6	6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.6	6	-
Follow-up Hdwy	2.236	-	-	2.353	-	-	3.5	4	3.3	3.95	4.45	3.75
Pot Cap-1 Maneuver	1468	-	-	1265	-	-	625	592	949	541	519	713
Stage 1	-	-	-	-	-	-	900	808	-	685	640	-
Stage 2	-	-	-	-	-	-	785	725	-	791	720	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1468	-	-	1265	-	-	622	592	949	541	519	713
Mov Cap-2 Maneuver	-	-	-	-	-	-	622	592	-	541	519	-
Stage 1	-	-	-	-	-	-	900	808	-	685	640	-
Stage 2	-	-	-	-	-	-	781	725	-	791	720	-

Approach	NB	SB	SE	NW
HCM Control Delay, s	0	0	0	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBL	NBT	NBRNWLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	1468	-	-	713	-	1265	-
HCM Lane V/C Ratio	-	-	-	0.005	-	-	-
HCM Control Delay (s)	0	-	-	10.1	0	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

HCM 6th TWSC  
1: Leroy Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	18.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Vol, veh/h	48	644	50	123	621	57	45	8	111	19	10	66
Future Vol, veh/h	48	644	50	123	621	57	45	8	111	19	10	66
Conflicting Peds, #/hr	4	0	0	0	0	3	0	0	0	3	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	7	2	2	8	2	2	2	2	2	2	2
Mvmt Flow	52	700	54	134	675	62	49	9	121	21	11	72

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	741	0	0	754	0	0	1851	1840	730	1877	1836	714
Stage 1	-	-	-	-	-	-	831	831	-	978	978	-
Stage 2	-	-	-	-	-	-	1020	1009	-	899	858	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	866	-	-	856	-	-	57	75	422	55	76	431
Stage 1	-	-	-	-	-	-	364	384	-	301	329	-
Stage 2	-	-	-	-	-	-	285	318	-	334	374	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	863	-	-	856	-	-	~ 34	59	421	29	60	428
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 34	59	-	29	60	-
Stage 1	-	-	-	-	-	-	342	361	-	282	276	-
Stage 2	-	-	-	-	-	-	191	267	-	218	352	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.6		1.5		153.2		77.3	
HCM LOS					F		F	

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	34	298	863	-	-	856	-	-	29	237
HCM Lane V/C Ratio	1.439	0.434	0.06	-	-	0.156	-	-	0.712	0.349
HCM Control Delay (s)	\$ 489.4	26	9.4	-	-	10	-	-	274.1	28.1
HCM Lane LOS	F	D	A	-	-	A	-	-	F	D
HCM 95th %tile Q(veh)	5.3	2.1	0.2	-	-	0.6	-	-	2.3	1.5

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

HCM 6th TWSC  
2: Shaver Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	747	26	15	792	0	9	0	23	0	1	0
Future Vol, veh/h	1	747	26	15	792	0	9	0	23	0	1	0
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	4	4	4	2	2	2	2	2	2
Mvmt Flow	1	859	30	17	910	0	10	0	26	0	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	912	0	0	891	0	0	1825	1824	878	1837	1839	914
Stage 1	-	-	-	-	-	-	878	878	-	946	946	-
Stage 2	-	-	-	-	-	-	947	946	-	891	893	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	739	-	-	752	-	-	59	77	347	58	75	331
Stage 1	-	-	-	-	-	-	343	366	-	314	340	-
Stage 2	-	-	-	-	-	-	314	340	-	337	360	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	738	-	-	751	-	-	56	73	346	51	71	330
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	73	-	51	71	-
Stage 1	-	-	-	-	-	-	341	364	-	312	324	-
Stage 2	-	-	-	-	-	-	298	324	-	310	358	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			39.3			56.5		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	141	738	-	-	751	-	-	71
HCM Lane V/C Ratio	0.261	0.002	-	-	0.023	-	-	0.016
HCM Control Delay (s)	39.3	9.9	0	-	9.9	0	-	56.5
HCM Lane LOS	E	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	0



HCM 6th TWSC  
3: Shaver Avenue & Section Street

07/23/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	50	0	0	0	53	0	0
Future Vol, veh/h	0	0	0	0	0	50	0	0	0	53	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	68	0	0	0	72	0	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	178	144	0	144	144	0	0	0	0	0	0	0
Stage 1	144	144	-	0	0	-	-	-	-	-	-	-
Stage 2	34	0	-	144	144	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	784	747	-	825	747	-	-	-	-	-	-	-
Stage 1	859	778	-	-	-	-	-	-	-	-	-	-
Stage 2	982	-	-	859	778	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	-	747	-	-	747	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	747	-	-	747	-	-	-	-	-	-	-
Stage 1	859	778	-	-	-	-	-	-	-	-	-	-
Stage 2	982	-	-	859	778	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0		0	
HCM LOS	A	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	-	-
HCM Lane LOS	A	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-	-	-

HCM 6th TWSC  
4: Molalla Avenue & Section Street

07/23/2021

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	1	6	0	1	4	4	137	4	14	171	18
Future Vol, veh/h	22	1	6	0	1	4	4	137	4	14	171	18
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	2	2	2	6	6	6	1	1	1
Mvmt Flow	26	1	7	0	1	5	5	159	5	16	199	21

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	417	416	210	418	424	162	220	0	0	164	0	0
Stage 1	242	242	-	172	172	-	-	-	-	-	-	-
Stage 2	175	174	-	246	252	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.12	6.52	6.22	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.518	4.018	3.318	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	543	524	825	545	522	883	1326	-	-	1421	-	-
Stage 1	757	702	-	830	756	-	-	-	-	-	-	-
Stage 2	822	751	-	758	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	532	515	825	532	513	883	1326	-	-	1421	-	-
Mov Cap-2 Maneuver	532	515	-	532	513	-	-	-	-	-	-	-
Stage 1	754	693	-	827	753	-	-	-	-	-	-	-
Stage 2	813	748	-	741	689	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.7		9.7		0.2		0.5	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1326	-	-	573	772	1421	-	-
HCM Lane V/C Ratio	0.004	-	-	0.059	0.008	0.011	-	-
HCM Control Delay (s)	7.7	0	-	11.7	9.7	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 6th TWSC  
5: Molalla Avenue & Molalla Forest Road

07/23/2021

Intersection												
Int Delay, s/veh	0.4											
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	138	1	0	183	0	4	0	1	4	0	1
Future Vol, veh/h	1	138	1	0	183	0	4	0	1	4	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	159	1	0	210	0	5	0	1	5	0	1

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	210	0	0	160	0	0	372	372	210	373	372	160
Stage 1	-	-	-	-	-	-	210	210	-	162	162	-
Stage 2	-	-	-	-	-	-	162	162	-	211	210	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1331	-	-	1419	-	-	585	558	830	584	558	885
Stage 1	-	-	-	-	-	-	792	728	-	840	764	-
Stage 2	-	-	-	-	-	-	840	764	-	791	728	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1331	-	-	1419	-	-	584	557	830	583	557	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	584	557	-	583	557	-
Stage 1	-	-	-	-	-	-	791	728	-	839	763	-
Stage 2	-	-	-	-	-	-	838	763	-	790	728	-

Approach	NB	SB	SE	NW
HCM Control Delay, s	0.1	0	10.9	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBL	NBT	NBR	NWLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	1331	-	-	626	621	1419	-	-
HCM Lane V/C Ratio	0.001	-	-	0.009	0.009	-	-	-
HCM Control Delay (s)	7.7	0	-	10.8	10.9	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Appendix G  
Year 2023 Total Traffic Conditions Operational Analysis Worksheets

HCM 6th TWSC  
1: Leroy Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	12.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Vol, veh/h	43	371	40	124	468	55	39	7	84	27	9	97
Future Vol, veh/h	43	371	40	124	468	55	39	7	84	27	9	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	10	2	2	12	2	2	2	2	2	2	18
Mvmt Flow	52	452	49	151	571	67	48	9	102	33	11	118

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	501	0	0	1552	1521	477	1543	1512	605
Stage 1	-	-	-	-	-	-	581	581	-	907	907	-
Stage 2	-	-	-	-	-	-	971	940	-	636	605	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.462
Pot Cap-1 Maneuver	946	-	-	1063	-	-	92	118	588	94	120	469
Stage 1	-	-	-	-	-	-	499	500	-	330	355	-
Stage 2	-	-	-	-	-	-	304	342	-	466	487	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	946	-	-	1063	-	-	54	96	588	62	97	469
Mov Cap-2 Maneuver	-	-	-	-	-	-	54	96	-	62	97	-
Stage 1	-	-	-	-	-	-	472	473	-	312	305	-
Stage 2	-	-	-	-	-	-	188	293	-	357	460	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			1.7			74.4			40.1		
HCM LOS							F			E		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	54	422	946	-	-	1063	-	-	62	354
HCM Lane V/C Ratio	0.881	0.263	0.055	-	-	0.142	-	-	0.531	0.365
HCM Control Delay (s)	209.6	16.5	9	-	-	8.9	-	-	115.7	20.9
HCM Lane LOS	F	C	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	3.8	1	0.2	-	-	0.5	-	-	2.1	1.6

HCM 6th TWSC  
2: Shaver Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	455	28	7	626	1	21	1	6	0	1	1
Future Vol, veh/h	0	455	28	7	626	1	21	1	6	0	1	1
Conflicting Peds, #/hr	0	0	1	1	0	0	1	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	16	16	16	13	13	13	53	53	53	2	2	2
Mvmt Flow	0	511	31	8	703	1	24	1	7	0	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	704	0	0	543	0	0	1250	1248	529	1252	1263	705
Stage 1	-	-	-	-	-	-	528	528	-	720	720	-
Stage 2	-	-	-	-	-	-	722	720	-	532	543	-
Critical Hdwy	4.26	-	-	4.23	-	-	7.63	7.03	6.73	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.63	6.03	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.63	6.03	-	6.12	5.52	-
Follow-up Hdwy	2.344	-	-	2.317	-	-	3.977	4.477	3.777	3.518	4.018	3.318
Pot Cap-1 Maneuver	832	-	-	973	-	-	118	138	462	149	170	436
Stage 1	-	-	-	-	-	-	452	453	-	419	432	-
Stage 2	-	-	-	-	-	-	348	364	-	531	520	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	832	-	-	972	-	-	116	136	461	144	167	436
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	136	-	144	167	-
Stage 1	-	-	-	-	-	-	452	453	-	419	426	-
Stage 2	-	-	-	-	-	-	341	359	-	521	519	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			38.3			20.1		
HCM LOS							E			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	139	832	-	-	972	-	-	241
HCM Lane V/C Ratio	0.226	-	-	-	0.008	-	-	0.009
HCM Control Delay (s)	38.3	0	-	-	8.7	0	-	20.1
HCM Lane LOS	E	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0

HCM 6th TWSC  
3: Shaver Avenue & Section Street

07/23/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	0	0	0	0	18	0	0	0	12	1	14
Future Vol, veh/h	17	0	0	0	0	18	0	0	0	12	1	14
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	64	64	64	64	64	64	64	64	64
Heavy Vehicles, %	100	100	100	17	17	17	2	2	2	72	72	72
Mvmt Flow	27	0	0	0	0	28	0	0	0	19	2	22

Major/Minor	Minor2		Minor1			Major1			Major2		
Conflicting Flow All	65	51	13	51	62	0	24	0	0	0	0
Stage 1	51	51	-	0	0	-	-	-	-	-	-
Stage 2	14	0	-	51	62	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.27	6.67	6.37	4.12	-	-	4.82	-
Critical Hdwy Stg 1	7.1	6.5	-	6.27	5.67	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.27	5.67	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.653	4.153	3.453	2.218	-	-	2.848	-
Pot Cap-1 Maneuver	735	684	841	912	801	-	1591	-	-	-	-
Stage 1	763	694	-	-	-	-	-	-	-	-	-
Stage 2	803	-	-	925	815	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	684	841	912	801	-	1591	-	-	-	-
Mov Cap-2 Maneuver	-	684	-	912	801	-	-	-	-	-	-
Stage 1	763	694	-	-	-	-	-	-	-	-	-
Stage 2	803	-	-	925	815	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0			
HCM LOS	-			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	-	-	-
HCM Lane LOS	A	-	-	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

HCM 6th TWSC  
4: Molalla Avenue & Section Street

07/23/2021

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	11	0	0	9	6	171	0	1	115	3
Future Vol, veh/h	7	0	11	0	0	9	6	171	0	1	115	3
Conflicting Peds, #/hr	2	0	2	0	0	0	2	0	0	0	0	2
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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	50	50	50	2	2	2	4	4	4	10	18	10
Mvmt Flow	8	0	13	0	0	10	7	194	0	1	131	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	352	345	137	351	346	196	136	0	0	194	0	0
Stage 1	137	137	-	208	208	-	-	-	-	-	-	-
Stage 2	215	208	-	143	138	-	-	-	-	-	-	-
Critical Hdwy	7.6	7	6.7	7.12	6.52	6.22	4.14	-	-	4.2	-	-
Critical Hdwy Stg 1	6.6	6	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	6	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.45	3.75	3.518	4.018	3.318	2.236	-	-	2.29	-	-
Pot Cap-1 Maneuver	523	508	798	604	577	845	1436	-	-	1333	-	-
Stage 1	764	700	-	794	730	-	-	-	-	-	-	-
Stage 2	690	649	-	860	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	513	504	795	591	572	843	1433	-	-	1333	-	-
Mov Cap-2 Maneuver	513	504	-	591	572	-	-	-	-	-	-	-
Stage 1	759	698	-	790	726	-	-	-	-	-	-	-
Stage 2	677	646	-	844	780	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.7		9.3		0.3		0.1	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1433	-	-	655	843	1333	-	-
HCM Lane V/C Ratio	0.005	-	-	0.031	0.012	0.001	-	-
HCM Control Delay (s)	7.5	0	-	10.7	9.3	7.7	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-



HCM 6th TWSC  
 5: Molalla Avenue & Molalla Forest Road

07/23/2021

Intersection												
Int Delay, s/veh	0.3											
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	171	1	0	86	23	4	0	0	0	0	3
Future Vol, veh/h	3	171	1	0	86	23	4	0	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	4	4	4	17	17	17	0	0	0	50	50	50
Mvmt Flow	4	222	1	0	112	30	5	0	0	0	0	4

Major/Minor	Major1	Major2	Minor2	Minor1
Conflicting Flow All	142	0	0	223
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.27
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.236	-	-	2.353
Pot Cap-1 Maneuver	1429	-	-	1262
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1429	-	-	1262
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	NB	SB	SE	NW
HCM Control Delay, s	0.1	0	11.1	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBL	NBT	NBR	NWLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	1429	-	-	710	594	1262	-	-
HCM Lane V/C Ratio	0.003	-	-	0.005	0.009	-	-	-
HCM Control Delay (s)	7.5	0	-	10.1	11.1	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1	2	176	108	23
Future Vol, veh/h	3	1	2	176	108	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	50	50	50	4	17	50
Mvmt Flow	4	1	3	229	140	30

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	390	155	170	0	0
Stage 1	155	-	-	-	-
Stage 2	235	-	-	-	-
Critical Hdwy	6.9	6.7	4.6	-	-
Critical Hdwy Stg 1	5.9	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-
Follow-up Hdwy	3.95	3.75	2.65	-	-
Pot Cap-1 Maneuver	530	779	1163	-	-
Stage 1	769	-	-	-	-
Stage 2	703	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	528	779	1163	-	-
Mov Cap-2 Maneuver	528	-	-	-	-
Stage 1	767	-	-	-	-
Stage 2	703	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1163	-	574	-	-
HCM Lane V/C Ratio	0.002	-	0.009	-	-
HCM Control Delay (s)	8.1	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
 7: Molalla Forest Road & Site Access B

07/23/2021

Intersection						
Int Delay, s/veh	1.1					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	0	0	0	26	4	0
Future Vol, veh/h	0	0	0	26	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	34	5	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	34	0	-	0	18
Stage 1	-	-	-	-	17
Stage 2	-	-	-	-	1
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1578	-	-	-	1000
Stage 1	-	-	-	-	1006
Stage 2	-	-	-	-	1022
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1578	-	-	-	1000
Mov Cap-2 Maneuver	-	-	-	-	1000
Stage 1	-	-	-	-	1006
Stage 2	-	-	-	-	1022

Approach	SE	NW	SW
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1578	-
HCM Lane V/C Ratio	-	-	-	0.005
HCM Control Delay (s)	-	-	0	8.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
1: Leroy Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	20.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Vol, veh/h	48	648	50	123	643	57	45	8	111	19	10	66
Future Vol, veh/h	48	648	50	123	643	57	45	8	111	19	10	66
Conflicting Peds, #/hr	4	0	0	0	0	3	0	0	0	3	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	7	2	2	8	2	2	2	2	2	2	2
Mvmt Flow	52	704	54	134	699	62	49	9	121	21	11	72

Major/Minor	Major1		Major2		Minor1			Minor2				
Conflicting Flow All	765	0	0	758	0	0	1879	1868	734	1905	1864	738
Stage 1	-	-	-	-	-	-	835	835	-	1002	1002	-
Stage 2	-	-	-	-	-	-	1044	1033	-	903	862	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	848	-	-	853	-	-	54	72	420	52	73	418
Stage 1	-	-	-	-	-	-	362	383	-	292	320	-
Stage 2	-	-	-	-	-	-	277	310	-	332	372	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	845	-	-	853	-	-	~ 32	57	419	27	58	415
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 32	57	-	27	58	-
Stage 1	-	-	-	-	-	-	340	359	-	273	269	-
Stage 2	-	-	-	-	-	-	185	260	-	216	349	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.6		1.5		167.1		84.7	
HCM LOS					F		F	

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	32	294	845	-	-	853	-	-	27	229
HCM Lane V/C Ratio	1.529	0.44	0.062	-	-	0.157	-	-	0.765	0.361
HCM Control Delay (s)	\$ 538.9	26.5	9.5	-	-	10	-	-	\$ 306.1	29.3
HCM Lane LOS	F	D	A	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	5.5	2.1	0.2	-	-	0.6	-	-	2.4	1.6

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

HCM 6th TWSC  
2: Shaver Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	751	26	15	814	0	9	0	23	0	1	0
Future Vol, veh/h	1	751	26	15	814	0	9	0	23	0	1	0
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	4	4	4	2	2	2	2	2	2
Mvmt Flow	1	863	30	17	936	0	10	0	26	0	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	938	0	0	895	0	0	1855	1854	882	1867	1869	940
Stage 1	-	-	-	-	-	-	882	882	-	972	972	-
Stage 2	-	-	-	-	-	-	973	972	-	895	897	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	722	-	-	750	-	-	57	74	345	55	72	320
Stage 1	-	-	-	-	-	-	341	364	-	304	331	-
Stage 2	-	-	-	-	-	-	303	331	-	335	358	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	721	-	-	749	-	-	54	70	344	49	68	319
Mov Cap-2 Maneuver	-	-	-	-	-	-	54	70	-	49	68	-
Stage 1	-	-	-	-	-	-	339	362	-	302	315	-
Stage 2	-	-	-	-	-	-	287	315	-	308	356	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			40.7			58.9		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	137	721	-	-	749	-	-	68
HCM Lane V/C Ratio	0.268	0.002	-	-	0.023	-	-	0.017
HCM Control Delay (s)	40.7	10	0	-	9.9	0	-	58.9
HCM Lane LOS	E	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	0.1

HCM 6th TWSC  
3: Shaver Avenue & Section Street

07/23/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	50	0	0	0	53	0	0
Future Vol, veh/h	0	0	0	0	0	50	0	0	0	53	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	68	0	0	0	72	0	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	178	144	0	144	144	0	0	0	0	0	0	0
Stage 1	144	144	-	0	0	-	-	-	-	-	-	-
Stage 2	34	0	-	144	144	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	784	747	-	825	747	-	-	-	-	-	-	-
Stage 1	859	778	-	-	-	-	-	-	-	-	-	-
Stage 2	982	-	-	859	778	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	747	-	-	747	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	747	-	-	747	-	-	-	-	-	-	-
Stage 1	859	778	-	-	-	-	-	-	-	-	-	-
Stage 2	982	-	-	859	778	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0		0	
HCM LOS	A	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	-	-
HCM Lane LOS	A	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-	-	-

HCM 6th TWSC  
4: Molalla Avenue & Section Street

07/23/2021

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	22	1	6	0	1	4	4	186	4	14	180	18
Future Vol, veh/h	22	1	6	0	1	4	4	186	4	14	180	18
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	2	2	2	6	12	6	1	1	1
Mvmt Flow	26	1	7	0	1	5	5	216	5	16	209	21

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	484	483	220	485	491	219	230	0	0	221	0	0
Stage 1	252	252	-	229	229	-	-	-	-	-	-	-
Stage 2	232	231	-	256	262	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.12	6.52	6.22	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.518	4.018	3.318	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	490	480	815	492	478	821	1315	-	-	1354	-	-
Stage 1	748	695	-	774	715	-	-	-	-	-	-	-
Stage 2	766	710	-	749	691	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	480	471	815	480	469	821	1315	-	-	1354	-	-
Mov Cap-2 Maneuver	480	471	-	480	469	-	-	-	-	-	-	-
Stage 1	745	685	-	771	712	-	-	-	-	-	-	-
Stage 2	757	707	-	731	681	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	10.1	0.2	0.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1315	-	-	524	714	1354	-	-
HCM Lane V/C Ratio	0.004	-	-	0.064	0.008	0.012	-	-
HCM Control Delay (s)	7.7	0	-	12.3	10.1	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 6th TWSC  
5: Molalla Avenue & Molalla Forest Road

07/23/2021

Intersection												
Int Delay, s/veh	1.2											
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	138	1	0	186	4	29	0	3	4	0	1
Future Vol, veh/h	2	138	1	0	186	4	29	0	3	4	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	159	1	0	214	5	33	0	3	5	0	1

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	219	0	0	160	0	0	381	381	217	382	383	160
Stage 1	-	-	-	-	-	-	217	217	-	164	164	-
Stage 2	-	-	-	-	-	-	164	164	-	218	219	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1321	-	-	1419	-	-	577	552	823	576	550	885
Stage 1	-	-	-	-	-	-	785	723	-	838	762	-
Stage 2	-	-	-	-	-	-	838	762	-	784	722	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1321	-	-	1419	-	-	575	551	823	573	549	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	575	551	-	573	549	-
Stage 1	-	-	-	-	-	-	783	723	-	836	760	-
Stage 2	-	-	-	-	-	-	835	760	-	781	722	-

Approach	NB	SB	SE	NW
HCM Control Delay, s	0.1	0	11.5	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBL	NBT	NBR	NWLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	1321	-	-	616	592	1419	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.062	-	-	-
HCM Control Delay (s)	7.7	0	-	10.9	11.5	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-



HCM 6th TWSC  
6: Molalla Avenue & Site Access A

07/23/2021

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	24	3	0	170	187	5
Future Vol, veh/h	24	3	0	170	187	5
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	87	87	87	87	87	87
Heavy Vehicles, %	50	50	50	7	2	50
Mvmt Flow	28	3	0	195	215	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	413	218	221	0	0
Stage 1	218	-	-	-	-
Stage 2	195	-	-	-	-
Critical Hdwy	6.9	6.7	4.6	-	-
Critical Hdwy Stg 1	5.9	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-
Follow-up Hdwy	3.95	3.75	2.65	-	-
Pot Cap-1 Maneuver	514	715	1110	-	-
Stage 1	717	-	-	-	-
Stage 2	735	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	514	715	1110	-	-
Mov Cap-2 Maneuver	514	-	-	-	-
Stage 1	717	-	-	-	-
Stage 2	735	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1110	-	531	-	-
HCM Lane V/C Ratio	-	-	0.058	-	-
HCM Control Delay (s)	0	-	12.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th TWSC  
 7: Molalla Forest Road & Site Access B

07/23/2021

Intersection						
Int Delay, s/veh	6.2					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↔		↕	
Traffic Vol, veh/h	0	5	1	5	27	0
Future Vol, veh/h	0	5	1	5	27	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	6	1	6	31	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	7	0	-	0	10
Stage 1	-	-	-	-	4
Stage 2	-	-	-	-	6
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1614	-	-	-	1010
Stage 1	-	-	-	-	1019
Stage 2	-	-	-	-	1017
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1614	-	-	-	1010
Mov Cap-2 Maneuver	-	-	-	-	1010
Stage 1	-	-	-	-	1019
Stage 2	-	-	-	-	1017

Approach	SE	NW	SW
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1614	-
HCM Lane V/C Ratio	-	-	-	0.031
HCM Control Delay (s)	-	-	0	8.7
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0.1

HCM 6th TWSC  
1: Leroy Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	8.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Vol, veh/h	43	371	40	124	468	55	24	7	84	27	9	97
Future Vol, veh/h	43	371	40	124	468	55	24	7	84	27	9	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	10	2	2	12	2	2	2	2	2	2	18
Mvmt Flow	52	452	49	151	571	67	29	9	102	33	11	118

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	501	0	0	1552	1521	477	1543	1512	605
Stage 1	-	-	-	-	-	-	581	581	-	907	907	-
Stage 2	-	-	-	-	-	-	971	940	-	636	605	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.462
Pot Cap-1 Maneuver	946	-	-	1063	-	-	92	118	588	94	120	469
Stage 1	-	-	-	-	-	-	499	500	-	330	355	-
Stage 2	-	-	-	-	-	-	304	342	-	466	487	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	946	-	-	1063	-	-	54	96	588	62	97	469
Mov Cap-2 Maneuver	-	-	-	-	-	-	54	96	-	62	97	-
Stage 1	-	-	-	-	-	-	472	473	-	312	305	-
Stage 2	-	-	-	-	-	-	188	293	-	357	460	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	1.7	40.7	40.1
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	54	422	946	-	-	1063	-	-	62	354
HCM Lane V/C Ratio	0.542	0.263	0.055	-	-	0.142	-	-	0.531	0.365
HCM Control Delay (s)	132.6	16.5	9	-	-	8.9	-	-	115.7	20.9
HCM Lane LOS	F	C	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	2.1	1	0.2	-	-	0.5	-	-	2.1	1.6

HCM 6th TWSC  
8: Cascade Center & Highway 211

07/23/2021

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	412	73	59	530	92	42
Future Vol, veh/h	412	73	59	530	92	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	10	2	2	12	2	2
Mvmt Flow	502	89	72	646	112	51

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	591	0	1337 547
Stage 1	-	-	-	-	547 -
Stage 2	-	-	-	-	790 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	985	-	169 537
Stage 1	-	-	-	-	580 -
Stage 2	-	-	-	-	447 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	985	-	157 537
Mov Cap-2 Maneuver	-	-	-	-	289 -
Stage 1	-	-	-	-	580 -
Stage 2	-	-	-	-	414 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	25.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	338	-	-	985	-
HCM Lane V/C Ratio	0.483	-	-	0.073	-
HCM Control Delay (s)	25.2	-	-	8.9	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	2.5	-	-	0.2	-

HCM 6th TWSC  
1: Leroy Avenue & Highway 211

07/23/2021

Intersection												
Int Delay, s/veh	9.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Vol, veh/h	48	648	50	123	643	57	20	8	111	19	10	66
Future Vol, veh/h	48	648	50	123	643	57	20	8	111	19	10	66
Conflicting Peds, #/hr	4	0	0	0	0	3	0	0	0	3	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	7	2	2	8	2	2	2	2	2	2	2
Mvmt Flow	52	704	54	134	699	62	22	9	121	21	11	72

Major/Minor	Major1		Major2		Minor1			Minor2				
Conflicting Flow All	765	0	0	758	0	0	1879	1868	734	1905	1864	738
Stage 1	-	-	-	-	-	-	835	835	-	1002	1002	-
Stage 2	-	-	-	-	-	-	1044	1033	-	903	862	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	848	-	-	853	-	-	54	72	420	52	73	418
Stage 1	-	-	-	-	-	-	362	383	-	292	320	-
Stage 2	-	-	-	-	-	-	277	310	-	332	372	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	845	-	-	853	-	-	32	57	419	27	58	415
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	57	-	27	58	-
Stage 1	-	-	-	-	-	-	340	359	-	273	269	-
Stage 2	-	-	-	-	-	-	185	260	-	216	349	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	0.6		1.5		57.8			84.7		
HCM LOS					F			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	32	294	845	-	-	853	-	-	27	229
HCM Lane V/C Ratio	0.679	0.44	0.062	-	-	0.157	-	-	0.765	0.361
HCM Control Delay (s)	244.3	26.5	9.5	-	-	10	-	-	306.1	29.3
HCM Lane LOS	F	D	A	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	2.3	2.1	0.2	-	-	0.6	-	-	2.4	1.6

HCM 6th TWSC  
8: Cascade Center & Highway 211

07/23/2021

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻		↻	↻	↻	
Traffic Vol, veh/h	698	82	56	673	100	48
Future Vol, veh/h	698	82	56	673	100	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	2	2	8	2	2
Mvmt Flow	759	89	61	732	109	52

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	848	0	1658 804
Stage 1	-	-	-	-	804 -
Stage 2	-	-	-	-	854 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	790	-	~ 107 383
Stage 1	-	-	-	-	440 -
Stage 2	-	-	-	-	417 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	790	-	~ 99 383
Mov Cap-2 Maneuver	-	-	-	-	232 -
Stage 1	-	-	-	-	440 -
Stage 2	-	-	-	-	385 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	37.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	266	-	-	790	-
HCM Lane V/C Ratio	0.605	-	-	0.077	-
HCM Control Delay (s)	37.3	-	-	9.9	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	3.6	-	-	0.2	-

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Appendix H  
Year 2023 Total Traffic Conditions Queueing Analysis Worksheets

Intersection: 1: Leroy Avenue & Highway 211

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	52	24	69	12	54	93	98	144
Average Queue (ft)	17	1	31	1	15	41	25	57
95th Queue (ft)	45	13	62	7	44	74	62	111
Link Distance (ft)		317		2202		535		819
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150		150		100		100	
Storage Blk Time (%)					0	0	0	3
Queuing Penalty (veh)					0	0	0	1

Intersection: 2: Shaver Avenue & Highway 211

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	16	67	78	32
Average Queue (ft)	1	6	27	3
95th Queue (ft)	8	37	69	16
Link Distance (ft)	2202	879	1716	163
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Shaver Avenue & Section Street

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	77	58
Average Queue (ft)	22	15
95th Queue (ft)	67	45
Link Distance (ft)	136	858
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		



Intersection: 4: Molalla Avenue & Section Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	77	28	17	8
Average Queue (ft)	19	6	1	0
95th Queue (ft)	60	25	10	6
Link Distance (ft)	858	409	1113	648
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Molalla Avenue & Molalla Forest Road

Movement	NB	SE	NW
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	4	16	32
Average Queue (ft)	0	3	3
95th Queue (ft)	3	12	20
Link Distance (ft)	535	436	526
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Molalla Avenue & Site Access A

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	56	27
Average Queue (ft)	6	1
95th Queue (ft)	33	13
Link Distance (ft)	237	1096
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Molalla Forest Road & Site Access B

Movement	SW
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	152
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Cascade Center & Highway 211

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	48	148
Average Queue (ft)	16	57
95th Queue (ft)	42	106
Link Distance (ft)		282
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	75	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Network Summary

Network wide Queuing Penalty: 1
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Intersection: 1: Leroy Avenue & Highway 211

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	55	52	86	86	91	146	82	109
Average Queue (ft)	22	4	38	6	21	54	18	38
95th Queue (ft)	49	23	69	37	58	106	54	75
Link Distance (ft)		317		2202		535		819
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150		150		100		100	
Storage Blk Time (%)				0		2	0	1
Queuing Penalty (veh)				0		0	0	0

Intersection: 2: Shaver Avenue & Highway 211

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	157	219	70	16
Average Queue (ft)	9	30	23	1
95th Queue (ft)	82	131	53	9
Link Distance (ft)	2202	879	1716	163
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Shaver Avenue & Section Street

Movement	WB
Directions Served	LTR
Maximum Queue (ft)	58
Average Queue (ft)	25
95th Queue (ft)	47
Link Distance (ft)	858
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Molalla Avenue & Section Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	41	28	18	47
Average Queue (ft)	16	4	1	3
95th Queue (ft)	40	19	8	19
Link Distance (ft)	858	409	1113	648
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Molalla Avenue & Molalla Forest Road

Movement	SE	NW
Directions Served	LTR	LTR
Maximum Queue (ft)	48	17
Average Queue (ft)	12	2
95th Queue (ft)	30	12
Link Distance (ft)	436	526
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Molalla Avenue & Site Access A

Movement	EB	SB
Directions Served	LR	TR
Maximum Queue (ft)	73	4
Average Queue (ft)	29	0
95th Queue (ft)	73	4
Link Distance (ft)	237	1113
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Molalla Forest Road & Site Access B

Movement	SW
Directions Served	LR
Maximum Queue (ft)	64
Average Queue (ft)	18
95th Queue (ft)	47
Link Distance (ft)	152
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Cascade Center & Highway 211

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	17	65	303
Average Queue (ft)	1	20	128
95th Queue (ft)	9	52	264
Link Distance (ft)	614		282
Upstream Blk Time (%)			4
Queuing Penalty (veh)			0
Storage Bay Dist (ft)		75	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		1	

Network Summary

Network wide Queuing Penalty: 2
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Appendix I  
Traffic Signal and Turn Lane Warrant Analysis Worksheets

# Preliminary Traffic Signal Warrant Analysis



Project Name: Dansons

Intersection: Highway 211 at Leroy Avenue

Scenario: 2023 Background Plus Site Trips

Number of Major Street Lanes: 1 PM Peak Hour Volume 1398 (sum of both approaches)

Number of Minor Street Lanes 1 PM Peak Hour Volume 53 (highest-volume approach)<sup>a</sup>

Posted or 85th percentile speed > 40 mph: No

Isolated Population Less than 10,000: No

## Warrant 1, Eight-Hour Vehicular Volume

### Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

### Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

### Warrant Analysis Calculations

	8th Highest Hour <sup>b</sup>	Minimum Volume	Warrant Satisfied?
<b>Condition A - Minimum Vehicular Volume</b>			
Major Street Volume	790	500	
Minor Street Volume	30	150	<b>No</b>
<b>Condition B - Interruption of Continuous Traffic</b>			
Major Street Volume	790	750	
Minor Street Volume	30	75	<b>No</b>
<b>Combination Warrant<sup>c</sup></b>			
Major Street Volume	790	600	
Minor Street Volume	30	120	<b>No</b>

<sup>a</sup> Minor-Street right turn volumes are reduced to account for the impact of right-turns on red.

<sup>b</sup> Eighth-highest hour volumes are calculated as 5.65 percent of the expected daily traffic volume.

<sup>c</sup> This warrant should be used only after adequate trial of other alternatives has failed to solve traffic problems.

# Preliminary Traffic Signal Warrant Analysis



Project Name: Dansons

Intersection: Highway 211 at Leroy Avenue

Scenario: 2023 Background Plus Site Trips with prohibition on NBLT from West Cascade Center Access

Number of Major Street Lanes: 1 PM Peak Hour Volume 1398 (sum of both approaches)

Number of Minor Street Lanes: 1 PM Peak Hour Volume 128 (highest-volume approach)<sup>a</sup>

Posted or 85th percentile speed > 40 mph: No

Isolated Population Less than 10,000: No

## Warrant 1, Eight-Hour Vehicular Volume

### Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

### Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

### Warrant Analysis Calculations

	8th Highest Hour <sup>b</sup>	Minimum Volume	Warrant Satisfied?
<b>Condition A - Minimum Vehicular Volume</b>			
Major Street Volume	790	500	
Minor Street Volume	72	150	<b>No</b>
<b>Condition B - Interruption of Continuous Traffic</b>			
Major Street Volume	790	750	
Minor Street Volume	72	75	<b>No</b>
<b>Combination Warrant<sup>c</sup></b>			
Major Street Volume	790	600	
Minor Street Volume	72	120	<b>No</b>

<sup>a</sup> Minor-Street right turn volumes are reduced to account for the impact of right-turns on red.

