

**DEVELOPMENT REVIEW APPLICATION**

For Office Use Only		
STAFF CONTACT	PROJECT No(s). <b>DR-20-02</b>	
NON-REFUNDABLE FEE(S) <b>300</b>	REFUNDABLE DEPOSIT(S) <b>20,000</b>	TOTAL <b>20,300</b>

**Type of Review** (Please check all that apply):

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Annexation (ANX)                      | <input type="checkbox"/> Historic Review                                  | <input type="checkbox"/> Subdivision (SUB)                               |
| <input type="checkbox"/> Appeal and Review (AP) *              | <input type="checkbox"/> Legislative Plan or Change                       | <input type="checkbox"/> Temporary Uses *                                |
| <input type="checkbox"/> Conditional Use (CUP)                 | <input type="checkbox"/> Lot Line Adjustment (LLA) */**                   | <input type="checkbox"/> Time Extension *                                |
| <input checked="" type="checkbox"/> Design Review (DR)         | <input type="checkbox"/> Minor Partition (MIP) (Preliminary Plat or Plan) | <input type="checkbox"/> Variance (VAR)                                  |
| <input type="checkbox"/> Easement Vacation                     | <input type="checkbox"/> Non-Conforming Lots, Uses & Structures           | <input type="checkbox"/> Water Resource Area Protection/Single Lot (WAP) |
| <input type="checkbox"/> Extraterritorial Ext. of Utilities    | <input type="checkbox"/> Planned Unit Development (PUD)                   | <input type="checkbox"/> Water Resource Area Protection/Wetland (WAP)    |
| <input type="checkbox"/> Final Plat or Plan (FP)               | <input type="checkbox"/> Pre-Application Conference (PA) */**             | <input type="checkbox"/> Willamette & Tualatin River Greenway (WRG)      |
| <input type="checkbox"/> Flood Management Area                 | <input type="checkbox"/> Street Vacation                                  | <input type="checkbox"/> Zone Change                                     |
| <input type="checkbox"/> Hillside Protection & Erosion Control |   |  |

Home Occupation, Pre-Application, Sidewalk Use, Sign Review Permit, and Temporary Sign Permit applications require different or additional application forms, available on the City website or at City Hall.

<b>Site Location/Address:</b> 1575 Burns Street	Assessor's Map No.: 22E30BD
	Tax Lot(s): 2501
	Total Land Area: 27,571 sq. ft.

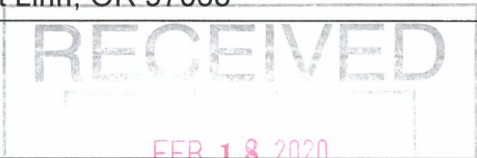
**Brief Description of Proposal:**

New single-story dental and physical therapy clinic in OBC zone

**Applicant Name:** Sam Thomas - Lenity Architecture, Inc. (please print) Phone: (503) 399-1090  
 Address: 3150 Kettle Court SE Email: [samt@lenityarchitecture.com](mailto:samt@lenityarchitecture.com)  
 City State Zip: Salem, OR 97301

**Owner Name** (required): Kim Wright, DMD, MAGD (please print) Phone: (503) 665-9300  
 Address: 1554 Garden Street, Suite 104 Email: [kim@advancedentalarts.com](mailto:kim@advancedentalarts.com)  
 City State Zip: West Linn, OR 97068

**Consultant Name:** (please print) Phone:  
 Address: Email:  
 City State Zip:



- All application fees are non-refundable (excluding deposit). **Any overruns to deposit will result in additional billing.**
- The owner/applicant or their representative should be present at all public hearings.
- A denial or approval may be reversed on appeal. No permit will be in effect until the appeal period has expired.
- Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application. One (1) complete set of digital application materials must also be submitted on CD in PDF format.**  
 If large sets of plans are required in application please submit only two sets.

\* No CD required / \*\* Only one hard-copy set needed

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application. Acceptance of this application does not infer a complete submittal. All amendments to the Community Development Code and to other regulations adopted after the application is approved shall be enforced where applicable. Approved applications and subsequent development is not vested under the provisions in place at the time of the initial application.

Kim Wright 2-13-20 Kim Wright 2-13-20  
 Applicant's signature Date Owner's signature (required) Date

# 1575 Burns Street

Design Review Submittal

2/18/2020

**SHAREHOLDERS**

**Daniel Roach**  
Architect  
**Marcus Hite**  
Architect  
**Kristin Newland**

**BOARD OF DIRECTORS**

**Daniel Roach**  
Architect / President  
**Marcus Hite**  
Architect / Vice President  
**Aaron Clark**  
Architect  
**Lee Gwyn**  
Architect  
**Stephen Hockman**  
Architect  
**Robert J. Hazleton, Jr.**  
Engineer  
**Brian Lind**  
Landscape Architect

Sam Thomas  
LENITY ARCHITECTURE, INC.

## 1575 BURNS STREET DENTAL/PHYSICAL THERAPY CLINIC

### WRITTEN STATEMENT & RESPONSE TO APPLICABLE REVIEW AND DECISION CRITERIA

**Project Description:** The proposed project would demolish an existing single-family dwelling in order to construct a new medical office that would house a dental clinic and physical therapy clinic. The proposed building would contain approximately 6,922 square feet. The subject property is located at northeast corner of Hood Street and Burns Street. The subject property is currently zoned Office-Business Center (OBC). The proposed use is outright permitted. The subject site is approximately 0.63-acre in size.

#### Applicable Review and Decision Criteria

#### West Linn Community Development Code – Chapters 21, 46, 48, 54, 55, and 92.

##### 21.030 PERMITTED USES

8. Medical and dental services.

**Applicant Response:** The proposed uses, a dental clinic and physical therapy clinic, are listed as outright permitted uses according to West Linn Community Development Code (CDC) Section 21.030(8).

#### 21.070 DIMENSIONAL REQUIREMENTS, USES PERMITTED OUTRIGHT AND USES PERMITTED UNDER PRESCRIBED CONDITIONS

A. Except as may be otherwise provided by the provisions of this code, the following are requirements for uses within this zone:

1. The minimum front lot line length or the minimum lot width at the front lot line shall be 35 feet.
2. The average minimum lot width shall be 35 feet.
3. Repealed by Ord. 1622.
4. The yard dimensions or building setback area from the lot line shall be:
  - a. Interior side yard, a minimum of seven and one-half feet.
  - b. Side yard abutting a street, no minimum.
  - c. Rear yard, a minimum of 25 feet.
  - d. Front yard, no minimum and a 20-foot maximum. The front setback area between the street and the building line shall consist of landscaping or a combination of non-vehicular hardscape areas (covered with impervious surfaces) and landscaped areas. If there are not street trees within the public right-of-way, the front setback area shall include such trees per the requirements of the City Arborist.

5. The maximum lot coverage shall be 50 percent.
  6. The maximum building height shall be two and one-half stories or 35 feet for any structure located within 50 feet of a low or medium density residential zone and three and one-half stories or 45 feet for any structure located 50 feet or more from a low or medium density residential area.
- B. The requirements of subsections (A)(1) through (4) of this section may be modified for developments under the planned unit development provisions of Chapter 24 CDC. (Ord. 1425, 1998; Ord. 1622 § 24, 2014)

**Applicant Response: The current and proposed continued lot configuration will include an approximately 130-foot front lot width, which exceeds the minimum lot width of 35 feet. The interior side yard will be approximately 8 feet. The subject property has two side yards, each abutting a street and no rear yard. The front yard is 4 feet wide at the narrowest point. The front yard area will be landscaped. The proposed lot coverage is approximately 25.4% of the total lot area.**

**The height of the proposed building ranges from 25 feet, 4 inches to approximately 39 feet due to the topography of the site. The proposed building will be a story building with a large building wall on the downslope (east) side. The maximum proposed building height is approximately 39 feet at the highest point along the and the structure is more than 50 feet from a low or medium density zone.**

### **Chapter 38**

#### **ADDITIONAL YARD AREA REQUIRED; EXCEPTIONS TO YARD REQUIREMENTS; STORAGE IN YARDS; PROJECTIONS INTO YARDS**

##### **38.020 NO YARD REQUIRED; STRUCTURE NOT ON PROPERTY LINE**

In zones where a side yard or a rear yard setback is not required, a structure which is not to be built on the property line shall be set back from the property line by at least three feet, except as prescribed in CDC 58.090(C)(1). (Ord. 1675 § 36, 2018)

**Applicant Response: The proposed building will be placed at the property line adjacent to Burns Street, which is a street-abutting side yard. The front yard, interior side yard, and rear yard will be a minimum of 3 feet in width.**

##### **38.030 SETBACK FROM STREET CENTERLINE REQUIRED**

A. To assure improved light, air, and sight distance and to protect the public health, safety and welfare, a setback in addition to the yard requirements of the zone may be required where the right-of-way is inadequate. A determination shall be made based on the street standards contained in CDC 85.200(A).

**Applicant Response: The proposed property setback and ultimate right-of-way was developed through preliminary communication with Public Works Staff, which includes provisions for street widening, on-street parking, and sidewalk improvements.**

B. The minimum yard requirement shall be increased to provide for street widening in the event a yard abuts a street having a right-of-way width less than required by its functional classification on the City's Comprehensive Plan Map, and in such case the setback shall be not less than the setback required by the zone plus one-half of the projected road width as required under CDC 85.200(A); however

C. The minimum distance from the wall of any structure to the centerline of an abutting street shall not be less than 25 feet plus the yard required by the zone. This provision shall not apply to rights-of-way of 50 feet or greater in width.

**Applicant Response: The minimum distance between the proposed structure and the centerlines of Hood Street and Burns Street is at least 25 feet plus the yard required by the OBC zone.**

#### 38.050 STORAGE IN FRONT YARD

Boats, trailers, campers, camper bodies, house trailers, recreation vehicles or commercial vehicles in excess of three-quarter-ton capacity shall not be stored in a required front yard in a residential zone if the location creates an obstruction to the vision of passing motorists which constitutes a potential traffic hazard.

**Applicant Response: The proposed development does not include any proposed storage of boats, trailers, campers, camper bodies, house trailers, recreation vehicles or commercial vehicles in the front yard.**

#### 38.060 PROJECTIONS INTO REQUIRED YARDS

A. Repealed by Ord. 1635.

B. Cornices, eaves, belt courses, sills, canopies, or similar architectural features may extend or project into a required yard not more than 36 inches provided the width of such side yard is not reduced to less than three feet. Projections into the side yard may not include living space such as bay windows or overhanging breakfast nooks, etc.

**Applicant Response: There will be no architectural features that project into required minimum side yards.**

C. Projections that include living space such as bay windows or overhanging breakfast nooks, etc., may extend into the front or rear yard setbacks, but no more than two feet. The footprint or foundation of the house may not encroach into the front or rear setback area.

**Applicant Response: There are no bay windows or breakfast nooks proposed for this development.**

D. Fireplace chimneys may project into a required front, side or rear yard not more than three feet, provided the width of such side yard is not reduced to less than three feet.

**Applicant Response: There are no fireplace chimneys proposed for this development.**

E. The presence of an easement within a required yard is a limitation to projections. Uncovered open porches, decks, or balconies, not more than 30 inches in height above grade and not covered by a roof or canopy, may extend or project into a required front or rear yard until the projection

reaches a utility easement or comes within five feet of the property line, whichever provides a greater distance from the property line. The uncovered deck, porch or balcony may go into side yard setback leaving at least three feet to the property line. Encroachment into a utility easement is not allowed, except as provided below:

1. Uncovered open porches, decks, or balconies may extend into an existing utility easement, provided:
  - a. A minimum vertical clearance of 12 feet is maintained between the lowest point of the deck and the ground; and
  - b. That no posts are installed within the easement.
2. These provisions do not apply in the Willamette Historic District.

**Applicant Response: To the best of our knowledge, there are no easements that encumber the proposed development site and the subject property is not located within the Willamette Historic District.**

F. Front and rear porches, covered porches, unroofed landings and stairs (over 30 inches in height) may encroach into the front or rear yard setback up to five feet. Homes on corner lots may have a front porch that wraps around to the side street side. The porch on the side street may also encroach five feet into the required street side setback area. Enclosed porches are not permitted to encroach. The roofline of the house may be extended to cover the porch but no living space shall be allowed inside the front yard setback (i.e., dormers). The Planning Director shall determine compliance with this section as provided by CDC 99.060(A)(3). These provisions do not apply in the Willamette Historic District. (Ord. 1291, 1990; Ord. 1308, 1991; Ord. 1401, 1997; Ord. 1635 § 22, 2014)

**Applicant Response:**

#### 41.005 DETERMINING HEIGHT OF BUILDING

A. For all zoning districts, building height shall be the vertical distance above a reference datum measured to the highest point of a flat roof or to the deck line of a mansard roof or to the highest gable, ridgeline or peak of a pitched or hipped roof, not including projections above roofs such as cupolas, towers, etc. The reference datum shall be selected by either of the following, whichever yields a greater height of building.

1. For relatively flat sites where there is less than a 10-foot difference in grade between the front and rear of the building, the height of the building shall be measured from grade five feet out from the exterior wall at the front of the building; or
2. For steeper lots where there is more than a 10-foot difference in grade between the front and rear of the building, the height of the building is measured from grade at a point five feet out from the exterior wall on the lowest side (front or rear) of the building. One then measures vertically to the peak or ridgeline of the roof to determine the height.

**Applicant Response: The subject property is a relatively steep lot. There is a difference of 30 feet from the highest point along Hood Street (130 feet) to the lowest point of the site along Burns Street. The total building height using the method in 41.005 (A)(2) would be 39 feet.**

3. Buildings on cross slopes or side slopes are measured at either the front or rear of the building using methods described in subsections (A)(1) and (2) of this definition only.

Even if the cross slope creates a tall elevation on the side, the method of determining height is not modified.

Also see CDC 41.020, Height Exceptions.

Figure 1.

Height of building on relatively flat lot is measured from grade at front of house to peak of roof.

Height of building on steep lots where there is more than a 10-foot difference in elevation between the front and rear of the building is measured from grade at a point five feet out from the front or rear exterior wall on the lowest side of the house to the peak of the building.

Height of building with a cross slope is still measured at either the front or rear by methods described in subsection (A)(1) or (2) of this definition.