<sup>b</sup> Eighth-highest hour volumes are calculated as 5.65 percent of the expected daily traffic volume.

<sup>c</sup> This warrant should be used only after adequate trial of other alternatives has failed to solve traffic problems.



# Left-Turn Lane Warrant Analysis (ODOT Methodology)

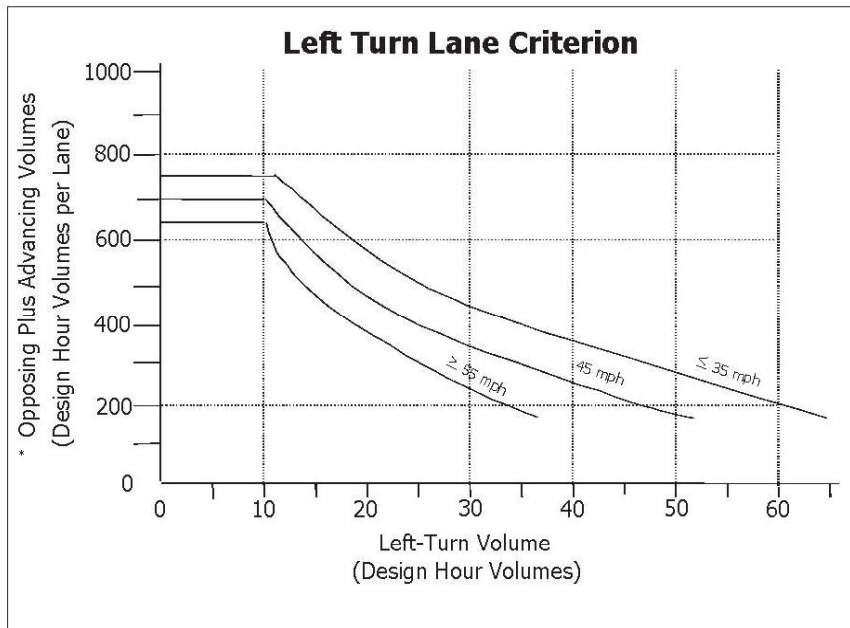


Project Name: Dansons Molalla  
 Approach: Highway 211 at Shaver Avenue - Westbound  
 Scenario: 2023 Background Conditions

Number of Advancing Lanes: 1  
 Number of Opposing Lanes: 1  
 Major-Street Design Speed: 25 mph

	AM Volume	PM Volume
Advancing Volume for Design Hour:	631	807
Opposing Volume for Design Hour:	463	774
Design Hour Volume Per Lane:	1094	1581
Number of Left Turns per Hour:	7	15
Left-turn lane warrants satisfied?	<b>NO</b>	<b>YES</b>

**Exhibit 7-1 Left Turn Lane Criterion (TTI)**



\*(Advancing Volume/Number of Advancing Through Lanes) + (Opposing Volume/Number of Opposing Through Lanes)

# Left-Turn Lane Warrant Analysis (ODOT Methodology)

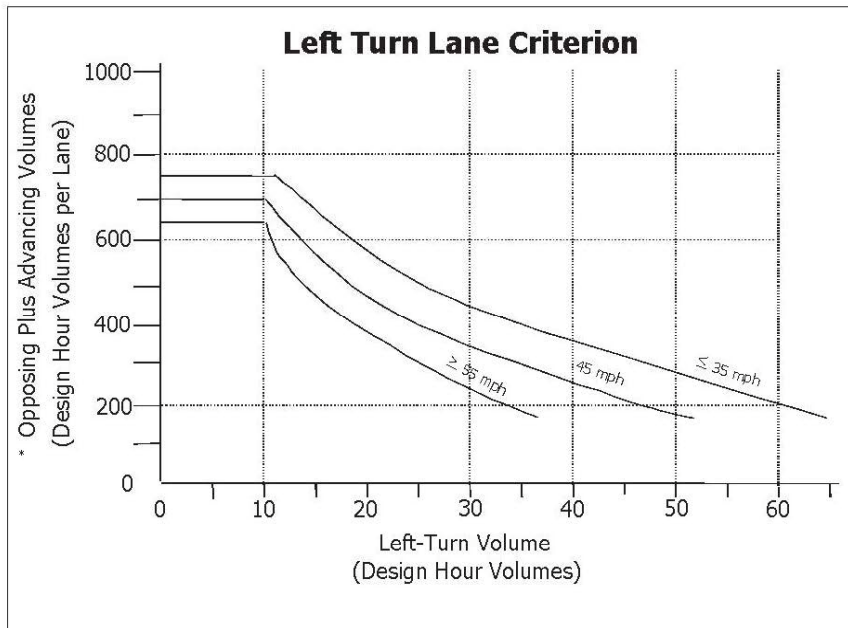


Project Name: Dansons Molalla  
 Approach: Molalla Avenue at Section Street - Southbound  
 Scenario: 2023 Background plus Site Trips Conditions

Number of Advancing Lanes: 1  
 Number of Opposing Lanes: 1  
 Major-Street Design Speed: 25 mph

	AM Volume	PM Volume
Advancing Volume for Design Hour:	119	212
Opposing Volume for Design Hour:	177	194
Design Hour Volume Per Lane:	296	406
Number of Left Turns per Hour:	1	14
Left-turn lane warrants satisfied?	<b>NO</b>	<b>NO</b>

**Exhibit 7-1 Left Turn Lane Criterion (TTI)**



\* $(\text{Advancing Volume} / \text{Number of Advancing Through Lanes}) + (\text{Opposing Volume} / \text{Number of Opposing Through Lanes})$

# Right-Turn Lane Warrant Analysis (ODOT Methodology)



Project Name: Dansons Molalla  
 Approach: Highway 211 Westbound at Leroy Avenue  
 Scenario: 2023 Background Conditions

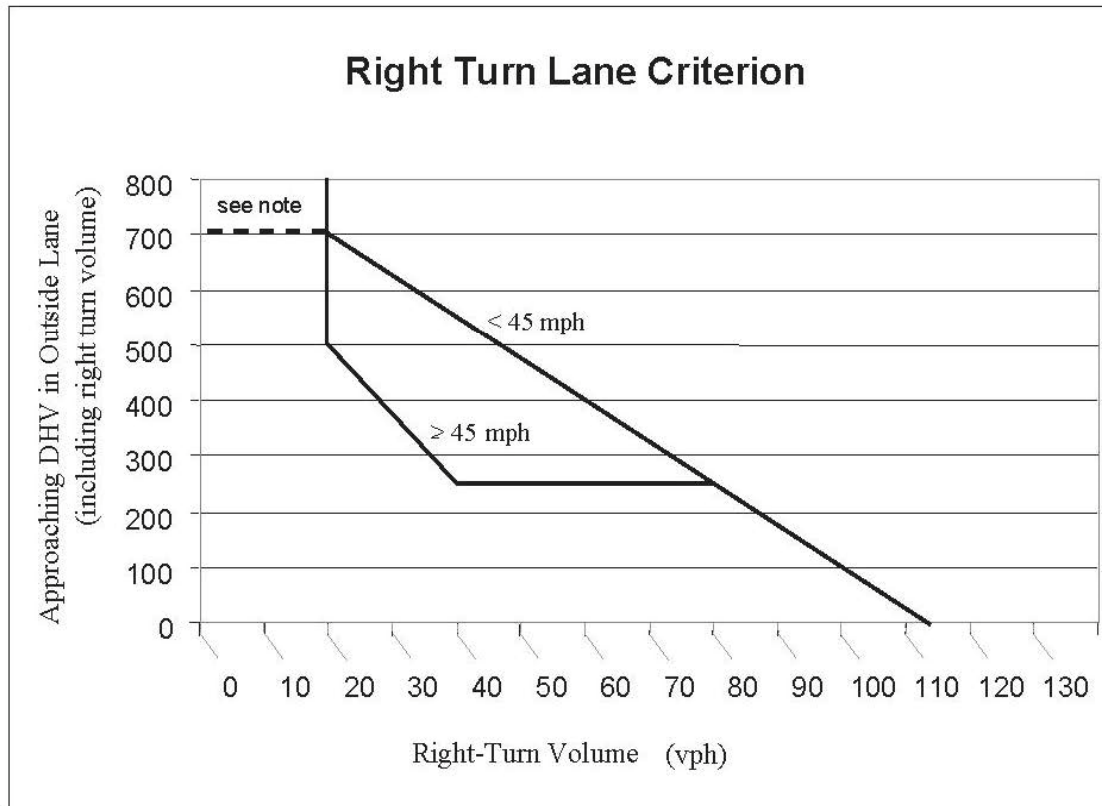
Major-Street Design Speed: 25 mph

	AM Volume	PM Volume
Number of Right Turns per Hour:	55	57
Approaching DVH in Outside Lane:	520	678
Calculated Turn Volume Threshold:	44	23
Right Turn Volume Exceeds Threshold?	<b>YES</b>	<b>YES</b>

## Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria are determined using the curve in Exhibit 7-2.

### Exhibit 7-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

# Right-Turn Lane Warrant Analysis (ODOT Methodology)



Project Name: Dansons Molalla  
 Approach: Highway 211 Eastbound at Leroy Avenue  
 Scenario: 2023 Background Conditions

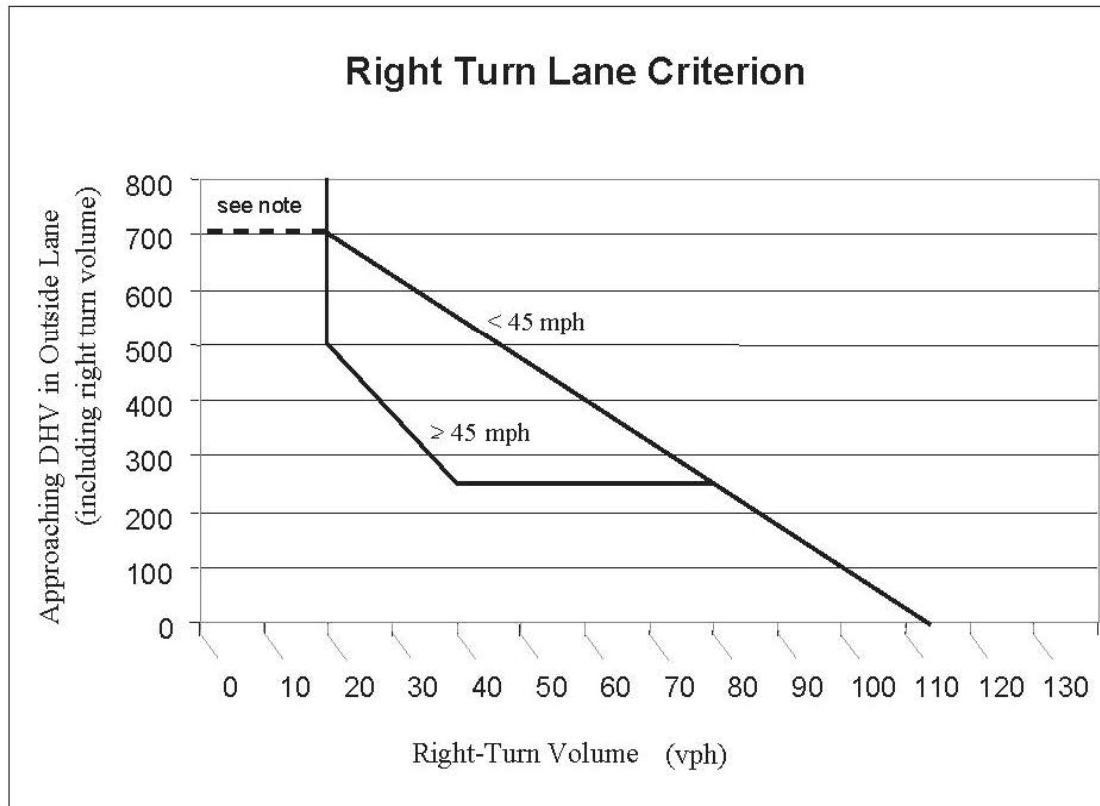
Major-Street Design Speed: 25 mph

	AM Volume	PM Volume
Number of Right Turns per Hour:	40	50
Approaching DVH in Outside Lane:	391	694
Calculated Turn Volume Threshold:	61	21
Right Turn Volume Exceeds Threshold?	<b>NO</b>	<b>YES</b>

## Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria are determined using the curve in Exhibit 7-2.

### Exhibit 7-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

# Right-Turn Lane Warrant Analysis (ODOT Methodology)



Project Name: Dansons Molalla  
 Approach: Highway 211 Eastbound at Shaver Avenue  
 Scenario: 2023 Background Conditions

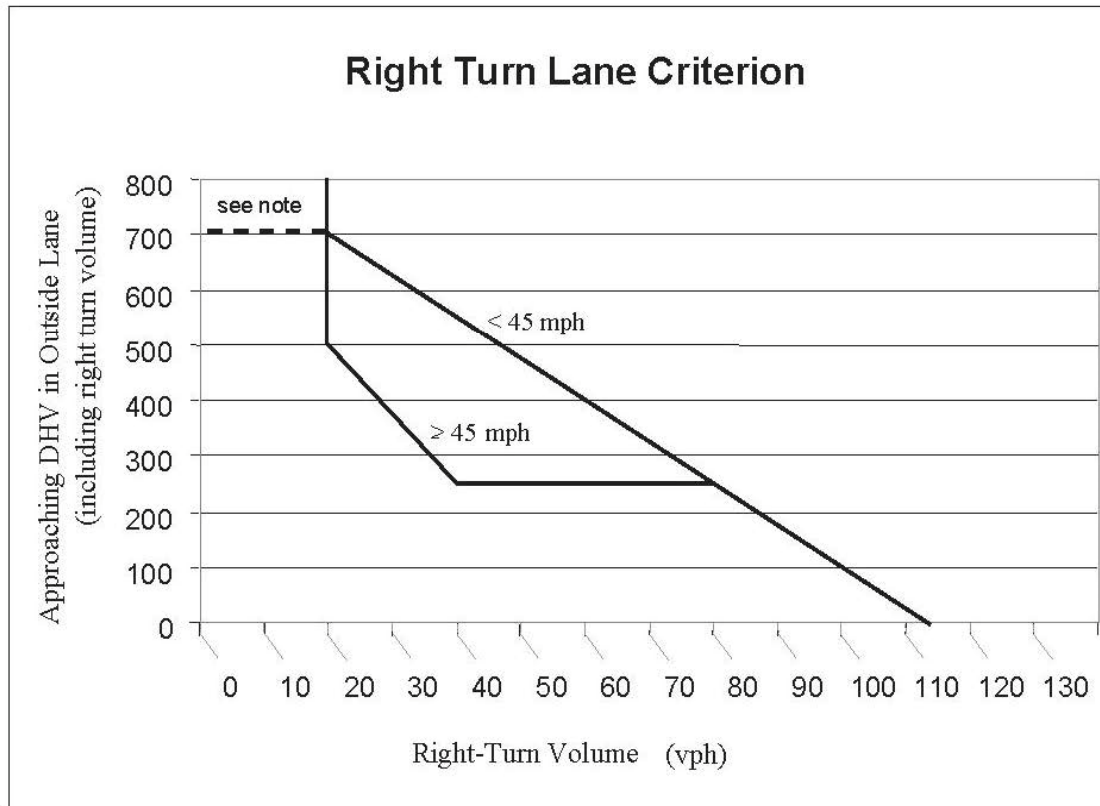
Major-Street Design Speed: 25 mph

	AM Volume	PM Volume
Number of Right Turns per Hour:	28	26
Approaching DVH in Outside Lane:	463	774
Calculated Turn Volume Threshold:	51	20
Right Turn Volume Exceeds Threshold?	<b>NO</b>	<b>YES</b>

## Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria are determined using the curve in Exhibit 7-2.

### Exhibit 7-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

# Right-Turn Lane Warrant Analysis (ODOT Methodology)



Project Name: Dansons Molalla  
 Approach: Molalla Avenue at Molalla Forest Road  
 Scenario: 2023 Background plus Site Trips Conditions

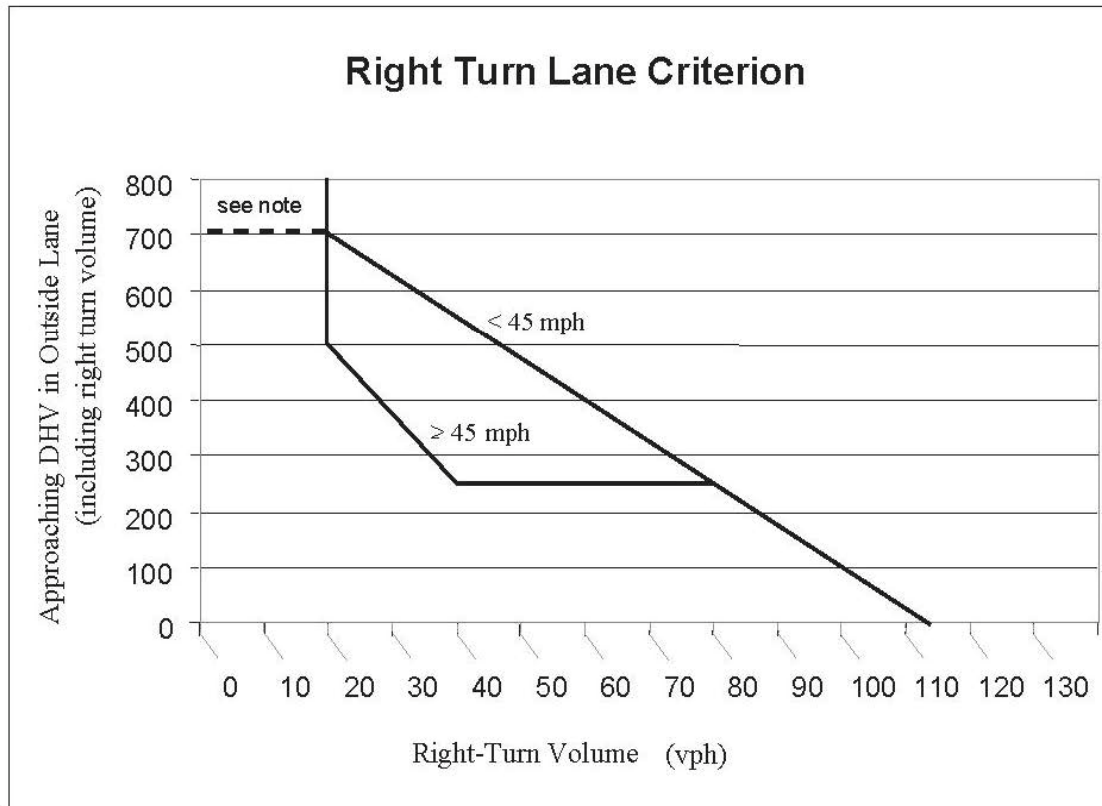
Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Number of Right Turns per Hour:	23	4
Approaching DVH in Outside Lane:	109	190
Calculated Turn Volume Threshold:	99	88
Right Turn Volume Exceeds Threshold?	<b>NO</b>	<b>NO</b>

## Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria are determined using the curve in Exhibit 7-2.

### Exhibit 7-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

# Right-Turn Lane Warrant Analysis (ODOT Methodology)



Project Name: Dansons Molalla  
 Approach: Molalla Avenue at Site Access  
 Scenario: 2023 Background plus Site Trips Conditions

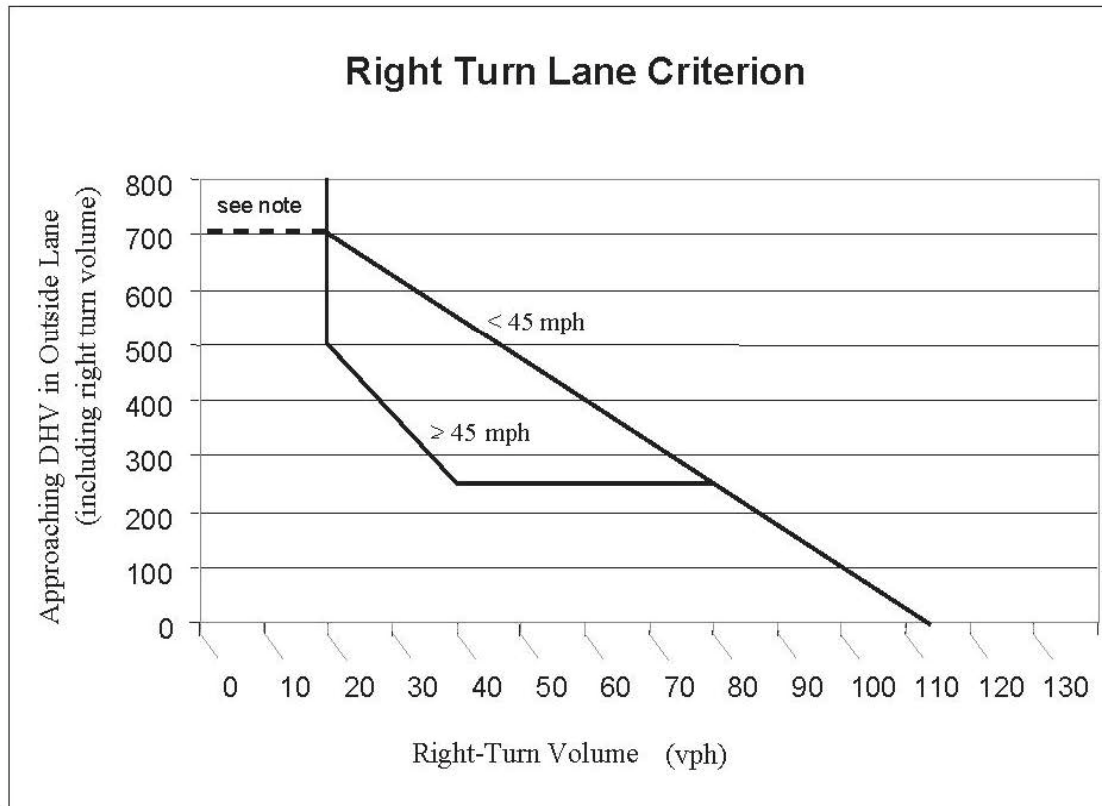
Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Number of Right Turns per Hour:	23	5
Approaching DVH in Outside Lane:	131	192
Calculated Turn Volume Threshold:	96	87
Right Turn Volume Exceeds Threshold?	<b>NO</b>	<b>NO</b>

## Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria are determined using the curve in Exhibit 7-2.

### Exhibit 7-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

**Exhibit C:**

*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

September 28, 2021

TO: Mac Corthell, Planning Director  
Dan Zinder, Assistant Planner  
Julie Larson, Planning Specialist

FROM: Sam Miller, Sr. Engineer Tech.

**RE: 250 W 7<sup>th</sup> Street (SDR06-2021/CUP01-2021)**

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:

A. Street:

1. The 1 lot subdivision proposal will require a traffic impact analysis update. The proposed development will add a total of 408 trips and the threshold for a traffic impact analysis is 25 AM or PM PH trips, impacts to an intersection currently at failure, impacts intersections with high number of accidents, or increase number of vehicles with 20,000 Lb GVW.
2. S Molalla Ave.: S Molalla Ave. is a Minor Arterial Street under Clackamas County jurisdiction. Street improvements shall meet Clackamas County Department of Transportation and Development requirements. Applicant will be required to dedicate a 10-foot Public Utility Easement along property frontage. If required during design review, additional striping and pavement tapers may be necessary.
3. S. Molalla Forest Rd: S. Molalla Forest Rd is a major collector street under City of Molalla jurisdiction. Current right-of-way width is 60 feet and approximate pavement width of 20 feet. Major collector streets (w/o PK) require 60 feet of right-of-way and 34 feet of pavement. Applicant will not be required to dedicate right-of-way and will be required to dedicate a 10-foot Public Utility Easement. Applicant will be required to sign a waiver of remonstrance for street and streetlighting improvements. Applicant will be required to construct double access ramp at the northwest corner of the intersection at S. Molalla Forest Rd and S. Molalla Ave. Access ramp design shall be in conformance with the ADA Standards for Accessible Design standards and submit plans to be reviewed by the City of Molalla and Clackamas County for compliance.
4. Right-of-way Dedications: If right-of-way dedication fronts streets under the jurisdiction of the City of Molalla, Applicant shall submit dedication on formats approved by the Public Works Department. On Clackamas County rights of way, applicant will be

required to donate sufficient right-of-way along variable width improvements and construct sidewalk widening to County standards. Applicant is advised that dedications must be completed and recorded prior to submission of final subdivision plat or final partition plat in order for Public Works to process plat documents.

5. Access to public streets shall be limited to the following locations and all accesses shall be constructed in such a manner as to eliminate turning conflicts. Access spacing shall conform to the Transportation Systems Plan. The proposed width of accesses shall meet the Molalla Standard Specifications for Public Works Construction (i.e North side of Molalla Forest Road approximately 320 feet west of the centerline of S Molalla Ave.)
  6. Transportation SDC's – In accordance with MMC 13.14 this development does increase the impacts to the public improvement facility and is therefore not exempt from transportation SDC charges. SDC's shall be calculated in accordance with the SDC methodology.
- B. Storm:
1. Applicant proposes to collect, treat, and detain all stormwater onsite and discharge to Bear Creek. Connection to Bear Creek shall comply with all City and DEQ requirements. Onsite private storm system shall comply with plumbing code requirements. The detention and flow control facilities shall be reviewed, permitted, and inspected by Public Works. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit. The connection to Bear Creek shall be reviewed and permitted by DEQ including water quality requirements.
  2. Stormwater SDC's – In accordance with MMC 13.14 this development 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.
- C. Sanitary:
1. An 8-inch sanitary main exists on Hart Ave. Sanitary main is approx. 6.19 feet deep near proposed Tax Lot 52E17A 00102 and will serve this development to the south by gravity system.
  2. Sanitary SDC's – In accordance with MMC 13.14 this development does increase the impacts to the public improvement facility and is therefore not exempt from sanitary SDC charges...this development is not exempt from sanitary SDC charges. SDC's shall be calculated in accordance with the SDC methodology.
- D. Water:
1. Development will be required to extend an 8" water main along S Molalla Ave. Project will be required to connect to 6-inch main at intersection of S Molalla Ave. an 7<sup>th</sup> Street and extend an 8-inch line south along proposed street improvement. New main line shall extend to the far side of the property to allow for future extensions beyond present development and be consistent with the Water Master Plan.
  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 based on domestic water meter size in accordance with the SDC methodology.
- E. Parks:
1. Parks SDC's – In accordance with SMC 13.70.110 this commercial/industrial design

review is exempt from parks SDC charge and is exempt from parks SDC charges.

F. 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, all public improvements shall be completed and accepted by the Public Works Department prior to issuance of any 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 Director.
- 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 D:**

*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

Pellet Mill Comments. September 27, 2021

- 1) Please explain how the green product storage in the new building be kept from generating heat? Is there a process for monitoring heat?
- 2) Please look at section 903.2.9 of the 2019 Oregon Fire Code. At the last meeting, Clackamas County classified this building as an S-1. This building will require sprinklers as S-1's or is limited to 12,000 Square Feet without them.
- 3) Will this process produce combustible dust? Combustible dust is defined in Chapter 2 of the 2019 Oregon Fire Code as 420 microns that would pass through a us standard 40 sieve that when mixed with air could ignite by spark or other means. If this is the case, see Chapter 22 of the 2019 Oregon Fire Code.
- 4) Hydrants will need to be functioning and distributed as per Appendix B and Appendix C of the 2019 Oregon Fire Code prior to the C of O for business. See the City of Molalla's detail for hydrants.
- 5) Fire and life safety systems (sprinklers/alarm systems) shall be acceptance tested and functioning prior to the C of O.
- 6) Knox locks for gates that are manually operated or a knox over ride switch for electronic gates will be required. A Knox box will also be required for the building if they are not occupied 24/7.
- 7) Fire line will need to meet the requirements of the city/county but the actual fire line portion will be inspected and approved by Molalla Fire and Clackamas County.
- 8) FDC's shall be placed on the same side of the road as the fire hydrants and within 50 feet of a hydrant. OFC 912.2
- 9) Please submit potential hydrant locations on a site map for approval. On the plan provided, I was only able to identify three hydrant locations. The previous site had 6. A minimum of 6 will be required to be put back.
- 10) Hydrants will need to be provided with a 4-inch stortz quack connect.
- 11) Current fire flow readings will be required (within the past 12 months) for sprinkler calculations. Andy is working on this.
- 12) Please provide access road dimensions fir review.
- 13) John Utter and I have been in contact regarding the 150 x 350-foot storage building discussing:
  - a. Sprinkler systems
  - b. Combustible materials vs combustible fibers. Chips and small amounts of sawdust will be allowed with a suppression system. Combustible fibers will not. Suppression systems are out for bids.
  - c. Fire flow at the site.

The above comments are based solely on the site plan provided. Molalla Fire reserves the right to review and comment on the plans that are to be submitted for full review or revisions to plans that have already been reviewed.

Review of submitted plans is not an approval of omissions, oversights or authorization of non-compliance with any regulations of this agency or of the regulations of any other agency. This decision should not be considered a precedent setting recommendation, as we will review each project on a case-by-case basis.



[www.molallafire.org](http://www.molallafire.org)





# Molalla Rural Fire Protection District #73

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P.O. Box 655 • Molalla, OR 97038  
320 N Molalla Ave. Molalla, OR 97038

Telephone: 503-829-2200  
Fax: 503-829-5794



[www.molallafire.org](http://www.molallafire.org)



**Exhibit E:**

*Clackamas County (Roadway Authority)  
Comments*





**DAN JOHNSON**  
DIRECTOR

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT  
DEVELOPMENT SERVICES BUILDING  
150 BEAVERCREEK ROAD OREGON CITY, OR 97045

## MEMORANDUM

**TO:** Mac Corthell City of Molalla Planning Department  
**FROM:** Jonny Gish Clackamas County Development Engineering  
**DATE:** 9/29/2021  
**RE:** Dansons Wood Pellet  
52E17A 001002, 00290; 52E17 02480

Clackamas County Development Engineering staff has visited the site and reviewed this application with the attached site plan. We have the following comments:

### **Facts and Findings:**

The applicant has proposed a consolidated Site Design review and Conditional Use permit approval for a wood pellet manufacturing business within the City of Molalla. The proposed development has frontage along S Molalla Ave which is under the jurisdiction of Clackamas County Department of Transportation and Development and Molalla Forest Road, which is under the jurisdiction of City of Molalla.

S Molalla Ave is classified as a Minor Arterial. Clackamas County has adopted roadway standards that pertain to the structural section, construction characteristics, minimum right-of-way widths and access standards for minor arterials. Previous registered land surveys shows S Molalla Ave having an existing right-of-way width of 30-feet from centerline. Development applications are required to dedicate up to one half of the standard right-of-way width. Consistent with Clackamas County Roadway Standards detail C140, the applicant will be required to provide a minimum of 35-feet from centerline and a minimum 8-foot public utility, sidewalk and sign easement to accommodate the required frontage improvements. The applicant may be required to increase the easement to accommodate the sidewalk around existing utility structures. **This condition can be met.**

The right-of-way dedication and public utility, sidewalk and sign easement will be required to be submitted by document to the Clackamas County Right-of-Way department for approval and recording prior to Certificate of Occupancy. **This condition can be met.**

The applicant is proposing a new access to S Molalla Ave for primary truck and visitor access. Clackamas County Roadway Standards Section 220.4(d) allows commercial and industrial

developments direct access to collector and arterials roadways that can comply with access spacing and intersection sight distance requirements.

The applicant has proposed the new access to S Molalla Ave from the proposed development to be adjacent to an existing entrance on the east side of S Molalla Ave. Therefore, the proposed access is not reducing the access spacing of S Molalla Ave. **This condition is met.**

The proposed private access will be required to be constructed to meet standard detail D650. If the applicant is proposing the commercial access to be in excess of 42-feet in width, an approved striping plan shall be required.

The private driveway providing access for the proposed development to S Molalla Ave will be required to provide a minimum intersection sight distance based on the travel speed of the roadway, per Clackamas County Roadway Standards Section 240. S Molalla Ave has a posted speed limit of 45 miles per hour. Therefore, the private driveway requires a minimum of 500 feet of intersection sight distance in both directions along S Molalla Ave. **This condition can be met.**

The applicant has submitted plans for half-street frontage improvements for S Molalla Ave meeting standard detail C140. The applicant will be required to provide a minimum 20-feet of pavement, standard curb or curb and gutter, 5-foot wide planter strip and 7-foot wide ADA compliant sidewalk.

Where new sidewalks do not connect to existing sidewalks, the applicant shall provide an ADA compliant ramp.

Clackamas County DTD is the surface water management authority for S Molalla Ave. The applicant will be required to submit a Stormwater Management Plan for S Molalla Ave in conformance with Clackamas County Roadway Standards chapter 4.

Clackamas County does not take maintenance responsibility for water quality/quantity proposed within County right-of-way. Prior to Certificate of Occupancy, the applicant or the City will be required to enter into an agreement with Clackamas County for the continuing maintenance of any water quality/quantity within the County right-of-way.

Clackamas County and the City of Molalla have entered into an agreement for the maintenance and repair of related facilities within S Molalla Ave including stormwater drainage facilities, traffic control devices and street lights and roadside barriers.

Clackamas County Roadway Standards Section 295 requires private developments to be served by a roadway system that has adequate capacity to handle the anticipated traffic generated by the proposed development. County staff has reviewed the Traffic Impact Study from Ard Engineering dated August 16<sup>th</sup>, 2021 and finds that County infrastructure will operate within the capacity standards and no mitigation is recommended. **This condition has been met.**

Clackamas County Roadway Standards Section 180 requires commercial developer to provide primary inspection services for improvements within County right-of-way. The applicant will be required enter into and sign a Developer-Engineer Agreement prior to Development Permit issuance to ensure the Engineer of Record is responsible for primary inspection services. Prior to Certificate of Occupancy, the Engineer will be required to provide a Certificate of Compliance

stating all materials and workmanship with County right-of-way has been completed per the approved plans and manufacture specifications.

**Conclusion:**

If the City of Molalla approves the proposed development, the following conditions of approval are recommended. If the applicant is advised to or chooses to modify the proposal in terms of access location and or design following the preparation of these comments, this office requests an opportunity to review and comment on such changes prior to decision being made.

The following items are project requirements from the Department of Transportation and Development's Development Engineering Division. These conditions of approval are not intended to include every engineering requirement necessary for the successful completion of this project, but are provided to illustrate to the applicant specific details regarding the required improvements that may prove helpful in determining the cost and scope of the project. These conditions are based on Clackamas County Roadway Standards. Additional requirements beyond those stated in the conditions of approval may be required. The applicant may discuss the requirements of the project with staff at any time.

**Recommended Conditions of Approval:**

1. **Prior to site improvements:** a Development Permit is required from the Engineering Department for review and approval of frontage improvements, erosion control Best Management Practices implemented and sight distances. The permit shall be obtained prior to commencement of work within the County right-of-way and Certificate of Occupancy. To obtain the permit, the applicant shall submit construction plans prepared and stamped by an Engineer registered in the State of Oregon, provide a performance guarantee equal to 125% of the estimated cost of the construction within existing County right-of-way and pay a plan review and inspection fee. The fee will be calculated as a percentage of the construction costs if it exceeds the minimum permit fee. The minimum fee and the percentage will be determined by the current fee structure at the time of the Development Permit Application.
  