(Ord. 1604 § 42, 2011)

#### **41.010 FRONT YARD SETBACK EXCEPTION**

If the average slope of a building site is 25 percent or greater, as measured along the planes of the proposed structure, the minimum front yard setback for the garage shall be three feet. All structures other than the garage shall meet the setback requirement of the underlying zone, or as otherwise specified in this code.

When a garage is situated less than 20 feet from the front property line or less than 15 feet from a side property line facing a street, the following siting conditions shall apply:

A. Where lot width allows, the garage shall be set parallel to the street (i.e., the garage doors shall be perpendicularly oriented to the street), and at least two off-street parking spaces shall be provided as specified in Chapter 46 CDC (i.e., paved).

B. If the lot width prohibits the parallel siting required above, the garage may be sited perpendicular to the street (i.e., the garage door or doors facing directly onto the street), provided, in addition to the sheltered parking spaces, two off-street parking spaces are provided on site. (Ord. 1226, 1988; Ord. 1276, 1990)

#### **41.020 HEIGHT EXCEPTIONS**

A. If the highest grade of a building site which fronts on the downslope side of the street is greater than 10 feet above the lowest grade as measured along the planes of the proposed structure, the total building height may not exceed 45 feet as measured from the lowest grade at a point five feet downhill from the rear of the building, provided the building height does not

project more than 24 feet above the average grade of the street. In the R-15, R-20, and R-40 zones the 45-foot height may be increased to 50 feet.

B. If the highest grade of a building site which fronts on the upslope side of the street is greater than 10 feet above the lowest grade, as measured along the planes of the proposed structure, the total building height shall not exceed 45 feet. In the R-15, R-20, and R-40 zones the 45-foot height may be increased to 50 feet.

Height of buildings on uphill slopes where there is more than a 10-foot difference between the rear and front elevation is measured from a point five feet downhill from the front of the building to the peak or dominant ridgeline and shall not exceed 45 feet (50 feet in the R-15, R-20 and R-40 zones).

Figure 2. Height exceptions

Height of buildings on downhill slopes where there is more than a 10-foot difference between the rear and front elevation is measured from a point five feet downhill from the rear of the building to the peak or dominant ridgeline and shall not exceed 45 feet (50 feet in the R-15, R-20 and R-40 zones). Front house height cannot be more than 24 feet above average street grade. (Ord. 1276, 1990; Ord. 1308, 1991; Ord. 1538, 2006; Ord. 1604 § 43, 2011)

**Applicant Response: The proposed building will not exceed 45 feet in height.**

#### 41.030 PROJECTIONS NOT USED FOR HUMAN HABITATION

Projections such as chimneys, spires, domes, elevator shaft housings, towers, aerials, flag poles, and other similar objects not used for human occupancy are not subject to the building height limitations of this code. (Ord. 1604 § 44, 2011)

**Applicant Response: There are no projections on the proposed building above the roof height.**

#### 42.020 CLEAR VISION AREAS REQUIRED, USES PROHIBITED

A. A clear vision area shall be maintained on the corners of all property adjacent to an intersection as provided by CDC 42.040 and 42.050.

B. A clear vision area shall contain no planting, fence, wall, structure or temporary or permanent obstruction (except for an occasional utility pole or tree) exceeding three feet in height, measured from the top of the curb, or, where no curb exists, from the street centerline grade, except that trees exceeding this height may be located in this area, provided all branches below eight feet are removed. (Ord. 1192, 1987)

**Applicant Response: The subject site design includes a clear vision area at the corner of Burns Street and Hood Street that is 30 feet by 30 feet.**

#### 42.030 EXCEPTIONS

The following described area in Willamette shall be exempt from the provisions of this chapter. The units of land zoned General Commercial which abut Willamette Falls Drive, located between 10th and 16th Streets. Beginning at the intersection of Willamette Falls Drive and 11th Street on 7th Avenue to 16th Street; on 16th Street to 9th Avenue; on 9th Avenue to 14th Street to the Tualatin River; following the Tualatin River and Willamette River to 12th Street; on 12th Street to



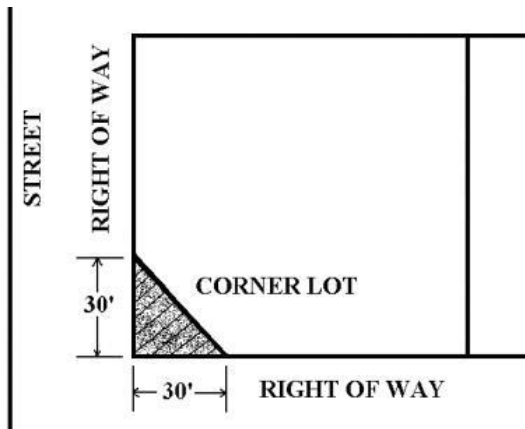
4th Avenue; on 4th Avenue to 11th Street; on 11th Street to Willamette Falls Drive. This described area does not include the northerly side of Willamette Falls Drive. (Ord. 1636 § 29, 2014)

**Applicant Response: The subject property is not located within the area described in the criterion above.**

**42.040 COMPUTATION; STREET AND ACCESSWAY 24 FEET OR MORE IN WIDTH**

The clear vision area for all street intersections and street and accessway intersections (accessways having 24 feet or more in width) shall be that triangular area formed by the right-of-way or property lines along such lots and a straight line joining the right-of-way or property line at points which are 30 feet distant from the intersection of the right-of-way line and measured along such lines.

Clear vision area for corner lots and driveways 24 feet or more in width:

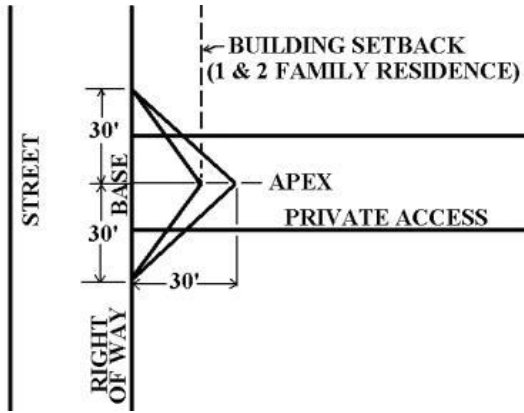


**Applicant Response: The subject site includes two private driveways to access the off-street parking areas on Hood Street and Burns Street. The driveway intersection with Hood Street is approximately 27 feet in width and will include clear vision areas that meet the 30 feet by 30 feet triangle requirement.**

**42.050 COMPUTATION; ACCESSWAY LESS THAN 24 FEET IN WIDTH**

The clear vision area for street and accessway intersections (accessways having less than 24 feet in width) shall be that triangular area whose base extends 30 feet along the street right-of-way line in both directions from the centerline of the accessway at the front setback line of a single-family and two-family residence, and 30 feet back from the property line on all other types of uses.

Clear vision area for corner lots and driveways less than 24 feet in width:



**Applicant Response: The Burns Street driveway intersection is approximately 23 feet in width and will include clear vision areas that meet the 30 feet by 30 feet triangle from the centerline of the driveway.**

**CHAPTER 46  
OFF-STREET PARKING, LOADING AND RESERVOIR AREAS**

**46.060 STORAGE IN PARKING AND LOADING AREAS PROHIBITED**

Required parking spaces shall be available for the parking of passenger automobiles of residents, customers, patrons and employees only, and the required parking spaces shall not be used for storage of vehicles or materials or for the parking of trucks connected with the business or use with the exception of small (under one-ton) delivery trucks or cars.

**Applicant Response: The subject site parking area will not be used for storage of vehicles, materials, or large trucks.**

**46.070 MAXIMUM DISTANCE ALLOWED BETWEEN PARKING AREA AND USE**

A. Off-street parking spaces for single- and two-family dwellings shall be located on the same lot with the dwelling.

B. Off-street parking spaces for uses not listed in subsection A of this section shall be located not farther than 200 feet from an entryway to the building or use they are required to serve, measured in a straight line from the building, with the following exceptions:

1. Shared parking areas for commercial uses which require more than 40 parking spaces may provide for the spaces in excess of the required 40 spaces up to a distance of 300 feet from the entryway to the commercial building or use.
2. Industrial and manufacturing uses which require in excess of 40 spaces may locate the required spaces in excess of the 40 spaces up to a distance of 300 feet from the entryway to the building.
3. Employee parking areas for carpools and vanpools shall be located closer to the entryway to the building than general employee parking.
4. Stacked or valet parking is allowed if an attendant is present to move vehicles. If stacked parking is used for required parking spaces, the applicant shall ensure that an attendant will always be present when the lot is in operation. The requirements for minimum or maximum spaces and all parking area development standards continue to apply for stacked parking.
5. All disabled parking shall be placed closest to building entrances than all other parking. Appropriate ADA curb cuts and ramps to go from the parking lot to the ADA-accessible entrance shall be provided unless exempted by ADA code. (Ord. 1547, 2007)

**Applicant Response: The proposed off-street parking area consists of 26 auto parking stalls. Two ADA stalls are proposed, one near each main entrance. There are no industrial or manufacturing uses proposed. Carpool/vanpool? There are no proposed stacked or valet parking proposed. The two proposed ADA parking spaces are proposed to be as close to the building entrances as possible. ADA curb cuts and ramps will lead from the parking area to building entrances.**

#### 64.080 COMPUTATION OF REQUIRED PARKING SPACES AND LOADING AREA

- A. Where several uses occupy a single structure or unit of land, a combination of uses is included in one business, or a combination of uses in the same or separate buildings share a common parking area as in the case of a shopping center, the total off-street parking spaces and loading area shall be the sum of the requirements of the several uses, computed separately. For example, parking for an auto sales and repair business would be calculated using the “retail-bulky” calculation for the sales area and the “service and repair” calculation for the repair area. In another example, parking for a shopping center with a grocery store, a restaurant, and a medical office would be calculated using the “general retail store” calculation for the grocery store, the “restaurant” calculation for the restaurant, and the “medical/dental clinics” calculation for the medical office. The total number of required parking spaces may be reduced by up to 10 percent to account for cross-patronage (when a customer visits several commercial establishments during one visit to the commercial center) of adjacent businesses or services in a commercial center with five or more separate commercial establishments.
- B. To calculate building square footage as a basis for determining how many parking spaces are needed, the area measured shall be gross floor area under the roof measured from the faces of the structure, including all habitable floors and excluding only space devoted to covered off-street parking or loading.
- C. Where employees are specified, the employees counted are the persons who work on the premises including proprietors, executives, professional people, production, sales, and distribution employees, during the largest shift.
- D. Fractional space requirements shall be counted as a whole space.
- E. On-street parking along the immediate property frontage(s) may be counted toward the minimum parking requirement with approval from the City Engineer.
- F. When an office or commercial development is proposed which has yet to identify its tenants, the parking requirement shall be based upon the “office” or “general retail” categories, respectively.
- G. As permitted uses are replaced with new permitted uses within an existing commercial or business center, modification of the number of parking spaces relative to the new mix of uses is not required unless other modifications of the site which require design review approval pursuant to Chapter 55 CDC are proposed. (Ord. 1463, 2000; Ord. 1622 § 25, 2014; Ord. 1636 § 31, 2014)

**Applicant Response: The proposed uses on the property, dental and physical therapy clinic most closely fall under the parking category of “medical/dental clinics/day surgery” which requires one vehicle space for every 250 square feet of gross floor area. The proposed building would contain 6,922 square feet of gross floor area. Therefore, a minimum of 27.688 or 28 parking spaces. A reduction of 10% of the parking spaces is requested due to the proximity of transit which would then include a requirement of 25 parking spaces. The proposed development would provide 26 parking spaces, therefore exceeding the minimum parking requirement by 1 space.**

F. Maximum parking. Parking spaces (except for single-family and two-family residential uses) shall not exceed the minimum required number of spaces by more than 10 percent.

**Applicant Response: The proposed parking spaces exceed the minimum parking requirement but do not exceed more than 10% of the minimum.**

G. Parking reductions. An applicant may reduce parking up to 10 percent for development sites within one-quarter mile of a transit corridor or within a mixed-use commercial area, and up to 10 percent for commercial development sites adjacent to multi-family residential sites with the potential to accommodate more than 20 dwelling units.

**Applicant Response: The subject property is located within one-quarter mile of Willamette Drive which is a major transit corridor. The applicant is requesting a 10 percent reduction in the required number of parking spaces from 28 to 26.**

H. For office, industrial, and public uses where there are more than 20 parking spaces for employees on the site, at least 10 percent of the required employee parking spaces shall be reserved for carpool use before 9:00 a.m. on weekdays. The spaces will be the closest to the building entrance, except for any disabled parking and those signed for exclusive customer use. The carpool/vanpool spaces shall be clearly marked "Reserved – Carpool/Vanpool Before 9:00 a.m."

**Applicant Response: The subject property includes parking for a maximum of 26 vehicles, including two (2) ADA spaces.**

I. Existing developments along transit streets or near transit stops may redevelop up to 10 percent of the existing parking spaces to provide transit-oriented facilities, including bus pullouts, bus stops and shelters, park and ride stations, and other similar facilities.

**Applicant Response: The subject property is not located along a transit street and does not include existing parking spaces, therefore the criterion above does not apply.**

J. Development in water resource areas may reduce the required number of parking spaces by up to 25 percent. Adjacent improved street frontage with curb and sidewalk may also be counted towards the parking requirement at a rate of one parking space per 20 lineal feet of street frontage adjacent to the property. (Ord. 1291, 1990; Ord. 1391, 1996; Ord. 1408, 1998; Ord. 1425, 1998; Ord. 1463, 2000; Ord. 1499, 2003; Ord. 1547, 2007; Ord. 1622 § 25, 2014; Ord. 1623 § 4, 2014; Ord. 1650 § 1 (Exh. A), 2016; Ord. 1675 § 38, 2018)

**Applicant Response: Based on a review of the MapOptix GIS, the subject property is not located within a water resource area.**

## **Chapter 54 LANDSCAPING**

### **54.020 APPROVAL CRITERIA**

A. Every development proposal requires inventorying existing site conditions which include trees and landscaping. In designing the new project, every reasonable attempt should be made to preserve and protect existing trees and to incorporate them into the new landscape plan. Similarly, significant landscaping (e.g., bushes, shrubs) should be integrated. The rationale is that saving a 30-foot-tall mature tree helps maintain the continuity of the site, they are qualitatively superior to two or three two-inch caliper street trees, they provide immediate micro-climate benefits (e.g., shade), they soften views of the street, and they can increase the attractiveness, marketability, and value of the development.

B. To encourage tree preservation, the parking requirement may be reduced by one space for every significant tree that is preserved in the parking lot area for a maximum reduction of 10 percent of the required parking. The City Parks Supervisor or Arborist shall determine the significance of the tree and/or landscaping to determine eligibility for these reductions.

**Applicant Response: No trees are proposed to be preserved on the site due to the extent of development on site.**

C. Developers must also comply with the municipal code chapter on tree protection.

**Applicant Response: The developer will comply with the municipal code chapter on tree protection.**

D. Heritage trees. Heritage trees are trees which, because of their age, type, notability, or historical association, are of special importance. Heritage trees are trees designated by the City Council following review of a nomination. A heritage tree may not be removed without a public hearing at least 30 days prior to the proposed date of removal. Development proposals involving land with heritage tree(s) shall be required to protect and save the tree(s). Further discussion of heritage trees is found in the municipal code.

**Applicant Response: To the best of our knowledge, there are no listed heritage trees that exist on the subject property.**

E. Landscaping – By type, location and amount.

1. Residential uses (non-single-family). A minimum of 25 percent of the gross area including parking, loading and service areas shall be landscaped, and may include the open space and recreation area requirements under CDC 55.100. Parking lot landscaping may be counted in the percentage.

2. Non-residential uses. A minimum of 20 percent of the gross site area shall be landscaped. Parking lot landscaping may be counted in the percentage.

**Applicant Response: The site landscaping of the gross site area is 28% which exceeds the minimum of 20%.**

3. All uses (residential uses (non-single-family) and non-residential uses):

- a. The landscaping shall be located in defined landscaped areas which are uniformly distributed throughout the parking or loading area. There shall be one shade tree planted for every eight parking spaces. These trees shall be evenly distributed throughout the parking lot to provide shade. Parking lots with over 20 spaces shall have a minimum 10 percent of the interior of the parking lot devoted to landscaping. Pedestrian walkways in the landscaped areas are not to be counted in the percentage. The perimeter landscaping, explained in subsection (E)(3)(d) of this section, shall not be included in the 10 percent figure. Parking lots with 10 to 20 spaces shall have a minimum five percent of the interior of the parking lot devoted to landscaping. The perimeter landscaping, as explained above, shall not be included in the five percent. Parking lots with fewer than 10 spaces shall have the standard perimeter landscaping and at least two shade trees. Non-residential parking areas paved with a permeable parking surface may reduce the required minimum interior landscaping by one-third for the area with the permeable parking surface only.

**Applicant Response: The parking area includes a 3% landscaping area.**

- b. The landscaped areas shall not have a width of less than five feet.

**Applicant Response: No proposed landscape area has a width of less than 5 feet.**

- c. The soils, site, proposed soil amendments, and proposed irrigation system shall be appropriate for the healthy and long-term maintenance of the proposed plant species.
- d. A parking, loading, or service area which abuts a street shall be set back from the right-of-way line by perimeter landscaping in the form of a landscaped strip at least 10 feet in width. When a parking, loading, or service area or driveway is contiguous to an adjoining lot or parcel, there shall be an intervening five-foot-wide landscape strip. The landscaped area shall contain:
  - 1) Street trees spaced as appropriate to the species, not to exceed 50 feet apart on the average;
  - 2) Shrubs, not to reach a height greater than three feet, six inches, spaced no more than five feet apart on the average; or
  - 3) Vegetative ground cover such as grass, wildflowers, or other landscape material to cover 100 percent of the exposed ground within two growing seasons. No bark mulch shall be allowed except under the canopy of low level shrubs.
- e. If over 50 percent of the lineal frontage of the main street or arterial adjacent to the development site comprises parking lot, the landscape strip between the right-of-way and parking lot shall be increased to 15 feet in width and shall include terrain variations (e.g., one-foot-high berm) plus landscaping. This extra requirement only applies to one street frontage.
- f. A parking, loading, or service area which abuts a property line shall be separated from the property line by a landscaped area at least five feet in width and which shall act as a screen and noise buffer, and the adequacy of the screen and buffer shall be determined by the criteria set forth in CDC 55.100(C) and (D), except where shared parking is approved under CDC 46.050.

- g. All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.
- h. The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation.
- i. Outdoor storage areas, service areas (loading docks, refuse deposits, and delivery areas), and above-ground utility facilities shall be buffered and screened to obscure their view from adjoining properties and to reduce noise levels to acceptable levels at the property line. The adequacy of the buffer and screening shall be determined by the criteria set forth in CDC 55.100(C)(1).
- j. Crime prevention shall be considered and plant materials shall not be located in a manner which prohibits surveillance of public and semi-public areas (shared or common areas).
- k. Irrigation facilities shall be located so that landscaped areas can be properly maintained and so that the facilities do not interfere with vehicular or pedestrian circulation.
- l. For commercial, office, multi-family, and other sites, the developer shall select trees that possess the following characteristics:
  - 1) Provide generous “spreading” canopy for shade.
  - 2) Roots do not break up adjacent paving.
  - 3) Tree canopy spread starts at least six feet up from grade in, or adjacent to, parking lots, roads, or sidewalks unless the tree is columnar in nature.
  - 4) No sticky leaves or sap-dripping trees (no honey-dew excretion).
  - 5) No seed pods or fruit-bearing trees (flowering trees are acceptable).
  - 6) Disease-resistant.
  - 7) Compatible with planter size.
  - 8) Drought-tolerant unless irrigation is provided.
  - 9) Attractive foliage or form all seasons.
- m. Plant materials (shrubs, ground cover, etc.) shall be selected for their appropriateness to the site, drought tolerance, year-round greenery and coverage, staggered flowering periods, and avoidance of nuisance plants (Scotch broom, etc.).

**Applicant Response: A selection of native plants have been proposed. See Sheet L1.1 for specific details on the trees, shrubs, grasses/perennials, and ground cover proposed.**



## Chapter 55 – Design Review

### 55.100 APPROVAL STANDARDS – CLASS II DESIGN REVIEW

The approval authority shall make findings with respect to the following criteria when approving, approving with conditions, or denying a Class II design review application:

A. The provisions of the following chapters shall be met:

1. Chapter 34 CDC, Accessory Structures, Accessory Dwelling Units, and Accessory Uses.

**Applicant Response: With the exception of the trash enclosure, which is addressed in more detail below, there are no proposed accessory structures, accessory dwelling units, or accessory uses proposed on site.**

2. Chapter 38 CDC, Additional Yard Area Required; Exceptions to Yard Requirements; Storage in Yards; Projections into Yards.

**Applicant Response: Yard area requirements are addressed in the responses to the standards in Chapter 38 above.**

3. Chapter 41 CDC, Building Height, Structures on Steep Lots, Exceptions.

**Applicant Response: Responses to Building Height, Structures on Steep Lots, Exceptions of Chapter 41 CDC are addressed above.**

4. Chapter 42 CDC, Clear Vision Areas.

**Applicant Response: Responses to Clear Vision Areas of Chapter 42 CDC are addressed above.**

5. Chapter 44 CDC, Fences.

**Applicant Response: The proposed project does not include new fencing on the site**

6. Chapter 46 CDC, Off-Street Parking, Loading and Reservoir Areas.

**Applicant Response: Responses to Off-Street Parking, Loading and Reservoir Areas in Chapter 42 CDC are addressed above.**

7. Chapter 48 CDC, Access, Egress and Circulation.

8. Chapter 52 CDC, Signs.

9. Chapter 54 CDC, Landscaping.

**Applicant Response: Responses to Landscaping in Chapter 54 CDC are addressed above.**

B. Relationship to the natural and physical environment.

1. The buildings and other site elements shall be designed and located so that all heritage trees, as defined in the municipal code, shall be saved. Diseased heritage trees, as determined by the City Arborist, may be removed at his/her direction.

2. All heritage trees, as defined in the municipal code, all trees and clusters of trees (“cluster” is defined as three or more trees with overlapping driplines; however, native oaks need not have an overlapping dripline) that are considered significant by the City Arborist, either individually or in consultation with certified arborists or similarly qualified professionals, based on accepted arboricultural standards including consideration of their size, type, location, health, long term survivability, and/or numbers, shall be protected pursuant to the criteria of subsections (B)(2)(a) through (f) of this section. In cases where there is a difference of opinion on the significance of a tree or tree cluster, the City Arborist’s findings shall prevail. It is important to acknowledge that all trees are not significant and, further, that this code section will not necessarily protect all trees deemed significant.

a. Non-residential and residential projects on Type I and II lands shall protect all heritage trees and all significant trees and tree clusters by limiting development in the protected area. The protected area includes the protected tree, its dripline, and an additional 10 feet beyond the dripline, as depicted in the figure below. Development of Type I and II lands shall require the careful layout of streets, driveways, building pads, lots, and utilities to avoid heritage trees and significant trees and tree clusters, and other natural resources pursuant to this code. The method for delineating the protected trees or tree clusters (“dripline plus 10 feet”) is explained in subsection (B)(2)(b) of this section. Exemptions of subsections (B)(2)(c), (e), and (f) of this section shall apply.

PROTECTED AREA = DRIPLINE + 10 FEET

b. Non-residential and residential projects on non-Type I and II lands shall set aside up to 20 percent of the protected areas for significant trees and tree clusters, plus any heritage trees. Therefore, in the event that the City Arborist determines that a significant tree cluster exists at a development site, then up to 20 percent of the non-Type I and II lands shall be devoted to the protection of those trees by limiting development in the protected areas. The exact percentage is determined by establishing the driplines of the trees or tree clusters that are to be protected. In order to protect the roots which typically extend further, an additional 10-foot measurement beyond the dripline shall be added. The square footage of the area inside this “dripline plus 10 feet” measurement shall be the basis for calculating the percentage (see figure below). The City Arborist will identify which tree(s) are to be protected. Development of non-Type I and II lands shall also require the careful layout of streets, driveways, building pads, lots, and utilities to avoid significant trees, tree clusters, heritage trees, and other natural resources pursuant to this code. Exemptions of subsections (B)(2)(c), (e), and (f) of this section shall apply. Please note that in the event that more than 20 percent of the non-Type I and II lands comprise significant trees or tree clusters, the developer shall not be required to save the excess trees, but is encouraged to do so.

E.G., DRIPLINE + 10 FT. AREA = 2,500 SQ. FT. OR 18% OF TOTAL NON-TYPE I AND II LAND DENSITY CALCULATIONS FOR THIS PARCEL WILL BE BASED ON REMAINING NET SQ. FOOTAGE OF SITE (EXCLUDING THE 2,500 SQ. FT.)

**Applicant Response: To the best of our knowledge the existing site does not contain any heritage trees. An arborist report is provided herein. The only on-site tree to be preserved is one (1) Magnolia within the parking area.**

- b. Where stubouts of streets occur on abutting properties, and the extension of those streets will mean the loss of significant trees, tree clusters, or heritage trees, it is understood that tree loss may be inevitable. In these cases, the objective shall be to minimize tree loss. These provisions shall also apply in those cases where access, per construction code standards, to a lot or parcel is blocked by a row or screen of significant trees or tree clusters.

**Applicant Response: No new stubouts of streets are proposed.**

- c. For both non-residential and residential development, the layout shall achieve at least 70 percent of maximum density for the developable net area. The developable net area excludes all Type I and II lands and up to 20 percent of the remainder of the site for the purpose of protection of stands or clusters of trees as defined in subsection (B)(2) of this section.

**Applicant Response: The subject property does not include any existing stands or clusters of trees.**

- d. For arterial and collector street projects, including Oregon Department of Transportation street improvements, the roads and graded areas shall avoid tree clusters where possible. Significant trees, tree clusters, and heritage tree loss may occur, however, but shall be minimized.

**Applicant Response: Based upon preliminary design discussion with Engineering Staff, the anticipated road improvements will not impact any significant or heritage trees.**

- e. If the protection of significant tree(s) or tree clusters is to occur in an area of grading that is necessary for the development of street grades, per City construction codes, which will result in an adjustment in the grade of over or under two feet, which will then threaten the health of the tree(s), the applicant will submit evidence to the Planning Director that all reasonable alternative grading plans have been considered and cannot work. The applicant will then submit a mitigation plan to the City Arborist to compensate for the removal of the tree(s) on an “inch by inch” basis (e.g., a 48-inch Douglas fir could be replaced by 12 trees, each four-inch). The mix of tree sizes and types shall be approved by the City Arborist.

**Applicant Response: To the best of our knowledge, there are no identified significant trees on the subject property.**

- 3. The topography and natural drainage shall be preserved to the greatest degree possible.

**Applicant Response: The subject property contains steep slopes and has a grade difference of approximately 30 feet, sloping down from west to east. The proposed preliminary grading plan and site layout has taken into consideration the existing topography and natural drainage with goal of minimizing large retaining walls.**

5. The structures shall not be located in areas subject to slumping and sliding. The Comprehensive Plan Background Report's Hazard Map, or updated material as available and as deemed acceptable by the Planning Director, shall be the basis for preliminary determination.

**Applicant Response: To the best of our knowledge, the proposed structure is not located withing slumping or sliding areas.**

5. There shall be adequate distance between on-site buildings and on-site and off-site buildings on adjoining properties to provide for adequate light and air circulation and for fire protection.

6. Architecture.

- a. The proposed structure(s) scale shall be compatible with the existing structure(s) on site and on adjoining sites. Contextual design is required. Contextual design means respecting and incorporating prominent architectural styles, building lines, roof forms, rhythm of windows, building scale and massing of surrounding buildings in the proposed structure. The materials and colors shall be complementary to the surrounding buildings.

**Applicant Response: The proposed architectural design has been developed in harmony with surrounding buildings with regard to form, colors, and materials. The proposed materials and colors, being primarily natural and earth-toned, compliment nearby commercial structures. The sloped roof at the corner element references the neighboring library. The existing commercial development across the corner of Burns and Hood Street has a similar material and color palette.**

- b. While there has been discussion in Chapter 24 CDC about transition, it is appropriate that new buildings should architecturally transition in terms of bulk and mass to work with, or fit, adjacent existing buildings. This transition can be accomplished by selecting designs that "step down" or "step up" from small to big structures and vice versa (see figure below). Transitions may also take the form of carrying building patterns and lines (e.g., parapets, windows, etc.) from the existing building to the new one.