2. **Prior to Site Improvements:** Submit approvable construction Plans showing all required improvements. All proposed and required improvements for S Molalla Ave shall be designed, constructed, inspected and approved, pursuant to *Clackamas County Roadway Standards*:
  - a. Provide minimum frontage improvements for S Molalla Ave:
    - i. 20-feet of pavement from centerline with structural section meeting C100 for Minor Arterials
    - ii. Standard curb or curb and gutter
    - iii. 5-foot wide planter strip with street trees
    - iv. 7-foot wide ADA compliant sidewalk
    - v. Private driveway meeting standard detail D650
    - vi. Stormwater Drainage system in conformance with Clackamas County Roadway Standards Chapter 4 and City of Molalla Standard Specifications.

- vii. ADA ramp where the new sidewalk does not connect with existing sidewalk
  - viii. 35-foot curb radius and dual ADA ramp at the intersection with S Molalla Forest Rd.
  - ix. Show all utility connection and extensions with County right-of-way
- b. The applicant shall provide a minimum 125% surety of the cost estimate for all frontage improvements within existing County right-of-way.
  - c. Provide a Stormwater Management Plan for S Molalla Ave in conformance with Clackamas County Roadway Standards Chapter 4 and City of Molalla Standard specifications.
  - d. Submit approvable traffic control plan
  - e. Submit contractor's Certificate of Insurance naming Clackamas County as additionally insured.
  - f. Submit cost estimate for all improvements within County right-of-way.
  - g. The applicant shall enter into a Developer/Engineer Agreement, on County forms, providing primary inspection services.
  - h. Submit AutoTurn exhibits showing the anticipated truck traffic turning maneuvers not crossing into oncoming travel lane
- 3. Prior to Final Inspection:** the applicant shall provide and maintain minimum intersection sight distances at the proposed shared private access intersection with S Molalla Ave. Intersection sight distance shall restrict plantings at maturity, retaining wall, embankments, trees, fences or any other objects that obstruct vehicular sight distance. Minimum required intersection sight distance is 500 feet both north and south bound along S Molalla Ave.
- 4. Prior to Certificate of Occupancy:**
- a. All improvements within County right-of-way shall be constructed and approved per Roadway Standards Section 190.
  - b. The applicant shall provide a Certificate of Compliance and Completion ensuring all improvements were constructed per plans and manufacture recommendation.
  - c. The applicant shall submit electronic as-builts showing all changes and improvements within County right-of-way.
  - d. The applicant shall dedicated, by document, sufficient right-of-way to provide a minimum 35-foot half-street and accommodate the required frontage improvements and a minimum 8-foot wide Public Sidewalk, Sign and Utility Easement along the entire frontage of S Molalla Ave.
  - e. The applicant shall provide a 25% warranty surety for all improvements within County right-of-way.
  - f. Provide a maintenance agreement for the on-going and continued maintenance for any water quality/quantity located within the County right-of-way.



**Planning & Community Dev.**

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## CITY OF MOLALLA STAFF REPORT

### Consolidated Review for SUB02-2021 and SDR01-2021; 220 W Main ST – New Commercial Building

**Date:** September 29, 2021 for the October 6, 2021 Planning Commission Meeting

**File No.:** Consolidated Review for SUB02-2021 and SDR01-2021

**Proposal:** New 10,200 sqft commercial building for retail and storage uses. This proposal comes in conjunction with a proposed replat of the below-mentioned taxlots..

**Address:** 220 W Main ST

**Tax Lots:** Lots 4600, 4500, 4400, 9200, 9100, 4701, 8700, 8800, 8900, and 9000 of taxmap 52E08DD

**Applicant:** Bill Egoroff, B&I Construction  
PO Box 246  
Molalla, OR 97038

**Property Owners:** Bill Egoroff, B&I Construction

**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**

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

*Chapter 17-4.2.050 Approval Standards (Site Design Review)*

*Section 17-4.3.070 Preliminary Plat Approval Standards*

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EXHIBIT E: Molalla Fire Department Comments

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## I. EXECUTIVE SUMMARY

### **Proposal:**

The Applicants seek approval for a replat of 11 taxlots within the Molalla and Metzler and Harts Addition to Molalla subdivisions and site design review for a new 10,200 sqft commercial building in Molalla. The subject parcels are located south of OR-211 between Metzler Avenue and Hart Avenue. The replat will consolidate the existing 11 taxlots into five taxlots. Three of these taxlots will be created to better envelop the existing and proposed developments and create conforming lots. Two taxlots will remain undeveloped for future use. The applicant proposes vehicle access to the site from two private drives from Hart Avenue and pedestrian access from both Hart and Metzler Avenue. The Applicant's proposal includes onsite civic space development, offsite ROW dedication, and roadway improvements to bring adjacent transportation facilities to City standards. Additionally, the Applicant proposes required pedestrian frontage improvements adjacent to properties included in the proposed subdivision along OR-211, Hart Ave, and Metzler Ave and voluntary pedestrian improvements along the portions of OR-211 and Metzler Ave fronting 202 W Main ST.

### **Site Description:**

For the purposes of the Subdivision Application SUB02-2021, The 11 existing subject parcels make up 1.89 acres of general commercially zoned (C-2) land directly outside of Molalla's central commercial downtown district. The 11 parcels are located between Metzler and Hart Avenue and south of OR-211. The property slopes slightly from southwest to northwest. The parcels currently have three buildings on them. The northern building on parcel 04300 serves as headquarters for a contracting company, B&I Construction. The two other buildings are open faced out-buildings and are used as storage by the company. The Applicant proposes to utilize the existing out-building on existing parcels 4600 and 4400 as a portion of the proposed 10,200 sqft building on the newly formed parcel 4400. The five existing southernmost taxlots, to be combined into two taxlots, are vacant.

For the purposes of the Site Design Review SDR01-2021, the site refers to the newly formed 34439 sqft parcel between Hart Ave and Metzler Ave and created by SUB02-2021. This parcel is the site of the proposed building. For certain standards, such as those related to vehicular parking and access, the northern two parcels of the proposed subdivision are taken into consideration in this review as there are cross access elements and mutual parking components of the proposal. The site has an existing, non-conforming 2525 sqft building on it that is open facing to the north. The applicant's proposal utilizes this building as a portion of the proposed new building.

### **Surrounding Zoning and Land Uses:**

The properties are surrounded by central commercially zoned (C-1) land to the east, north, and south, and light industrially zoned land (M-1) to the west. Uses include a pre-



existing, non-conforming lumber yard to the north, retail sales and service uses including a glass shop and auto repair shop to the east, non-conforming residences to the south, and a truck repair facility and food cart to the west on the M-1 properties. 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 August 12, 2021. The City has included responses from these agencies as Exhibits D, E, and F 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 September 6, 2021. Notice was published in the Molalla Pioneer on September 16, 2021 and on the City's website on September 9, 2021. Signage containing public notice information was posted on the property on September 21, 2021. As of September 29, 2021 Staff had received no 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 SDR01-2021 and Subdivision SUB02-2021, 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. The Applicant shall record reciprocal access easements on the final plat between the northern three parcels to ensure that each parcel has parking and access in

compliance with Molalla Municipal Code sections 17-3.5.030 and 17-3.3.030 (MMC 17-3.4.040 F).

- 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 obtain any state or federal permits as applicable.
- e. Applicant shall dedicate a 10-foot wide Public Utility Easement along OR 211.
- f. On ODOT rights of way, applicant will be required to donate sufficient right-of-way along variable width improvements and construct sidewalk widening to ODOT standards. ODOT requires donations of right-of-way to follow the requirements of Chapter 5.322. Developer Mitigation Donation in the ODOT Right-of-Way Manual. Applicant is advised that donation must be completed and recorded prior to submission of final subdivision plat or final partition plat in order for Public Works to process plat documents.
- g. Applicant will also be required to dedicate the sidewalk along the property frontage to be within ODOT right-of-way and 10-foot wide Public Utility Easement across the frontage of 220 W. Main (Hwy 211).
- h. Applicant will be required to dedicate 5 feet of right-of-way, 10-foot Public Utility Easement along Hart Ave and construct road improvements to City standards for 17 feet of pavement (CL to face of curb), curb and gutter, and 6-foot curb tight sidewalk.
- i. Along Metzler Ave, Applicant will not be required to dedicate right-of-way but will be required to dedicate a 5-foot Public Utility Easement.

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

- a. The Applicant shall confirm with submittal of engineering plans that the turning radius for the new parking area can accommodate fire apparatus to make it behind

the proposed building. For a 20 wide access the radius is 28/48. For a 12-foot-wide surface the radius is 44/56.

- b. Materials, textures, and color on the east facing façade shall round the corner to the south facing façade (MMC 17-3.2.040 D 1).
- c. 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 5).
- d. The applicant shall submit building plans showing 60% transparency for the street facing elevation. To meet this condition, transom windows may be provided in areas where complete transparency is not appropriate, such as the modified façade of the portion of the existing that faces Metzler Ave (MMC 17-3.2.040 D 6).
- e. The applicant shall provide clerestory windows on the proposed building for visual relief on the west facing façade and on the portion of the north facing façade dedicated to storage (MMC 17-3.2.040 D 9).
- f. The Applicant shall show 4in or greater trim on building permit authorization plans and install window trim on all windows of 4in or greater (MMC 17-3.2.040 D 10).
- g. The Applicant shall submit building plans showing articulation meeting 24 in standards on the eastern, street facing façade of the proposed building (MMC 17-3.2.040 E 1).
- h. The Applicant shall submit building plans showing a north facing façade that shows a distinct base, middle, and top. As a non-street facing façade, it may utilize color and/or texture rather than materials to accomplish this. Alternately, the required pedestrian shelter on the north side of the proposed building along the adjacent walkway may be designed to provide visual relief (MMC 17-3.2.040 E 2).
- i. The applicant shall show horizontal lines, ground and upper floor division, and vertical rhythms on the north facing façade on submitted building plans. Alternately, the required pedestrian shelter on the north side of the proposed building along the adjacent walkway may be designed to provide vertical breaks (MMC 17-3.2.040 E 5).
- j. The applicant shall provide a pedestrian shelter at 75% coverage of the eastern and northern facing facades of the new building. Only covered portions of these walkways may contribute towards civic space requirements. These additions are to be included with building permit submission. Shelters on the northern frontage may be free

standing. All proposed shelters must extend at least 5 ft over proposed walkways (MMC 17-3.2.040 F 2).

- k. The Applicant shall provide a cost estimate for the proposed civic space area showing that civic space pedestrian amenities are provided in an amount equal to or greater than one-half of one percent of the estimated construction cost of the proposed building(s). The cost of a proposed public parking facility may be subtracted from building costs used in the assessment of civic space improvements. As a condition of approval, civic space areas located on private property shall be covered by a permanent weather protection feature (MMC 17-3.2.050 C 2).
- l. The Applicant shall receive an approach permit from the City of Molalla Public Works Department for access from Hart Ave prior to submission of building permits (MMC 17-3.3.030 B).
- m. As a condition of approval, existing driveway drops from OR-211 to the subject parcels shall be removed. 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 (MMC 17-3.3.030 B).
- n. The Applicant shall submit a plan showing truck turning radii of the largest proposed vehicle to enter the site to ensure the proposed approaches can accommodate that vehicle (MMC 17-3.3.030 D 7).
- o. All approaches shall be designed to the current version of Molalla Public Works Design Standards and be consistent with ADA requirements (MMC 17-3.3.030 D 16).
- p. The Applicant shall provide pedestrian crossing features such as striping along the drive aisle between the southern parking stalls and the pedestrian walkway to enhance pedestrian safety along the rear, western frontage of the proposed building (MMC 17-3.3.040 B 2).
- q. all walkways connecting to primary building entrances shall be designed consistent with ADA requirements (MMC 17-3.3.040 B 2).
- r. The area between the southern-most row of parking and the southern property line of the subject site shall be landscaped and provide buffering between it and the

adjacent property in accordance with this provision and to reduce headlight glare to neighboring properties (MMC 17-3.4.030 A).

- s. The applicant shall submit a landscaping plan meeting the standards of MMC 17-3.4.030 C, 1-17 with building permits. The applicant shall complete landscaping in accordance with the approved plan prior to City Approval of Occupancy (MMC 17-3.4.030 C).
- t. The area between the southern-most row of parking and the southern property line of the subject site shall be landscaped and provide buffering between it and the adjacent property to reduce headlight glare to neighboring properties (MMC 17-3.4.030 E 1).
- u. the applicant shall include a parking island within the southern row of parking so that no row of parking contains more than 10 contiguous parking stalls without a landscaped island. (MMC 17-3.4.030 E 2).
- v. The applicant shall show wheel stops, curbs, bollards, or other physical barriers between parking stalls and landscaped areas on their building plans (MMC 17-3.4.030 E 4).
- w. Trees planted in tree wells within sidewalks or other paved areas shall be installed with root barriers, consistent with applicable nursery standards (MMC 17-3.4.030 E 4).
- x. The area between the southern-most row of parking and the southern property line of the subject site shall be landscaped and provide buffering between it and the adjacent property to reduce headlight glare to neighboring properties (MMC 17-3.4.030 F).
- y. The Applicant shall submit a lighting plan and detailed drawings with its engineering plans showing compliance with the height, illumination, and directional standards of MMC 17-3.4.050. Applicants lighting plan shall comply with Dark Skies standards of MMC 21.80 (MMC 17-3.4.050 C).
- z. Applicant shall be required to install roadway lighting along OR-211, Metzler Ave, and Hart Ave. Location and number of lights shall be determined during design review (MMC 17-3.4.050 C).
- aa. The Applicant shall provide a truck turning radius schema with engineering plan submission showing that the largest proposed vehicle can enter the site without obstructing oncoming traffic (MMC17-3.5.030 H).

- bb. 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.
- 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.
  - II. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction.
  - 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.
  - IV. Applicant will be required to design and construct frontage improvements along the site's Main St. Frontage consistent with Molalla arterial (downtown district) cross sections to include sidewalk with street parking and convert the right turn lane onto Metzler Ave into on street parking in accordance with ODOT requirements. Applicant will be required to close existing unused driveways to the highway fronting the building.
  - V. The Applicant's Transportation Analysis Letter must be approved by the City prior to issuance of construction permits.
  - VI. Applicant will be required to bring the southeast corner of the intersection at Hart Ave and W. Main St (Hwy 211) up to ODOT ADA standards and submit plans to be reviewed by ODOT for ADA compliance. Applicant has opted to dedicate 5 feet of right-of-way and construct a half/full street improvement. Improvements shall consist of 17 feet of pavement, curb and gutter, and 6-foot curb tight sidewalk. Curb radius connecting to W. Main (Hwy211) Street shall be 25 feet and internal street shall be 15 feet minimum. Street shall be signed no parking on both sides until street is improved to full width.
  - VII. Along Metzler Ave Applicant will be required to construct road improvements to City standards for 17 feet of pavement (CL to face of curb), curb and gutter, and 6-foot curb tight sidewalk. Applicant will be required to bring the southwest corner of the intersection at Metzler Ave and W Main Street (Hwy 211) up to ODOT ADA standards and submit plans to be reviewed by ODOT for ADA compliance.

- 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.
- 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.
- 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.
- 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.
- 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.
- XIII. 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.

- 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.

#### 4. Conditions to be Met Prior To Occupancy:

- a. The Applicant shall record a deed provision allowing mutual access to parking between the northern three lots (MMC 17-3.4.040 F).
- b. 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 17-3.2.050 D 21).
- c. All driveway approaches shall be designed and constructed consistent with the current version of the Public Works Design Standards and Transportation Systems Plan (MMC 17-3.2.050 F).
- d. For stormwater, detention and flow control facilities shall be reviewed, permitted, and inspected by Public Works. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit. The connection to the ODOT facilities shall be reviewed and permitted by ODOT including water quality requirements.

#### 5. Ongoing Conditions:

- a. The southern two vacant parcels shall develop accesses in accordance MMC Chapter 17-3.3 at the time of their site design review (MMC 17-4.3.020(F)).
- b. No visual obstructions shall be placed in vision clearance areas (MMC 17-3.3.030 G).
- c. No proposed fencing shall be made of prohibited materials, as detailed in MMC 17-3.4

- d. All landscaping shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.030 G).
- e. Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.040 F).
- f. For undeveloped parcels of the proposed subdivision, the applicant shall make appropriate improvements conforming with Division III Community Design Standards at the time of development.
- g. The Applicant shall receive an approach permit from the City of Molalla Public Works Department prior to submission of building permits for development of any lot within the proposed replat.
- 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).

**Exhibit A:**

*City Staff's Findings of Fact for SUB01-2021*

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:** The proposed replat is adjacent to Hart Avenue, Metzler Avenue and OR-211 and the site has existing accesses from Hart Avenue. The Applicant's submitted site and utilities plan shows that all lots proposed in the subdivision will be served by existing underground utilities and power poles along Metzler Avenue, Hart Avenue, and OR-211. Appropriate street and utility upgrade requirements will be determined at the time of site design review for each lot. The proposal meets this standard.

**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:** Underground storm drainage mains run adjacent to the site along Metzler Avenue and W Main ST. Appropriate onsite surface water management facility requirements will be determined at the time of site design review for each lot. The proposal meets this standard.

**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 conditions of approval. Vehicular access for the subject parcels is available from Hart Avenue. The Applicant's submitted site plan for SDR01-2021 shows that all lots are served from two existing accesses from Hart Ave, a local classified street from the Molalla Transportation Systems Plan. The northern access serves the two northern-most lots of the proposed subdivision. The southern access from the Applicant's submitted site plan shows a proposed access to the existing building from Hart.

The proposed inner 14,130 sqft parcel containing the existing building on the north side has no direct access from Hart Avenue nor is any parking proposed on that parcel. However, the

proposed development has enough total parking spaces to accommodate all proposed buildings and the proposal shows that the access driveways serve the inner northern parcels. As a condition of approval, the Applicant shall record reciprocal access easements on the final plat between the northern three parcels to ensure that each parcel has parking and access in compliance with Molalla Municipal Code sections 17-3.5.030 and 17-3.3.030. The Applicant shall record a deed provision allowing mutual access to parking between the northern three lots.

No development is proposed on the southern two parcels nor do either of the parcels have existing access from Hart Ave. As a condition of approval, the southern two parcels shall develop accesses in accordance MMC Chapter 17-3.3 at the time of their site design review.

### 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 replat of eleven existing lots into five new lots. Per MMC 17-5.1.020 Definitions, any proposal resulting in four (4) or more lots constitutes a subdivision and is subject to a Type III approvals process. 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 site plan shows no 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 in 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 with submittal of engineering plans that the turning radius for the new parking area can accommodate fire apparatus to make it behind the proposed building. For a 20 wide access the radius is 28/48. For a 12-foot-wide surface the radius is 44/56.

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 existing general contracting use fits the “commercial services” portion of the use “Commercial Retail Sales and Services” and is an allowed use in the C-2 General Commercial zone. Standard is met. Use compatibility for proposed uses 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 future 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 future 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 19-22ft. This standard is met.

**Maximum Lot Coverage** - Maximum foundation plane coverage in the C-2 zone is 100%. The existing and proposed uses cover 26.4% of the site. This standard is met.



**Minimum Landscape Area % (includes required parking lot, landscaping, and required screening)**  
– Minimum landscaped area in the C-1 zone is 5%. Staff calculates that the applicant proposes landscaping approximately 3756 SQFT of the northern three lots or 6.7% of the total developed area. This standard is met.

**Minimum Setbacks -**

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

**Garage Setback Requirement: 20ft** – Vehicle entry points to the proposed building are no closer than 145 ft. This standard is met.

**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 Applicant’s proposes a new building along Metzler Ave that is built 5ft back from the property line. In accordance with MMC 17-3.2.040 B the applicable exemptions to waive build to line are met as there is a 5ft PUE requirement along Metzler Ave that cannot be built over. The Applicant has provided pedestrian amenities over the PUE area that further justify the waiver of build-to-line.

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;**

### 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 conditions of approval. Applicant’s submitted application shows that the applicant proposes access from Hart Avenue, which is classified as a local street per the Molalla Transportation Systems Plan. Each of the proposed lots would have adequate access from Hart Ave. As a condition of approval, the Applicant shall receive an approach permit from the City of Molalla Public Works Department prior to submission of building permits for development of any lot within the proposed replat.

For undeveloped parcels, the applicant shall make appropriate improvements conforming 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:** This standard can be met subject to a condition of approval. The findings and conditions contained within this staff report require that all public improvements be designed and constructed to City of Molalla adopted master plans and applicable engineering standards. The proposed replat lies within two existing plats with existing streets and facilities surrounding it. No new streets are proposed, nor required, with this subdivision application nor will the installation of new utility lines be required.

**OR 211:** OR 211 is an arterial street under Oregon Department of Transportation (ODOT) jurisdiction. Current right-of-way width varies from 65-70 feet and approximate pavement width of 48 feet. Applicant will be required to construct frontage improvements along the site's Main St. frontage consistent with Molalla arterial (downtown district) cross sections to include sidewalk with street parking and convert the right turn lane onto Metzler Ave into on street parking in accordance with ODOT requirements. Applicant will be required to close existing unused driveways to the highway fronting the building. Applicant will also be required to dedicate the sidewalk along the property frontage to be within ODOT right-of-way and 10-foot wide Public Utility Easement across the frontage of 220 W. Main (Hwy 211). 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. See also ODOT comments about right of way width and left turn warrants. Applicant shall dedicate a 10-foot wide Public Utility Easement along OR 211.

Right-of-way shall be deeded 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.

**Hart Ave:** Hart Ave is a local street under City of Molalla jurisdiction. Current right-of-way width is 40 feet and approximate pavement width is 34 feet. Local streets (w/ PK) require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 5 feet of right-of-way, 10-foot Public Utility Easement and construct road improvements to City standards for 17 feet of pavement (CL to face of curb), curb and gutter, and 6-foot curb tight sidewalk. Applicant will be required to bring the southeast corner of the intersection at Hart Ave and W. Main St (Hwy 211) up to ODOT ADA standards and submit plans to be reviewed by ODOT for ADA compliance.

**Metzler Ave:** Metzler Ave is a local street under City of Molalla jurisdiction. Current right-of-way width is 60 feet and approximate pavement width varies from 24-34 feet. Local streets (w/ PK) require 50 feet of right-of-way and 34 feet of pavement. Applicant will not be required to dedicate right-of-way, will be required to dedicate a 5-foot Public Utility Easement, and will be required to construct road improvements to City standards for 17 feet of pavement (CL to face of curb), curb and gutter, and 6-foot curb tight sidewalk. Applicant will be required to bring the southwest corner of the intersection at Metzler Ave and W Main Street (Hwy 211) up to ODOT ADA standards and submit plans to be reviewed by ODOT for ADA compliance.

Water, sewer, and storm facilities exist adjacent to the property. No upsizing of public utilities will be required. Connections to City utilities shall be in conformance with applicable Molalla Public Works Design Standards at the time of site design review.

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 privately held common areas associated with this application. Projects on this site may meet requirements for civic space or common private open space based on the nature of the proposal. Arrangements for maintenance of such areas shall be determined at the time of site design review.

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.

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.

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 subject property is a general commercially zoned property and may be developed as commercial use or multi-family development. Applicable design standards shall be required at the time of site design review.

**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 March 9<sup>th</sup>, 2021 and deemed it complete in accordance with Section 17-4.2.040 on August 5<sup>th</sup>, 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 Applicant proposes a new building that will provide:

- 7600 SQFT of total enclosed storage (3318 SQFT of net new storage) for the existing general contracting office located on the proposed 13144 SQFT parcel
- 2600 SQFT of new retail space
- 1920 SQFT of new office space.

The general contracting office and retail space fit the use category "commercial retail sales and services. The new office space fits the use category of "offices." Both are allowed uses in the general commercial zone. Allowed uses standards are met.

### 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 future 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 future 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 19-22ft. This standard is met.

**Maximum Lot Coverage** - Maximum foundation plane coverage in the C-2 zone is 100%. The existing and proposed uses cover 26.4% of the site. This standard is met.

**Minimum Landscape Area % (includes required parking lot, landscaping, and required screening)** – Minimum landscaped area in the C-1 zone is 5%. Staff calculates that the applicant proposes landscaping approximately 3756 SQFT of the northern three lots or 6.7% of the total developed area. This standard is met.

**Minimum Setbacks -**

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

**Garage Setback Requirement: 20ft** – Vehicle entry points to the proposed building are no closer than 145 ft. This standard is met.

**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 Applicant’s proposes a new building along Metzler Ave that is built 5ft back from the property line. In accordance with MMC 17-3.2.040 B the applicable exemptions to waive build to line are met as there is a 5ft PUE requirement along Metzler Ave that cannot be built over. The Applicant has provided pedestrian amenities over the PUE area that further justify the waiver of build-to-line.

**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;**

Existing unenclosed storage on the subject site will be replaced with enclosed storage. A portion of the existing building on the subject site that extends into the right-of-way will be cornered off to behind the extent of public utility easement requirements. Parking, landscaping, lighting, and access are brought to standard. Offsite improvements will bring frontages along the subject site to ODOT and City standards respectively by providing appropriate dedications, frontage improvements, and by removing non-conforming approaches along OR-211.

## 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 17-3.2.050 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

- 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 primary entrance for the new proposed office and retail uses is from Metzler Ave. The Applicant's submitted site plan shows the proposed building 5ft back from the property line abutting Metzler Ave. Additional sidewalk is proposed between the building and property line. Staff finds that the building is appropriately set back from the street and that the build-to-line standard can be waived due to the required 5' of Public Utility Easement which cannot be built upon. Additionally, the proposed pedestrian amenities between the ROW line and building further justify waiver of the build-to-line standard.

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:** Staff finds the Applicant's submitted site plan shows that the primary entrances for the office and retail uses of the proposed building abut Metzler Ave. Parking is located in the rear and is accessed from Hart Ave. The existing building fronting OR-211 also has its primary entrance oriented to OR-211. 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:** Staff finds the Applicant's submitted site plan shows that trash storage facilities are located in the rear of the building, internal to the site, and abutting no roadways. 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 site plan shows off-street parking is located internally to the site relative to the site's primary entrances on Metzler Ave. Screening is proposed between parking areas and Hart Ave. 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 Applicant's proposal can meet the above standards. 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 12,120 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:** This condition is met subject to a condition of approval. The Applicant's submitted architecture plans show that an existing, non-conforming building is being integrated into the design for the new development. The eastern portion of the existing building currently extends into the required 5' PUE and ROW abutting Metzler Ave and the applicant's submitted site and architectural plans show that the building will be modified to correct this issue.

However, the proposed architecture plans do not show materials and design rounding the corner to the south facing façade. As a condition of approval, the applicant shall show materials, textures, and color on the east facing façade rounding the corner to the south facing façade on their building plans.

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 site plan shows ground level entrances with at least partial transparency. 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:** This standard is met subject to a condition of approval. The Applicant’s submitted architectural plans shows that the ground floor of the proposed building expansion comprises of less than 60% transparency. As a condition of approval the applicant shall submit building plans showing 60% transparency for the street facing elevation. To meet this condition, transom windows may be provided in areas where complete transparency is not appropriate, such as the modified façade of the portion of the existing that faces Metzler Ave.

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 show that the upper story on the streetside is recessed from the ground floor and a different color, creating a visual distinction. This standard is met.

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:** This condition is met subject to a condition of approval.

The southern elevation of the existing building, to be retained, is a zero lot line and this standard does not apply to that elevation. No windows are proposed on the western facing façade nor for the portion of the northern facing façade dedicated to storage. As these portions of the building are intended for storage, transparent windows are not appropriate on ground floors nor for the large bay doors to maintain privacy and security. However, clerestory windows could provide visual relief while maintaining building functionality. As a condition of approval, the applicant shall provide clerestory windows on the proposed building for visual relief on the west facing façade and on the portion of the north facing façade dedicated to storage.

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:** This standard is met subject to a condition of approval. The Applicant's submitted architectural plans show window trim on all windows but do not indicate trim size. As a condition of approval, the Applicant shall show 4in or greater trim on building permit authorization plans and install window trim on all windows of 4in or greater.

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:** Staff has suggested exception options in appropriate areas above.

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:** This standard is met subject to a condition of approval. It is not clear if the Applicant’s submitted Architectural Plans shows breaks on the street facing façade. Recessing of the windows or entrances would provide articulation that meets standards and it is not clear if that was done or to standard. As a condition of approval, the Applicant shall

submit building plans showing articulation meeting 24 in standards on the eastern, street facing façade of the proposed building.

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:** This condition is met subject to a condition of approval. Staff finds the front, street facing façade of the proposed building meets this standard. Staff finds that the rear, west facing and south facing elevations do not have upper and lower stories and this condition does not apply to those elevations.

The north facing elevation of the proposed building does not have defining characteristics for base, middle, and top. As a condition of approval, the Applicant shall submit building plans showing a north facing façade that shows a distinct base, middle, and top. As a non-street facing façade, it may utilize color and/or texture rather than materials to accomplish this. Alternately, the required pedestrian shelter on the north side of the proposed building along the adjacent walkway may be designed to provide visual 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.
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.
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:** This condition is met subject to a condition of approval. Staff finds that the eastern and western facing facades meet these standards. The southern façade utilizes an existing building that did not require updating with this application. The northern façade does not include horizontal lines, ground and upper floor division, nor vertical rhythms. As a condition of approval, the applicant shall show horizontal lines, ground and upper floor division, and vertical rhythms on the north facing façade on submitted building plans. Alternately, the required pedestrian shelter on the north side of the proposed building along the adjacent walkway may be designed to provide vertical breaks.

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.
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:** This condition is met subject to a condition of approval. The Applicant did not include pedestrian shelters on the on facades abutting public sidewalks and walkways. Staff finds that the eastern pedestrian and northern facing facades require 75% shelter coverage over pedestrian sidewalks and walkways. As a condition of approval, the applicant shall provide a pedestrian shelter at 75% coverage of the eastern and northern facing facades of the new building. Only covered portions of these walkways may contribute towards civic space requirements. These additions are to be included with building permit submission. Shelters on the northern frontage may be free standing. All proposed shelters must extend at least 5 ft over proposed walkways.

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:** The Applicant does not propose any mechanical equipment on building walls, the rooftops, or on the ground. These standards do not apply.

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

**Findings:** The Applicant's proposed building has greater than 10,000 sqft of leasable floor area. These standards will 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. (Ord. 2017-08 §1)

**Findings:** The Applicant does not propose any a Drive-Up or Drive-Through facility. These standards do not apply.

### 17-3.2.050 Civic Space and Pedestrian Amenities

- A. **Purpose.** This section provides standards for civic spaces where such areas are required or provided voluntarily. Civic spaces allow for light and air circulation, visual relief, pedestrian resting areas, and opportunities for socialization in the most densely developed parts of the City. The code allows projects to meet minimum landscape area standards of Chapter 17-3.4 by providing civic space adjacent to street frontages or in courtyards or plazas between buildings, instead of with planted areas elsewhere on a lot as is typically done for residential developments.

- B. **Applicability.** All new commercial and mixed use developments with more than 10,000 square feet of gross leasable floor area within the Central Commercial C-1 and General Commercial C-2 zones are required to meet the standards of this section.

**Findings:** The Applicant's submitted narrative does not appropriately account for total leasable space and incorrectly asserts that the standards do not apply. Staff finds that the Applicant's submitted site plan shows a plan for 12,120 sqft of new leasable floor area. These standards do apply.

C. **Standards.**

1. **Civic Space Standards.** Except as provided by subsections C.3 and 4, at least three percent of every development site shall be designated and improved as civic space (plaza, landscaped courtyard, or similar space) that is accessible to the general public, pursuant to all of the following standards in subdivisions a through e, and as generally illustrated in Figure 17-3.2-12:
  - a. The highest priority locations for civic space improvements are those with the highest pedestrian activity (e.g., street corners and pedestrian access ways), as generally illustrated.
  - b. Civic spaces shall abut a public right-of-way or otherwise be connected to and visible from a public right-of-way by a sidewalk or pedestrian access way. Access ways shall be identifiable with a change in paving materials (e.g., pavers inlaid in concrete or a change in pavement scoring patterns or texture).
  - c. Where public access to a civic space is not practical due to existing development patterns, physical site constraints, or other hardship presented by the applicant, the City may allow a private area, such as an outdoor eating area attached to a restaurant, in finding the project complies with the standard.
  - d. All civic spaces shall have dimensions that allow for reasonable pedestrian access. For example, by extending the width of an existing sidewalk by four feet, a developer might provide space for an outdoor eating area; whereas a larger development at a street corner could meet the standard by creating a plaza adjacent to a building entrance.
  - e. Civic space improvements shall conform to Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting.

**Findings:** Staff finds that the site plan shows 1,180 sqft of walkway extensions on private property. These extensions are located in front of the proposed building and on the northern frontage of the building. The proposed walkway extensions are greater than 3%

of the area of the subject parcel and may count towards civic space requirements provided that they are sheltered. Additionally, Staff finds that the Applicant proposes extending the existing public sidewalk to 20 ft width along OR-211 and to 12 ft along Metzler Ave creating ~1750 sqft of pedestrian space beyond the 10ft standard along OR-211 and ~250 sqft of pedestrian space beyond the 10ft standard on Metzler Ave. Standards for total proposed civic space and accessibility of that civic space are met.

2. Pedestrian Improvements in Civic Spaces. Except as provided by subsections C.3 and 4, where this section requires the provision of civic space, such space shall be improved with pedestrian amenities, pursuant to the following standards in subdivisions a through e:
  - a. Pedestrian amenities shall be provided in an amount equal to or greater than one-half of one percent of the estimated construction cost of the proposed building(s). A licensed architect, landscape architect, or other qualified professional, shall prepare cost estimates for civic space improvements, which shall be subject to review and approval by the Planning Official.
  - b. Pedestrian amenities include plaza surfaces (e.g., pavers, landscapes, etc.), sidewalk extensions (e.g., with outdoor café space), street furnishings (e.g., benches, public art, pedestrian-scale lighting, water fountains, trash receptacles, bus waiting shelters, shade structures, or others), way-finding signs, or similar amenities, as approved by the Planning Official.
  - c. Where a civic space adjoins a building entrance it should incorporate a permanent weather protection canopy, awning, pergola, or similar feature, consistent with Section 17-3.2.040.F.
  - d. The City may accept pedestrian amenities proposed within a public right-of-way (e.g., street corner or mid-block pedestrian access way) and grant the developer credit toward fulfilling the above improvement standard.
  - e. The cost of a proposed public parking facility may be subtracted from building costs used in the assessment of civic space improvements.

**Findings:** These standards are met subject to conditions of approval. As a condition of approval, the Applicant shall provide a cost estimate for the proposed civic space area showing that civic space pedestrian amenities are provided in an amount equal to or greater than one-half of one percent of the estimated construction cost of the proposed building(s). The cost of a proposed public parking facility may be subtracted from building costs used in the assessment of civic space improvements. As a condition of approval, civic space areas located on private property shall be covered by a permanent weather protection feature.