**Applicant Response: The proposed structure has been designed as a single-story building to provide a soft transition between larger surrounding commercial buildings and the residential neighborhood. The higher roof elements of the proposed structure have been oriented toward the corner of Hood and Burns Street to address the commercial nature of the downtown while reducing imposition into residential areas.**

- c. Contrasting architecture shall only be permitted when the design is manifestly superior to adjacent architecture in terms of creativity, design, and workmanship, and/or it is adequately

separated from other buildings by distance, screening, grade variations, or is part of a development site that is large enough to set its own style of architecture.

**Applicant Response: The proposed structure was designed to stand on its own as a unique architectural work while also referencing surrounding buildings in both form and materiality.**

d. Human scale is a term that seeks to accommodate the users of the building and the notion that buildings should be designed around the human scale (i.e., their size and the average range of their perception). Human scale shall be accommodated in all designs by, for example, multi-light windows that are broken up into numerous panes, intimately scaled entryways, and visual breaks (exaggerated eaves, indentations, ledges, parapets, awnings, engaged columns, etc.) in the facades of buildings, both vertically and horizontally.

The human scale is enhanced by bringing the building and its main entrance up to the edge of the sidewalk. It creates a more dramatic and interesting streetscape and improves the “height and width” ratio referenced in this section.

**Applicant Response: The proposed building was sited near the corner of Hood Street and Burns Street to provide human scale and a pedestrian-friendly experience. Pedestrian connectivity is provided within the site at human scale with accessible paths from parking areas to building entrances.**

e. The main front elevation of commercial and office buildings shall provide at least 60 percent windows or transparency at the pedestrian level to create more interesting streetscape and window shopping opportunities. One side elevation shall provide at least 30 percent transparency. Any additional side or rear elevation, which is visible from a collector road or greater classification, shall also have at least 30 percent transparency. Transparency on other elevations is optional. The transparency is measured in lineal fashion. For example, a 100-foot-long building elevation shall have at least 60 feet (60 percent of 100 feet) in length of windows. The window height shall be, at minimum, three feet tall. The exception to transparency would be cases where demonstrated functional constraints or topography restrict that elevation from being used. When this exemption is applied to the main front elevation, the square footage of transparency that would ordinarily be required by the above formula shall be installed on the remaining elevations at pedestrian level in addition to any transparency required by a side elevation, and vice versa. The rear of the building is not required to include transparency. The transparency must be flush with the building elevation.

60 percent of lineal street facing or main elevation is windows. 30 percent of one side elevation is windows. You may transfer windows from the side to front, or vice versa.

**Applicant Response: Explain the topography change along Burns Street side elevation.**

f. Variations in depth and roof line are encouraged for all elevations.

**Applicant Response: Explain the topography change along Burns Street side elevation**

To vary the otherwise blank wall of most rear elevations, continuous flat elevations of over 100 feet in length should be avoided by indents or variations in the wall. The use of decorative brick, masonry, or stone insets and/or designs is encouraged. Another way to vary or soften this elevation is through terrain variations such as an undulating grass area with trees to provide vertical relief.

**Applicant Response: The topography of the site provides additional interest along the longest uninterrupted façade. Additionally, vining plans and material changes help to break up the length of the side elevation along Burns Street.**

- g. Consideration of the micro-climate (e.g., sensitivity to wind, sun angles, shade, etc.) shall be made for building users, pedestrians, and transit users, including features like awnings.

**Applicant Response: Awnings are proposed at each building entrance to protect building users from the elements.**

- h. The vision statement identified a strong commitment to developing safe and attractive pedestrian environments with broad sidewalks, canopied with trees and awnings.

**Applicant Response: The internal site pedestrian environment will include broad sidewalks, trees, and awnings over building entrances.**

- i. Sidewalk cafes, kiosks, vendors, and street furniture are encouraged. However, at least a four-foot-wide pedestrian accessway must be maintained per Chapter 53 CDC, Sidewalk Use.

**Applicant Response: This project proposes no sidewalk obstructions. A 6-foot wide pedestrian accessway will be provided throughout the site. Right-of-way improvements will be constructed per City requirements and standards.**

- 7. Transportation. The automobile shall be shifted from a dominant role, relative to other modes of transportation, by the following means:

- a. Commercial and office development shall be oriented to the street. At least one public entrance shall be located facing an arterial street; or, if the project does not front on an arterial, facing a collector street; or, if the project does not front on a collector, facing the local street with highest traffic levels. Parking lots shall be placed behind or to the side of commercial and office development. When a large and/or multi-building development is occurring on a large undeveloped tract (three plus acres), it is acceptable to focus internally; however, at least 20 percent of the main adjacent right-of-way shall have buildings contiguous to it unless waived per subsection (B)(7)(c) of this section. These buildings shall be oriented to the adjacent street and include pedestrian-oriented transparencies on those elevations.

For individual buildings on smaller individual lots, at least 30 lineal feet or 50 percent of the building must be adjacent to the right-of-way unless waived per subsection (B)(7)(c) of this section. The elevations oriented to the right-of-way must incorporate pedestrian-oriented transparency.

**Applicant Response: The proposed structure has been sited with a main entrance facing the corner of Burns Street and Hood Street. Other entrances are located along a pedestrian pathway on the north side of the building. The proposed parking areas are located behind and to the side of the building. The building is site along the corner of Burns Street and Hood Street with frontage along both streets.**

b. Multi-family projects shall be required to keep the parking at the side or rear of the buildings or behind the building line of the structure as it would appear from the right-of-way inside the multi-family project. For any garage which is located behind the building line of the structure, but still facing the front of the structure, architectural features such as patios, patio walls, trellis, porch roofs, overhangs, pergolas, etc., shall be used to downplay the visual impact of the garage, and to emphasize the rest of the house and front entry.

The parking may be positioned inside small courtyard areas around which the units are built. These courtyard spaces encourage socialization, defensible space, and can provide a central location for landscaping, particularly trees, which can provide an effective canopy and softening effect on the courtyard in only a few years. Vehicular access and driveways through these courtyard areas is permitted.

**Applicant Response: The proposed project does not include multi-family dwellings.**

c. Commercial, office, and multi-family projects shall be built as close to the adjacent main right-of-way as practical to facilitate safe pedestrian and transit access. Reduced frontages by buildings on public rights-of-way may be allowed due to extreme topographic (e.g., slope, creek, wetlands, etc.) conditions or compelling functional limitations, not just inconveniences or design challenges.

entrance from right-of-way

**Applicant Response: The proposed structure has been sited as close as permitted to prominently address the corner of the two primary streets, Hood and Burns.**

d. Accessways, parking lots, and internal driveways shall accommodate pedestrian circulation and access by specially textured, colored, or clearly defined footpaths at least six feet wide. Paths shall be eight feet wide when abutting parking areas or travel lanes. Paths shall be separated from parking or travel lanes by either landscaping, planters, curbs, bollards, or raised surfaces. Sidewalks in front of storefronts on the arterials and main store entrances on the arterials identified in CDC 85.200(A)(3) shall be 12 feet wide to accommodate pedestrians, sidewalk sales, sidewalk cafes, etc. Sidewalks in front of storefronts and main store entrances in commercial/OBC zone development on local streets and collectors shall be eight feet wide.

**Applicant Response: 6 foot or wider pedestrian access is provided throughout the site. Within the parking, vehicles are maintained at least two feet from sidewalks by wheel stops or curbs with widened sidewalks.**

e. Paths shall provide direct routes that pedestrians will use between buildings, adjacent rights-of-way, and adjacent commercial developments. They shall be clearly identified. They shall be laid out to attract use and to discourage people from cutting through parking lots and impacting environmentally sensitive areas.

**Applicant Response: The proposed parking lot design includes visible paths to the stairway from the lower parking area to the main building and cross-connection to adjacent commercial and public buildings. The parking lots have been designed with a single entrance and exit so there will be no opportunity to cut through the parking area.**

h. At least one entrance to the building shall be on the main street, or as close as possible to the main street. The entrance shall be designed to identify itself as a main point of ingress/egress.

**Applicant Response: The proposed main entrance has been oriented at a 45 degree angle to address the corner of Hood and Burns Street.**

g. Where transit service exists, or is expected to exist, there shall be a main entrance within a safe and reasonable distance of the transit stop. A pathway shall be provided to facilitate a direct connection.

**Applicant Response: To the best of our knowledge, there is no transit service or stops immediately adjacent to the proposed project.**

h. Projects shall bring at least part of the project adjacent to or near the main street right-of-way in order to enhance the height-to-width ratio along that particular street. (The “height-to-width ratio” is an architectural term that emphasizes height or vertical dimension of buildings adjacent to streets. The higher and closer the building is, and the narrower the width of the street, the more attractive and intimate the streetscape becomes.) For every one foot in street width, the adjacent building ideally should be one to two feet higher. This ratio is considered ideal in framing and defining the streetscape.

**Applicant Response: The existing street width along Hood Street is approximately 36.5'. The building height at the corner element along of Hood and Burns Street is approximately 30 feet on average above the street elevation. The building steps down as Burns drops toward the east giving a varied height above the street level.**

1:1 height to width ratio is ideal

(example only)

i. These architectural standards shall apply to public facilities such as reservoirs, water towers, treatment plants, fire stations, pump stations, power transmission facilities, etc. It is recognized that many of these facilities, due to their functional requirements, cannot readily be configured to meet these architectural standards. However, attempts shall be made to make the design sympathetic to surrounding properties by landscaping, setbacks, buffers, and all reasonable architectural means.



**Applicant Response: The proposed project is not a public facility.**

j. Parking spaces at trailheads shall be located so as to preserve the view of, and access to, the trailhead entrance from the roadway. The entrance apron to the trailhead shall be marked: “No Parking,” and include design features to foster trail recognition.

**Applicant Response: The proposed project does not include any trailheads.**

C. Compatibility between adjoining uses, buffering, and screening.

**Applicant Response: Significant design consideration was applied to the proposed project to address neighboring single-family dwelling concerns regarding the proximity of parking spaces adjacent to homes, landscape buffering, and view corridors. The applicant presented the project to the Bolton Neighborhood Association on October 15, 2019 and has made efforts to design the site plan to address neighbor concerns regarding the use of native plants, parking areas being too close to residential homes and lowering the height of the building from two-stories to a single story.**

1. In addition to the compatibility requirements contained in Chapter 24 CDC, buffering shall be provided between different types of land uses; for example, buffering between single-family homes and apartment blocks. However, no buffering is required between single-family homes and duplexes or single-family attached units. The following factors shall be considered in determining the adequacy of the type and extent of the buffer:

- a. The purpose of the buffer, for example to decrease noise levels, absorb air pollution, filter dust, or to provide a visual barrier.
- b. The size of the buffer required to achieve the purpose in terms of width and height.
- c. The direction(s) from which buffering is needed.
- d. The required density of the buffering.
- e. Whether the viewer is stationary or mobile.

**Applicant Response: Landscape buffering between neighboring residential properties to the north and the proposed development is achieved by a mix of fast-growing shrubs to provide a green screen and trees.**

2. On-site screening from view from adjoining properties of such things as service areas, storage areas, and parking lots shall be provided and the following factors will be considered in determining the adequacy of the type and extent of the screening:

- a. What needs to be screened?

- b. The direction from which it is needed.
  - c. How dense the screen needs to be.
  - d. Whether the viewer is stationary or mobile.
  - e. Whether the screening needs to be year-round.
3. Rooftop air cooling and heating systems and other mechanical equipment shall be screened from view from adjoining properties.

**Applicant Response: The proposed refuse enclosure is located in a central, unobtrusive area of the site and located as far from the neighboring residences as possible. The refuse enclosure area will include landscaping for additional screening and a solid wall which will match in material and color to primary structure.**

D. Privacy and noise.

- 1. Structures which include residential dwelling units shall provide private outdoor areas for each ground floor unit which is screened from view from adjoining units.
- 2. Residential dwelling units shall be placed on the site in areas having minimal noise exposure to the extent possible. Natural-appearing sound barriers shall be used to lessen noise impacts where noise levels exceed the noise standards contained in West Linn Municipal Code Section 5.487.

**Applicant Response: The proposed development does not include residential units.**

- 3. Structures or on-site activity areas which generate noise, lights, or glare shall be buffered from adjoining residential uses in accordance with the standards in subsection C of this section where applicable.

**Applicant Response: The proposed uses, a dental and physical therapy clinic, are not expected to generate, noise, light, or glare that would impact adjoining residential uses.**

- 4. Businesses or activities that can reasonably be expected to generate noise in excess of the noise standards contained in West Linn Municipal Code Section 5.487 shall undertake and submit appropriate noise studies and mitigate as necessary to comply with the code. (See CDC 55.110(B)(11) and 55.120(M).)

If the decision-making authority reasonably believes a proposed use may generate noise exceeding the standards specified in the municipal code, then the authority may require the applicant to supply professional noise studies from time to time during the user's first year of operation to monitor compliance with City standards and permit requirements.

**Applicant Response: The proposed uses, a dental and physical therapy clinic, are not expected to generate noise in excess of the noise standards of the West Linn Municipal Code.**

E. Private outdoor area. This section only applies to multi-family projects.

1. In addition to the requirements of residential living, unit shall have an outdoor private area (patio, terrace, porch) of not less than 48 square feet in area;
2. The outdoor space shall be oriented towards the sun where possible; and
3. The area shall be screened or designed to provide privacy for the users of the space.
4. Where balconies are added to units, the balconies shall not be less than 48 square feet, if they are intended to be counted as private outdoor areas.

**Applicant Response: The proposed development does not include residential uses.**

F. Shared outdoor recreation areas. This section only applies to multi-family projects and projects with 10 or more duplexes or single-family attached dwellings on lots under 4,000 square feet. In those cases, shared outdoor recreation areas are calculated on the duplexes or single-family attached dwellings only. It also applies to qualifying PUDs under the provisions of CDC 24.170.

1. In addition to the requirements of subsection E of this section, usable outdoor recreation space shall be provided in residential developments for the shared or common use of all the residents in the following amounts:
  - a. Studio up to and including two-bedroom units: 200 square feet per unit.
  - b. Three or more bedroom units: 300 square feet per unit.
2. The required recreation space may be provided as follows:
  - a. It may be all outdoor space; or
  - b. It may be part outdoor space and part indoor space; for example, an outdoor tennis court and indoor recreation room; and
  - c. Where some or all of the required recreation area is indoor, such as an indoor recreation room, then these indoor areas must be readily accessible to all residents of the development subject to clearly posted restrictions as to hours of operation and such regulations necessary for the safety of minors.
  - d. In considering the requirements of this subsection F, the emphasis shall be on usable recreation space. No single area of outdoor recreational space shall encompass an area of less than 250 square feet. All common outdoor recreational space shall be clearly delineated and readily identifiable as

such. Small, marginal, and incidental lots or parcels of land are not usable recreation spaces. The location of outdoor recreation space should be integral to the overall design concept of the site and be free of hazards or constraints that would interfere with active recreation.