3. Exception for Minor Projects. Building additions and remodels are not required to provide civic space where the estimated cost of the proposed building improvement is less than 50 percent of the existing assessed value of improvements on the subject site. Cost estimates are based on those used to estimate building permit fees, or other independent and credible source, subject to review and approval by the Planning Official. Assessed values shall be the market value of record at the Clackamas County Assessor's Office.
4. Exception for In Lieu Fee. Where the City finds that the creation of civic space is not practicable based on the project location or other relevant factors, it may accept an in lieu fee, to be paid to the City of Molalla Parks Improvement Fund, which shall be proportionate to the estimated cost of land and improvements (on-site) that otherwise would have been required. In such case, a licensed architect, landscape architect, or other qualified professional, shall prepare cost estimates for civic space improvements, which shall be subject to review and approval by the City Planning Official. (Ord. 2017-08 §1)

**Findings:** The Applicant has provided civic space in compliance with City Code subject to the above conditions of approval. These standards do not 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.

**Findings:** This condition is met subject to conditions of approval. Applicant's submitted application shows that the applicant proposes access from Hart Avenue, which is classified as a local street per the Molalla Transportation Systems Plan. Each of the proposed lots would have adequate access from Hart Ave. As a condition of approval, the Applicant shall receive an approach permit from the City of Molalla Public Works Department for access from Hart Ave prior to submission of building permits.

There are existing driveway drops on the north side of the proposed subdivision. The subject property is not permitted access from OR-211. As a condition of approval, existing driveway drops from OR-211 to the subject parcels shall be removed. 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.

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 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:** Consistent with the requirements of this standard, the Applicant proposes to remove existing driveway drops from OR-211. Vehicular access will be taken from Hart Ave. 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:** Staff finds that proposed access spacing is consistent with the Molalla Transportation Systems Plan requirements for local streets. 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.

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.
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:** These standards do not apply.

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:** Please check turning radius for new parking area to assure apparatus can make it behind new building. For 20 wide access radius is 28/48. For 12-foot-wide surface radius is 44/56.

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 largest vehicles to enter the site will be a garbage truck and medium size delivery truck. As a condition of approval, the Applicant shall submit a plan showing truck turning radii of 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 is interior to the site. This standard is met.

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

**Findings:** All approaches are designed to Public Works Standards for local streets. 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 does not apply.

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:** There are no acceleration nor deceleration lanes on Hart Ave. 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:** Pedestrian movement areas are located away from loading areas and the nearest parking areas have substantial clearance (min 45ft) from loading dock doors. This standard is met.

14. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge. The roadway authority may require the driveway apron be installed outside the required sidewalk or walkway surface, consistent with Americans with Disabilities Act (ADA) requirements, and to manage surface water runoff and protect the roadway surface.
15. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.

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:** These standards are met subject to a condition of approval. The Applicant's submitted site plans show driveway aprons between the roadway and proposed driveway. No modifications to the proposed configuration and design of the approaches have been recommended by the City Engineer. As a condition of approval, all approaches shall be designed to the current version of Molalla Public Works Design Standards and be consistent with ADA requirements.

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:** The proposed development does not take access from any ODOT facilities. This standard does not apply.

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:** The proposed development does not cross any culverts or drainage ditches. These standards do not apply.

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

**Findings:** 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

- 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 current version of the Molalla Transportation Systems Plan requires a minimum of 50ft between driveway approaches on local streets. Staff finds that both proposed approaches substantially exceed this standard. 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.

- 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, such as consolidated access River Meadows Subdivision Page of 7 32 (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.

- 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:** No joint use or cross accesses are proposed nor are any exceptions or adjustments requested. Standards H and I do not apply.

### 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 to the proposed building between public sidewalks on Hart and Metzler Ave and picking up pedestrian traffic from through the proposed parking lot. There are no proposed future phases. 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. The proposed pedestrian walkway through the site Applicant's submitted site plan meets standards for being safe, direct, and convenient. It deviates from a straight line only once to circumvent a row of parking stalls. The proposed row of parking on the southern side of the parking lot does not have direct pedestrian access to this walkway. The western portion of this walkway, near Hart Ave, is close to either the public walkway or an enclosed group of stalls. The eastern portion requires pedestrian movement from the proposed stalls to the pedestrian walkway through the drive aisle and loading zone. As a condition of approval, the Applicant shall provide pedestrian crossing features such as striping along the drive aisle between the southern parking stalls and the pedestrian walkway to enhance pedestrian safety along the rear, western frontage of the proposed building.

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 6" from vehicle maneuvering areas. 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 driveway. 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.

**Findings:** The Applicant's submitted site plan shows that all proposed sidewalks shall be 6ft and the submitted narrative states that they will be designed with appropriate materials to meet standards of this code. This standard is 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.

**Findings:** The Applicant's submitted site plan shows that all proposed sidewalks shall be 6ft and the submitted narrative states that they will be designed with appropriate materials to meet standards of this code. This standard is 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:** This standard is met subject to a condition of approval. Staff finds that the Applicant's proposed site plan shows landscaping planters and lawn landscaping on undeveloped portions of the property with the exception of an area between the southern-most row of parking and the southern property line of the subject site. As a condition of approval, the area between the southern-most row of parking and the southern property line of the subject site shall be landscaped and provide buffering between it and the adjacent

property in accordance with this provision and to reduce headlight glare to neighboring properties.

**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:** Staff finds that once the area between the southern-most row of parking and the southern property line of the subject site is included in landscaping area, the Applicant's submitted application shows over 6.7% landscape coverage. This meets the 5% standard for commercial zones. This condition 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 met subject to conditions of approval.

The Applicant submitted plans showing landscaping areas but did not identify plant types nor present a plan for coverage pursuant to 17-3.4.030 C, 1-17. As a condition of approval, portions of the subject site where the applicant has proposed landscaping shall be brought to current standards prior to City Approval of Occupancy. The applicant shall submit a landscaping plan meeting the standards of MMC 17-3.4.030 C, 1-17 with building permits. The applicant shall complete landscaping in accordance with the approved plan prior to City Approval of Occupancy.

**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, however property is within direct proximity of the downtown area. Staff extended the opportunity to incorporate streetscape design elements from the downtown master plan into their frontage improvement design along OR-211. The Applicant proposes required pedestrian frontage improvements adjacent to properties included in the proposed subdivision along OR-211, Hart Ave, and Metzler Ave and voluntary pedestrian improvements along the portions of OR-211 and Metzler Ave fronting 202 W Main ST, pending the City's ability to partner. The Applicant has proposed six 6'x6' tree wells, four of which front their property and street lighting matching the recommendations of the Downtown Master Plan. The resultant 144 sqft of space dedicated to tree wells on the OR-211 frontage in front of the Applicant's property contributes to the overall balance of landscaping for the property.

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

Staff calculates that the total vehicle maneuvering area for vehicular parking applicable to this site design review is 21,736 sqft. Assuming the addition of the landscaped area required by condition on the southern portion of the lot, staff counts total landscaping within this maneuvering area is at 2616 sqft, or 12%. This calculation does not include approximately 500 sqft dedicated to storm detention. As a condition of approval, the area between the southern-most row of parking and the southern property line of the subject site shall be landscaped and provide buffering between it and the adjacent property to reduce headlight glare to neighboring properties.

The applicant has proposed three trees in the parking area that contains 33 proposed parking spaces. This standard is met.

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

**Findings:** This standard is met subject to a condition of approval. The Applicants submitted site plan shows 33 parking spaces. The row against the southern border of the property contains 12 contiguous parking stalls. As a condition of approval, the applicant shall include a parking island within the southern row of parking so that no row of parking contains more than 10 contiguous parking stalls without a landscaped island.

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:** This standard can be met subject to a condition of approval. As a condition of approval the applicant shall submit a landscaping plan with building permit authorization submissions showing plant coverage standards of 17-3.4.030, E, 1 and 17-3.4.030, E, 3 for parking lot landscaping areas are 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:** This standard can be met subject to a condition of approval. As a condition of approval the applicant shall show wheel stops, curbs, bollards, or other physical barriers between parking stalls and landscaped areas on their building plans.

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

**Findings:** This standard is met subject to a condition of approval. The Applicant's submitted site plan includes three new tree within the parking area and six new trees within the right-of-way. As a condition of approval, trees planted in tree wells within sidewalks or other paved areas shall be installed with root barriers, consistent with applicable nursery standards.

- 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:** This standard is met subject to a condition of approval. Staff finds that the Applicant's proposed site plan shows landscaping planters and lawn landscaping on undeveloped portions of the property with the exception of an area between the southern-most row of parking and the southern property line of the subject site. As a condition of approval, the area between the southern-most row of parking and the southern property line of the subject site shall be landscaped and provide buffering between it and the adjacent property to reduce headlight glare to neighboring properties.

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

**Findings:** This standard does not apply to this proposal.

- 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.
- 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 subject site has an existing 6ft chain link fence around the perimeter of all properties owned by the Applicant, except for the frontage of the existing office building. The Applicant’s submitted site plans show that the fence will be removed except for the border between the subject site and the auto glass shop to the northeast and along the interior borders of the southern undeveloped parcels. Fencing in these areas meet the standards of this section.

- 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 does not apply.

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 fences of prohibited materials are proposed. 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:** Fencing 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.
2. Where a light standard is placed over a sidewalk or walkway, a minimum vertical clearance of eight feet shall be maintained.
3. Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.

4. Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.
5. Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.
6. Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.
7. Active building entrances shall have a minimum average illumination of not less than two foot-candles.
8. Surfaces of signs shall have an illumination level of not more than two foot-candles.
9. Parking lots and outdoor services areas, including quick vehicle service areas, shall have a minimum illumination of not less than 0.2 foot-candles, average illumination of approximately 0.8 foot-candles, and a uniformity ratio (maximum-to-minimum ratio) of not more than 20:1.
10. Where illumination grid lighting plans cannot be reviewed or if fixtures do not provide photometrics and bulbs are under 2,000 lumens, use the following guidelines:
  - a. Poles should be no greater in height than four times the distance to the property line.
  - b. Maximum lumen levels should be based on fixture height.
  - c. Private illumination shall not be used to light adjoining public right-of-way.
11. Where a light standard is placed within a walkway, an unobstructed pedestrian through zone not less than 48 inches wide shall be maintained.
12. Lighting subject to this section shall consist of materials approved for outdoor use and shall be installed according to the manufacturer's specifications.

**Findings:** These standards are met subject to conditions of approval. The Applicant's submitted site plan shows onsite lighting in the parking lots. The Applicant's submitted narrative states that lighting mounted on the building will illuminate adjacent walkways. As a condition of approval, the Applicant shall submit a lighting plan and detailed drawings with its engineering plans showing compliance with the height, illumination, and directional standards of MMC 17-3.4.050. Applicant's lighting plan shall comply with Dark Skies standards of MMC 21.80.

The Applicant's submitted site plan shows proposed lighting along OR-211 but does not show roadway lighting along Metzler and Hart Ave. Roadway lighting is required on all new development. Applicant shall be required to install roadway lighting. Location and number of lights shall be determined during design review.

- 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:** This standard is 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.
- C. **Calculations of Amounts of Required and Allowed Parking.**
  - 1. When computing parking spaces based on floor area, parking structures and non-leasable floor spaces, such as storage closets, mechanical equipment rooms, and similar spaces, are not counted.
  - 2. The number of parking spaces is computed based on the primary uses on the site except as stated in subsection C.3. When there are two or more separate primary uses on a site, the minimum and maximum parking for the site is the sum of the required or allowed parking for the individual primary uses. For shared parking, see Section 17-3.5.030.D.
  - 3. When more than 50 percent of the floor area on a site is in an accessory use, the required or allowed parking is calculated separately for the accessory use. An example would be a 10,000 square foot building with a 7,000 square foot warehouse and a 3,000 square foot accessory retail area. The minimum and maximum parking would be computed separately for the retail and warehouse uses.

4. Required parking spaces periodically used for the storage of equipment or goods may be counted toward meeting minimum parking standards, provided that such storage is an allowed use under Section 17-2.2.030, and is permitted as a Temporary Use under Section 17-2.3.160.

**Findings:** Staff has elected not to count proposed equipment storage space in its calculations for parking but does count the existing office headquarters building as that building does not have required dedicated parking. This brings the entire complex to code with parking with the approval of SDR01-2021. The Applicant will be required to record a separate deed provision to ensure that a mutual parking arrangement is maintained between the northern three parcels.

- 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 proposed parking lot is on site and closer than 800 ft from primary pedestrian entrances. This standard is met.

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

**Findings:** Staff finds that the proposed parking spaces are either within the public right-of-way or within a parking area developed to the standards of this code. 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:** Staff finds that the Applicant is providing parking for 11,027 sqft of total office space, including the existing building fronting OR-211 which currently has no off-street parking, and 2,600 sqft of new retail space. Space used for the accessory storage portion does not apply. Minimum parking standards for office space are 1 space per 500 sqft and minimum parking standards for retail space are 1 space per 400 sqft. The total minimum parking standards for the proposed development 28 spaces. The Applicant has proposed 33 off-street spaces.

Staff's interpretation of total parking differs from the Applicant's narrative in that it does not count the on-street spaces nor does it count the new accessory building. Despite these differences in determining calculations, Staff finds that this standard is met.

#### **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 a commercial use with fewer than 50 parking spaces. 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 available adjacent offstreet parking, making the maximum 1.2x minimum requirements. Maximum parking standards for the proposed development are 34 vehicle stalls. The Applicant has proposed 33 vehicle stalls. 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:** 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, 10' stall widths, and at least 27' drive aisles. 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 6 staple racks, accommodating up to 12 bicycles. With 33 proposed on-site spaces, parking for 7 bicycles is required. Bicycle parking 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.
- 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. (Ord. 2017-08 §1)

**Findings:** This standard is met subject to a condition of approval. The Applicant's submitted site plan shows that loading areas are internal to the site. As a condition of approval, the Applicant shall provide a truck turning radius schema with engineering plan submission showing that the largest proposed vehicle can enter the site without obstructing oncoming traffic.

## Chapter 17-3.6 Public Facilities

### 17-3.6.020 Transportation Standards

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

1. The 5-lot subdivision proposal will not require a City traffic impact analysis update. However, applicant will need to verify that an impact analysis is not required by ODOT. The proposed development will add a total of 14 peak hour trips and the threshold for a traffic impact analysis is 25 AM or PM PH trips. A Transportation Analysis Letter (TAL) is required per MMC 17-3.6.020.A.4.a. The Applicant has submitted their TAL to the City with this application. It must be approved by the City prior to issuance of construction permits.
2. **OR-211:** OR 211 is an arterial street under Oregon Department of Transportation (ODOT) jurisdiction. Current right-of-way width varies from 65-70 feet and approximate pavement width of 48 feet. Applicant will be required to design and construct frontage improvements along the site's Main St. Frontage consistent with Molalla arterial (downtown district) cross sections to include sidewalk with street parking and convert the right turn lane onto Metzler Ave into on street parking in accordance with ODOT requirements. Applicant will be required to close existing unused driveways to the highway fronting the building. Applicant will also be required to dedicate the sidewalk along the property frontage to be within ODOT right-of-way and 10-foot wide Public Utility Easement across the frontage of 220 W. Main (Hwy 211). 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. See also ODOT comments about right of way width and left turn warrants.

3. **Hart Ave:** Hart Ave is a local street under City of Molalla jurisdiction. Current right-of-way width is 40 feet and approximate pavement width is 34 feet. Local streets (w/ PK) require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 5 feet of right-of-way, 10-foot Public Utility Easement and construct road improvements to City standards for 17 feet of pavement (CL to face of curb), curb and gutter, and 6-foot curb tight sidewalk. Applicant will be required to bring the southeast corner of the intersection at Hart Ave and W. Main St (Hwy 211) up to ODOT ADA standards and submit plans to be reviewed by ODOT for ADA compliance.
4. **Metzler Ave:** Metzler Ave is a local street under City of Molalla jurisdiction. Current right-of-way width is 60 feet and approximate pavement width varies from 24-34 feet. Local streets (w/ PK) require 50 feet of right-of-way and 34 feet of pavement. Applicant will not be required to dedicate right-of-way, will be required to dedicate a 5-foot Public Utility Easement, and will be required to construct road improvements to City standards for 17 feet of pavement (CL to face of curb), curb and gutter, and 6-foot curb tight sidewalk. Applicant will be required to bring the southwest corner of the intersection at Metzler Ave and W Main Street (Hwy 211) up to ODOT ADA standards and submit plans to be reviewed by ODOT for ADA compliance.
5. **Right-of-way Dedications/Donations:** If right of way dedication fronts streets under the jurisdiction of the City of Molalla, Applicant shall submit dedication on formats approved by the Public Works Department. On ODOT rights of way, applicant will be required to donate sufficient right-of-way along variable width improvements and construct sidewalk widening to ODOT standards. ODOT requires donations of right-of-way to follow the requirements of Chapter 5.322. Developer Mitigation Donation in the ODOT Right-of-Way Manual. Applicant is advised that donation must be completed and recorded prior to submission of final subdivision plat or final partition plat in order for Public Works to process plat documents.
6. **Proposed Street "Hart Ave":** Applicant has opted to dedicate 5 feet of right-of-way and construct a half/full street improvement. Improvements shall consist of 17 feet of pavement, curb and gutter, and 6-foot curb tight sidewalk. Curb radius connecting to W. Main (Hwy211) Street shall be 25 feet and internal street shall be 15 feet minimum. Street shall be signed no parking on both sides until street is improved to full width.
7. Access to public streets shall be limited to the following locations and all accesses shall be constructed in such a manner as to eliminate turning conflicts. Access

spacing shall conform to the Transportation Systems Plan. The proposed width of accesses shall meet the Molalla Standard Specifications for Public Works Construction.

### 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

**Findings:**

#### Sanitary:

An 8-inch sanitary main exists on Metzler Ave. Sanitary main is 9 feet deep near proposed Tax Lot 52E08DD04600 and will serve new proposed development to the east by gravity system.

#### Water:

Development can be served from existing 6-inch lines on Metzler Ave that are stubbed into the site in two locations. 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:** Storm Drainage standards are met subject to conditions of approval.

1. **City Streets:** A 10-inch storm main exists approximately 50 feet to the east of the project on Metzler Ave. Storm main is approximate 3 feet in depth and will serve this subdivision.
2. Applicant proposes to collect and detain all stormwater onsite and discharge to City facilities. Connection to City facilities shall comply with all City requirements. Onsite private storm system shall comply with plumbing code requirements. The detention and flow control facilities shall be reviewed, permitted, and inspected by Public Works. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit. The connection to the ODOT facilities shall be reviewed and permitted by ODOT including water quality requirements.

3. ODOT Streets: Storm improvements shall meet ODOT requirements.

### 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 on OR-211/W Main ST, and Hart Ave. A 5 ft public utility easement is required along Metzler Ave.

### 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. 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.
- 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 retail, office, and accessory storage 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. Staff has conditioned additional vegetation screening on the southern border of the property 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:

*Consolidated Application Package For SDR01-  
2021 and SUB02-2021*

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# **Preliminary Subdivision Narrative**

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## **220 W Main Street Commercial Development**

# Preliminary Subdivision Narrative

## 220 W Main Street Commercial Development

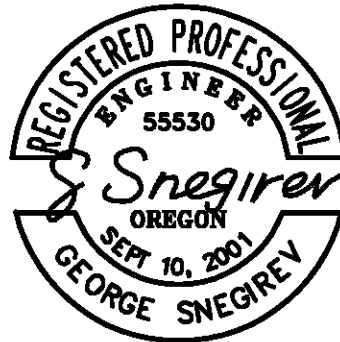
City of Molalla, Oregon

Prepared for:

**B&I Construction  
220 W Main Street  
Molalla, OR 97038**

Prepared By:

George Snegirev  
**Avalon Engineering  
200 Sweden Circle  
Silverton, OR 97381**



EXPIRES 6-30-2022

*Revised July 19th, 2021*

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## DESCRIPTION

This project is a development of a new building on a multi-lot commercial subdivision on a 1.94 total acre property located at 220 W. Main Street in Molalla, Oregon. The properties can also be located by the Clackamas County Map under the following information: 52E08DD04300, 52E08DD04400, 52E08DD04500, 52E08DD04600, 52E08DD04701, 52E08DD08700, 52E08DD08800, 52E08DD08900, 52E08DD09000, 52E08DD09100 and 52E08DD09200.

## EXISTING CONDITIONS

The project site is a collection of eleven lots. There is an existing building on lot 52E08DD04300 adjacent to W Main Street, an existing building on lot 52E08DD09200 adjacent to Hart Avenue and an existing building that straddles across lots 52E08DD04400 and 52E08DD04600 that is adjacent to Metzler Avenue. The other remaining lots are empty. The lots have access from Hart Avenue and Metzler Avenue. There are also some driveway drops/access points from W Main Street, but they don't go anywhere anymore. The site is mostly paved with asphaltic cement and a couple of patches of concrete slab. What is not paved is compacted gravel. There are no trees on the property. The site slopes from south west to north east away from the back of the properties towards W Main Street and Metzler Avenue.

## PROPOSED DEVELOPMENT

The proposed development will consist of the construction of a new building with a building footprint of 10,200 square feet that will be adjacent to Metzler Avenue. There will be 2,600 square feet of retail lease space at the street frontage of Metzler Avenue, 1,920 square feet of office space on the second level above the back of the retail space and 7,600 square feet of accessory storage at the west end of the building. There will be a parking area at the west end of the site with access from Hart Avenue that will serve the parking requirements for the new building. A re-plat of existing lots 52E08DD09100, 52E08DD04400, 52E08DD04500, and 52E08DD04600 will be required to consolidate these lots into one lot, so that the new building and parking areas sit on one single lot. Since a replat will be required it may also be a good opportunity to "fix" the anomalies of the existing lot boundaries to make them more useable for the future development of those lots. There is already access to these lots from Hart Avenue. There will be frontage improvements on Metzler Avenue which will consist of pavement widening to allow parallel parking, new curb and gutter and sidewalk all the way up to the new building. There will be no vehicular access from Metzler Avenue. There will be frontage improvements on Hart Avenue which will consist of pavement widening to allow parallel parking, new curb and gutter and sidewalk. In order for that to happen a five foot right-of way dedication will be required which will bring the half right-of-way width up to the current standards for a Local street. There will be vehicular access points from Hart Avenue onto to the property being developed. The Oregon Department of Transportation has a requirement to close the driveway drops in front of the property on W Main Street. These driveway drops will be removed and replaced with full height curb and new sidewalk in a location that is consistent with the City of Molalla Transportation System Plan. The extent of these improvements will be along W Main Street from Hart Avenue to Metzler Avenue. There is also an issue with the exact location of the right-of-way along the project site on W Main Street and will need to be resolved between the property owners and the Oregon Department of Transportation. There will be shared access driveways that will serve all the internal lots of the commercial subdivision. All these lots will be serviced with storm, sanitary and water for domestic use as well as fire protection.

## CODE COMPLIANCE

This section will demonstrate that this project is in either compliance with the criteria of the Molalla Development Code or if any Zoning Adjustments or Variances will be required.

### 17-4.2 SITE DESIGN REVIEW

#### 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).

*Applicants Response: Information is being submitted for a Type III review.*

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).

*Applicants Response: The part of the site where the new building and parking area will be located is already a paved area. There will not be any impervious area added to the site. There will actually be a reduction of impervious area, once the landscaping areas come into effect. A preliminary Storm Water Management Plan will not be submitted as part of this application, but once the storm water quality / quantity requirements are clearly defined then a Storm Water Management Plan will be submitted as part of the Final Engineering Design . Any perceived traffic impact is minimal and below the threshold required for a Traffic Impact Analysis. Instead a Traffic Analysis Letter will be submitted as part of this application.*

- ##### 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.

*Applicants Response: A Site Analysis Map is provided as part of this submittal.*

- 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.

*Applicants Response: A Site Plan of the proposed development is provided as part of this submittal*

- 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.

*Applicants Response: Building plans and elevations are provided as part of this submittal*

- 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.

*Applicants Response: A Grading Plan is provided as part of this submittal*

- 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.

*Applicants Response: A Landscaping Plan is provided as part of this submittal.*

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

*Applicants Response: The shared access and utility easements will be maintained under separate agreements. The agreements will be provided at a later date.*

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

*Applicants Response: This document will serve as the narrative report documenting compliance with the applicable approval criteria.*

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

*Applicants Response: Any perceived traffic impact is minimal and below the threshold required for a Traffic Impact Analysis. Instead a Traffic Analysis Letter will be submitted as part of this application.*

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.

*Applicants Response: A Phase I Environmental Site Assessment seems unnecessary at this time.*

### **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;

*Applicants Response: A completed application is provided as part of this submittal*

- 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;
- 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;

*Applicants Response: Not Applicable*

- 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;

*Applicants Response: The development and design standards of Article 17-3 will be addressed in other sections of this application which are provided as part of this submittal*

- 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

*Applicants Response: All adverse impacts to adjacent properties will be avoided or minimized to the fullest extent as feasible.*

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

*Applicants Response: Not Applicable*

### **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.

*Applicants Response: A performance guarantee and warranty bond for the public improvements will be provided as required.*

### **17-4.1.040 Type III Procedure (Quasi-Judicial Review—Public Hearing)**

Type III decisions are made by the Planning Commission after a public hearing, with an opportunity for appeal to the City Council.

#### **A. Application Requirements.**

- 1. **Application Forms.** Applications requiring Quasi-Judicial Review shall be made on forms provided by the Planning Official.

*Applicants Response: The completed application forms are provided as part of this submittal*

- 2. **Submittal Information.** The Planning Official shall advise the applicant on application submittal requirements. At a minimum, the application shall include all of the following information:

- a. The information requested on the application form;

*Applicants Response: The completed application forms are provided as part of this submittal*

- b. Plans and exhibits required for the specific approval(s) being sought;

*Applicants Response: The necessary plans and exhibits are provided as part of this submittal*

- c. A written statement or letter explaining how the application satisfies each and all of the relevant criteria and standards in sufficient detail;

*Applicants Response: This narrative explains how the application satisfies each and all of the relevant criteria and standards*

- d. Information demonstrating compliance with prior decision(s) and conditions of approval for the subject site, as applicable; and

*Applicants Response: Not Applicable*

- e. The required fee.

*Applicants Response: A payment amount for the appropriate fees is provided as part of this submittal*

- f. Comments, if obtained from neighborhood contact per Section 17-4.1.070.

*Applicants Response: The criteria of Neighborhood Contact will be complied with per Section 17-4.0.070*

## **17-3 COMMUNITY DESIGN STANDARDS**

### **17-3.1 DESIGN STANDARDS ADMINISTRATION**

#### **17-3.1.010 Purpose**

Division III contains design standards for the built environment. The standards are intended to protect the public health, safety, and welfare through multimodal accessibility and interconnectivity, and through the provision of parking, landscaping, and adequate public facilities.

#### **17-3.1.020 Applicability**

The provisions of Division III apply to permits and approvals granted under this Code, and other City actions, as summarized in Table 17-3.1.020.

### **17-3.2 BUILDING ORIENTATION AND DESIGN**

#### **17-3.2.010 Purpose**

Chapter 17-3.2 regulates the placement, orientation, and design of buildings. The regulations are intended to protect public health, safety, and welfare through clear and objective standards that promote land use compatibility and livability, while protecting property values and ensuring predictability in the development process. In summary, Chapter 17-3.2 is intended to create and maintain a built environment that:

- A. Is conducive to walking and bicycling;
- B. Provides natural surveillance of public spaces, or “eyes on the street,” for crime prevention and security;
- C. Reduces dependency on the automobile for short trips, thereby conserving energy and reducing unwanted congestion;
- D. Encourages the use of water-conserving landscaping;
- E. Allows for the integration of surface water management facilities within parking lots and landscape areas; and
- F. Creates a sense of place that is consistent with the character of the community, including historical development patterns and the community vision.

#### **17-3.2.020 Applicability**

Chapter 17-3.2 applies to all new buildings, including single-family detached homes, and exterior alterations to existing buildings. The Planning Official, through a Type II procedure, may grant adjustments to Chapter 17-3.2, pursuant to the criteria of Chapter 17-4.7 Adjustments and Variances.

#### **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.
  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.
  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.
  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.

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.

*Applicants Response: The above conditions for Building Orientation have been considered and adhered to as much as possible. But there are also the needs of the prospective tenants/owners of these commercial subdivision lots that factor in on the layout of the site. A compromise will be necessary to make sure all parties concerned will be met with their needs to make this a viable project.*

- 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.
  1. The site plan or preliminary subdivision plan, as applicable, shall comply with the street connectivity standards of Section 17-3.6.020. The plan approval shall bind on all future phases of the development, if any, to the approved block layout.
  2. Except as provided by subsections C.6 through 9, the site shall be configured into blocks with building pads that have frontage onto improved streets meeting City standards, and shall contain interior parking courts and with interconnected pedestrian walkways.
  3. The build-to line standards in Table 17-2.2.040.E shall be met across not less than 75 percent of the site's street frontage, consistent with subsection 17-3.2.040.B, except the build-to standard does not apply where a railroad, expressway, water body, topographic constraint, or similar physical constraint makes it impractical to orient buildings to a particular street or highway.
  4. Walkways shall connect the street right-of-way to all primary building entrances, and shall connect all primary building entrances to one another, including required pedestrian crossings through interior parking areas, if any, in accordance with Section 17-3.3.040. The Planning Official may condition development to provide facilities exceeding those required by Section 17-3.3.040, including a requirement for lighting, stairways, ramps, and midblock pedestrian access ways (e.g., to break up an otherwise long block) to ensure reasonably safe, direct, and convenient pedestrian circulation. Development in the right-of-way shall be approved by the City Engineer.
  5. Buildings placed at a block corner shall have a primary entrance oriented to the block corner. That entrance shall be located no more than 20 feet from the corner, as measured from the street curb and shall have a direct and convenient pedestrian walkway connecting to the corner sidewalk.
  6. All buildings shall orient to a street, pursuant to subsection B. Where it is not practical to orient all buildings to streets due to existing parcel configuration or a similar site constraints, buildings may orient to a "shopping street" providing, at a minimum, on-street parking (parallel or angled parking), 10-foot sidewalks (which shall include a four-foot zone for street trees and furnishings such as benches and other street furniture), and pedestrian-scale lighting. Shopping street dimensions do not apply to the public right-of-way.
  7. Each building that is proposed as orienting to a shopping street shall comply with the orientation standards of subsection B in reference to the shopping street, and shall have at least one primary entrance oriented to the shopping street.
  8. Where a building fronts both a shopping street and a public street, that building shall contain at least one primary entrance oriented to each street; except that an entrance is not required where the

public street is not improved with a sidewalk and the City determines that sidewalk improvements to the public street cannot be required as a condition of approval.

9. All other provisions of this Code apply to large-format developments.

*Applicants Response: The above conditions for Large-Format Developments are not applicable as the new building is less than 35,000 square feet.*

- 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.

*Applicants Response: This condition will be adhered to and will be reviewed as part of the design review and building permit process for the new building.*

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.

*Applicants Response: This condition will be adhered to and will be reviewed as part of the design review and building permit process for the new building.*

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.

*Applicants Response: There are no buildings located on corner lots.*

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.

*Applicants Response: Each building's primary entrances are at street level and are ADA accessible from parking lots and street sidewalk.*

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.
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.

*Applicants Response: This condition will be adhered to and will be reviewed as part of the design review and building permit process for the new building.*

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.

*Applicants Response: The part of the building that is up against the street sidewalk is of a one-story design.*

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.

*Applicants Response: All buildings are adjacent to a shopping 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.

*Applicants Response: Each building's internal functionality and operational procedures may not allow for incorporating transparency for the side and rear elevation windows. This condition will be considered and will be reviewed as part of the design review and building permit process for each individual building.*

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.

*Applicants Response: This condition will be considered and will be reviewed as part of the design review and building permit process for each individual building.*

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.

*Applicants Response: This condition will be adhered to and will be reviewed as part of the design review and building permit process for each individual 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).



*Applicants Response: This condition will be considered and will be reviewed as part of the design review and building permit process for each individual building.*

- 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.

*Applicants Response: This condition will be considered and will be reviewed as part of the design review and building permit process for each individual building.*

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.

*Applicants Response: This condition will be considered and will be reviewed as part of the design review and building permit process for each individual building.*

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.

*Applicants Response: This condition will be considered and will be reviewed as part of the design review and building permit process for each individual building.*

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.

*Applicants Response: The building on this project site is technically a one-story design, although it will be a tall building with a mezzanine level for the office space portion of the 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.

*Applicants Response: This condition will be considered and will be reviewed as part of the design review and building permit process for each individual building.*

- 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.

*Applicants Response: Not Applicable. There are no pedestrian shelters on this site.*

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.

*Applicants Response: Not Applicable. There are no pedestrian shelters on this site.*

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.

*Applicants Response: This condition will be considered and will be reviewed as part of the design review and building permit process for each individual building.*

- H. **Civic Space.** Commercial development projects shall provide civic space 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.

### **17-3.2.050 Civic Space and Pedestrian Amenities**

- A. **Purpose.** This section provides standards for civic spaces where such areas are required or provided voluntarily. Civic spaces allow for light and air circulation, visual relief, pedestrian resting areas, and opportunities for socialization in the most densely developed parts of the City. The code allows projects to meet minimum landscape area standards of Chapter 17-3.4 by providing civic space adjacent to street frontages or in courtyards or plazas between buildings, instead of with planted areas elsewhere on a lot as is typically done for residential developments.
- B. **Applicability.** All new commercial and mixed use developments with more than 10,000 square feet of gross leasable floor area within the Central Commercial C-1 and General Commercial C-2 zones are required to meet the standards of this section.
- C. **Standards.**
  - 1. Civic Space Standards. Except as provided by subsections C.3 and 4, at least three percent of every development site shall be designated and improved as civic space (plaza, landscaped courtyard, or similar space) that is accessible to the general public, pursuant to all of the following standards in subdivisions a through e, and as generally illustrated in Figure 17-3.2-12:
    - a. The highest priority locations for civic space improvements are those with the highest pedestrian activity (e.g., street corners and pedestrian access ways), as generally illustrated.
    - b. Civic spaces shall abut a public right-of-way or otherwise be connected to and visible from a public right-of-way by a sidewalk or pedestrian access way. Access ways shall be identifiable with a change in paving materials (e.g., pavers inlaid in concrete or a change in pavement scoring patterns or texture).
    - c. Where public access to a civic space is not practical due to existing development patterns, physical site constraints, or other hardship presented by the applicant, the City may allow a private area, such as an outdoor eating area attached to a restaurant, in finding the project complies with the standard.
    - d. All civic spaces shall have dimensions that allow for reasonable pedestrian access. For example, by extending the width of an existing sidewalk by four feet, a developer might provide space for an outdoor eating area; whereas a larger development at a street corner could meet the standard by creating a plaza adjacent to a building entrance.
    - e. Civic space improvements shall conform to Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting.

*Applicants Response: Not Applicable. There is less than 10,000 square feet of leasable floor area on this site.*

- 2. **Pedestrian Improvements in Civic Spaces.** Except as provided by subsections C.3 and 4, where this section requires the provision of civic space, such space shall be improved with pedestrian amenities, pursuant to the following standards in subdivisions a through e:

- a. Pedestrian amenities shall be provided in an amount equal to or greater than one-half of one percent of the estimated construction cost of the proposed building(s). A licensed architect, landscape architect, or other qualified professional, shall prepare cost estimates for civic space improvements, which shall be subject to review and approval by the Planning Official.
- b. Pedestrian amenities include plaza surfaces (e.g., pavers, landscapes, etc.), sidewalk extensions (e.g., with outdoor café space), street furnishings (e.g., benches, public art, pedestrian-scale lighting, water fountains, trash receptacles, bus waiting shelters, shade structures, or others), way-finding signs, or similar amenities, as approved by the Planning Official.
- c. Where a civic space adjoins a building entrance it should incorporate a permanent weather protection canopy, awning, pergola, or similar feature, consistent with Section 17-3.2.040.F.
- d. The City may accept pedestrian amenities proposed within a public right-of-way (e.g., street corner or mid-block pedestrian access way) and grant the developer credit toward fulfilling the above improvement standard.
- e. The cost of a proposed public parking facility may be subtracted from building costs used in the assessment of civic space improvements.

*Applicants Response: Not Applicable. There is less than 10,000 square feet of leasable floor area on this site.*

3. **Exception for Minor Projects.** Building additions and remodels are not required to provide civic space where the estimated cost of the proposed building improvement is less than 50 percent of the existing assessed value of improvements on the subject site. Cost estimates are based on those used to estimate building permit fees, or other independent and credible source, subject to review and approval by the Planning Official. Assessed values shall be the market value of record at the Clackamas County Assessor's Office.

*Applicants Response: Not applicable.*

4. **Exception for In Lieu Fee.** Where the City finds that the creation of civic space is not practicable based on the project location or other relevant factors, it may accept an in lieu fee, to be paid to the City of Molalla Parks Improvement Fund, which shall be proportionate to the estimated cost of land and improvements (on-site) that otherwise would have been required. In such case, a licensed architect, landscape architect, or other qualified professional, shall prepare cost estimates for civic space improvements, which shall be subject to review and approval by the City Planning Official.

*Applicants Response: Not Applicable. There is less than 10,000 square feet of leasable floor area on this site.*

### **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.

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

*Applicants Response: Not Applicable there are no drive-up and drive-through facilities on this site.*

### **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.

#### **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.

*Applicants Response: The permits for the frontage improvements on W Main Street and new street widening construction for Metzler Avenue and Hart Avenue will be applied for to the appropriate authorities.*

- 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.

*Applicants Response: Any perceived traffic impact is minimal and below the threshold required for a Traffic Impact Analysis. Instead a Traffic Analysis Letter will be submitted as part of this application.*

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.

*Applicants Response: There are three access points coming off W Main Street which don't go anywhere anymore, they will be replaced with full height curb and new sidewalk. There are two existing access points coming off Hart Avenue, which is a lower classification street. There are no planned access points on the frontage improvements of Metzler Avenue, which is a lower classification street.*

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.

*Applicants Response: spacing, sight distance and channelization standards will be met and reviewed by the appropriate roadway authority.*

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.

*Applicants Response: The driveways will be paved to meet the applicable construction standards.*

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.

*Applicants Response: All access points to the project site are being proposed as full access conditions.*

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).

*Applicants Response: A shared access agreement will be in place to ensure access to all lots on the project site. The agreement will be provided at a later date.*

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.

*Applicants Response: Emergency vehicle access and circulation has been incorporated into the design of the project site. Coordination and review with the local fire department will be completed to ensure this condition will be met.*

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

*Applicants Response: Service vehicle access and circulation, which include a garbage truck and a medium size delivery truck has been incorporated into the design of the project site. Coordination and review with the appropriate authorities will be completed to ensure this condition will be met.*

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.

*Applicants Response: Proposed access points have been designed to provide adequate que lengths for vehicles leaving the project site.*

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.

*Applicants Response: All driveways are located internally on the project site and do not obstruct any public right-of-way.*

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

*Applicants Response: Approaches and driveways are not wider than necessary to safely accommodate the turning movements of emergency and service vehicles while also minimizing the crossing distance for pedestrians where possible.*

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.

*Applicants Response: Cross walks across driveways will be marked. Coordination and review with the appropriate authorities will be completed to ensure this condition 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.

*Applicants Response: There are frontage improvements on Metzler Avenue and Hart Avenue which consist of pavement widening for parking area, curb and gutter and sidewalk along with a pavement taper into and out of this curbed area. The tapers in and out would be considered a safety operation, which is unavoidable.*

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.

*Applicants Response: Loading areas are located away from the main access points to the project site.*

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.

*Applicants Response: Concrete driveway aprons are proposed.*

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

*Applicants Response: The project site will be ADA accessible. Coordination and review with the appropriate authorities will be completed to ensure this condition will be 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.

*Applicants Response: Coordination and review with the appropriate authorities will be completed to ensure this condition will be 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.

*Applicants Response: The frontage improvements on W Main Street will require a permit from ODOT. A permit for this work will be applied for.*

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.

*Applicants Response: Not Applicable. There are no ditches, canals or railroads in the near vicinity of this project.*

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.

*Applicants Response: Not Applicable. There are no culverts or ditches in the near vicinity of this project.*

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.

*Applicants Response: Gravel construction entrances will be in place at the access points to the project site during construction. Other erosion and sediment control practices will be implemented 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.

*Applicants Response: This project will not create any additional impervious area. A Storm Water Management Plan for the project site will be implemented to the requirements of section 17-3.6.050.*

- 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.

*Applicants Response: Not Applicable. There are no new street intersections on this project.*

- 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.



*Applicants Response: Not Applicable. There are no new approaches on this project.*

- 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.

*Applicants Response: No objects greater than 2.5 feet in height shall be placed in the vision clearance areas. Coordination and review with the appropriate authorities will be completed to ensure this condition will be 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.

*Applicants Response: Not Applicable. There are no new intersections or approaches on this project.*

- 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.

*Applicants Response: A shared access and maintenance agreement will be in place to ensure access to all lots on the project site. This agreement will be provided at a later date.*

### **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.

*Applicants Response: A pedestrian walkway system has been incorporated into the design of the project site. The site plan shows sidewalks adjacent to buildings and connections to the sidewalk on the public street improvements.*

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.

*Applicants Response: A pedestrian walkway system has been incorporated into the design of the project site. Coordination and review with the appropriate authorities will be completed to ensure this condition will be met.*

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.

*Applicants Response: A pedestrian walkway system shall be raised six inches and curbed along the edge of the driveway or street. Coordination and review with the appropriate authorities will be completed to ensure this condition will be 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.

*Applicants Response: Crosswalks shall be clearly marked or differentiated from surrounding material. Coordination and review with the appropriate authorities will be completed to ensure this condition will 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.

*Applicants Response: All pedestrian walkways shall be a minimum of six feet in width and be made of material that is most appropriate for its location. Coordination and review with the appropriate authorities will be completed to ensure this condition will be 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.

*Applicants Response: All pedestrian walkways shall be a minimum of six feet in width and be made of material that is most appropriate for its location. Coordination and review with the appropriate authorities will be completed to ensure this condition will be 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.

*Applicants Response: Not Applicable*

## **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.

*Applicants Response: All the landscaping and screening on the project site will be designed to meet the specifications of Section 17-3.4.030.*

- 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.

*Applicants Response: All the fences and walls on the project site will be designed to meet the specifications of Section 17-3.4.050.*

- C. Section 17-3.4.050, Outdoor Lighting, applies to all new outdoor lighting, i.e., lighting that is installed after November 10, 2017.

*Applicants Response: All the outdoor lighting on the project site will be designed to meet the specifications of Section 17-3.4.050.*

- 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.

### **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.

*Applicants Response: All the areas designated as open space shall be landscaped.*

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

*Applicants Response: The minimum landscape area will be 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.

*Applicants Response: All the above design guidelines for plant selection shall be considered. Coordination and review with the appropriate authorities will be completed to ensure this condition will 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.

*Applicants Response: Not Applicable, project site is located in the C-2 Commercial District.*

- 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.
  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.
  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.
  4. Wheel stops, curbs, bollards, or other physical barriers are required along the edges of all vehicle-maneuvering areas to protect landscaping from being damaged by vehicles. Trees shall be planted not less than two feet from any such barrier.
  5. Trees planted in tree wells within sidewalks or other paved areas shall be installed with root barriers, consistent with applicable nursery standards.

*Applicants Response: All the above design guidelines for parking lot landscaping shall be considered. Coordination and review with the appropriate authorities will be completed to ensure this condition will 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.

*Applicants Response: All outdoor storage and unenclosed uses shall meet the screening requirements and will be reviewed as part of the design review and building permit process for each individual building.*

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.

*Applicants Response: This condition can be met. Coordination and review with the appropriate authorities will be completed to ensure this condition will be 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.
- G. **Maintenance.** All landscaping shall be maintained in good condition, or otherwise replaced by the property owner.

*Applicants Response: Landscaping will be maintained by property owners.*

### **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.
- 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.
- 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.

*Applicants Response: This condition can be 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.

*Applicants Response: No objects greater than 2.5 feet in height shall be placed in the vision clearance areas. Coordination and review with the appropriate authorities will be completed to ensure this condition will 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.

*Applicants Response: Only approved materials shall be used in the construction of fences and walls.*

- 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.

*Applicants Response: Fences and walls shall go through the appropriate building permit process and if necessary be designed by a Professional Engineer licensed in the State of Oregon.*

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

*Applicants Response: Fences and walls will be maintained by property owners.*

### **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.
  2. Where a light standard is placed over a sidewalk or walkway, a minimum vertical clearance of eight feet shall be maintained.
  3. Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.

4. Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.
5. Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.
6. Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.
7. Active building entrances shall have a minimum average illumination of not less than two foot-candles.
8. Surfaces of signs shall have an illumination level of not more than two foot-candles.
9. Parking lots and outdoor services areas, including quick vehicle service areas, shall have a minimum illumination of not less than 0.2 foot-candles, average illumination of approximately 0.8 foot-candles, and a uniformity ratio (maximum-to-minimum ratio) of not more than 20:1.
10. Where illumination grid lighting plans cannot be reviewed or if fixtures do not provide photometrics and bulbs are under 2,000 lumens, use the following guidelines:
  - a. Poles should be no greater in height than four times the distance to the property line.
  - b. Maximum lumen levels should be based on fixture height.
  - c. Private illumination shall not be used to light adjoining public right-of-way.
11. Where a light standard is placed within a walkway, an unobstructed pedestrian through zone not less than 48 inches wide shall be maintained.
12. Lighting subject to this section shall consist of materials approved for outdoor use and shall be installed according to the manufacturer's specifications.

*Applicants Response: The outdoor lighting for the project site shall be designed by a lighting design professional. All the above design guidelines for outdoor lighting shall be considered. Coordination and review with the appropriate authorities will be completed to ensure this condition will 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.

*Applicants Response: All the necessary permits shall be obtained for the installation of the outdoor lighting.*

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

*Applicants Response: Outdoor lighting will be maintained by property owners.*



## 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

#### 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.

*Applicants Response: The calculated number of parking spaces required for the new building area is as follows. The total square footage for the accessory storage is 7,600 square feet and at 0.5 parking space per 1000 square feet, the total spaces required is 3.8 (4). The total square footage for the proposed retail space is 2,600 square feet and at 1 parking space per 400 square feet the total spaces required is 6.5 (7). The total square footage for the proposed office space is 1,920 square feet and at 1 parking space per 500 square feet the total spaces required is 3.84 (4). The calculated number of parking spaces required for the existing building area after it will be renovated is as follows. The total square footage for the accessory storage is 1,814 square feet and at 0.5 parking space per 1000 square feet, the total spaces required is 0.90 (1). The total square footage for the proposed retail space is 7,527 square feet and at 1 parking space per 400 square feet the total spaces required is 18.8 (19). The total square footage for the proposed office space is 3,628 square feet and at 1 parking space per 500 square feet the total spaces required is 7.2 (8) The amount of public parking spaces required is 43 parking spaces. The total amount of public parking spaces provided is 51. This is a ratio of 1.186 of additional parking.*

- #### 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.

*Applicants Response: The parking provided is for employees and customer use. The parking is free of any fees.*

- #### 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.

*Applicants Response: There are parking spaces in the near vicinity of each retail/warehouse/office building and they are all less than 800 feet from the pedestrian access point to each building.*

- 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.

*Applicants Response: The site plans show the proposed parking areas for the project site.*

### **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.

- B. **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.
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.
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. Site has a bus stop with frequent transit service located adjacent to it, and the site's frontage is improved with a bus stop waiting shelter, consistent with the standards of the applicable transit service provider: Allow up to a 20 percent reduction to the standard number of automobile parking spaces.
  - b. 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.
  - c. Site has dedicated parking spaces for motorcycles, scooters, or electric carts: Allow reductions to the standard dimensions for parking spaces.

- d. 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.
- e. Site has off-street parking or other public parking in the vicinity of the site.
- 4. The number of required off-street parking spaces may be reduced through the provision of shared parking, pursuant to subsection D.
- 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 E.

*Applicants Response: There are an adequate number of parking spaces on the project site. No exceptions or reductions are necessary.*

- C. **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, 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.

*Applicants Response: There are two adjacent streets to the project site, Hart Avenue (a Local) which does not allow on-street parking and Metzler Avenue (a Local) which requires pavement widening in order to allow on-street parking. We are going to have to use two different factors to determine the maximum number of parking spaces. We have 9 parking spaces at 1.2 and 9 parking spaces at 1.5 which determines the maximum number of parking spaces at 24.3 (25). We have 18 parking spaces which is below the threshold of the maximum allowed.*

- D. **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.

*Applicants Response: Each building(s) on the project site sits on their own lot, but due to the configuration of the building layouts there will be a need for shared parking.*

- E. **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.E 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.

*Applicants Response: All parking stall design meet or exceed the minimum requirements.*

- F. **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.

*Applicants Response: No adjustments are necessary to the parking area dimensions.*

- G. **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.

*Applicants Response: There are two van accessible ADA parking spaces in the near vicinity of each retail/warehouse/office building and they are all less than 80 feet from the pedestrian access point to each building.*

- H. **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.

*Applicants Response: There are no electric charging stations proposed at this time unless an analysis is done to show the demand for these is there.*

#### **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.B, 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.

*Applicants Response: Bicycle parking and the necessary number of bike racks will be incorporated into the design of the project site. Coordination and review with the appropriate authorities will be completed to ensure this condition will be met.*

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

*Applicants Response: Not Applicable.*

- 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.

*Applicants Response: Bicycle parking and their required locations will be incorporated into the design of the project site. Coordination and review with the appropriate authorities will be completed to ensure this condition will be met.*

#### **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.

*Applicants Response: Loading areas are located internally on the project site close to the buildings that they will serve and will not interfere with traffic operations of the adjacent streets. They will be reviewed as part of the design review and building permit process for each individual building.*

- 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.

*Applicants Response: The loading area will be designed to accommodate a medium sized delivery vehicle.*

- 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.

*Applicants Response: Loading areas are located internally on the project site close to the buildings that they will serve and will not interfere with traffic operations of the adjacent streets. They will be reviewed as part of the design review and building permit process for each individual building.*

- 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.

*Applicants Response: Loading areas are located internally on the project site close to the buildings that they will serve and will not interfere with traffic operations of the adjacent streets. No adjustments are necessary.*

## 17-3.6 PUBLIC FACILITIES

### 17-3.6.010 Purpose and Applicability

- A. **Purpose.** The standards of Chapter 17-3.6 implement the public facility policies of the City of Molalla Comprehensive Plan and adopted City plans.
- B. **Applicability.** Chapter 17-3.6 applies to all new development, including projects subject to Land Division (Subdivision or Partition) approval and developments subject to Site Design Review where public facility improvements are required. All public facility improvements within the city shall occur in accordance with the standards and procedures of this chapter. When a question arises as to the intent or application of any standard, the City Engineer shall interpret the Code pursuant to Chapter 17-1.5.
- C. **Public Works Design Standards.** All public facility improvements, including, but not limited to, sanitary sewer, water, transportation, surface water and storm drainage and parks projects, whether required as a condition of development or provided voluntarily, shall conform to the City of Molalla Public Works Design Standards. Where a conflict occurs between this Code and the Public Works Design Standards, the provisions of the Public Works Design Standards shall govern.

*Applicants Response: The frontage improvements on W Main Street shall be designed in conformance with the ODOT Highway Design Standards. The frontage improvements of Metzler Avenue and Hart Avenue shall be designed in conformance with the City of Molalla Public Works Design Standards.*

- 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.

*Applicants Response: Due to the magnitude of this project. The frontage improvements on W Main Street, the frontage improvements of Metzler Avenue and Hart Avenue, the private and public improvements on-site and the construction of the buildings must run concurrently in order for this project to be completed in a timely manner.*

### **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.

*Applicants Response: This project will include the frontage improvements on W Main Street and the frontage improvements of Metzler Avenue and Hart Avenue.*

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.

*Applicants Response: The frontage improvements on W Main Street shall be designed in conformance with the ODOT Highway Design Standards. The frontage improvements of Metzler Avenue and Hart Avenue shall be designed in conformance with the City of Molalla Public Works Design Standards.*

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.

*Applicants Response: There is adequate Right-of Way for the frontage improvements on W Main Street and the frontage improvements of Metzler Avenue. The frontage improvements on Hart Avenue will require a five foot right-of-way dedication.*

4. The purpose of this subsection is 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 Traffic Impact Analysis 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 Traffic Impact Analysis; and who is qualified to prepare the analysis.
  - a. **When a Traffic Impact Analysis is Required.** The City or other road authority with jurisdiction may require a Traffic Impact Analysis (TIA) as part of an application for development, a change in use, or

a change in access. A TIA shall be required where a change of use or a development would involve one or more of the following:

- (1) A change in zoning or a plan amendment designation;
  - (2) Operational or safety concerns documented in writing by a road authority;
  - (3) An increase in site traffic volume generation by 300 Average Daily Trips (ADT) or more;
  - (4) An increase in peak hour volume of a particular movement to and from a street or highway by 20 percent or more;
  - (5) An increase in the use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day;
  - (6) Existing or proposed approaches or access connections that do not meet minimum spacing or sight distance requirements or are located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, creating a safety hazard;
  - (7) A change in internal traffic patterns that may cause safety concerns; or
  - (8) A TIA required by ODOT pursuant to OAR 734-051.
- b. **Traffic Impact Analysis Preparation.** A professional engineer registered by the State of Oregon, in accordance with the requirements of the road authority, shall prepare the Traffic Impact Analysis.

*Applicants Response: Any perceived traffic impact is minimal and below the threshold required for a Traffic Impact Analysis. Instead a Traffic Analysis Letter will be submitted as part of this application.*

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.

*Applicants Response: No waiver or deferral of standard street improvements are necessary*

**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.

*Applicants Response: Not Applicable. No new street construction is being proposed.*

**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.

*Applicants Response: There is adequate Right-of Way for the frontage improvements on W Main Street and the frontage improvements of Metzler Avenue. The frontage improvements on Hart Avenue will require a five foot right-of-way dedication.*

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.



*Applicants Response: The frontage improvements on W Main Street shall be designed in conformance with the ODOT Highway Design Standards. The frontage improvements of Metzler Avenue and Hart Avenue shall be designed in conformance with the City of Molalla Public Works Design Standards.*

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.

*Applicants Response: The frontage improvements on W Main Street shall be designed in conformance with the ODOT Highway Design Standards. The frontage improvements of Metzler Avenue and Hart Avenue shall be designed in conformance with the City of Molalla Public Works Design Standards.*

**D. Transportation Connectivity and Future Street Plans.** The following standards apply to the creation of new streets:

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

*Applicants Response: Not Applicable. No new street construction is being proposed.*

2. **Access Ways.** The Planning Commission, in approving a land use application with conditions shall require a developer to provide an access way where the creation of a cul-de-sac or dead-end street is unavoidable and the access way connects or may in the future connect, the end of the street to another street, a park, or a public access way, except where the City Engineer and City Planner determine the access way is not feasible. Where an access way is required, it shall be not less than 10 feet wide and shall contain a minimum eight-foot-wide concrete surface or other all-weather surface approved by the City Engineer. Access ways shall be contained within a public right-of-way or public access easement, as required by the City.

*Applicants Response: Not Applicable. No new street construction is being proposed.*

3. **Connectivity to Abutting Lands.** The street system of a proposed subdivision shall be designed to connect to existing, proposed, and planned streets adjacent to the subdivision. Wherever a proposed development abuts unplatted land or a future development phase of an existing development, street stubs shall be provided to allow access to future abutting subdivisions and to logically extend the street system into the surrounding area. Street ends shall be designed to facilitate future extension in terms of grading, width, and temporary barricades.

*Applicants Response: Not Applicable. Abutting land is already developed with an existing street system.*

4. **Street Connectivity and Formation of Blocks.** In order to promote efficient vehicular and pedestrian circulation throughout the City, subdivisions and site developments shall be served by an interconnected street network, pursuant to the current version of the Public Works Design Standards and Transportation System Plan. Where a street connection cannot be made due to physical site constraints, approach spacing requirements, access management requirements, or similar restrictions; where practicable, a pedestrian access way connection shall be provided pursuant to Chapter 17-3.3.

*Applicants Response: Not Applicable. Abutting land is already developed with an existing street system.*

5. **Cul-de-Sac Streets.** A cul-de-sac street shall only be used where the City Engineer determines that environmental or topographical constraints, existing development patterns, or compliance with other applicable City requirements preclude a street extension. Where the City determines that a cul-de-sac is allowed, cul-de-sac length, turn-around type, and pedestrian access to adjoining properties shall meet the requirements of the current version of the Public Works Design Standards and Transportation System Plan and subsection D.2.

*Applicants Response: Not Applicable. Abutting land is already developed with an existing street system.*

6. **Future Street Plan.** Where a subdivision is proposed adjacent to other developable land, a future street plan shall be filed by the applicant in conjunction with an application for a subdivision in order to facilitate orderly development of the street system. The plan shall show the pattern of existing and proposed future streets from the boundaries of the proposed land division and shall include other divisible parcels within 600 feet surrounding and adjacent to the proposed subdivision. The street plan is binding when part of a multi-phased master planned development. The plan must demonstrate, pursuant to City standards, that the proposed development does not preclude future street connections to adjacent development land.

*Applicants Response: Not Applicable. Abutting land is already developed with an existing street system.*

7. **Private Streets and Gated Drives.** Private streets and gated drives serving more than two dwellings (i.e., where a gate limits access to a development from a public street), are prohibited.

*Applicants Response: No private street or gated drive is proposed for this project*

- 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.

*Applicants Response: The frontage improvements on W Main Street shall be designed in conformance with the ODOT Highway Design Standards. The frontage improvements of Metzler Avenue and Hart Avenue shall be designed in conformance with the City of Molalla Public Works Design Standards.*

- 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.

*Applicants Response: Coordination will be required with the Fire Marshal in order for the Fire Code standards to be met.*

- 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.

*Applicants Response: There is adequate Right-of Way for the frontage improvements on W Main Street and the frontage improvements of Metzler Avenue. The frontage improvements on Hart Avenue will require a five foot right-of-way dedication.*

- 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.

*Applicants Response: Traffic calming is not anticipated and may not be necessary. However the roadway improvements shall be designed in conformance with the City of Molalla Public Works Design Standards and will be reviewed as part of the construction permit process for the roadway improvements.*

- 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.

*Applicants Response: Sidewalks will be included in the design of the frontage improvements on W Main Street and the frontage improvements of Metzler Avenue and Hart Avenue.*

- 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.

*Applicants Response: There are no Railroads nearby the project site.*

- 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.

*Applicants Response: No new street names will be required.*

- 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.

*Applicants Response: Survey monuments shall be included as part of the recording of the subdivision plat for this project.*

- 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.

*Applicants Response: All necessary signage shall be installed per the MUTCD and the appropriate governing jurisdiction.*

- 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.

*Applicants Response: The street lighting for the project site shall be designed by a lighting design professional. Coordination and review with the appropriate authorities will be completed to ensure this condition will be met.*

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

*Applicants Response: The location and type of mailboxes to be used on the project site shall be in coordination with the United States Postal Service to ensure this condition will be met.*

- 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.

*Applicants Response: This condition can 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.

*Applicants Response: The construction of the sanitary sewer and water service lines shall be included as part of the frontage improvements for Metzler Avenue. There are existing fire hydrants nearby that will provide adequate fire protection.*

- 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.

*Applicants Response: Permits shall be obtained prior to commencement of construction of the sanitary sewer and water services.*

- 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.

*Applicants Response: Not Applicable. There is no need to construct new sanitary sewer and water mains. Only service lines are required, and they will connect into the existing sanitary sewer and water mains.*

- 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.

*Applicants Response: Coordination with the City of Molalla will be required on the issue of existing capacity of the sanitary sewer and water mains*

### **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.

*Applicants Response: The storm water management plan for the project site will comply with the City of Molalla Public Works Design Standards and the Stormwater Master Plan*

- B. **Accommodation of Upstream Drainage.** Culverts and other drainage facilities shall be large enough to accommodate existing and potential future runoff from the entire upstream drainage area, whether inside or outside the development. Such facilities shall be subject to review and approval by the City Engineer.

*Applicants Response: Coordination with the City of Molalla will be required on the issue of over-sizing the storm drainage system in order to meet the possible needs of future adjacent development*

- 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.

*Applicants Response: Coordination with the City of Molalla will be required on the issue of downstream capacity issues for the storm drainage system. If capacity issues exist then a detention will be designed to overcome these capacity issues.*

- 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.

*Applicants Response: Coordination with the City of Molalla will be required on the issue of over-sizing the storm drainage system in order to meet the possible needs of future adjacent development*

- E. **Existing Watercourse.** Where a proposed development is traversed by a watercourse, drainage way, channel, or stream, the City may require a storm water 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.

*Applicants Response: Not Applicable. There is no watercourse, drainage way, channel or stream in the near vicinity of the project site.*

### 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.
- 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.
  - 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.

*Applicants Response: All utilities on the project site will be placed underground. Coordination and review with the appropriate authorities will be completed to ensure this condition will be met.*

- C. **Exception to Undergrounding Requirement.** The City Engineer may grant exceptions to the undergrounding standard where existing physical constraints, such as geologic conditions, streams, or existing development conditions make underground placement impractical.

### 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.
- 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.
- 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.

*Applicants Response: The location and description of the utility easements shall be included as part of the recording of the subdivision plat for this project.*

### 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.

*Applicants Response: Construction documents shall be approved and construction permits shall be obtained prior to commencement of any construction activities on the project site.*

### 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.
- 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.

*Applicants Response: The City of Molalla Public Works Design Standards shall be clearly adhered to*

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

*Applicants Response: Construction documents shall be approved and construction permits shall be obtained prior to commencement of any construction activities on the project site.*

- 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.

*Applicants Response: No break in construction is anticipated.*

- 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.

*Applicants Response: The Contractor shall coordinate with the City Inspectors to ensure any unforeseen, but necessary field changes are approved in a timely manner as not to impact the construction schedule.*

- 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.

*Applicants Response: An Engineers' Certification and As-Built Plans will be provided at the completion and the acceptance of the project by the City of Molalla.*

### 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.

*Applicants Response: A performance guarantee and warranty bond that is agreeable to all parties concerned, for the public improvements will be provided as required.*

- 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.
- 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.

*Applicants Response: An itemized improvement estimate for the public works construction shall be provided to the City of Molalla.*

- 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.

*Applicants Response: A performance guarantee and warranty bond that is agreeable to all parties concerned, for the public improvements will be provided as required.*

- 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.

*Applicants Response: Not anticipated. Failure is not an option.*

- 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.

*Applicants Response: Not anticipated.*

- 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.

*Applicants Response: A performance guarantee and warranty bond that is agreeable to all parties concerned, for the public improvements will be provided as required.*



## **18.02 SIGNS**

### **18.02.010 Purpose.**

- A. **The purpose of the sign regulations is to:**
1. Protect the health, safety, property and welfare of the public;
  2. Provide a neat, clean, orderly and attractive appearance in the community;
  3. Provide for safe construction, location, erection and maintenance of signs;
  4. Encourage signs to be well designed and wisely located;
  5. Prevent sign clutter, minimize adverse visual safety factors to travelers in the public right-of-way;
  6. Provide a simple and efficient regulatory process; and
  7. Achieve these purposes consistent with state and federal constitutional limits on the regulation of speech.
- B. To achieve this purpose, it is necessary to regulate the design, quality of materials, construction, location, electrification, illumination, and maintenance of signs that are visible to the public.
- C. Nothing in these regulations is intended to control the construction or location of directional or informational signs installed by the city, county or state for the purpose of controlling traffic, indicating street names, providing legal or public notice, or other public purposes.

### **18.02.020 Rules for reading and applying sign code language.**

- A. **Reading and Applying the Code.** Literal readings of the code language will be used. Regulations are no more or less strict than as stated. Application of the regulations that are consistent with the rules of this sign code are non-discretionary actions of the Planning Director to implement the code.
- B. **Situations Where the Code is Silent.** Proposals for signs where the code is silent, or where the rules of this chapter do not provide a basis for concluding that the sign is allowed, are prohibited.

### **18.02.030 Area of signs.**

Sign area includes the area within a perimeter enclosing the limits of lettering, writing, representation, emblem, figure, essential sign structure, foundations or supports. For a multiple-face (more than 2-sided) sign, the sign area shall be the total of all faces. If the sign consists of more than 1 section or module, all areas will be totaled. For a double-faced sign in a single cabinet, the allowed area shall be the dimension of the cabinet, not the total of the area of the message.

### **18.02.040 Permit requirements.**

- A. **Permit Required.** All signs erected after the effective date of the ordinance codified in this chapter, other than signs exempt from permit requirements of this chapter shall require a sign permit.
- B. **Permit Application.**
1. Application for a sign permit shall be made on forms provided by the Planning Director.

2. An application shall include all plans and information necessary to establish that the proposed sign complies with the applicable requirements of this chapter and applicable building, structural and life safety codes.
3. Sign permits shall be reviewed pursuant to a Type I Land Use Procedure.
4. An approved sign review does not replace, supersede, or waive structural or electrical standards and permits required. These other permits must also be obtained prior to work on the installation of the sign.
5. Signs requested to be placed in any public right-of-way must first obtain permission from the jurisdiction having control of said right-of-way.
6. A sign review permit issued under this chapter is void if substantial physical action is not taken in accordance with the conditions of the permit and the applicable provisions of this chapter, and the finding that the applicant did not misrepresent or falsify any information supplied in the application.
7. Site plan and/or building elevation plans drawn to scale and dimension showing:
  - a. Existing structures;
  - b. Driveways;
  - c. Street and right-of-way;
  - d. Existing signs;
  - e. Proposed sign;
  - f. Vision clearance;
  - g. All incidental signs.
8. A proposed sign plan drawn to scale and dimension showing:
  - a. Height;
  - b. Width;
  - c. Square footage;
  - d. Thickness;
  - e. Size and style of letters;
  - f. Color;
  - g. Type of illumination;
  - h. Materials.
- C. **Fees.** A fee as established by resolution of the City Council shall be paid upon the filing of an application. Such fees shall not be refundable.
- D. **Permit Conditions.** The Planning Department shall attach conditions in conjunction with the approval of a sign permit in order to ensure the intent of this Code is met. The Planning Department may also require guarantees and evidence to ensure that such conditions will be complied with.

- E. **Permit Appeal.** A decision may be appealed to the Planning Commission. A written appeal must be filed with the Planning Department within 10 days of the notice of the decision. The appeal shall be conducted pursuant to a Type I Land Use appeals process.
- F. **Permit Suspension or Revocation.** The Planning Director or duly authorized representative may, in writing, suspend or revoke a permit issued under provisions of this chapter whenever the permit is issued on the basis of incorrect information supplied, or in violation of applicable ordinance or regulation or any of the provisions of this chapter.
- G. Adjustments to portions of the sign code may be allowed pursuant to compliance with Chapter 20.16.

*Applicants Response: permits will be obtained and permit requirements adhered to prior to any signs being constructed or installed on the project site.*

### **18.02.050 Construction and maintenance.**

- A. Signs shall be constructed, erected and maintained to meet the requirements of the Oregon Structural Specialty Code, National Electric Code and Oregon Mechanical Code. In addition, all illuminated signs shall be subject to the provisions of the Underwriters' Standards, as defined in Underwriters' Laboratories, "Standards for Safety, Electric Signs." For purposes of this section, "illuminated sign" means any sign which has characters, letters, figures, designs or outlines illuminated by electric lights or luminous tubes as part of the sign property.
- B. All signs and component parts shall be kept in good repair and maintained in a safe, neat, clean and attractive condition.
- C. All signs shall be located entirely within the boundaries of the subject property unless specifically authorized by this code.
- D. No sign shall be erected or maintained in such a manner that any portion will interfere in any way with the free use of, or any access to, any fire escape, or be erected or maintained so as to obstruct any window of light or ventilation required by any applicable law or building code.
- E. It is unlawful to erect or maintain a sign which, by reason of its size or location, pose immediate danger to the health, safety and welfare of the citizens of the city, either pedestrian or motorists, at public and/or private roadways, intersections, and driveways.
- F. All signs shall be able to withstand a wind pressure at a minimum of 20 pounds per square foot of exposed surface.
- G. All signs shall be constructed securely and shall not constitute a fire hazard.
- H. When wood is used which comes into contact with the ground, the wood must be pressure treated.

*Applicants Response: All signs on the project site shall be constructed and maintained per the recommended guidelines and regulations.*

### **18.02.060 Sign removal.**

The Planning Department may order removal of any sign erected, replaced, reconstructed or maintained in violation of these regulations.

- A. The Planning Department shall deliver written notice by certified mail (return receipt requested) to the owner of the sign, or, if the owner of the sign cannot be located, to the owner of the lot(s) as shown on the tax rolls of Clackamas County, on which such sign is located, directing that the sign shall be removed or brought into compliance with these standards.
- B. If the owner of such sign or the owner of the lot(s) on which the sign is located fails to remove the sign or remedy the violation within 30 days after receipt of written notice from the city, the Planning Director shall cause such sign to be removed at the expense of the property owner. Such costs shall be entered by the City Recorder on the docket of city liens against the property owner and shall be collectible in the same manner as liens for public improvements.
- C. If the condition of the sign presents an immediate threat to the safety of the public, the Planning Director may cause removal of the sign immediately, without prior notice, and the expenses for such removal shall be paid by the owner of the sign or the permit applicant. If such persons cannot be found, the expense shall be paid by the owner of the building, structure or property.

*Applicants Response: Not Applicable. There are no signs that need to be removed.*

### **18.02.070 Nonconforming signs.**

- A. A nonconforming sign lawfully existed prior to the adoption of applicable zoning requirements with which it does not comply. Except, however, signs shall be considered to be nonconforming where the sign, by reason of its size, location, construction, or lack of maintenance creates a public hazard or nuisance. In the case of such public hazard or nuisance, the city may begin immediate abatement procedures, as provided in this chapter and other city ordinances.
- B. Relocation, replacement, structural alteration or expansion of a nonconforming sign is subject to the same limitations, application procedures and requirements set forth in this chapter for other nonconforming structures. Except, approval of a nonconforming structure application is not required for the following:
  - 1. Normal repair and maintenance, where the cost to repair the sign does not exceed 50% of the replacement cost of the sign using new materials, as determined by the Building Official.
  - 2. Change of sign copy.
  - 3. Structural alteration when the alteration is necessary for structural safety, as determined by the Building Official.
  - 4. A nonconforming sign may be reconstructed if it is required to be temporarily removed to accommodate construction or repair of public utilities or public works and the sign reconstruction is completed within 90 days after the completion of the public utilities or public works construction activity.
- C. Signs installed in violation of any prior sign code or applicable laws or regulations, and which are in violation of this chapter, shall be removed, replaced or altered in order to conform to the requirements of this chapter.
- D. Signs recognized as historical element of a historical landmark are exempt from this chapter.
- E. All nonconforming signs shall be altered to conform to the requirements of this chapter by January 1, 2025.
- F. A sign for which a variance is granted under the provisions of this chapter is not considered nonconforming.