3. The shared space shall be readily observable to facilitate crime prevention and safety.

**Applicant Response: The proposed development does not include residential uses.**

G. Demarcation of public, semi-public, and private spaces. The structures and site improvements shall be designed so that public areas such as streets or public gathering places, semi-public areas, and private outdoor areas are clearly defined in order to establish persons having a right to be in the space, to provide for crime prevention, and to establish maintenance responsibility. These areas may be defined by:

1. A deck, patio, fence, low wall, hedge, or draping vine;
2. A trellis or arbor;
3. A change in level;
4. A change in the texture of the path material;
5. Sign; or
6. Landscaping.

Use of gates to demarcate the boundary between a public street and a private access driveway is prohibited.

**Applicant Response: The proposed development does not include any on-site public or semi-public outdoor space.**

H. Public transit.

1. Provisions for public transit may be required where the site abuts an existing or planned public transit route. The required facilities shall be based on the following:

- a. The location of other transit facilities in the area.
- b. The size and type of the proposed development.
- c. The rough proportionality between the impacts from the development and the required facility.

2. The required facilities shall be limited to such facilities as the following:

- a. A waiting shelter with a bench surrounded by a three-sided covered structure, with transparency to allow easy surveillance of approaching buses.
  - b. A turnout area for loading and unloading designed per regional transit agency standards.
  - c. Hard-surface paths connecting the development to the waiting and boarding areas.
  - d. Regional transit agency standards shall, however, prevail if they supersede these standards.
3. The transit stop shall be located as close as possible to the main entrance to the shopping center, public or office building, or multi-family project. The entrance shall not be more than 200 feet from the transit stop with a clearly identified pedestrian link.
  4. All commercial business centers (over three acres) and multi-family projects (over 40 units) may be required to provide for the relocation of transit stops to the front of the site if the existing stop is within 200 to 400 yards of the site and the exaction is roughly proportional to the impact of the development. The commercial or multi-family project may be required to provide new facilities in those cases where the nearest stop is over 400 yards away. The transit stop shall be built per subsection (H)(2) of this section.

**Applicant Response: To the best of our knowledge, the proposed development site is not along an existing or planned transit route.**

I. Public facilities. An application may only be approved if adequate public facilities will be available to provide service to the property prior to occupancy.

1. Streets. Sufficient right-of-way and slope easement shall be dedicated to accommodate all abutting streets to be improved to the City's Improvement Standards and Specifications. The City Engineer shall determine the appropriate level of street and traffic control improvements to be required, including any off-site street and traffic control improvements, based upon the transportation analysis submitted. The City Engineer's determination of developer obligation, the extent of road improvement and City's share, if any, of improvements and the timing of improvements shall be made based upon the City's systems development charge ordinance and capital improvement program, and the rough proportionality between the impact of the development and the street improvements.

In determining the appropriate sizing of the street in commercial, office, multi-family, and public settings, the street should be the minimum necessary to accommodate anticipated traffic load and needs and should provide substantial accommodations for pedestrians and bicyclists. Road and driveway alignment should consider and mitigate impacts on adjacent properties and in neighborhoods in terms of increased traffic loads, noise, vibrations, and glare.

The realignment or redesign of roads shall consider how the proposal meets accepted engineering standards, enhances public safety, and favorably relates to adjacent lands and land uses. Consideration should also be given to selecting an alignment or design that minimizes or avoids

hazard areas and loss of significant natural features (drainageways, wetlands, heavily forested areas, etc.) unless site mitigation can clearly produce a superior landscape in terms of shape, grades, and reforestation, and is fully consistent with applicable code restrictions regarding resource areas.

Streets shall be installed per Chapter 85 CDC standards. The City Engineer has the authority to require that street widths match adjacent street widths. Sidewalks shall be installed per CDC 85.200(A)(3) for commercial and office projects, and CDC 85.200(A)(16) and 92.010(H) for residential projects, and applicable provisions of this chapter. Where streets bisect or traverse water resource areas (WRAs) the street width shall be reduced to the appropriate “constrained” cross-section width indicated in the TSP or alternate configurations which are appropriate to site conditions, minimize WRA disturbance or are consistent with an adopted transportation system plan. The street design shall also be consistent with habitat friendly provisions of CDC 32.060(I).

Based upon the City Manager’s or Manager’s designee’s determination, the applicant shall construct or cause to be constructed, or contribute a proportionate share of the costs, for all necessary off-site improvements identified by the transportation analysis commissioned to address CDC 55.125 that are required to mitigate impacts from the proposed development. Proportionate share of the costs shall be determined by the City Manager or Manager’s designee, who shall assume that the proposed development provides improvements in rough proportion to identified impacts of the development.

**Applicant Response: The proposed development will include street improvements along Hood Street and Burns Street to include street-widening, sidewalks, ADA accessible ramps, crosswalks, and street signage to meet the ultimate ROW widths and improve vehicle and pedestrian safety.**

2. Storm detention and treatment and geologic hazards. Per the submittals required by CDC 55.130 and 92.010(E), all proposed storm detention and treatment facilities must comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards, there will be no adverse off-site impacts caused by the development (including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream), and the applicant must provide sufficient factual data to support the conclusions of the submitted plan.

Per the submittals required by CDC 55.130(E), the applicant must demonstrate that the proposed methods of rendering known or potential hazard sites safe for development, including proposed geotechnical remediation, are feasible and adequate to prevent landslides or other damage to property and safety. The review authority may impose conditions, including limits on type or intensity of land use, which it determines are necessary to mitigate known risks of landslides or property damage.

**Applicant Response: A stormwater report and geotechnical report are submitted with this application that provides insight to the characteristics of the proposed development site**

3. Municipal water. A registered civil engineer shall prepare a plan for the provision of water which demonstrates to the City Engineer’s satisfaction the availability of sufficient volume, capacity, and

pressure to serve the proposed development's domestic, commercial, and industrial fire flows. All plans will then be reviewed by the City Engineer.

**Applicant Response: See attached Civil plans detailing the water service requested.**

4. Sanitary sewers. A registered civil engineer shall prepare a sewerage collection system plan which demonstrates sufficient on-site capacity to serve the proposed development. The City Engineer shall determine whether the existing City system has sufficient capacity to serve the development.

**Applicant Response: See attached Civil plans detailing the sanitary sewer service requested.**

6. Solid waste and recycling storage areas. Appropriately sized and located solid waste and recycling storage areas shall be provided. Metro standards shall be used.

**Applicant Response: The proposed refuse/recycling area has been developed to meet Metro standards.**

J. Crime prevention and safety/defensible space.

1. Windows shall be located so that areas vulnerable to crime can be surveyed by the occupants.

2. Interior laundry and service areas shall be located in a way that they can be observed by others.

3. Mailboxes, recycling, and solid waste facilities shall be located in lighted areas having vehicular or pedestrian traffic.

4. The exterior lighting levels shall be selected and the angles shall be oriented towards areas vulnerable to crime.

5. Light fixtures shall be provided in areas having heavy pedestrian or vehicular traffic and in potentially dangerous areas such as parking lots, stairs, ramps, and abrupt grade changes.

6. Fixtures shall be placed at a height so that light patterns overlap at a height of seven feet which is sufficient to illuminate a person. All commercial, industrial, residential, and public facility projects undergoing design review shall use low or high pressure sodium bulbs and be able to demonstrate effective shielding so that the light is directed downwards rather than omni-directional. Omni-directional lights of an ornamental nature may be used in general commercial districts only.

**Applicant Response: Site lighting has been designed by a registered engineer. See sheet E1.1, E1.2, and the attached electrical lighting cut sheets.**

7. Lines of sight shall be reasonably established so that the development site is visible to police and residents.

**Applicant Response: The proposed structure and parking areas are located at visible areas from the intersection of Burns Street and Hood Street, providing excellent sight lines for police and residents.**

8. Security fences for utilities (e.g., power transformers, pump stations, pipeline control equipment, etc.) or wireless communication facilities may be up to eight feet tall in order to protect public safety. No variances are required regardless of location.

**Applicant Response: The proposed structure and parking areas are located at visible areas from the intersection of Burns Street and Hood Street, providing excellent sight lines for police and residents.**

K. Provisions for persons with disabilities.

1. The needs of a person with a disability shall be provided for. Accessible routes shall be provided between all buildings and accessible site facilities. The accessible route shall be the most practical direct route between accessible building entries, accessible site facilities, and the accessible entry to the site. An accessible route shall connect to the public right-of-way and to at least one on-site or adjacent transit stop (if the area is served by transit). All facilities shall conform to, or exceed, the Americans with Disabilities Act (ADA) standards, including those included in the Uniform Building Code.

**Applicant Response: The proposed site will be developed with accessible routes between parking areas and building entrances. There are no transit stops adjacent to the subject property.**

L. Signs.

1. Based on considerations of crime prevention and the needs of emergency vehicles, a system of signs for identifying the location of each residential unit, store, or industry shall be established.

buildings shall be numbered for emergency identification

2. The signs, graphics, and letter styles shall be designed to be compatible with surrounding development, to contribute to a sense of project identity, or, when appropriate, to reflect a sense of the history of the area and the architectural style.

3. The sign graphics and letter styles shall announce, inform, and designate particular areas or uses as simply and clearly as possible.

4. The signs shall not obscure vehicle driver's sight distance.

5. Signs indicating future use shall be installed on land dedicated for public facilities (e.g., parks, water reservoir, fire halls, etc.).

6. Signs and appropriate traffic control devices and markings shall be installed or painted in the driveway and parking lot areas to identify bicycle and pedestrian routes.



**Applicant Response: The exact sign details are still under development but will adhere to the criteria above.**

M. Utilities. The developer shall make necessary arrangements with utility companies or other persons or corporations affected for the installation of underground lines and facilities. Electrical lines and other wires, including but not limited to communication, street lighting, and cable television, shall be placed underground, as practical. The design standards of Tables 1 and 2 above, and of subsection 5.487 of the West Linn Municipal Code relative to existing high ambient noise levels shall apply to this section.

**Applicant Response: The developer will work with the local utility providers to achieve undergrounding as needed.**

N. Wireless communication facilities (WCFs). (This section only applicable to WCFs.) WCFs as defined in Chapter 57 CDC may be required to go through Class I or Class II design review. The approval criteria for Class I design review is that the visual impact of the WCF shall be minimal to the extent allowed by Chapter 57 CDC. Stealth designs shall be sufficiently camouflaged so that they are not easily seen by passersby in the public right-of-way or from any adjoining residential unit. WCFs that are classified as Class II design review must respond to all of the approval criteria of this chapter.

**Applicant Response: The proposed project does not include any plans to develop a Wireless Communication Facility.**

O. Refuse and recycling standards.

1. All commercial, industrial and multi-family developments over five units requiring Class II design review shall comply with the standards set forth in these provisions. Modifications to these provisions may be permitted if the Planning Commission determines that the changes are consistent with the purpose of these provisions and the City receives written evidence from the local franchised solid waste and recycling firm that they are in agreement with the proposed modifications.

2. Compactors, containers, and drop boxes shall be located on a level Portland cement concrete pad, a minimum of four inches thick, at ground elevation or other location compatible with the local franchise collection firm's equipment at the time of construction. The pad shall be designed to discharge surface water runoff to avoid ponding.

3. Recycling and solid waste service areas.

a. Recycling receptacles shall be designed and located to serve the collection requirements for the specific type of material.

b. The recycling area shall be located in close proximity to the garbage container areas and be accessible to the local franchised collection firm's equipment.

- c. Recycling receptacles or shelters located outside a structure shall have lids and be covered by a roof constructed of water and insect-resistive material. The maintenance of enclosures, receptacles and shelters is the responsibility of the property owner.
- d. The location of the recycling area and method of storage shall be approved by the local fire marshal.
- e. Recycling and solid waste service areas shall be at ground level and/or otherwise accessible to the franchised solid waste and recycling collection firm.
- f. Recycling and solid waste service areas shall be used only for purposes of storing solid waste and recyclable materials and shall not be a general storage area to store personal belongings of tenants, lessees, property management or owners of the development or premises.
- g. Recyclable material service areas shall be maintained in a clean and safe condition.

#### 4. Special wastes or recyclable materials.

- a. Environmentally hazardous wastes defined in ORS 466.005 shall be located, prepared, stored, maintained, collected, transported, and disposed in a manner acceptable to the Oregon Department of Environmental Quality.
- b. Containers used to store cooking oils, grease or animal renderings for recycling or disposal shall not be located in the principal recyclable materials or solid waste storage areas. These materials shall be stored in a separate storage area designed for such purpose.

#### 5. Screening and buffering.

- a. Enclosures shall include a curbed landscape area at least three feet in width on the sides and rear. Landscaping shall include, at a minimum, a continuous hedge maintained at a height of 36 inches.
- b. Placement of enclosures adjacent to residentially zoned property and along street frontages is strongly discouraged. They shall be located so as to conceal them from public view to the maximum extent possible.
- c. All dumpsters and other trash containers shall be completely screened on all four sides with an enclosure that is comprised of a durable material such as masonry with a finish that is architecturally compatible with the project. Chain link fencing, with or without slats, will not be allowed.

#### 6. Litter receptacles.

- a. Location. Litter receptacles may not encroach upon the minimum required walkway widths.
- b. Litter receptacles may not be located within public rights-of-way except as permitted through an agreement with the City in a manner acceptable to the City Attorney or his/her designee.