- G. If a nonconforming sign is damaged by wind, fire, neglect or by any other cause, and such damage exceeds 60% of its replacement value, the nonconforming sign shall be removed.
- H. An unlawful sign shall be removed or made to conform within 60 days after written notice from the Planning Department. Said 60-day period may be extended if the owner of an unlawful sign submits to the Planning Department a declaration signed under penalty of perjury, on forms provided by the Department, stating that he or she intends to terminate the business identified by said sign within 12 months of the date of the notice and agrees to remove the sign upon the expiration of the 12-month period or the date he or she terminates his or her business, whichever occurs first.

*Applicants Response: Not Applicable.*

### **18.02.080 Exempt signs.**

All signs which are placed inside a structure or building, which are not visible through windows or building openings and are not intended to be visible to the public are exempt from the provisions of the sign code.

*Applicants Response: Not Applicable.*

### **18.02.090 Prohibited signs.**

- A. No sign, unless exempt or allowed pursuant to this chapter shall be permitted except as may be permitted pursuant to a variance procedure (Chapter 20.04).
- B. In a commercial or industrial zone no sign shall be placed inside or outside a structure so as to obscure more than 25% of any individual window surface. In a residential zone no sign shall be placed so as to obscure more than 10% of any individual window surface. Glass doors shall be considered an individual window surface. Holiday paintings and temporary specials painted on windows shall be exempt from this percentage of limitation.
- C. No permanent sign, other than a public sign, may be placed within or over any portion of the public right-of-way, except those signs which are consistent with the provisions of this chapter.
- D. No sign shall be allowed within 2 feet of any area subject to vehicular travel.
- E. No temporary sign, except for banner signs for which a permit has been issued and those necessary for temporary traffic control shall be placed within or over any portion of the public right-of-way of a major collector or arterial street.
- F. No sign shall be located in a manner which could impede travel on any pedestrian or vehicular travel surface.
- G. No temporary signs, bench signs. Banners, pennants, wind signs, balloon signs, flags, or any other temporary sign structure shall be allowed as except specifically authorized by this chapter.
- H. Except as otherwise provided herein, no sign shall be equipped or displayed with moving, flashing or intermittent illumination except athletic scoreboards.
- I. No sign shall be or consist of any moving, rotating, or otherwise animated part.
- J. No signs on buildings shall be placed on the roof or extend above the roof line or parapet of the structure.
- K. No sign shall be attached to a tree or vegetation.

- L. No non-public sign which purports to be, is an imitation of, or resembles an official traffic sign or signal, or which attempts to direct the movement of traffic on the street, or which hides from view any official traffic sign or signal shall be permitted.
- M. No public address system or sound devices shall be used in conjunction with any sign or advertising device.
- N. No signs that are internally illuminated shall be permitted in any residential zone.
- O. No sign that obstructs free and clear vision of the traveling public at the intersection of any street or driveway shall be permitted.
- P. A sign with lighting of such intensity or brilliance as to cause glare on adjoining properties or roadways or impair the vision of a driver of a motor vehicle or otherwise to interfere with the operations thereof or allows light to be directed upward.
- Q. A sign erected or maintained on public property or within the public right-of-way without permission of the public body having jurisdiction.
- R. Any sign larger than 32 square feet (counting both sides) on an undeveloped lot or parcel of property.
- S. Signs larger than 3 square feet on fences or fencing.
- T. Signs placed on, affixed to, or painted on any motor vehicle, trailer or other mobile structure not registered, licensed and insured for use on public highways, city and/or parked with the primary purpose of providing a sign not otherwise allowed by this chapter.
- U. Video signs.
- V. Signs in violation of the other chapters of the Molalla Development Code.

*Applicants Response: Not Applicable. No prohibited signs shall be used on the project site.*

### **18.02.100 Design standards.**

- A. All illuminated signs must be installed by a licensed sign contractor, subject to provisions of the State Electrical Code. All electrically illuminated signs shall bear the Underwriters' Laboratory label or equivalent.
- B. Building and electrical permits shall be the responsibility of the applicant. Prior to obtaining permits the applicant bears the burden of providing an approved sign permit or demonstrating exemption from the permit requirements of this chapter.
- C. Signs shall be designed to be compatible with nearby signs, other elements of street and site furniture and with adjacent structures. Compatibility shall be determined by the relationship of the elements of form, proportion, scale, color, materials, surface treatment, overall sign size and the size and style of lettering.
- D. Content on signs visible from streets shall be designed to minimize distractions to motorists. Signs may be reviewed for clarity and readability.
- E. **Setbacks.** Signs are required to meet the setback requirements of the applicable zoning district, except however the street yard setback for signs may be reduced to 50% of that required for other structures in the zone. Signs shall not obstruct a vision clearance area.

F. **Size of Sign.** The maximum size of all signs per building shall not exceed the totals listed in the table below:

<b>Street Frontage (ft)</b>	<b>Maximum Display Surface Area (sq ft)</b>	<b>Maximum Area of Any One Sign Face (sq ft)</b>	<b>Maximum Height Freestanding Signs (ft)</b>
1 – 50	50	25	30
50 – 200	100	50	30
201+	300	150	30

On a building containing multiple tenants signage requirements shall meet the maximum below as an entire building not as individual business.

G. **Illumination.**

1. External illumination is allowed. The external illumination may be either “direct” or “indirect,” provided that the source of light (e.g., bulb) is shielded such that it is not directly seen by the public. External light sources shall be carefully located, directed and shielded in order to avoid direct illumination of any off-site object or property.
2. Internal illumination is allowed.
3. Sign illumination shall not result in glare onto neighboring properties or onto public right-of-way, such that due to level of brightness, lack of shielding, or high contrast with surrounding light levels, the sign illumination results in “light intrusion” onto adjacent properties.
  - a. Direct lighting means exposed lighting or neon tubes on the sign face.
  - b. Indirect lighting means the light source is separate from the sign face or cabinet and is directed so as to shine on the sign.
  - c. Internal lighting means the light source is concealed within the sign.
4. Signs shall not flash, undulate, pulse, or portray explosions, fireworks, flashes of light, or blinking or chasing lights.
5. Exposed incandescent bulbs may be used on the exterior surface of a sign if each of such bulbs do not exceed 25 watts or unless each of such bulbs is screened by a diffusing lens, sun screen or similar shading device.

H. **Monument Signs.**

1. Monument signs shall have a distinct base, middle, and top. These elements of the sign shall vary from one another in terms of their thickness, materials, or color.
2. Monument signs shall incorporate the following materials, unless otherwise approved pursuant to subsection (H)(4) of this section.
  - a. The base and top shall be constructed of stone, brick, or wood;
  - b. The middle shall be constructed of stone, brick, wood, metal with a matte/non-reflective finish, vinyl, or other materials as noted in subsection (H)(2)(c);
  - c. Other materials may be used for bulletin board or electronic message board components in the middle portion of a monument sign, as needed to allow the bulletin board or electronic message board to function.

3. Monument signs shall provide street addresses when street addresses are not visible from the street.
4. A monument sign which does not meet 1 or more of the standards detailed above in subsections (H)(1) through (3), may be approved by the Planning Director pursuant to the Type II Land Use Procedure. A discretionary monument sign application may be approved if the applicant demonstrates compliance with all of the following criteria:
  - a. The overall design of the sign exhibits a sense of structure; and
  - b. Materials, similar to stone, brick, or wood are used; and
  - c. The proposed sign is in conformance with all other applicable city ordinances concerning its location, construction, and design.
- I. **Blade/Overhang Signs.**
  1. Blade/overhang sign shall not extend more than 8 feet from the building face.
  2. The outer edge of a blade/overhang sign shall be set back a minimum of 2 feet from the curb.
  3. A minimum 9-foot clearance shall be provided between grade and the bottom of a blade/overhang sign.
- J. **Wall Signs.**
  1. A wall sign shall not project more than 18 inches from the wall to which it is attached (or 12 inches from a wall directly abutting an alley). An encroachment permit is required prior to encroachment into any public right-of-way.
  2. The surface area of a wall sign shall not be more than 2 square feet per lineal foot of the wall on which it is erected. For shopping centers, the footage will be counted on the entire surface of the wall on which the sign is being erected and include all signs erected on that wall in the total footage.
- K. **Reader Boards and Electronic Message Boards.**
  1. The rate of change for sign copy on a bulletin or electronic message board from 1 message to another message shall be no more frequent than every 8 seconds. Once changed, content shall remain static until the next change.
  2. Displays may travel horizontally or scroll vertically onto electronic message boards but must hold a static position after completing the travel or scroll.
  3. Sign content shall not appear to flash, undulate, pulse, or portray explosions, fireworks, flashes of light, or blinking or chasing lights. Content shall not appear to move toward or away from the viewer, expand or contract, bounce, rotate, spin, twist, or otherwise portray graphics or animation as it moves onto, is displayed on or leaves the electronic message board.
  4. No electronic message board may be illuminated to a degree of brightness that is greater than necessary for adequate visibility.
  5. Electronic reader boards may be placed in commercial, industrial and public zones only.
  6. No electronic message board may be located closer than 500 feet from another electronic message board.



7. These signs are only allowed as part of a blade/overhang sign, marquee sign, monument sign, pole sign, or wall sign.

L. **A-Frame Signs.**

1. Dimensions. The A-frame sign area shall not exceed 3 feet high by 2 feet wide. The top of the sign shall be no more than 42 inches from the ground (including feet and hinge mechanisms).
2. Construction. Shall be constructed of wood, plastic, or metal with a matte/non-reflective finish.
3. Location. Shall not be located further than 100 feet from the primary business. Signs must not obstruct vehicle sight clearances or be placed so as to obscure permanent signs.
4. Quantity. No more than 1 A-frame sign per business.
5. No A-frame sign shall include any parts or attachments that extend beyond the edge of the sign dimensions.
6. No reflective materials shall be incorporated into the A-frame sign.
7. Neon colors shall not be incorporated into the A-frame sign.
8. No A-frame sign shall be placed along any designated sidewalk, or walkway in such a manner as to impede pedestrian passage.
9. A-frames shall not be placed in landscaped areas.
10. All A-frames shall comply with the requirements of this code within 1 year of adoption of this code.
11. Time Period. A-frame signs may be displayed only during public business hours and shall be promptly removed from public display when the business is closed, or at dusk, whichever comes first. For enforcement purposes, dusk is when nearby street lights turn on.
12. An A-frame sign which does not meet 1 or more of the standards detailed in this section above, may be approved by the Planning Director pursuant to a Type II Land Use Procedure. A discretionary A-frame sign application may be approved if the applicant demonstrates compliance with all of the following criteria: The proposed materials, colors, and dimensions of the A-frame sign do not pose a hazard concerning its location, construction, and design.

*Applicants Response: All signs on the project site will comply with the guidelines and regulations as stated above*

- M. **Signs in Residential Zones.** In addition to the temporary and permanent signage allowed without a permit in the residential zones the following signage is allowed subject to permit and fee:

*Applicants Response: Not Applicable. The project site is not located in a Residential Zone*

- N. **Signs in the Central Business District.** In addition to the temporary and permanent signage allowed without permit in the following Central Business District zones the following signage is allowed subject to permit and fee:

*Applicants Response: Not Applicable. The project site is not located in the Central Business District*

- O. **Signs in the Commercial District.** In addition to the temporary and permanent signage allowed without permit in the following commercial zones the following signage is allowed subject to permit and fee:

## 220 W Main Street Commercial Development

1. Monument Signs.
  - a. Church, School, or Public Facility.
    - i. Size. Maximum 48 square feet per sign face up to 2 sign faces.
    - ii. Maximum height 9 feet.
    - iii. Location/Number. One sign may be located adjacent on each street frontage.
  - b. Minor Business Complex.
    - i. Size. Maximum 100 square feet per sign face up to 2 sign faces.
    - ii. Maximum height 12 feet.
    - iii. Location/Number. One sign, except on site abutting a collector or arterial street, 1 sign may be located adjacent to each collector/arterial street frontage.
  - c. Major Business Complex.
    - i. Size. Maximum 150 square feet per sign face up to 2 sign faces.
    - ii. Maximum height 12 feet.
    - iii. Location/Number. One sign, except on site abutting a collector or arterial street, 1 sign may be located adjacent to each collector/arterial street frontage.
  - d. All Other Uses.
    - i. Size. Maximum 48 square feet per sign face up to 2 sign faces.
    - ii. Maximum height 12 feet.
    - iii. Location/Number. One sign, except on site abutting a collector or arterial street, 1 sign may be located adjacent to each collector/arterial street frontage.
2. Blade/Overhang Signs.
  - a. All Other Uses.
    - i. Size. Each sign shall have a maximum sign face area of 48 square feet. The total combined area of wall and blade/overhang signs on a primary frontage shall not exceed 12% of the building elevation area.
    - ii. Maximum Height. The height of the sign shall not project above the roofline or top of the parapet wall, whichever is higher.
    - iii. Location/Number. One sign per building frontage for each business license on file with the city at that location.
3. Wall Signs.
  - a. All Uses.
    - i. Size. Maximum sign area of all signage allowed on a primary building frontage is 8% of the building elevation area of the primary building frontage, up to a maximum of 120 square feet.

- (A) The total combined area of marquee signs, awning or canopy signs, and wall signs on a primary frontage shall not exceed the maximum percentage of building elevation area allowed.
  - (B) The maximum sign face area of all signage allowed on a secondary building frontage is 6% of the building elevation area of the secondary building frontage, up to a maximum of 60 square feet.
  - (C) If the building elevation area of a primary or secondary building frontage exceeds 5,000 square feet, the total sign face area allowed on that frontage is 130 square feet.
- ii. Maximum Height. Shall not project above the roofline or top of the parapet wall, whichever is higher.
  - iii. Location/Number. One sign per building frontage for each business license on file with the city at that location.
4. Reader Boards and Electronic Message Board Signs.
- a. Bulletin Board for Church, School, Public/Semi-Public Facility.
    - i. Size. May encompass up to 75% of the sign face area.
    - ii. Maximum height determined by height of sign.
    - iii. Location/Number. Only allowed as a permitted sign.
  - b. Bulletin Board—All Other Uses.
    - i. Size. May encompass up to 50% of sign face area.
    - ii. Maximum height determined by height of sign.
    - iii. Location/Number. Only allowed as part of a permitted sign.
  - c. Electronic Message Board—All Uses.
    - i. Size. May be no larger than 8-foot horizontal by 3-foot vertical from the ground.
    - ii. Maximum height determined by height of sign.
    - iii. Location/Number. Only allowed as part of permitted sign.
5. Pole Signs.
- a. Church, School, Public/Semi-Public Facility.
    - i. Size. Maximum 48 square feet per sign face (up to 2 faces).
    - ii. Maximum height 18 feet.
    - iii. Location/Number. One sign may be located adjacent each street frontage.
  - b. Minor Business Complex.
    - i. Size. Maximum 100 square feet per sign face (up to 2 faces).
    - ii. Maximum height 20 feet.

- iii. Location/Number. One sign; except on a site with more than 1 street frontage, 1 sign may be located adjacent each collector or arterial street frontage that is at least 500 feet in length. Where more than 1 sign is permitted on a site, the signs must be separated by at least 300 feet.
- c. Major Business Complex.
  - i. Size. Maximum 130 square feet per sign face (up to 2 faces).
  - ii. Maximum height 26 feet.
  - iii. Location/Number. One sign; except on a site with more than 1 street frontage, 1 sign may be located adjacent each collector or arterial street frontage that is at least 500 feet in length. Where more than 1 sign is permitted on a site, the signs must be separated by at least 300 feet.
- d. All Other Uses.
  - i. Size. Maximum 48 square feet per sign face (up to 2 faces).
  - ii. Maximum height 18 feet.
  - iii. Location/Number. One sign; except 1 sign may be located adjacent each collector or arterial street frontage.
- 6. Awning Sign and Canopy Sign.
  - a. Use on Site—All Uses.
    - i. Size. Maximum sign face area of all signage allowed on a primary building frontage is 12% of the building elevation area of the primary building frontage, up to a maximum of 120 square feet.
  - (A) The total combined area of marquee signs, awning or canopy signs, and wall signs on a primary frontage shall not exceed the maximum percentage of building elevation area allowed.
  - (B) The maximum sign face area of all signage allowed on a secondary building frontage is 8% of the building elevation area of the secondary frontage, up to a maximum of 30 square feet.
  - ii. Maximum Height. Shall not project above the roof line or parapet wall whichever is higher.
  - iii. Location/Number. One sign per building frontage for each business license on file with the city at that location. Sign shall not project above the roof line. Sign shall not extend more than 8 feet from the building face. Outer edge of sign shall be set back a minimum of 2 feet from a curb. A minimum 8½ foot clearance shall be provided between grade and bottom of sign.
- 7. Marquee Sign.
  - a. Use on Site—All Uses.
    - i. Size. Maximum sign face area of all signage allowed on a primary building frontage is 12% of the building elevation area of the primary building frontage, up to a maximum of 120 square feet. The total combined area of marquee signs, awning or canopy signs, and wall signs on a primary frontage shall not exceed the maximum percentage of the building elevation area allowed.
    - ii. Maximum Height. Shall not project more than 8 feet above the roofline or parapet wall, whichever is higher the blade/overhang portion of the sign may extend above the roof line or parapet wall.
    - iii. Location/Number. Outer edge of sign shall be setback a minimum of 2 feet from a curb. A minimum 8½ foot clearance shall be provided between grade and bottom of sign.

- 8. Window Signs.
  - a. Use on Site—All Other Uses.
    - i. Size. See Section 18.02.090(B).
    - ii. Maximum height determined by height of window.
    - iii. Location/Number. Only allowed in ground floor or 2nd floor windows.

*Applicants Response: The project site is located in a Commercial District. All signs on the project site will comply with the guidelines and regulations as stated above*

**P. Signs in the Community Planning Area.** In addition to the temporary and permanent signage allowed without permit in the Community Planning Area the following signage is allowed subject to a permit and fee.

*Applicants Response: Not Applicable. The project site is not located in the Community Planning Area*

**Q. Signs in Industrial Districts.** In addition to the temporary and permanent signage allowed without permit in the following industrial zones the following signage is allowed subject to permit and fee:

*Applicants Response: Not Applicable. The project site is not located in an Industrial District*

### **18.02.110 Permanent signs exempt from permit and fee.**

The following signs shall comply with all provisions and regulations of this chapter; however, no fee, permit or application is required:

- A. One sign not exceeding 1 square foot in area hung from a building.
- B. One sign not exceeding 2 square feet in area placed on any occupied residential lot.
- C. **Incidental Signs.** Not exceeding 6 square feet in area shall be allowed on any parcel that a multiple dwelling is constructed.
- D. **Public Signs.** For hospitals or emergency services, legal notices, railroad signs, and danger signs. Signs or tablets (including names of buildings, and the date of erection) when cut into any masonry surface, or constructed of bronze or other noncombustible surface not to exceed 8 square feet in area.
- E. **Athletic Field Signs.** Rigid signs located on the outfield fence of athletic fields may be installed. Each individual sign shall be no more than 32 square feet in area. There shall be no more than 32 square feet of area for any 8 linear feet of fence. The maximum height shall not exceed 8 feet above grade. The signs shall be placed so as to be visible from the interior of the field and/or viewing stands. One sign located at 1 end of the field visible to spectators shall have a maximum height of 15 feet above grade and shall be a maximum of 64 square feet.
- F. Accessory signs within a commercial or industrial zone which are permanent and an internal part of permitted outdoor accessory or display structures such as soft drink machines, fuel pumps, and newspaper dispensers.
- G. No “solicitation” sign pursuant to size.

H. Signs attached to or carried by a person limited to 6 square feet in total size.

I. Flags as outlined in Chapter 21.30.

### **18.02.120 Regulation of temporary signs.**

The following signs shall comply with all provisions and regulations of this chapter; however, no fee, permit or application is required. Temporary signs are prohibited signs except as provided by this section.

#### **A. Generally.**

1. Illumination. No temporary sign shall be internally or externally illuminated.
2. Location.
  - a. No temporary sign shall extend into or over the public right-of-way of any street.
  - b. Signs allowed in the right-of-way for temporary traffic control shall provide a minimum of 5 feet of clear passage of pedestrians on the sidewalk where a sidewalk exists and shall come no closer than 2 feet from areas subject to vehicular travel.
  - c. No temporary sign shall extend into the vision clearance area.
3. Maintenance. Temporary signs shall be kept neat, clean and in good repair. Signs which are faded, torn, damaged or otherwise unsightly or in a state of disrepair shall be immediately repaired or removed.
4. Placement. Except as provided by this section, temporary signs shall not be attached to trees, shrubbery, utility poles, or traffic control signs or devices. They shall not obstruct or obscure primary signs on adjacent premises.
5. Sign Collection and Retrieval.
  - a. The city may collect temporary signs placed in the public right-of-way without a permit.
  - b. Each sign collected will be stored for a minimum of 30 days.
  - c. Notice will be mailed within 3 business days of the date of collection to the owner of each sign if the ownership is reasonably discernible from the sign or as previously filed by the owner of the sign with the Planning Department.
  - d. The owner of a sign may retrieve a sign collected by the city within 30 days of the collection date. The owner must present proof of ownership of the sign and pay a sign retrieval fee in the amount established by City Council resolution.
  - e. The owner of the sign may request a hearing before the Planning Commission to contest the sign removal. To request a hearing, the owner of a sign must file an application for a hearing and pay a hearing fee in an amount established by resolution of the City Council within 15 days of the date of mailing of the notice as provided in subsection (A)(5)(c) above. The hearing fee and the sign retrieval fee are refunded if the Planning Commission finds that the sign was removed improperly. At the hearing, testimony and evidence begins with the city, followed by the owner, and concludes with rebuttal by the city. After the evidence has been provided, the Planning Commission will close testimony and issue a written decision that states the facts of the case and the conclusions of the decision.

#### **B. Allowed Signage.**

1. To any residential zone temporary signage shall be allowed for each and every lot. This signage shall not be restricted by content, but is usually and customarily used to advertise real estate sales, political or ideological positions, garage sales, home construction or remodeling, etc. Signage shall be allowed for each lot as follows:
  - a. Temporary signs not exceeding 6 square feet, provided the signs are erected not more than 90 days prior to an election and removed within 5 days following the election.
  - b. One temporary sign not exceeding 6 square feet provided the sign is removed within 15 days from the sale, lease or rental of the property or within 7 days of completion of any construction or remodeling. An additional sign of the same size may be erected if the property borders a second street and the signs are not visible simultaneously. On tracts of land of more than 2 acres in residential zones the sign area may be increased to 32 square feet. In no case shall the sign or signs be erected for more than 12 months.
  - c. One temporary sign not exceeding 4 square feet in area which is erected for a maximum of 8 days in any calendar month and is removed by sunset on any day it is erected.
  - d. Temporary signs erected within a building which do not obstruct more than 10% of any individual window surface.
2. In any commercial or industrial zone temporary signage shall be allowed for each and every lot. This signage shall not be restricted by content, but is usually and customarily used to advertise real estate signs, political or ideological positions, construction or remodeling, etc. The signage shall be allowed for each lot as follows:
  - a. Temporary signs not exceeding 6 square feet, provided the signs are erected not more than 90 days prior to an election and removed within 5 days following the election.
  - b. Temporary sign not exceeding 32 square feet provided said signs are removed within 15 days from the sale, lease or rental of the property or within 7 days of completion of any construction or remodeling. An additional sign of the same size may be erected if the property borders a second street and the signs are not visible simultaneously.
  - c. Temporary non-illuminated signs not exceeding 16 square feet for charitable fundraising events placed by nonprofit and charitable organizations. Such signs shall not be placed more than 7 days prior to the event and must be removed within 2 days following the event. No more than 3 such events shall be advertised in this manner per lot per year.
  - d. Temporary signs not exceeding 16 square feet in area erected in association with the temporary uses allowed by code including Christmas tree sales, pushcart vendors, Saturday market and sidewalk sales. This signage shall be allowed for the same duration as the temporary use.

*Applicants Response: If temporary signs are needed then the temporary signs on the project site will comply with the guidelines and regulations as stated above*

### **18.02.130 Temporary signs requiring a permit.**

- A. The City Manager may allow temporary signs larger than those allowed by this code to be erected. This signage shall not be restricted by content, but is usually and customarily used to advertise special events and store openings on banners. The City Manager shall allow the erection of such signs only if the City Manager finds that the proposed sign will not materially impair the purposes of the Sign Code. Seasonal decorations erected within the public right-of-way shall be considered to be such signs. These signs shall meet all applicable City Code provisions. Lighting of such signs will be reviewed as part of the application and may be allowed depending on impact to surrounding development.

- B. The following requirements shall be met, as applicable:
  - 1. Written consent from the property owner where the sign will be located shall be provided. The consent shall identify any restrictions that the property owner requires of the permit holder. Banners hung from utility poles shall require written approval from Portland General Electric. Banners hung over a state highway will require written approval from the Oregon Department of Transportation.
  - 2. Plans or a description showing the location of the sign; banner height above the right-of-way; support devices for the banner; and proposed dates shall be provided.
  - 3. The display period shall not exceed 25 consecutive days in duration and no more than once in any 12-month period. All such signs shall be removed no later than 1 day following the event being advertised.
  - 4. A copy of any liability and/or property damage insurance required by the property owner where the sign or banner will be located.
  - 5. A signed rebate and indemnity agreement shall be provided if placing a banner over the public right-of-way.
  - 6. The extent of signage allowed and the location of the signage is at the discretion of the City Manager.
- C. The extent of signage allowed and the location of the signage is at the discretion of the City Manager.
- D. Any temporary sign that exceeds 6 square feet in size.

*Applicants Response: If temporary signs are needed then a temporary sign permit will be obtained.*

**18.02.140 Signs requiring a permit.**

- A. It is unlawful and a civil infraction for any person to erect, construct, alter or relocate any sign without first obtaining a permit pursuant to the provisions of this chapter unless a provision of this chapter specifically exempts a sign from the permit requirement.
- B. It is unlawful and a civil infraction for any person to construct a sign that is not specifically allowed by this chapter or to erect, construct, maintain or allow to exist a sign in violation of the terms of the permit issued pursuant to this chapter.

*Applicants Response: If a permit is required to construct or install a particular sign then a permit will be obtained for that particular sign*

**18.02.150 Automobile service station sign standards.**

Sign denoting gasoline prices, as provided for in Oregon Revised Statutes 649.030, are permitted subject to the following provisions:

- A. Maximum area on 1 sign face is 20 square feet.
- B. Maximum height is 25 feet or that required under freestanding signs whichever is less.
- C. Only 1 gasoline sign shall be allowed per business location street frontage.

*Applicants Response: Not Applicable.*



**18.02.160 Signage on cars.**

Signs on cars not otherwise discussed in the MDC shall meet the following requirements:

- A. Shall not project beyond the original frame of the vehicle more than 1/4 inch; exceptions: pizza delivery, taxi, and the like;
- B. Shall not be larger than 6 square feet; car wraps are exempt from the size requirements; and
- C. Shall not be parked in a right-of-way for periods of time to be used as a portable sign.

*Applicants Response: Not Applicable.*

**18.02.170 Garage/household sales.**

Signs advertising household goods, such as a garage sale, are permitted, subject to the following provisions:

- A. Maximum area on 1 sign face is 6 square feet.
- B. Height of 3 square feet.
- C. On premises sign—One sign.
- D. Three off-premises A-frame signs.
- E. Placement no earlier than 8:00 a.m. on the first day and removal no later than 7:00 p.m. on the last day.
- F. Sign cannot create a traffic hazard, impede pedestrian passage or create a public nuisance.
- G. All garage sale signs shall include the address of the location of the garage sale.
- H. The city shall have available a reasonable supply of professional sale signs that can be rented by individuals. In addition, the city may secure a deposit to recover the cost of replacing the sign in the event of damage or loss.

*Applicants Response: Not Applicable.*

**18.02.180 Nameplates.**

Nameplates identifying the occupant of a residence are permitted outright when not exceeding 1 square foot in size.

*Applicants Response: Not Applicable.*

**18.02.190 Open house signs/for sale signs.**

- A. Additional temporary single or double-faced open house signs shall be permitted on private property during daylight hours provided such additional temporary signs are removed prior to sunset the day of placement. Such signs are permitted only on private property with the consent of the occupant. Units displaying an open house sign must remain unlocked during the time the sign is posted. An open house is to be attended by the seller or representative at all times during the open house. This section does not apply to model homes within subdivisions or model apartment units. An open house sign may not be displayed for the same address for more than 2 consecutive weekends.

- B. One temporary sign per frontage, not exceeding 6 square feet in area, during the time of sale, lease or rental of the lot/structure provided that the sign is removed within 30 days of the sale, lease or rental of the lot/structure.

*Applicants Response: Not Applicable.*

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# 220 W. MAIN STREET COMMERCIAL DEVELOPMENT MOLALLA, OREGON

**AVALON  
 ENGINEERING**

200 Sweden Circle  
 Silverton, OR 97381  
 (503) 807 - 5048  
 avalonengineering123@gmail.com



EXPIRES 6-30-2022

## PROJECT INFORMATION

### PROPERTY INFORMATION

Address: 220 W Main Street, Molalla, OR  
 Tax Maps: 52E08DD04300, 52E08DD04400,  
 52E08DD04500, 52E08DD04600, 52E08DD04701,  
 52E08DD08700, 52E08DD08800, 52E08DD08900,  
 52E08DD09000, 52E08DD09100 and 52E08DD09200  
 Development Site Area: 84,382.48 sq.ft (1.94 Acres)  
 Current Zone: Central Commercial (C-2)  
 Location: South Side of State Highway 211  
 Between Hart Avenue and Metzler Avenue.

### APPLICANT/OWNER

B & I CONSTRUCTION  
 220 W. Main Street  
 Molalla, OR. 97038  
 971-718-3694  
 CONTACT: Bill Egoroff

### PROJECT SURVEYOR

AG GEOSPATIAL NW, LLC  
 30532 S. McCown Road  
 Molalla, OR. 97038  
 503-329-8008  
 CONTACT: Tony J. Brooks P.L.S.

### PROJECT CIVIL ENGINEER

AVALON ENGINEERING  
 200 Sweden Circle  
 Silverton, OR. 97381  
 503-807-5048  
 CONTACT: George Snegirev P.E.

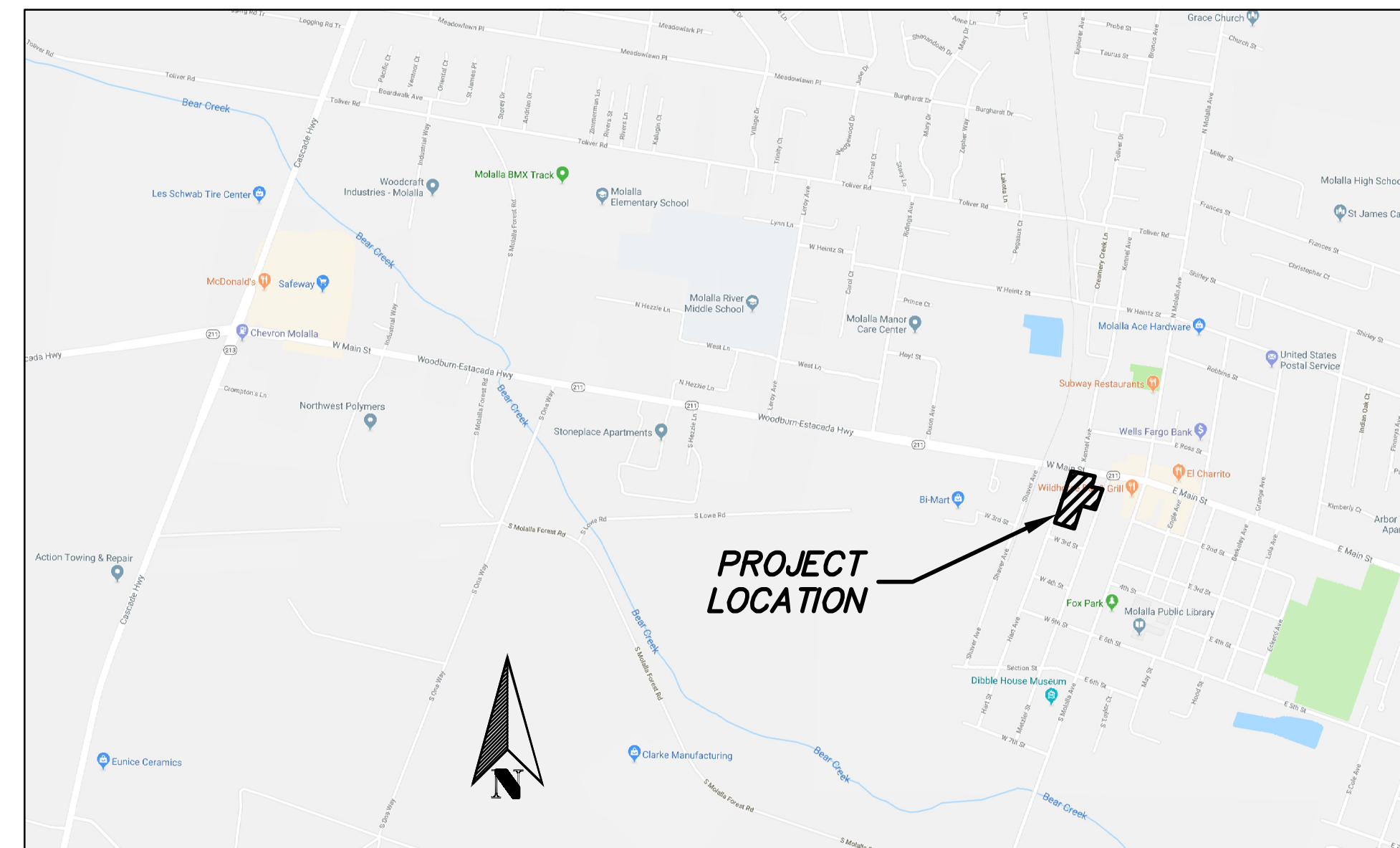
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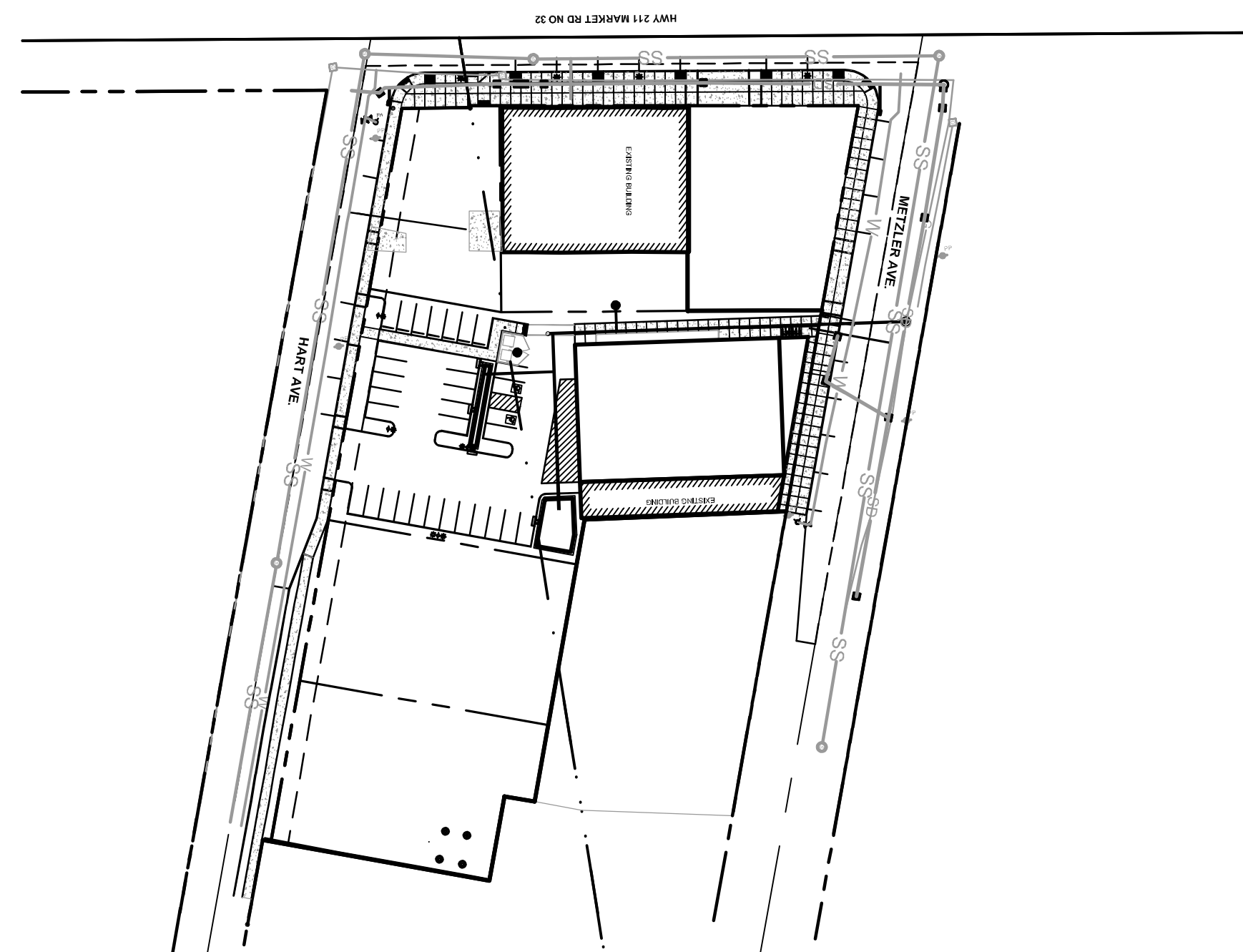
VERTICAL DATUM: NAVD 88 ESTABLISHED WITH  
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 TRIMBLE VRSNOW OREGON GPS NETWORK.

### UTILITIES / SERVICES

WATER: CITY OF MOLALLA  
 SEWER: CITY OF MOLALLA  
 POWER: PORTLAND GENERAL ELECTRIC (PGE)  
 GAS: N.W. NATURAL GAS  
 PHONE: MOLALLA COMMUNICATIONS  
 CABLE: WAVE BROADBAND



VICINITY MAP



SITE MAP

## SHEET INDEX

- P0 COVER SHEET
- P1.1 EXISTING CONDITIONS AND SITE DEMOLITION PLAN
- P1.2 EXISTING BOUNDARIES PLAN
- P2.1 PROPOSED DEVELOPMENT PLAN
- P2.2 TYPICAL ROADWAY SECTIONS
- P2.3 PRELIMINARY PLAT
- P3.1 PRELIMINARY GRADING PLAN
- P4.1 PRELIMINARY LANDSCAPE AND LIGHTING PLAN
- P5.1 PRELIMINARY UTILITY PLAN

**220 W. MAIN STREET  
 MOLALLA, OREGON  
 COMMERCIAL DEVELOPMENT  
 COVER SHEET**

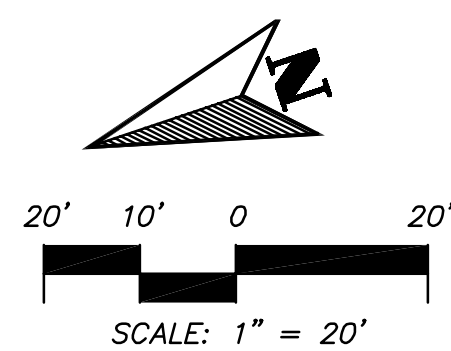
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CITY OF MOLALLA FILE  
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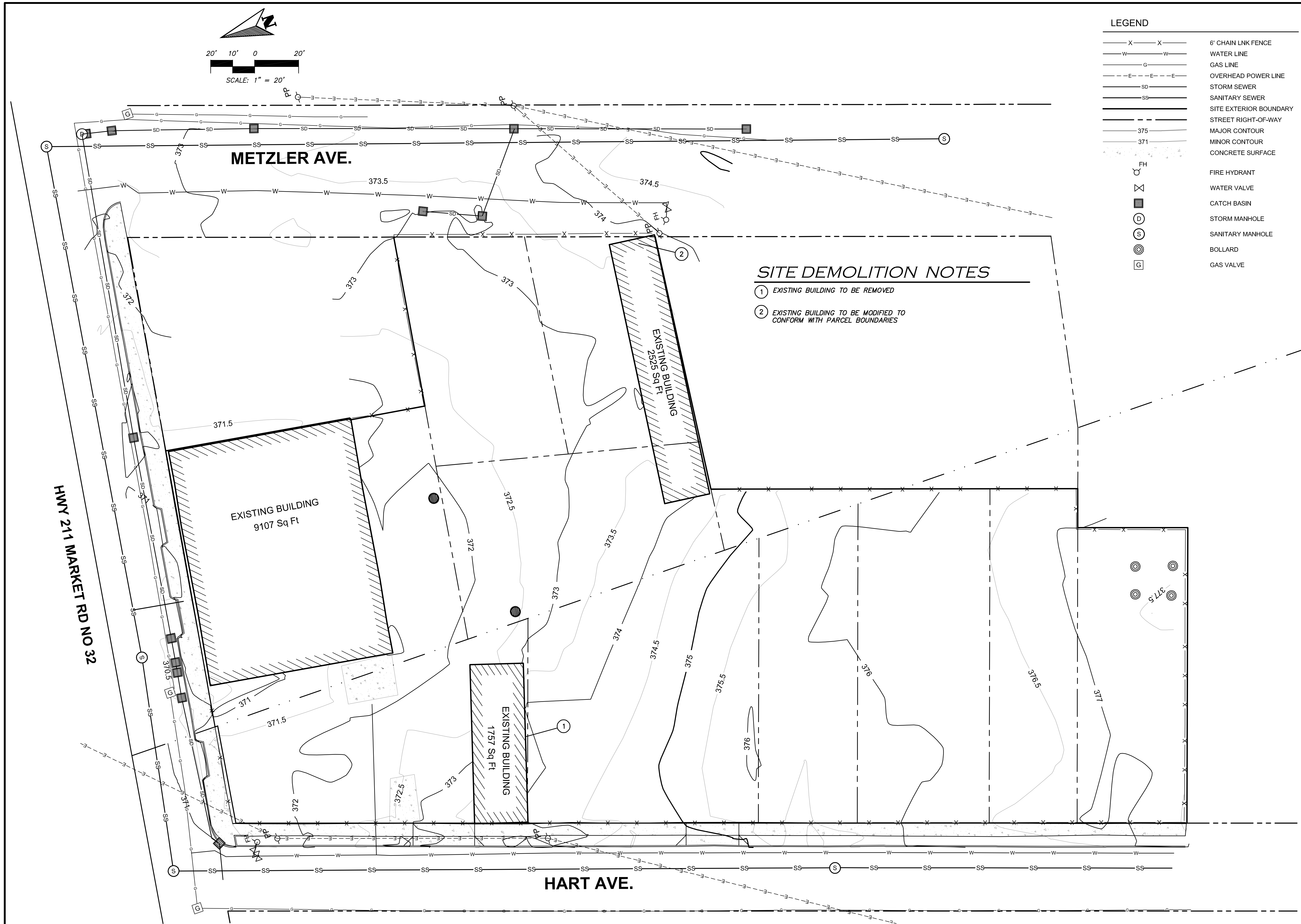


**LEGEND**

—X—X—	6' CHAIN LNK FENCE
—W—W—	WATER LINE
—G—G—	GAS LINE
—E—E—E—E—	OVERHEAD POWER LINE
—SD—SD—	STORM SEWER
—SS—SS—	SANITARY SEWER
---	SITE EXTERIOR BOUNDARY
---	STREET RIGHT-OF-WAY
375	MAJOR CONTOUR
371	MINOR CONTOUR
•••••	CONCRETE SURFACE
⊙	FIRE HYDRANT
⊗	WATER VALVE
■	CATCH BASIN
⊙	STORM MANHOLE
⊙	SANITARY MANHOLE
⊙	BOLLARD
G	GAS VALVE

**SITE DEMOLITION NOTES**

- ① EXISTING BUILDING TO BE REMOVED
- ② EXISTING BUILDING TO BE MODIFIED TO CONFORM WITH PARCEL BOUNDARIES



**AVALON ENGINEERING**

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 (503) 807 - 5048  
 avalonengineering123@gmail.com



**220 W. MAIN STREET**  
 MOLALLA, OREGON  
**COMMERCIAL DEVELOPMENT**  
**EXISTING CONDITIONS PLAN**

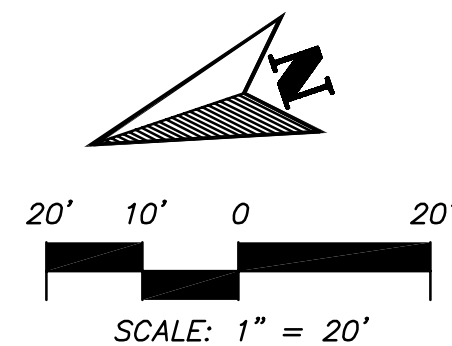
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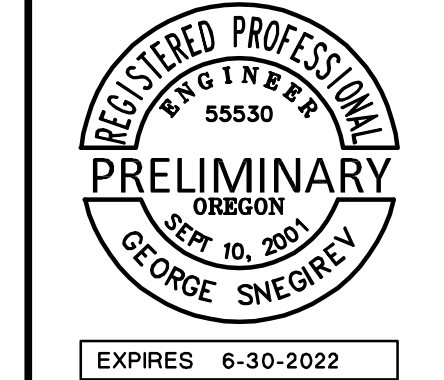


PROPERTY LINE DATA		
Line Designation	Distance in Feet	Bearing
L1	1.28	N 0° 29' 38" W
L2	0.87	S 81° 29' 57" E

PROPERTY MONUMENT DATA	
Monument Designation	Monument Description
M1	5/8" IR W/YPC Up 0.1', "LOVE PLS 747"
M2	5/8" IR W/YPC, "LOVE PLS 747"
M3	5/8" IR W/YPC, "LOVE PLS 747"
M4	5/8" IR W/YPC, "LOVE PLS 747", Under Fence
M5	5/8" IR W/YPC Down 0.1', "LOVE PLS 747"
M6	5/8" IR
M7	5/8" IR W/YPC, "LS 1015 SHAVER"
M8	5/8" IR W/YPC, "LS 1015 SHAVER"

# AVALON ENGINEERING

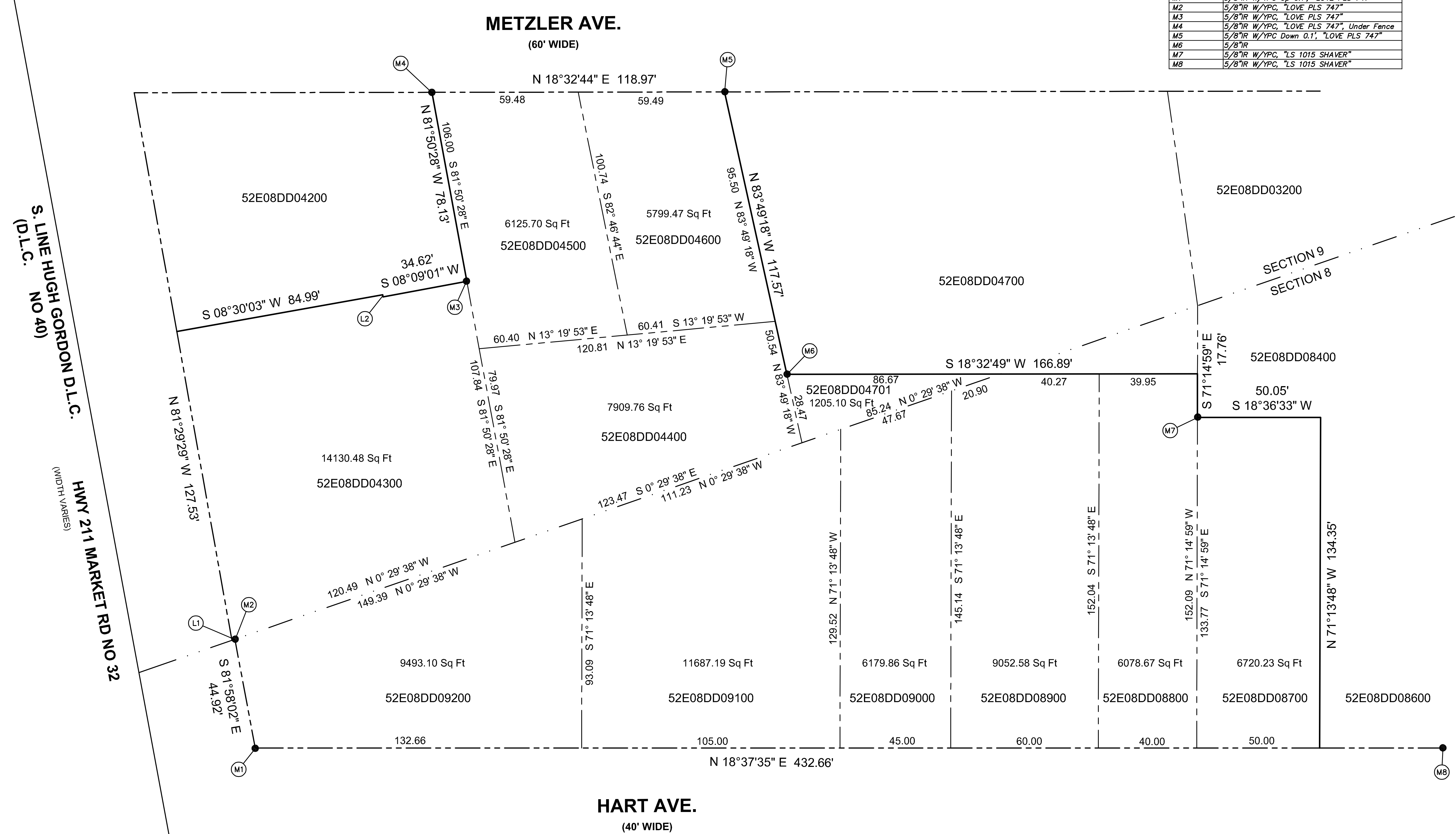
200 Sweden Circle  
 Silverton, OR 97381  
 (503) 807 - 5048  
 avalonengineering123@gmail.com



## 220 W. MAIN STREET MOLALLA, OREGON COMMERCIAL DEVELOPMENT EXISTING BOUNDARIES PLAN

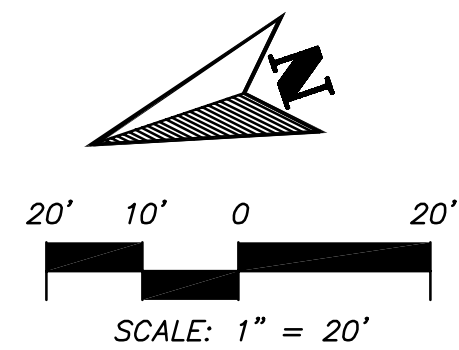
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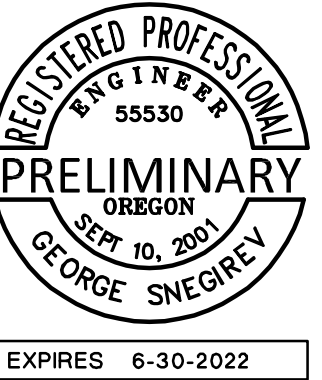
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Lot No.	Total Area in sq ft	LOT AREA BREAKDOWN							
		Paved Driveway Aisle / Parking		Buildings		Landscaping		Hardscaping	
		Paved area in sq ft	% of Total	Building area in sq ft	% of Total	Landscaping area in sq ft	% of Total	Hardscaping area in sq ft	% of Total
52E08DD04400	34,439.38	15,150.26	43.99 %	12,643.04	36.71 %	4,180.00	12.13 %	2,466.08	7.16 %

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 (503) 807 - 5048  
 avalonengineering123@gmail.com



## 220 W. MAIN STREET MOLALLA, OREGON COMMERCIAL DEVELOPMENT OVERALL DEVELOPMENT PLAN

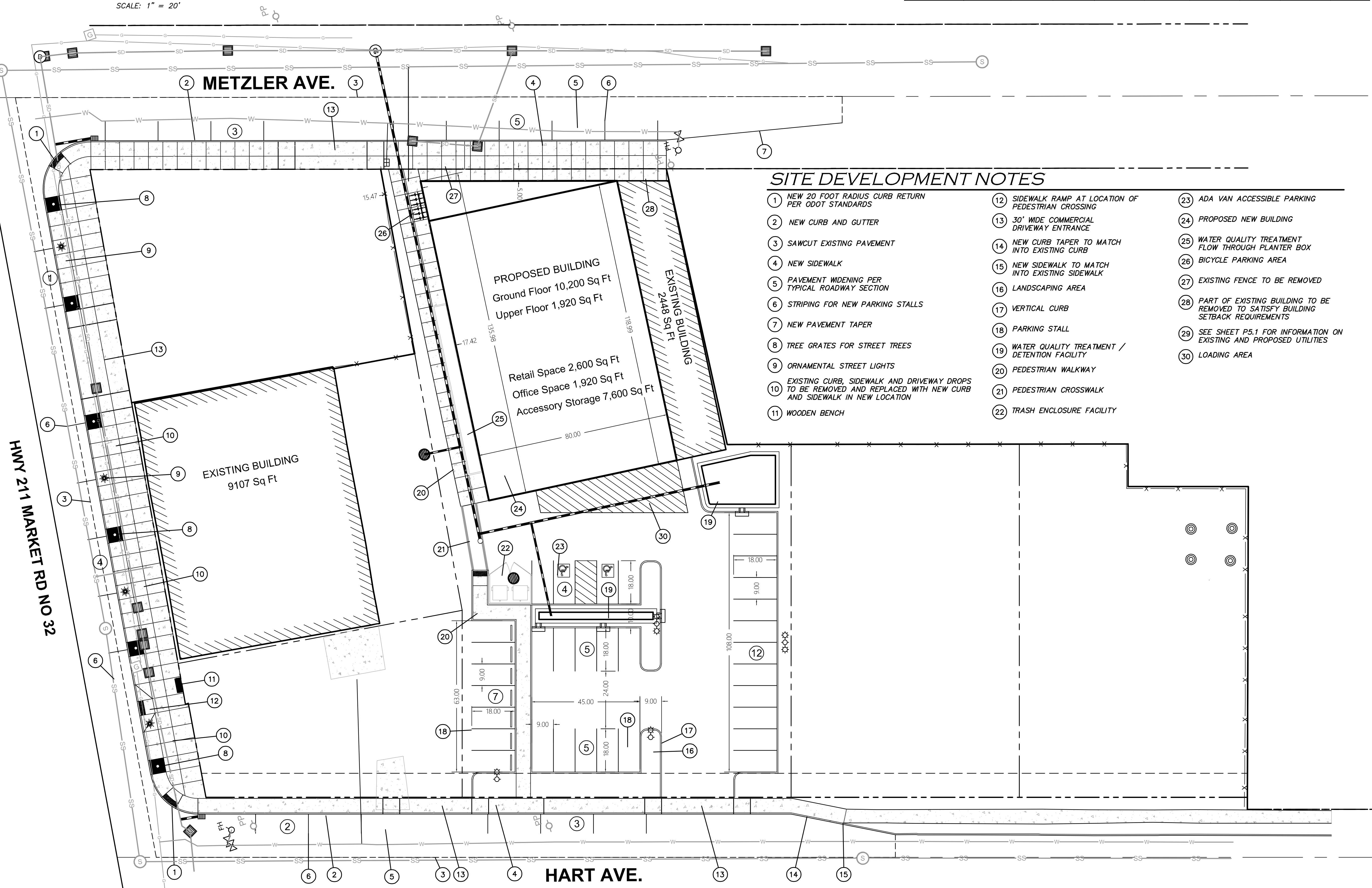
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SHEET NUMBER

# P2.1

CITY OF MOLALLA FILE X

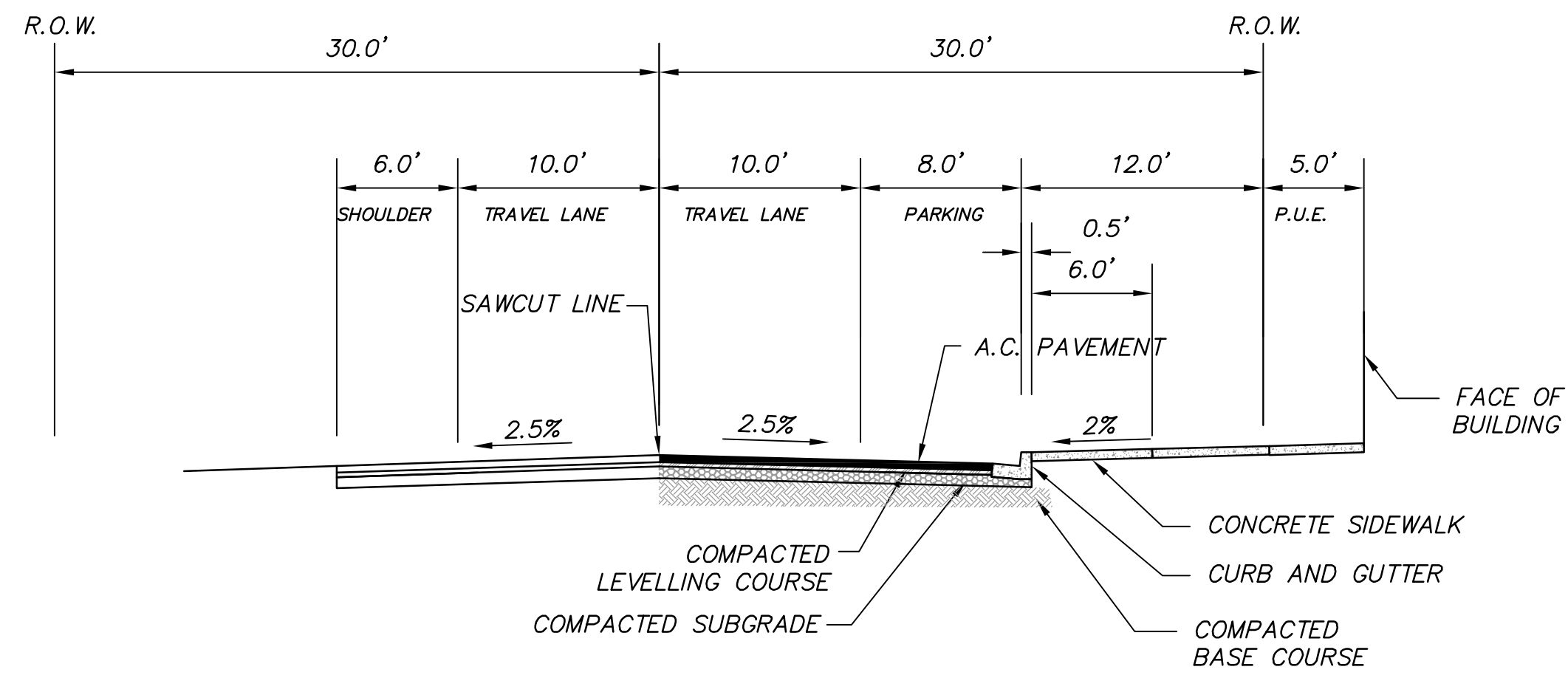


### SITE DEVELOPMENT NOTES

- 1 NEW 20 FOOT RADIUS CURB RETURN PER ODOT STANDARDS
- 2 NEW CURB AND GUTTER
- 3 SAWCUT EXISTING PAVEMENT
- 4 NEW SIDEWALK
- 5 PAVEMENT WIDENING PER TYPICAL ROADWAY SECTION
- 6 STRIPING FOR NEW PARKING STALLS
- 7 NEW PAVEMENT TAPER
- 8 TREE GRATES FOR STREET TREES
- 9 ORNAMENTAL STREET LIGHTS
- 10 EXISTING CURB, SIDEWALK AND DRIVEWAY DROPS TO BE REMOVED AND REPLACED WITH NEW CURB AND SIDEWALK IN NEW LOCATION
- 11 WOODEN BENCH
- 12 SIDEWALK RAMP AT LOCATION OF PEDESTRIAN CROSSING
- 13 30' WIDE COMMERCIAL DRIVEWAY ENTRANCE
- 14 NEW CURB TAPER TO MATCH INTO EXISTING CURB
- 15 NEW SIDEWALK TO MATCH INTO EXISTING SIDEWALK
- 16 LANDSCAPING AREA
- 17 VERTICAL CURB
- 18 PARKING STALL
- 19 WATER QUALITY TREATMENT / DETENTION FACILITY
- 20 PEDESTRIAN WALKWAY
- 21 PEDESTRIAN CROSSWALK
- 22 TRASH ENCLOSURE FACILITY
- 23 ADA VAN ACCESSIBLE PARKING
- 24 PROPOSED NEW BUILDING
- 25 WATER QUALITY TREATMENT FLOW THROUGH PLANTER BOX
- 26 BICYCLE PARKING AREA
- 27 EXISTING FENCE TO BE REMOVED
- 28 PART OF EXISTING BUILDING TO BE REMOVED TO SATISFY BUILDING SETBACK REQUIREMENTS
- 29 SEE SHEET P5.1 FOR INFORMATION ON EXISTING AND PROPOSED UTILITIES
- 30 LOADING AREA

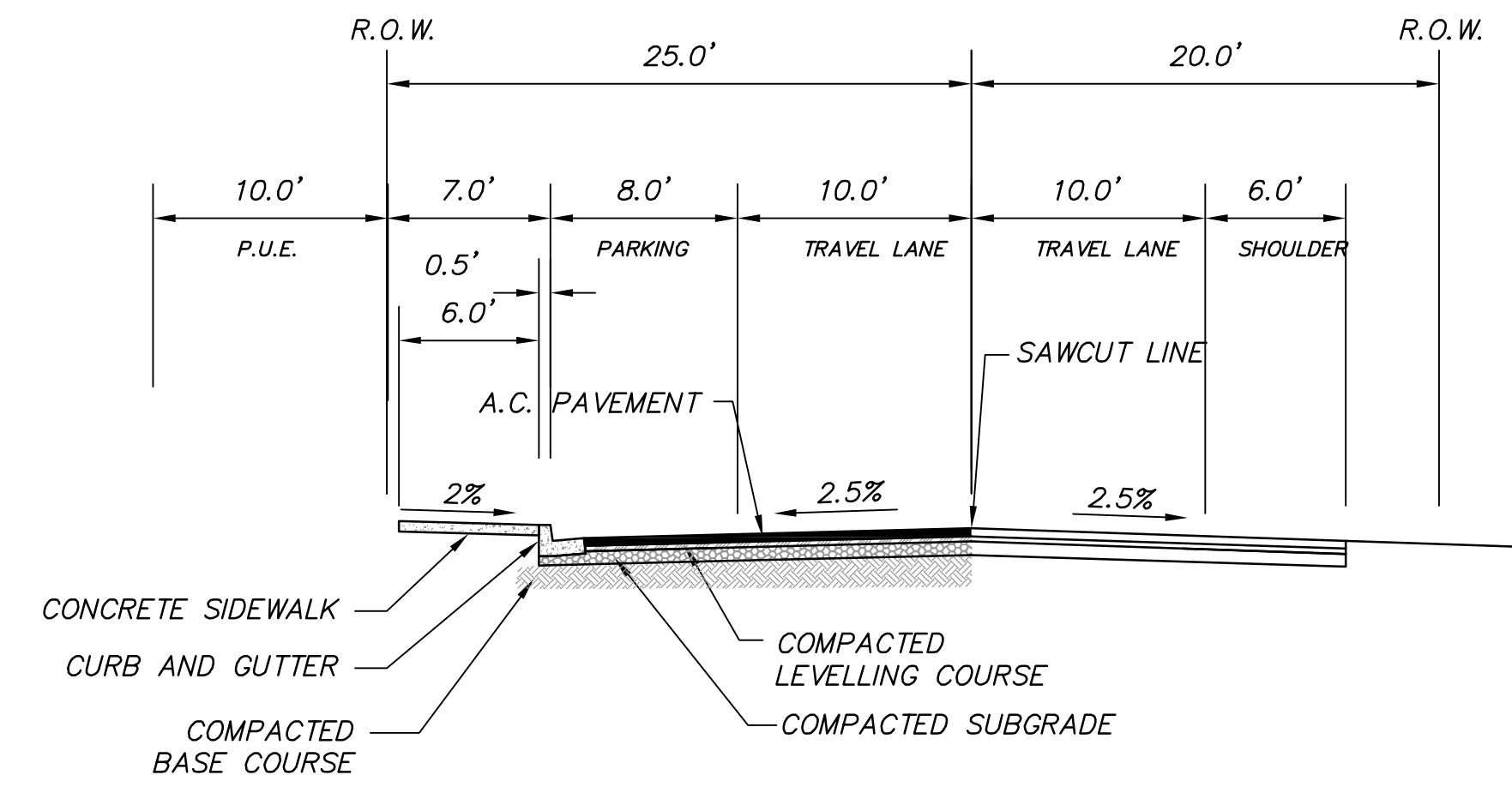
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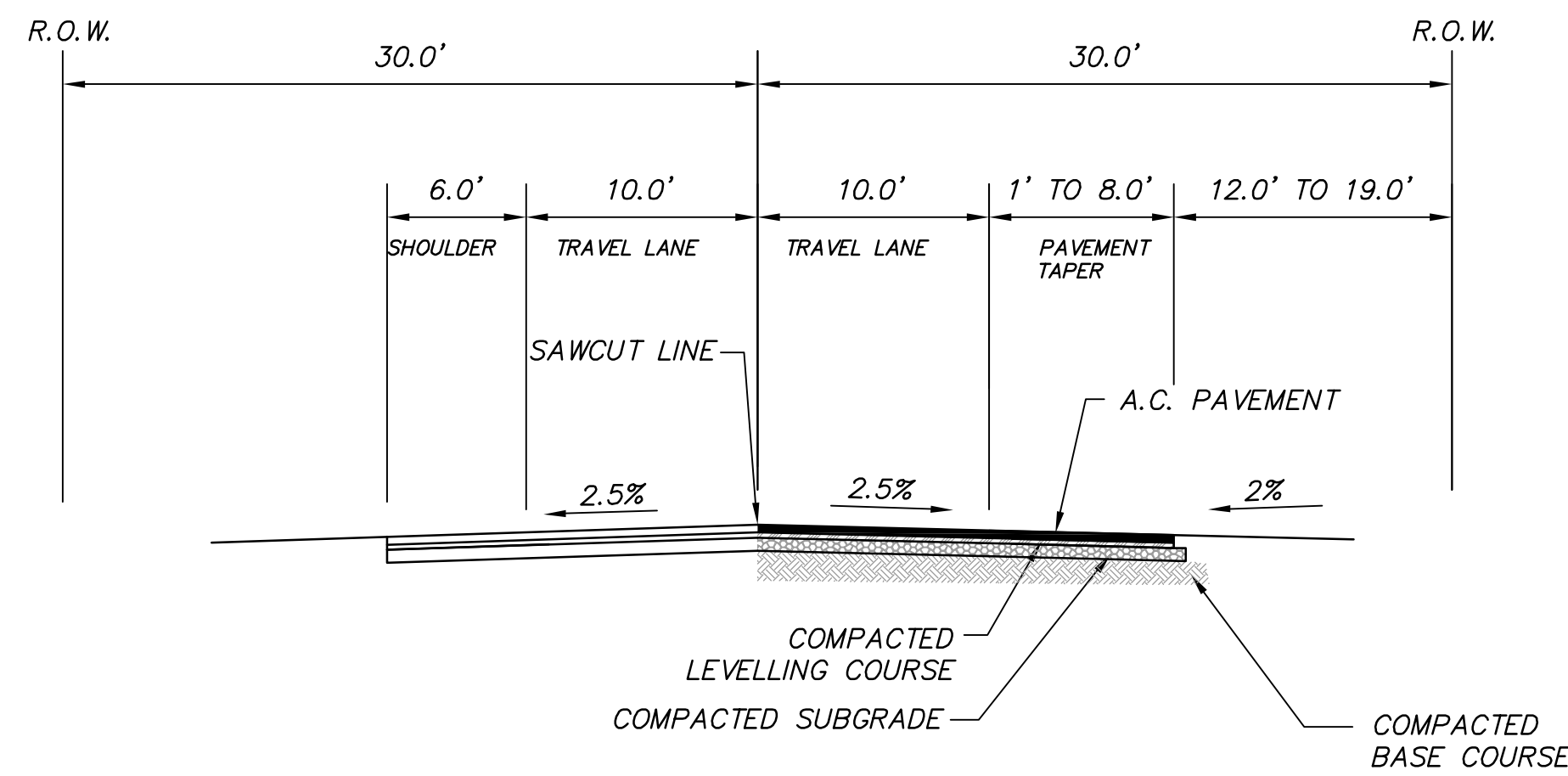
**METZLER AVENUE  
 FRONTAGE IMPROVEMENTS**

SCALE: NTS



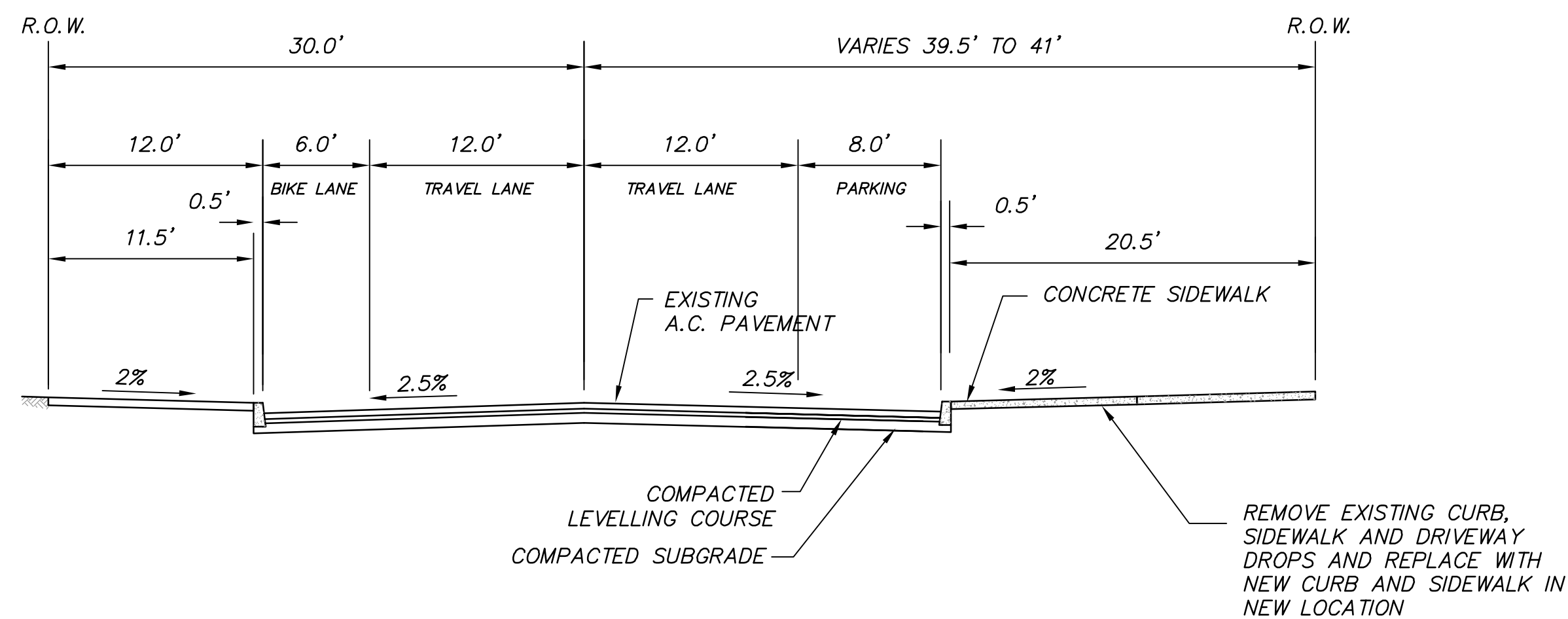
**HART AVENUE  
 FRONTAGE IMPROVEMENTS**