- d. Number. The number and location of proposed litter receptacles shall be based on the type and size of the proposed uses. However, at a minimum, for non-residential uses, at least one external litter receptacle shall be provided for every 25 parking spaces for first 100 spaces, plus one receptacle for every additional 100 spaces. (Ord. 1547, 2007; Ord. 1604 § 52, 2011; Ord. 1613 § 12, 2013; amended during July 2014 supplement; Ord. 1623 § 6, 2014; Ord. 1635 § 26, 2014; Ord. 1636 § 37, 2014; Ord. 1647 § 6, 2016; Ord. 1650 § 1 (Exh. A), 2016; Ord. 1662 § 8, 2017; Ord. 1675 § 45, 2018)

## **CHAPTER 92 – REQUIRED IMPROVEMENTS.**

### **92.010 PUBLIC IMPROVEMENTS FOR ALL DEVELOPMENT**

The following improvements shall be installed at the expense of the developer and meet all City codes and standards:

#### **A. Streets within subdivisions.**

1. All streets within a subdivision, including alleys, shall be graded for the full right-of-way width and improved to the City’s permanent improvement standards and specifications which include sidewalks and bicycle lanes, unless the decision-making authority makes the following findings:

a. The right-of-way cannot be reasonably improved in a manner consistent with City road standards or City standards for the protection of wetlands and natural drainageways.

b. The right-of-way does not provide a link in a continuous pattern of connected local streets, or, if it does provide such a link, that an alternative street link already exists or the applicant has proposed an alternative street which provides the necessary connectivity, or the applicant has proven that there is no feasible location on the property for an alternative street providing the link.

**Applicant Response: The subject property is not located or proposing to develop a subdivision. The above criteria do not apply to this application.**

2. When the decision-making authority makes these findings, the decision-making authority may impose any of the following conditions of approval:

a. A condition that the applicant initiate vacation proceedings for all or part of the right-of-way.

b. A condition that the applicant build a trail, bicycle path, or other appropriate way.

If the applicant initiates vacation proceedings pursuant to subsection (A)(2)(a) of this section, and the right-of-way cannot be vacated because of opposition from adjacent property owners, the City Council shall consider and decide whether to process a City-initiated street vacation pursuant to Chapter 271 ORS.

Construction staging area shall be established and approved by the City Engineer. Clearing, grubbing, and grading for a development shall be confined to areas that have been granted approval in the land use approval process only. Clearing, grubbing, and grading outside of land use approved areas can only be approved through a land use approval modification and/or an approved Building Department grading permit for survey purposes. Catch basins shall be installed and connected to pipe lines leading to storm sewers or drainageways.

**Applicant Response: Based on preliminary discussions with Engineering Staff, we do not anticipate any vacations, trails, bicycle paths, or other appropriate public ways as part of the proposed development.**

B. Extension of streets to subdivisions. The extension of subdivision streets to the intercepting paving line of existing streets with which subdivision streets intersect shall be graded for the full right-of-way width and improved to a minimum street structural section and width of 24 feet.

C. Local and minor collector streets within the rights-of-way abutting a subdivision shall be graded for the full right-of-way width and approved to the City's permanent improvement standards and specifications. The City Engineer shall review the need for street improvements and shall specify whether full street or partial street improvements shall be required. The City Engineer shall also specify the extent of storm drainage improvements required. The City Engineer shall be guided by the purpose of the City's systems development charge program in determining the extent of improvements which are the responsibility of the subdivider.

**Applicant Response: The proposed development does not include plans for the development of a subdivision. No lot configuration changes are proposed, aside from required right-of-way dedications.**

D. Monuments. Upon completion of the first pavement lift of all street improvements, monuments shall be installed and/or reestablished at every street intersection and all points of curvature and points of tangency of street centerlines with an iron survey control rod. Elevation benchmarks shall be established at each street intersection monument with a cap (in a monument box) with elevations to a U.S. Geological Survey datum that exceeds a distance of 800 feet from an existing benchmark.

**Applicant Response: The owner/developer will ensure the criterion above is met during road construction.**

E. Storm detention and treatment. For Type I, II and III lands (refer to definitions in Chapter 02 CDC), a registered civil engineer must prepare a storm detention and treatment plan, at a scale sufficient to evaluate all aspects of the proposal, and a statement that demonstrates:

1. The location and extent to which grading will take place indicating general contour lines, slope ratios, slope stabilization proposals, and location and height of retaining walls, if proposed.

2. All proposed storm detention and treatment facilities comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards.
3. There will be no adverse off-site impacts, including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream.
4. There is sufficient factual data to support the conclusions of the plan.

**Applicant Response: A detailed stormwater plan prepared by a registered civil engineer will be developed and submitted for review as part of development approvals.**

Conclusion:

The proposed development is in conformance with West Linn Municipal Code as evidenced by the responses above.

If you have any questions, please contact me at (503) 399-1090 or [samt@lenityarchitecture.com](mailto:samt@lenityarchitecture.com)

Sincerely,



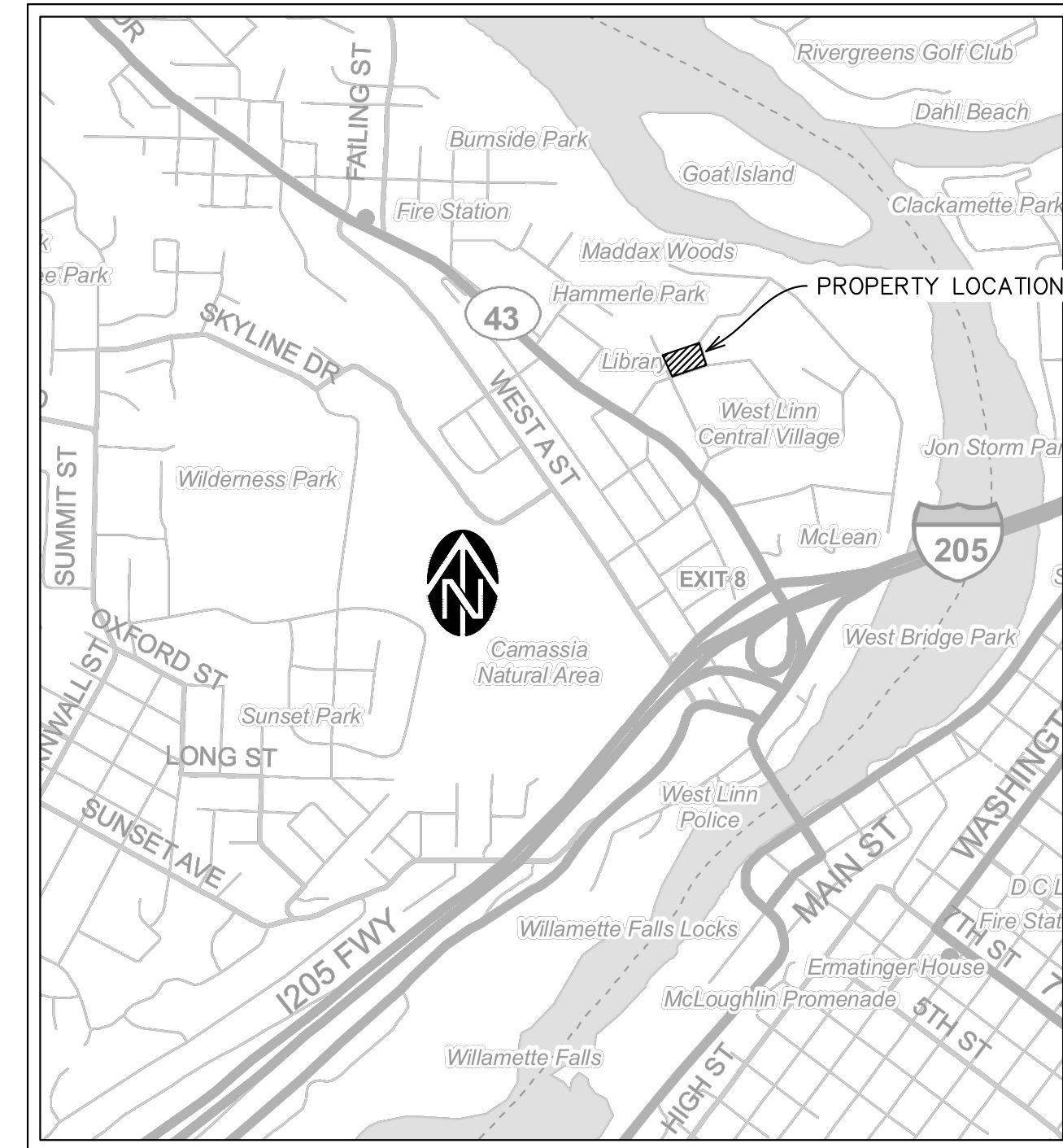
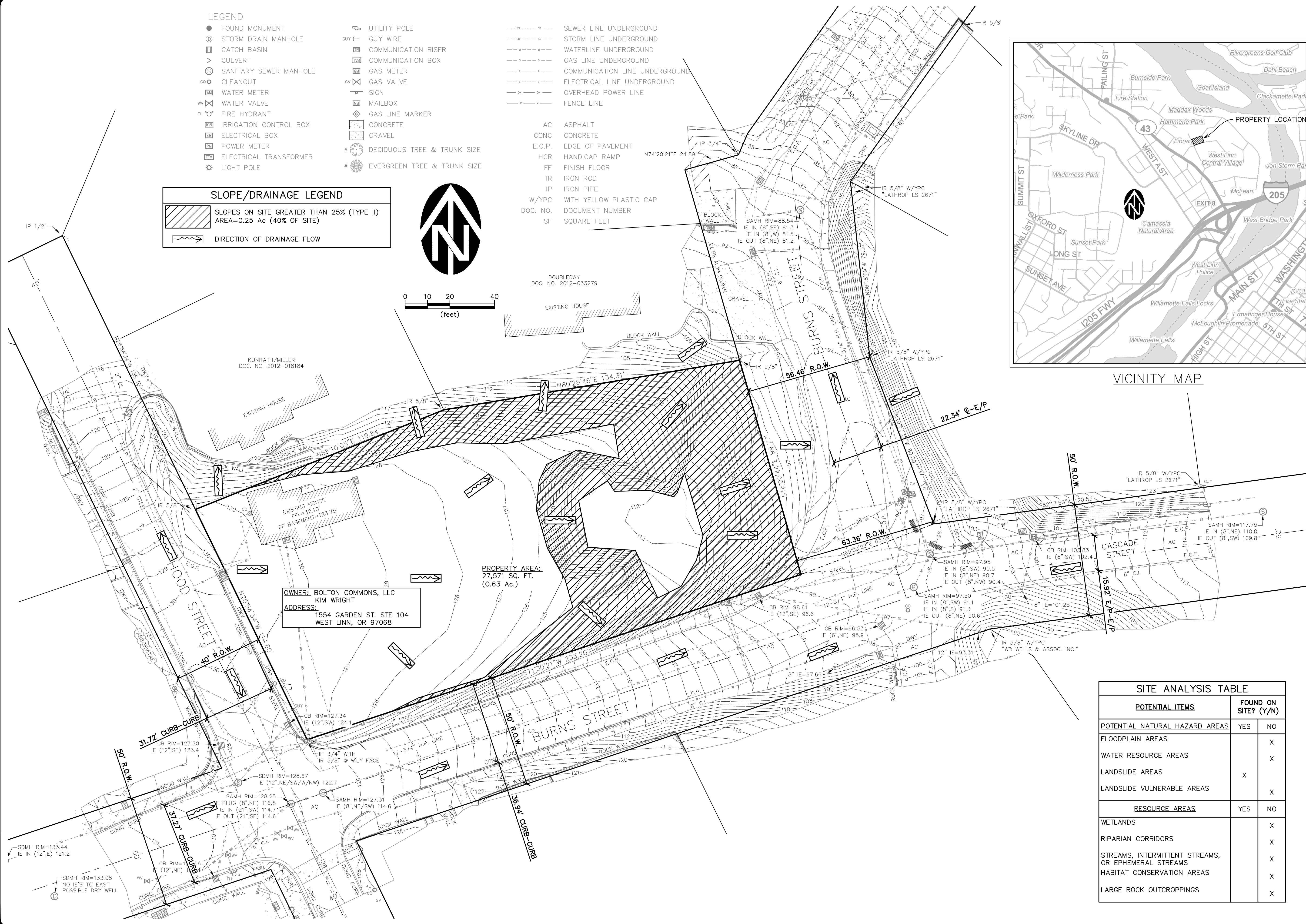
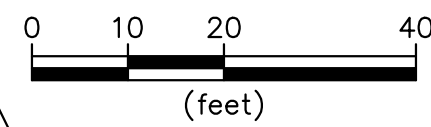
Samuel A. Thomas  
Senior Land Use Specialist

**LEGEND**

- FOUND MONUMENT
- ⊙ STORM DRAIN MANHOLE
- ▭ CATCH BASIN
- > CULVERT
- ⊙ SANITARY SEWER MANHOLE
- ∞ CLEANOUT
- ⊙ WATER METER
- ⊙ WATER VALVE
- ⊙ FIRE HYDRANT
- ⊙ IRRIGATION CONTROL BOX
- ⊙ ELECTRICAL BOX
- ⊙ POWER METER
- ⊙ ELECTRICAL TRANSFORMER
- ⊙ LIGHT POLE
- ⊙ UTILITY POLE
- GUY WIRE
- ⊙ COMMUNICATION RISER
- ⊙ COMMUNICATION BOX
- ⊙ GAS METER
- ⊙ GAS VALVE
- ⊙ SIGN
- ⊙ MAILBOX
- ⊙ GAS LINE MARKER
- ⊙ CONCRETE
- ⊙ GRAVEL
- ⊙ DECIDUOUS TREE & TRUNK SIZE
- ⊙ EVERGREEN TREE & TRUNK SIZE
- SEWER LINE UNDERGROUND
- STORM LINE UNDERGROUND
- WATERLINE UNDERGROUND
- GAS LINE UNDERGROUND
- COMMUNICATION LINE UNDERGROUND
- ELECTRICAL LINE UNDERGROUND
- OVERHEAD POWER LINE
- FENCE LINE
- AC ASPHALT
- CONC CONCRETE
- E.O.P. EDGE OF PAVEMENT
- HCR HANDICAP RAMP
- FF FINISH FLOOR
- IR IRON ROD
- IP IRON PIPE
- W/YPC WITH YELLOW PLASTIC CAP
- DOC. NO. DOCUMENT NUMBER
- SF SQUARE FEET