SCALE: NTS



**METZLER AVENUE  
 PAVEMENT TAPER**

SCALE: NTS



**W. MAIN STREET  
 FRONTAGE IMPROVEMENTS**

SCALE: NTS

**AVALON  
 ENGINEERING**

200 Sweden Circle  
 Silverton, OR 97381  
 (503) 807 - 5048  
 avalonengineering123@gmail.com



EXPIRES 6-30-2022

**220 W. MAIN STREET  
 MOLALLA, OREGON  
 COMMERCIAL DEVELOPMENT  
 TYPICAL ROADWAY SECTIONS**

REV.	DATE	BY

PROJECT NUMBER  
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 DATE: 07/19/21  
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 DESIGNED BY: GS  
 CHECKED BY: GS  
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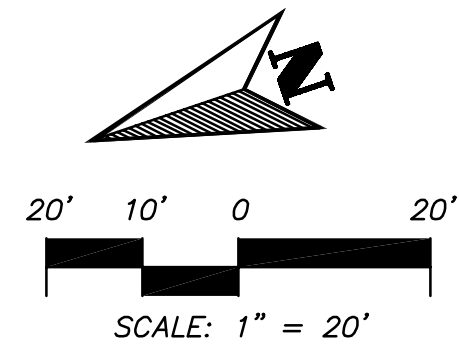
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CITY OF MOLALLA FILE  
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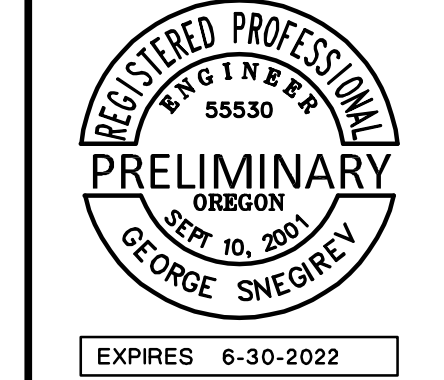


PROPERTY LINE DATA		
Line Designation	Distance in Feet	Bearing
L1	1.28	N 0° 29' 38" W
L2	0.87	S 81° 29' 57" E

PROPERTY MONUMENT DATA	
Monument Designation	Monument Description
M1	5/8" IR W/YPC Up 0.1', "LOVE PLS 747"
M2	5/8" IR W/YPC, "LOVE PLS 747"
M3	5/8" IR W/YPC, "LOVE PLS 747"
M4	5/8" IR W/YPC, "LOVE PLS 747", Under Fence
M5	5/8" IR W/YPC Down 0.1', "LOVE PLS 747"
M6	5/8" IR
M7	5/8" IR W/YPC, "LS 1015 SHAVER"
M8	5/8" IR W/YPC, "LS 1015 SHAVER"

# AVALON ENGINEERING

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 avalonengineering123@gmail.com

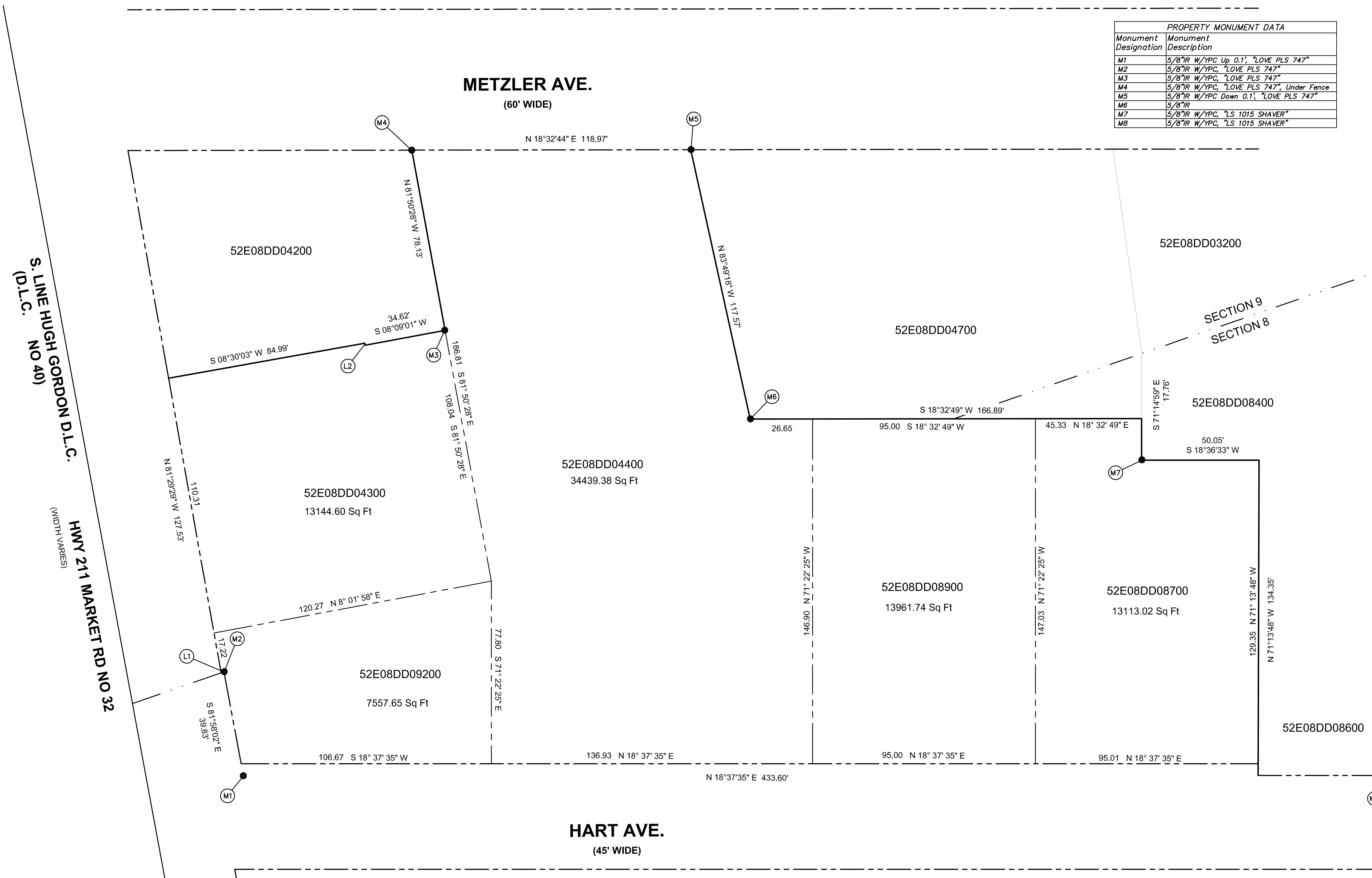


## 220 W. MAIN STREET MOLALLA, OREGON COMMERCIAL DEVELOPMENT PRELIMINARY PLAT

REV.	DATE	BY

PROJECT NUMBER  
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 CHECKED BY: GS  
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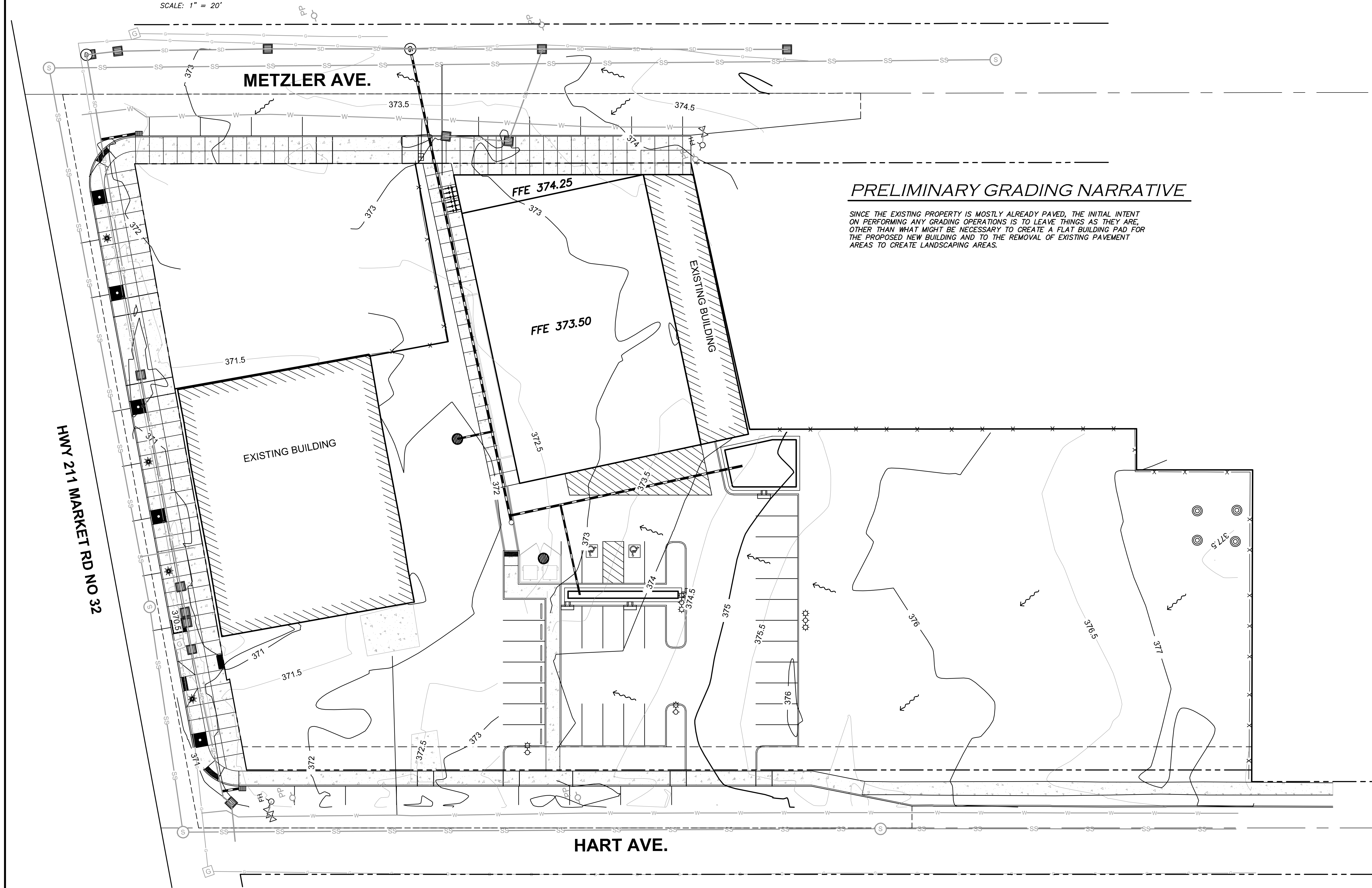
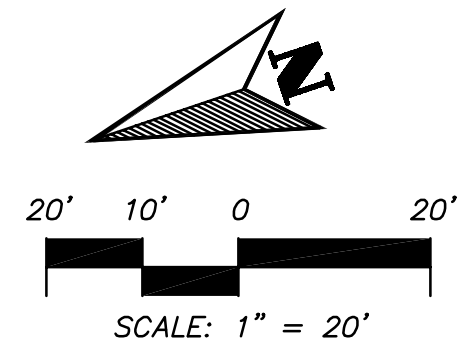
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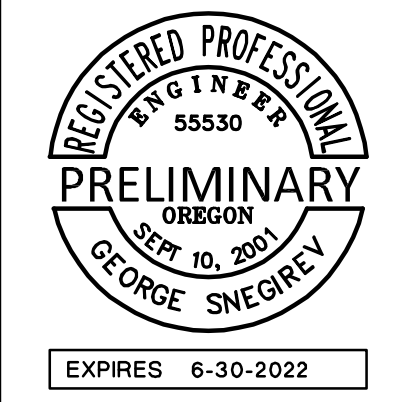


**PRELIMINARY GRADING NARRATIVE**

SINCE THE EXISTING PROPERTY IS MOSTLY ALREADY PAVED, THE INITIAL INTENT ON PERFORMING ANY GRADING OPERATIONS IS TO LEAVE THINGS AS THEY ARE, OTHER THAN WHAT MIGHT BE NECESSARY TO CREATE A FLAT BUILDING PAD FOR THE PROPOSED NEW BUILDING AND TO THE REMOVAL OF EXISTING PAVEMENT AREAS TO CREATE LANDSCAPING AREAS.

**AVALON ENGINEERING**

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 avalonengineering123@gmail.com



**220 W. MAIN STREET  
 MOLALLA, OREGON  
 COMMERCIAL DEVELOPMENT  
 PRELIMINARY GRADING PLAN**

REV.	DATE	BY

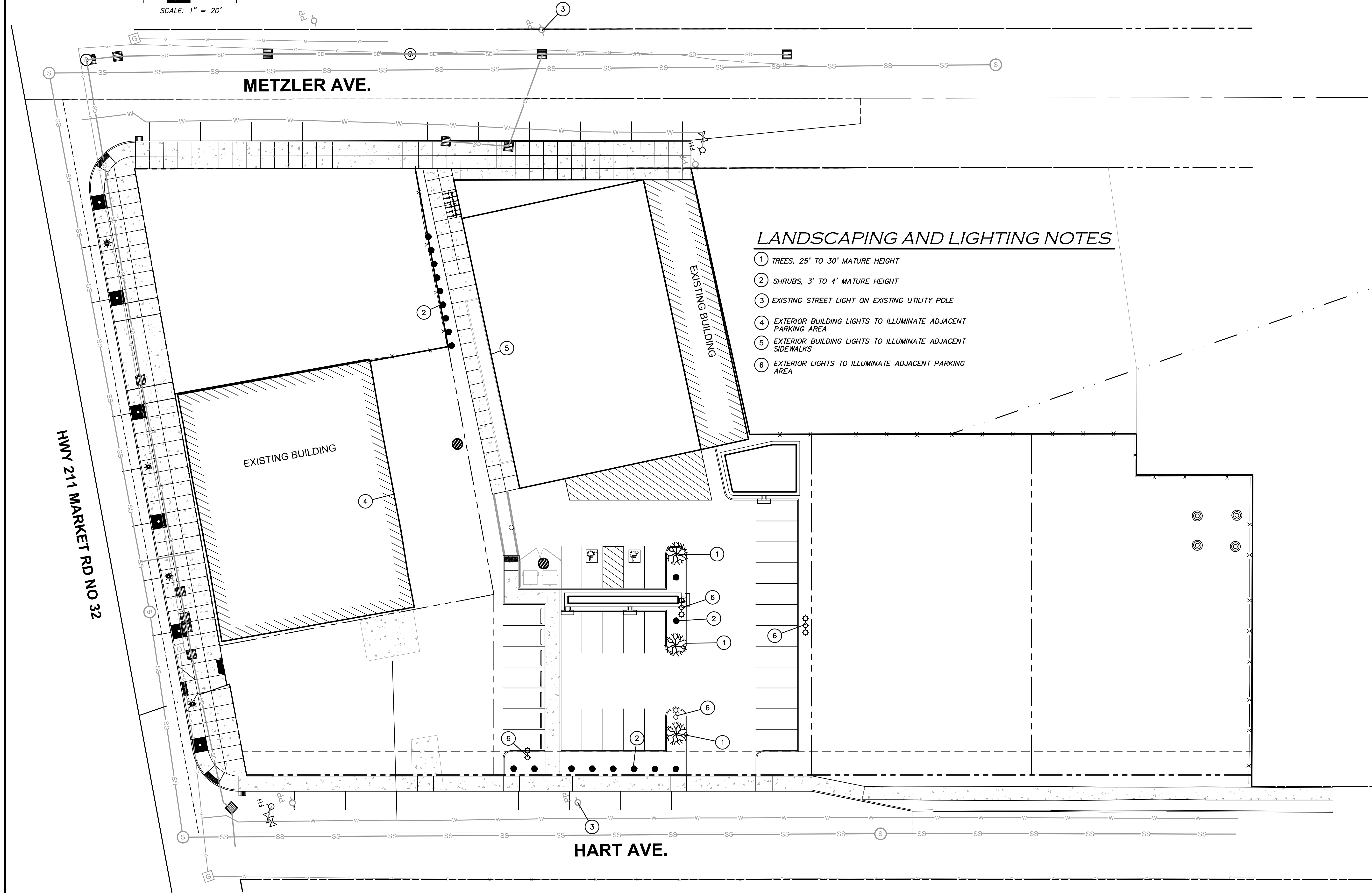
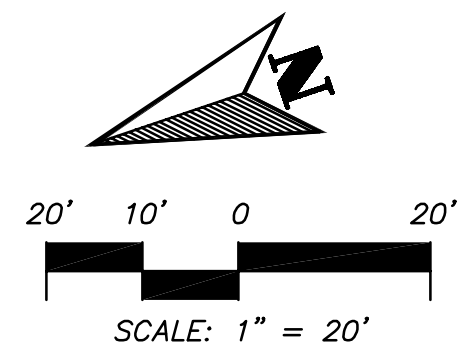
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SHEET NUMBER  
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CITY OF MOLALLA FILE  
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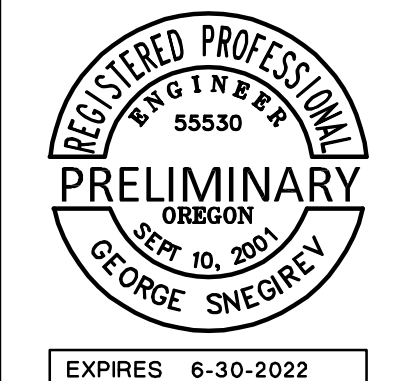


**LANDSCAPING AND LIGHTING NOTES**

- ① TREES, 25' TO 30' MATURE HEIGHT
- ② SHRUBS, 3' TO 4' MATURE HEIGHT
- ③ EXISTING STREET LIGHT ON EXISTING UTILITY POLE
- ④ EXTERIOR BUILDING LIGHTS TO ILLUMINATE ADJACENT PARKING AREA
- ⑤ EXTERIOR BUILDING LIGHTS TO ILLUMINATE ADJACENT SIDEWALKS
- ⑥ EXTERIOR LIGHTS TO ILLUMINATE ADJACENT PARKING AREA

**AVALON ENGINEERING**

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 avalonengineering123@gmail.com



**220 W. MAIN STREET**  
 MOLALLA, OREGON  
**COMMERCIAL DEVELOPMENT**  
**LANDSCAPING, LIGHTING PLAN**

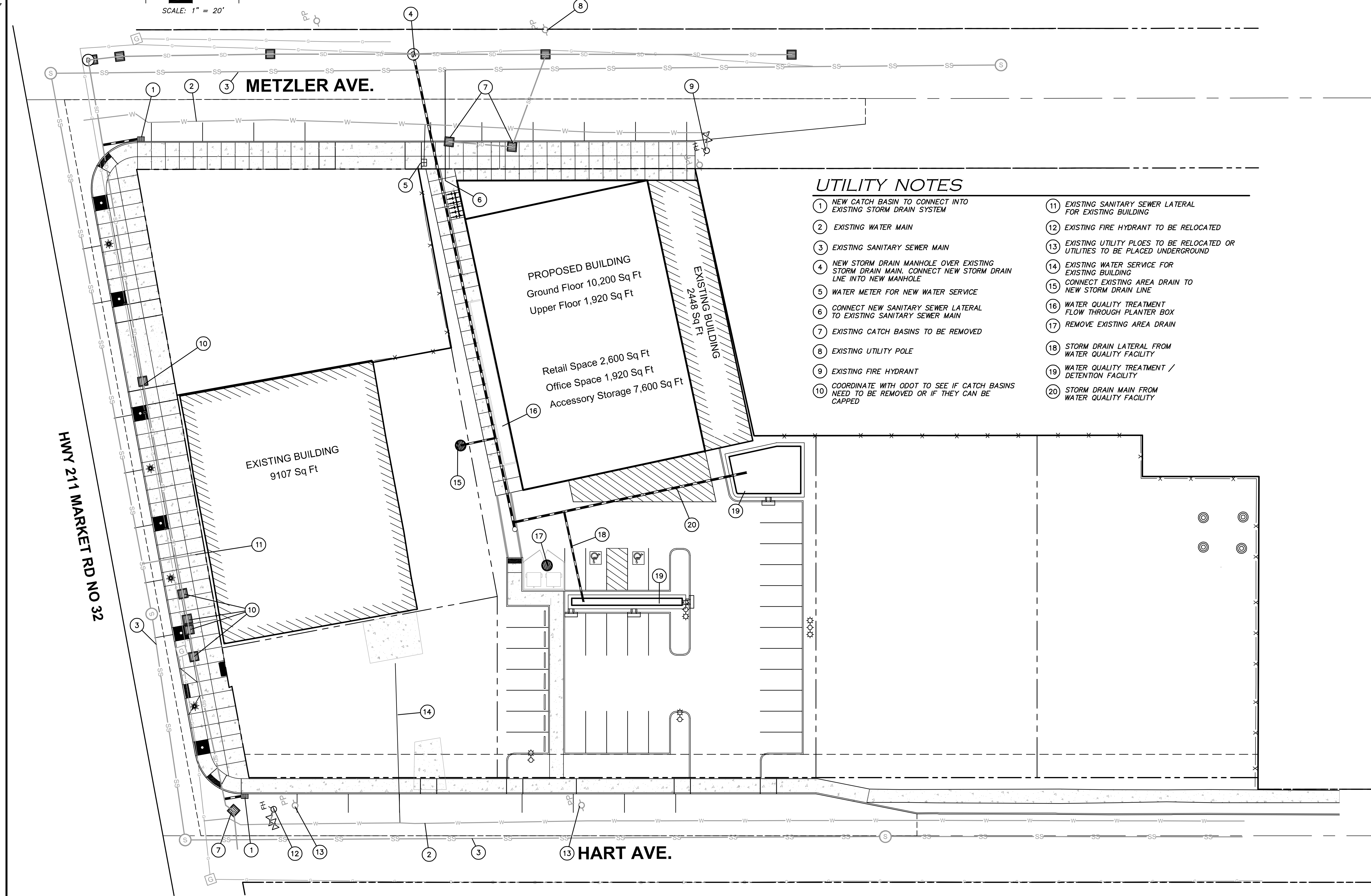
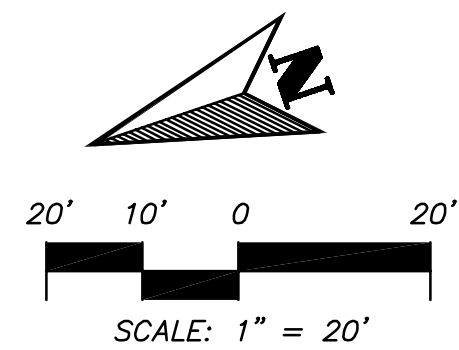
REV.	DATE	BY

PROJECT NUMBER  
**BN1001**  
 DATE: 07/19/21  
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SHEET NUMBER  
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 CITY OF MOLALLA FILE  
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**UTILITY NOTES**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>① NEW CATCH BASIN TO CONNECT INTO EXISTING STORM DRAIN SYSTEM</li> <li>② EXISTING WATER MAIN</li> <li>③ EXISTING SANITARY SEWER MAIN</li> <li>④ NEW STORM DRAIN MANHOLE OVER EXISTING STORM DRAIN MAIN. CONNECT NEW STORM DRAIN LNE INTO NEW MANHOLE</li> <li>⑤ WATER METER FOR NEW WATER SERVICE</li> <li>⑥ CONNECT NEW SANITARY SEWER LATERAL TO EXISTING SANITARY SEWER MAIN</li> <li>⑦ EXISTING CATCH BASINS TO BE REMOVED</li> <li>⑧ EXISTING UTILITY POLE</li> <li>⑨ EXISTING FIRE HYDRANT</li> <li>⑩ COORDINATE WITH ODOT TO SEE IF CATCH BASINS NEED TO BE REMOVED OR IF THEY CAN BE CAPPED</li> </ul> | <ul style="list-style-type: none"> <li>⑪ EXISTING SANITARY SEWER LATERAL FOR EXISTING BUILDING</li> <li>⑫ EXISTING FIRE HYDRANT TO BE RELOCATED</li> <li>⑬ EXISTING UTILITY PLOES TO BE RELOCATED OR UTILITIES TO BE PLACED UNDERGROUND</li> <li>⑭ EXISTING WATER SERVICE FOR EXISTING BUILDING</li> <li>⑮ CONNECT EXISTING AREA DRAIN TO NEW STORM DRAIN LINE</li> <li>⑯ WATER QUALITY TREATMENT FLOW THROUGH PLANTER BOX</li> <li>⑰ REMOVE EXISTING AREA DRAIN</li> <li>⑱ STORM DRAIN LATERAL FROM WATER QUALITY FACILITY</li> <li>⑲ WATER QUALITY TREATMENT / DETENTION FACILITY</li> <li>⑳ STORM DRAIN MAIN FROM WATER QUALITY FACILITY</li> </ul> |
|---|--|

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EXPIRES 6-30-2022

**220 W. MAIN STREET  
 MOLALLA, OREGON  
 COMMERCIAL DEVELOPMENT  
 PRELIMINARY UTILITY PLAN**

REV.	DATE	BY

PROJECT NUMBER  
**BN1001**  
 DATE: 07/19/21  
 SCALE: AS SHOWN  
 DRAWN BY: GS  
 DESIGNED BY: GS  
 CHECKED BY: GS  
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SHEET NUMBER  
**P5.1**

CITY OF MOLALLA FILE  
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**Exhibit D:**

*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

September 15, 2021

TO: Mac Corthell, Planning Director  
Dan Zinder, Assistant Planner  
Julie Larson, Planning Specialist

FROM: Sam Miller, Sr Engineer Tech.

**RE: 220 W Main (SDR01-2021 and SUB02-2021)**

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:

A. Street:

1. The 5-lot subdivision proposal will not require a City traffic impact analysis update. However, applicant will need to verify that an impact analysis is not required by ODOT. The proposed development will add a total of 14 trips and the threshold for a traffic impact analysis is 25 AM or PM PH trips. A Transportation Analysis Letter (TAL) is required per MMC 17-3.6.020.A.4.a and must be submitted and approved by the City prior to issuance of construction permits.
2. OR 211: OR 211 is an arterial street under Oregon Department of Transportation (ODOT) jurisdiction. Current right-of-way width varies from 65-70 feet and approximate pavement width of 48 feet. Applicant will be required to construct frontage improvements along the site's Main St. frontage consistent with Molalla arterial (downtown district) cross sections to include sidewalk with street parking and convert the right turn lane onto Metzler Ave into on street parking in accordance with ODOT requirements. Applicant will be required to close existing unused driveways to the highway fronting the building. Applicant will also be required to dedicate the sidewalk along the property frontage to be within ODOT right-of-way and 10-foot wide Public Utility Easement across the frontage of 220 W. Main (Hwy 211). 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. See also ODOT comments about right of way width and left turn warrants. Applicant shall dedicate a 10-foot wide Public Utility Easement along OR 211
3. Hart Ave: Hart Ave is a local street under City of Molalla jurisdiction. Current right-of-way width is 40 feet and approximate pavement width is 34 feet. Local streets (w/ PK) require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to

dedicate 5 feet of right-of-way, 10-foot Public Utility Easement and construct road improvements to City standards for 17 feet of pavement (CL to face of curb), curb and gutter, and 6-foot curb tight sidewalk. Applicant will be required to bring the southeast corner of the intersection at Hart Ave and W. Main St (Hwy 211) up to ODOT ADA standards and submit plans to be reviewed by ODOT for ADA compliance.

4. Metzler Ave: Metzler Ave is a local street under City of Molalla jurisdiction. Current right-of-way width is 60 feet and approximate pavement width varies from 24-34 feet. Local streets (w/ PK) require 50 feet of right-of-way and 34 feet of pavement. Applicant will not be required to dedicate right-of-way, will be required to dedicate a 5-foot Public Utility Easement, and will be required to construct road improvements to City standards for 17 feet of pavement (CL to face of curb), curb and gutter, and 6-foot curb tight sidewalk. Applicant will be required to bring the southwest corner of the intersection at Metzler Ave and W Main Street (Hwy 211) up to ODOT ADA standards and submit plans to be reviewed by ODOT for ADA compliance.
5. Right-of-way Dedications/Donations: If right of way dedication fronts streets under the jurisdiction of the City of Molalla, Applicant shall submit dedication on formats approved by the Public Works Department. On ODOT rights of way, applicant will be required to donate sufficient right-of-way along variable width improvements and construct sidewalk widening to ODOT standards. ODOT requires donations of right-of-way to follow the requirements of Chapter 5.322. Developer Mitigation Donation in the ODOT Right-of-Way Manual. Applicant is advised that donation must be completed and recorded prior to submission of final subdivision plat or final partition plat in order for Public Works to process plat documents.
6. Proposed Street "Hart Ave": Applicant has opted to dedicate 5 feet of right-of-way and construct a half/full street improvement. Improvements shall consist of 17 feet of pavement, curb and gutter, and 6-foot curb tight sidewalk. Curb radius connecting to W. Main (Hwy211) Street shall be 25 feet and internal street shall be 15 feet minimum. Street shall be signed no parking on both sides until street is improved to full width.
7. Access to public streets shall be limited to the following locations and all accesses shall be constructed in such a manner as to eliminate turning conflicts. Access spacing shall conform to the Transportation Systems Plan. The proposed width of accesses shall meet the Molalla Standard Specifications for Public Works Construction.
8. Transportation SDC's – In accordance with MMC 13.14 this development does increase the impacts to the public improvement facility and is therefore not exempt from transportation SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

B. Storm:

1. City Streets: A 10-inch storm main exists approximately 50 feet to the east of the project on Metzler Ave. Storm main is approximate 3 feet in depth and will serve this subdivision.
2. Applicant proposes to collect and detain all stormwater onsite and discharge to City facilities. Connection to City facilities shall comply with all City requirements. Onsite private storm system shall comply with plumbing code requirements. The detention and flow control facilities shall be reviewed, permitted, and inspected by Public Works. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit. The connection to the ODOT facilities shall be reviewed and permitted by ODOT including water quality requirements.
3. ODOT Streets: Storm improvements shall meet ODOT requirements.

4. Stormwater SDC's – In accordance with MMC 13.14 this development 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.
- C. Sanitary:
1. A 8-inch sanitary main exists on Metzler Ave. Sanitary main is 9 feet deep near proposed Tax Lot 52E08DD04600 and will serve new proposed development to the east by gravity system.
  2. Sanitary SDC's – In accordance with MMC 13.14 this development does increase the impacts to the public improvement facility and is therefore not exempt from sanitary SDC charges...this development is not exempt from sanitary SDC charges. SDC's shall be calculated in accordance with the SDC methodology.
- D. Water:
1. Development can be served from existing 6-inch lines on Metzler Ave that are stubbed into the site in two locations.
  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 based on domestic water meter size in accordance with the SDC methodology.
- E. Parks:
1. Parks SDC's – In accordance with SMC 13.70.110 this commercial/industrial design review is exempt from parks SDC charge and is exempt from parks SDC charges.
- F. 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, all public improvements shall be completed and accepted by the Public Works Department prior to issuance of any 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 Director.
- 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 E:**

*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 220 W Main Street. August 16<sup>th</sup> 2021

- 1) The access from Metzler is being eliminated. Will it be fenced off as well or will there be public access from Metzler??
- 2) If gates are installed to prevent vehicle access, the clear span shall not be less than 20-feet. A Knox lock or Knox override will be required.
- 3) Please check turning radius for new parking area to assure apparatus can make it behind new building. For 20 wide access radius is 28/48. For 12-foot-wide surface radius is 44/56.
- 4) What's the building construction type?
- 5) Will this building have an alarm system? If so, provide Knox Box.
- 6) How tall will new two-story structure be at sidewall/eave connection. See OFC D105.3.
- 7) We will eventually need to know what the commodity is that is being stored and how high. Depending on commodity, and storage height, a suppression system may be required. Suggest knowing this before sending plans to Clackamas County.
- 8) It appears that the new building and the existing building will be connected. If this the case, please site codes for not installing suppression system.
- 9) If suppression system is needed, please see section 912 of the OFC.
- 10) A current fire flow test will need to be conducted at a hydrant within 400 feet of the building. A test will be accepted if it has been done within 5 years, If a suppression system is needed, the test will need to be within the past 12 months.

*The above comments are based solely on the site plan provided. Molalla Fire reserves the right to review and comment on the plans that are to be submitted for full review or revisions to plans that have already been reviewed.*

*Review of submitted plans is not an approval of omissions, oversights or authorization of non-compliance with any regulations of this agency or of the regulations of any other agency. This decision should not be considered a precedent setting recommendation, as we will review each project on a case-by-case basis.*

Michael Penunuri  
August 16<sup>th</sup>, 2021



[www.molallafire.org](http://www.molallafire.org)



**Exhibit F:**  
*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

9/22/21

ODOT #11754

## ODOT Response

<b>Project Name:</b> B&I Construction Building Addition	<b>Legal Description:</b> 05S 02E 08DD <b>Tax Lot(s):</b> 04300
<b>Jurisdiction:</b> City of Molalla	<b>Jurisdiction Case #:</b> SDR01-2021; SUB02-2021
<b>Site Address:</b> 220 W Main St (OR 211), Molalla, OR 97038	<b>State Highway:</b> OR 211

The site of this proposed land use action is adjacent to Main St (OR 211). ODOT has permitting authority for this facility and an interest in ensuring that this proposed land use is compatible with its safe and efficient operation. **Please direct the applicant to the District Contact indicated below to determine permit requirements and obtain application information.**

### COMMENTS/FINDINGS

The proposed development will be making a significant investment in the transportation infrastructure by adding sidewalks along three street frontage. ODOT particularly is excited to see that the city will be requiring the entire block length along Main St (OR211) to be improved with new sidewalks. This will be a significant safety benefit to the public walking to businesses in downtown Molalla.

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 cross walk ramps shall be constructed as necessary to be consistent with the Molalla Transportation System Plan, ODOT and ADA standards.
- Right of way deeded 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.

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.

**Please send a copy of the Notice of Decision including conditions of approval to:**

ODOT Region 1 Planning  
Development Review  
123 NW Flanders St  
Portland, OR 97209

[ODOT\\_R1\\_DevRev@odot.state.or.us](mailto:ODOT_R1_DevRev@odot.state.or.us)

Development Review Planner: Marah Danielson	503.731.8258, marah.b.danielson@odot.state.or.us
District Contact: Loretta Kieffer	503.667.7441 Loretta.l.kieffer@odot.state.or.us