**SLOPE/DRAINAGE LEGEND**

- SLOPES ON SITE GREATER THAN 25% (TYPE II) AREA=0.25 Ac (40% OF SITE)
- DIRECTION OF DRAINAGE FLOW



VICINITY MAP

**OWNER:** BOLTON COMMONS, LLC  
**KIM WRIGHT**  
**ADDRESS:**  
 1554 GARDEN ST. STE 104  
 WEST LINN, OR 97068

**PROPERTY AREA:**  
 27,571 SQ. FT.  
 (0.63 Ac.)

SITE ANALYSIS TABLE		
POTENTIAL ITEMS	FOUND ON SITE? (Y/N)	
	YES	NO
<b>POTENTIAL NATURAL HAZARD AREAS</b>		
FLOODPLAIN AREAS		X
WATER RESOURCE AREAS		X
LANDSLIDE AREAS	X	
LANDSLIDE VULNERABLE AREAS		X
<b>RESOURCE AREAS</b>	YES	NO
WETLANDS		X
RIPARIAN CORRIDORS		X
STREAMS, INTERMITTENT STREAMS, OR EPHEMERAL STREAMS		X
HABITAT CONSERVATION AREAS		X
LARGE ROCK OUTCROPPINGS		X

**REVIEW**

REGISTERED PROFESSIONAL ENGINEER  
 WILLIAM J. WELLS  
 OREGON REG. NO. 12345  
 DATE: 6/30/2020

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**WESTTECH ENGINEERING, INC.**  
 CONSULTING ENGINEERS AND PLANNERS  
 3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302  
 Phone: (503) 585-2474 Fax: (503) 585-3966  
 E-mail: westtech@westtech-eng.com

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LENITY ARCHITECTURE  
 ADVANCE DENTAL ARTS

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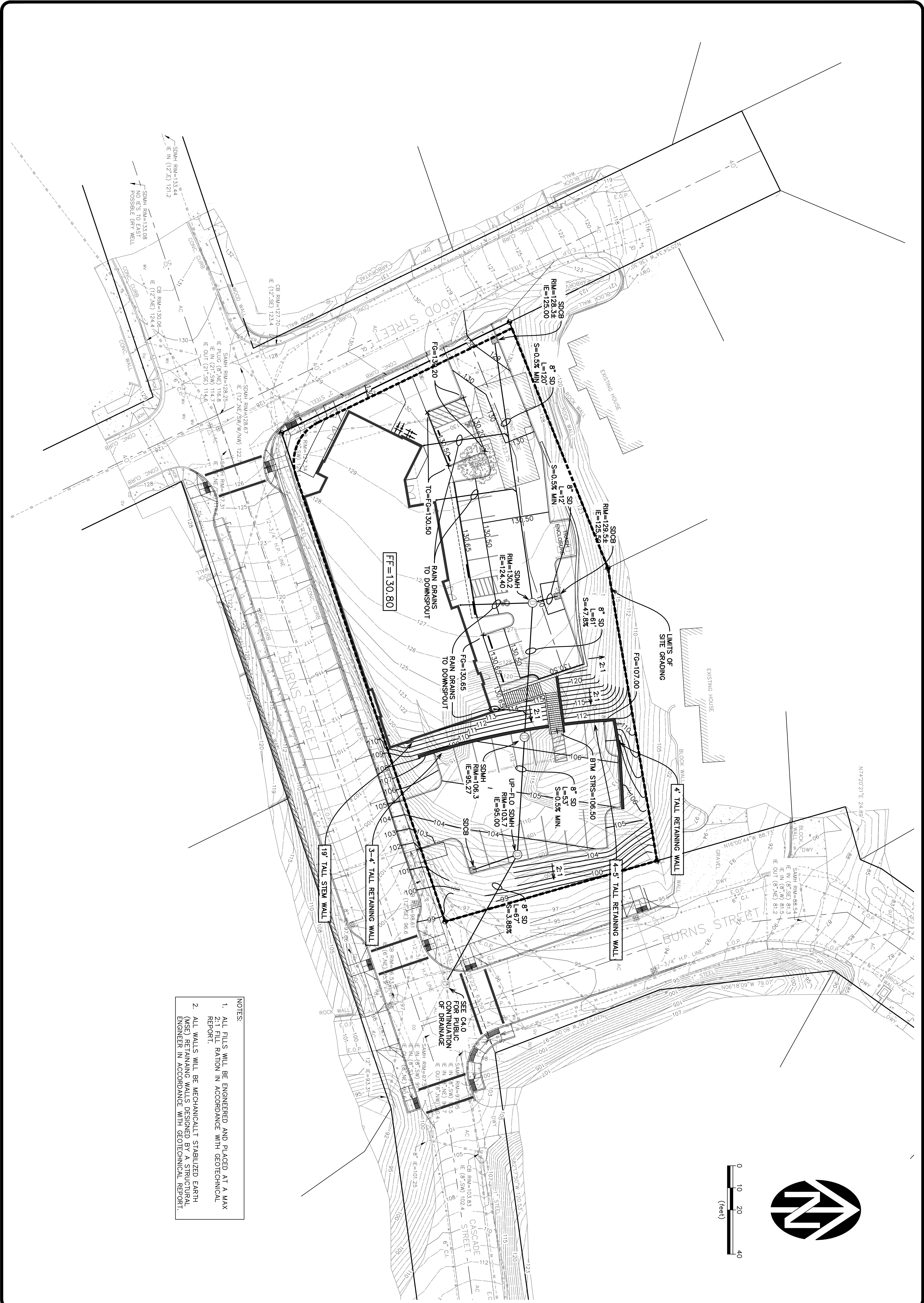
SITE ANALYSIS PLAN

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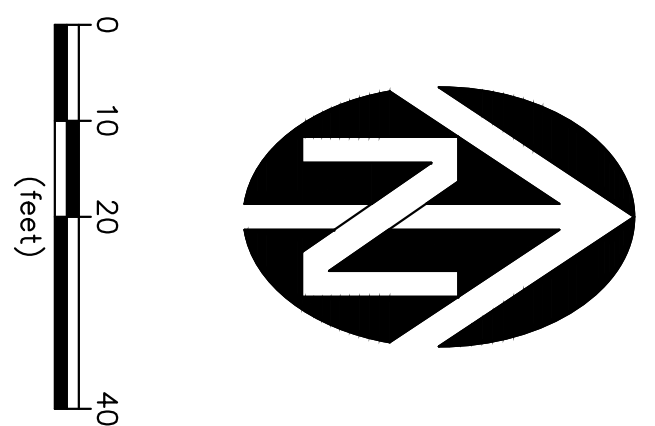
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JOB NUMBER  
**3132.0000.0**



- NOTES:
1. ALL FILLS WILL BE ENGINEERED AND PLACED AT A MAX 2:1 FILL RATIO IN ACCORDANCE WITH GEOTECHNICAL REPORT.
  2. ALL WALLS WILL BE MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS DESIGNED BY A STRUCTURAL ENGINEER IN ACCORDANCE WITH GEOTECHNICAL REPORT.



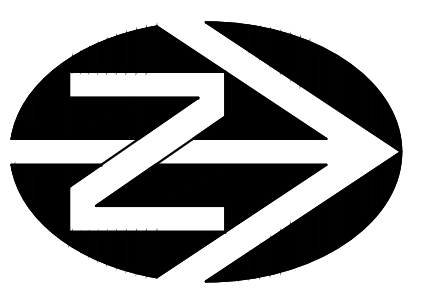
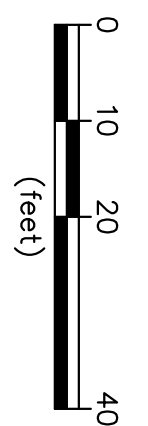
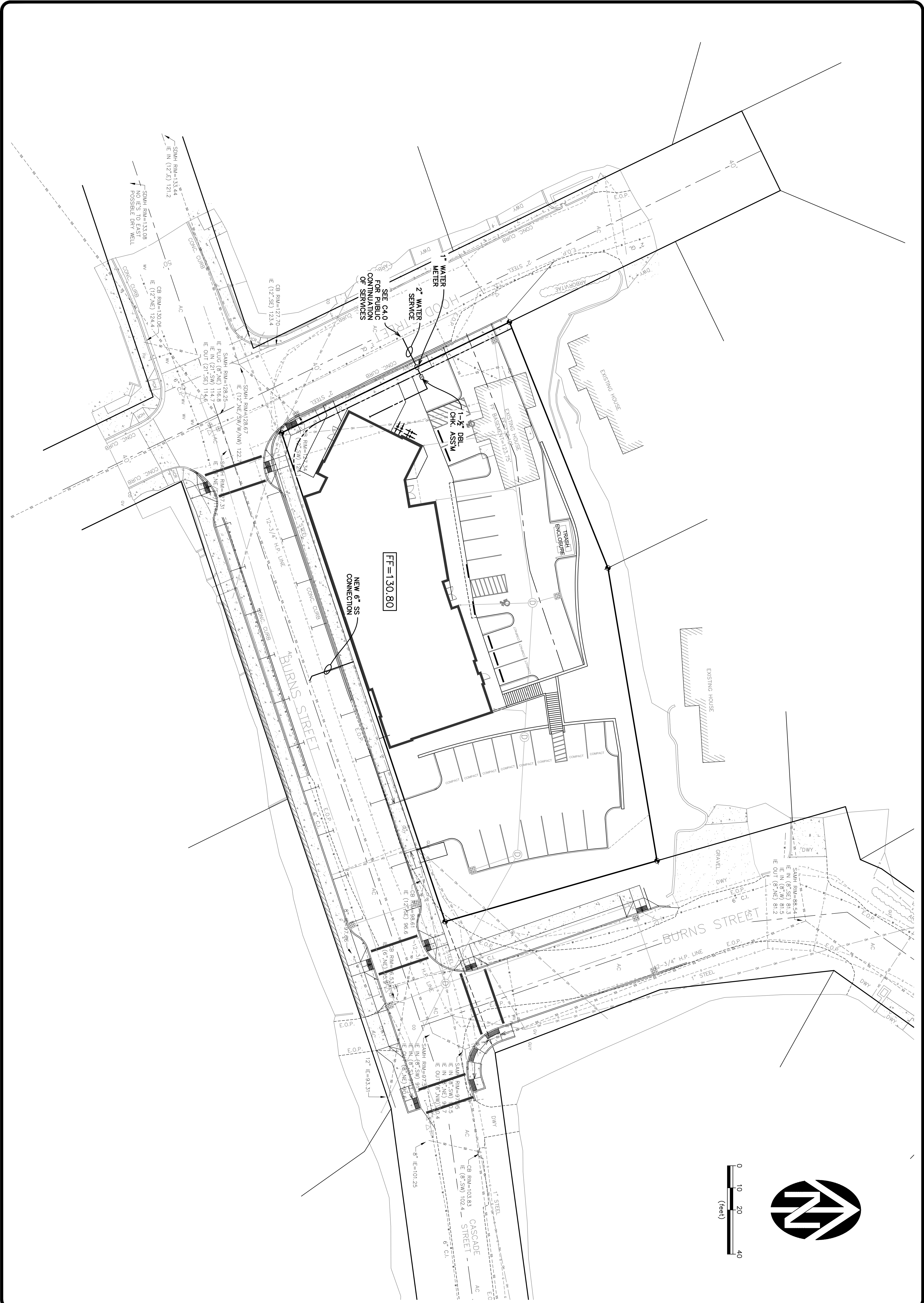
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LENITY ARCHITECTURE  
ADVANCE DENTAL ARTS  
**PRELIMINARY GRADING & DRAINAGE PLAN**

**WE**  
WESTECH ENGINEERING, INC.  
CONSULTING ENGINEERS AND PLANNERS  
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302  
Phone: (503) 585-2474 Fax: (503) 585-3986  
E-mail: westech@westech-eng.com

**REGISTERED PROFESSIONAL ENGINEER**  
**REVIEW**  
WILLIAM J. WELLS  
NOV. 12, 2008  
RENEWS: 6/30/2020

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY		1"	
DSN.	JW	NO.	1
DRN.	RS	DATE	02/2020
CKD.	JW	DESCRIPTION	REVISIONS
DATE: 02/2020			



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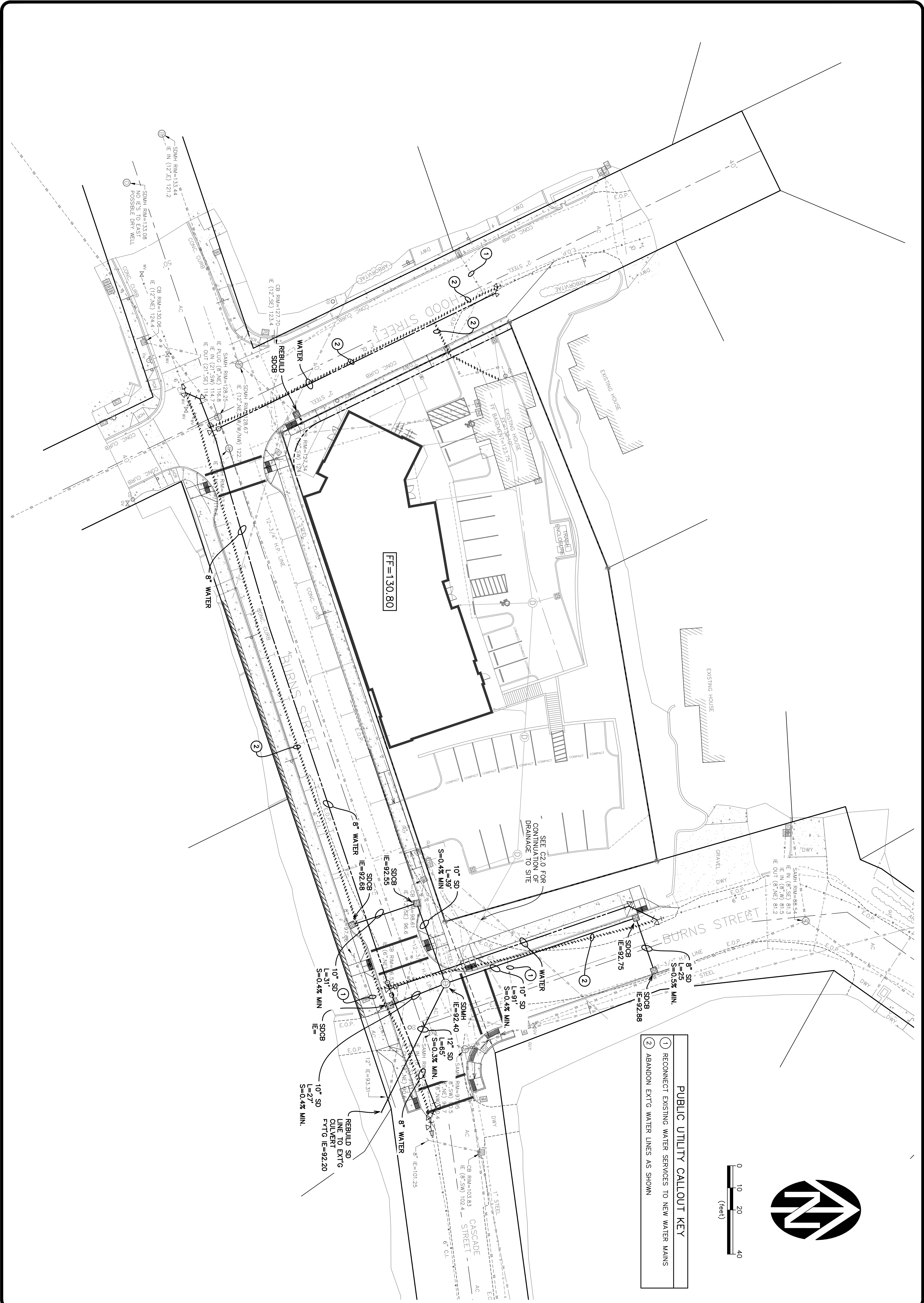
LENITY ARCHITECTURE  
ADVANCE DENTAL ARTS  
  
UTILITY PLAN

**WE**  
WESTECH ENGINEERING, INC.  
CONSULTING ENGINEERS AND PLANNERS  
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302  
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RENEWS: 6/30/2020

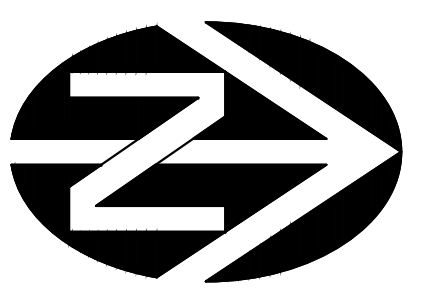
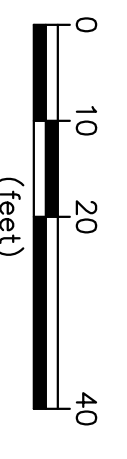
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DRN.	RS	NO.		DATE	
CKD.	JW	NO.		DATE	
DATE:	02/2020	NO.		DATE	
				DESCRIPTION	BY
				REVISIONS	





**PUBLIC UTILITY CALLOUT KEY**

- 1 RECONNECT EXISTING WATER SERVICES TO NEW WATER MAINS
- 2 ABANDON EXTG WATER LINES AS SHOWN



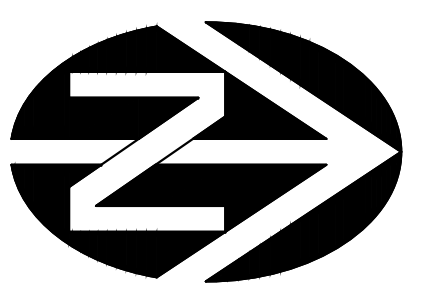
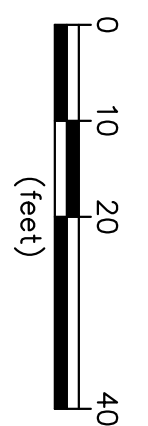
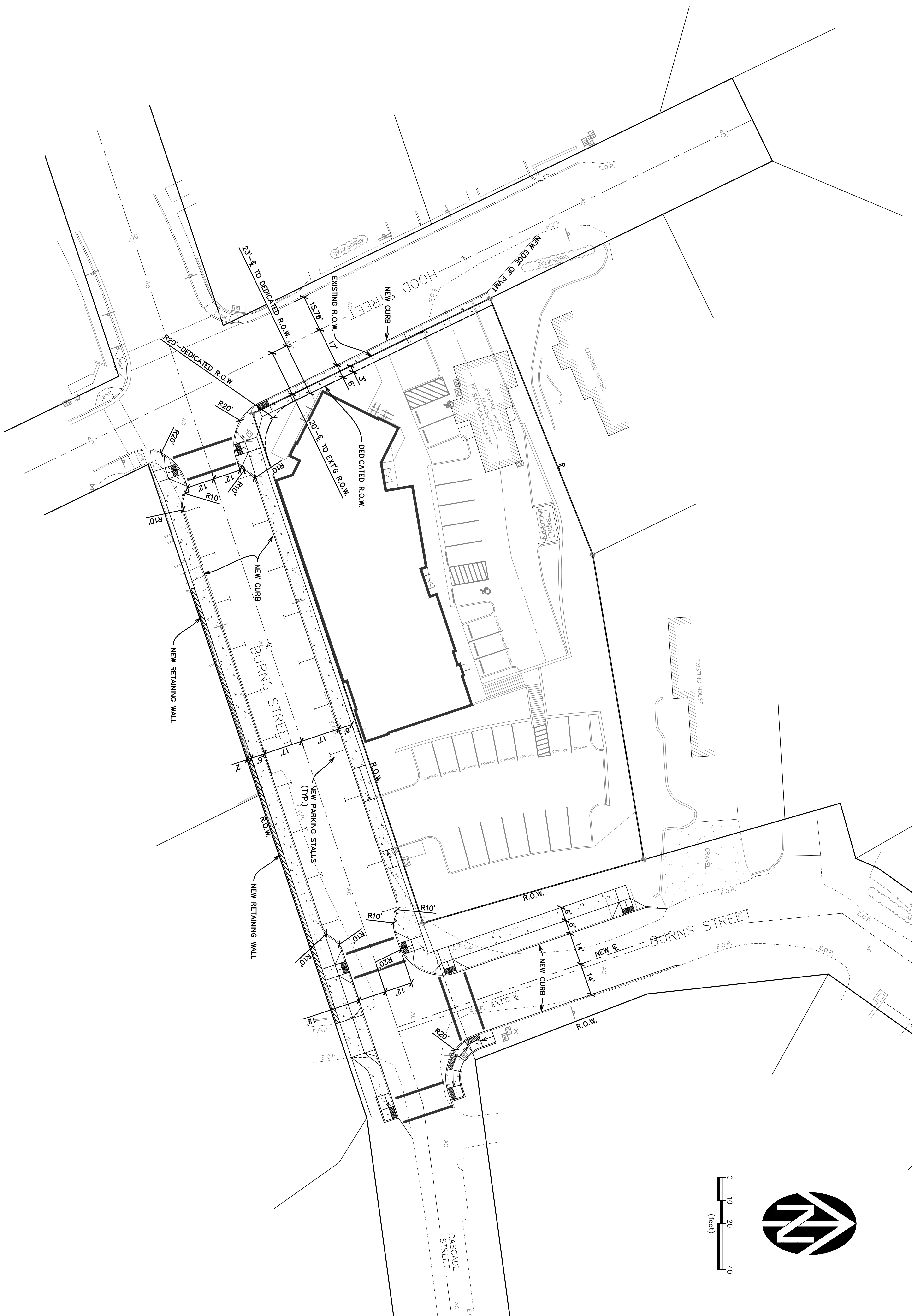
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LENITY ARCHITECTURE  
ADVANCE DENTAL ARTS  
**PRELIMINARY PUBLIC UTILITY  
IMPROVEMENT PLAN**

**WESTECH ENGINEERING, INC.**  
CONSULTING ENGINEERS AND PLANNERS  
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302  
Phone: (503) 585-2474 Fax: (503) 585-3986  
E-mail: westech@westech-eng.com

**REGISTERED PROFESSIONAL ENGINEER**  
NOV. 12, 2020  
**WILLIAM J. WELLS**  
RENEWS: 6/30/2020

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LENITY ARCHITECTURE  
ADVANCE DENTAL ARTS  
**PRELIMINARY STREET PLAN**

**WE**  
WESTECH ENGINEERING, INC.  
CONSULTING ENGINEERS AND PLANNERS  
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302  
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E-mail: westech@westech-eng.com

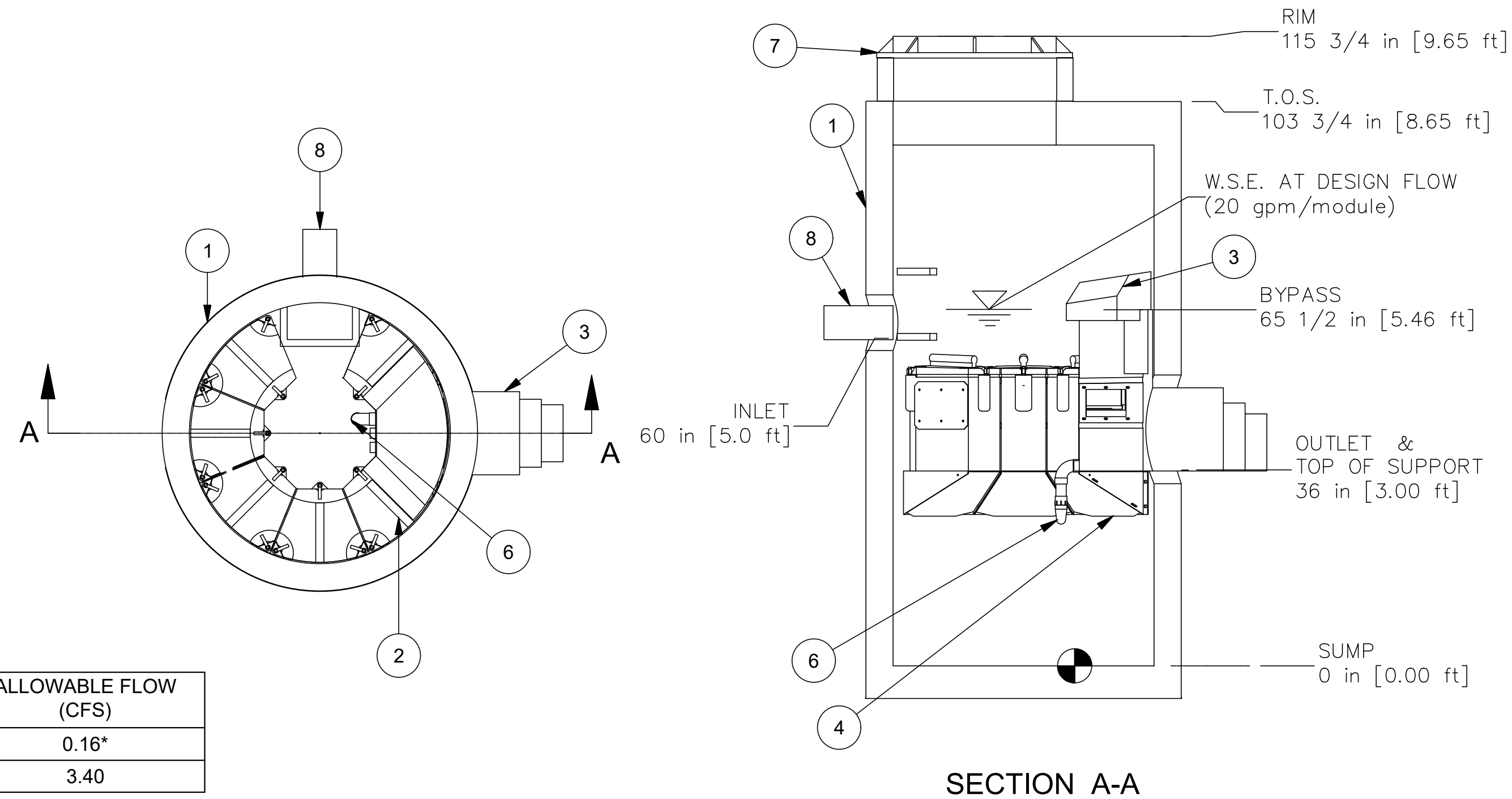
**REGISTERED PROFESSIONAL ENGINEER**  
**REVIEW**  
WILLIAM J. WELLS  
NOV. 12, 2008  
RENEWS: 6/30/2020

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW  
DRN. RS  
CKD. JW  
DATE: 02/2020

NO.	DATE	DESCRIPTION	BY
1			

## UP-FLO FILTER MANHOLE



DESIGN STORM	DEVELOPED SITE FLOW (CFS)	ALLOWABLE FLOW (CFS)
WATER QUALITY EVENT	0.14	0.16*
BYPASS 100-YEAR	0.63	3.40

\*ALLOWABLE PEAK TREATMENT FLOW FOR 3 FILTER MODULES

### EQUIPMENT PERFORMANCE

The stormwater filtration system shall adhere to the parameters listed below:  
 Minimum Performance Criteria: 80% removal of Sil-Co-Sil 106 at the peak treatment flow.  
 Peak Treatment Flow for 6 Filter Modules: 150 gpm (9.48 l/s)  
 Minimum Bypass Capacity: 1527 gpm (96.20 l/s)  
 Minimum Sediment Storage Capacity: 16.6 cu. ft. (0.47 cu. m.)  
 Minimum Oil Storage Capacity: 50 gal. (189 liters)  
 Media Type: CPZ

### OUTLET PIPE STUB SIZE INFORMATION

Outside Diameter: 10.5", 12.5" or 15.3" OD  
 Concrete Penetration: Pipe Boot (by Hydro)  
 Hook-up: Fernco-type coupling (by others)

Parts List			
ITEM	QTY	SIZE	DESCRIPTION
1	1	48 in	CONCRETE MANHOLE
2	6		FILTER MODULE
3	1		OUTLET MODULE AND PIPE STUB
4	1		SINGLE SUPPORT BRACKET
5	1		OUTLET SUPPORT BRACKET
6	1		DRAINDOWN FILTER
7	1	30 in	FRAME AND COVER
8	1	12 in	INLET PIPE

NO.	DATE	DESCRIPTION	BY
1			

VERIFY SCALE  
 BASIS ONE INCH ON ORIGINAL DRAWING  
 IF NOT ONE INCH ON SCALES ACCORDINGLY

DSN. JW  
 DRN. RS  
 CKD. JW  
 DATE: 02/20/20



**WESTTECH ENGINEERING, INC.**  
 CONSULTING ENGINEERS AND PLANNERS

**WE**

3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302  
 Phone: (503) 585-2474 Fax: (503) 585-3966  
 E-mail: westtech@westtech-eng.com

LENITY ARCHITECTURE  
 ADVANCE DENTAL ARTS  
 CIVIL DETAILS

DRAWING  
**C6.0**

JOB NUMBER  
**3132.0000.0**

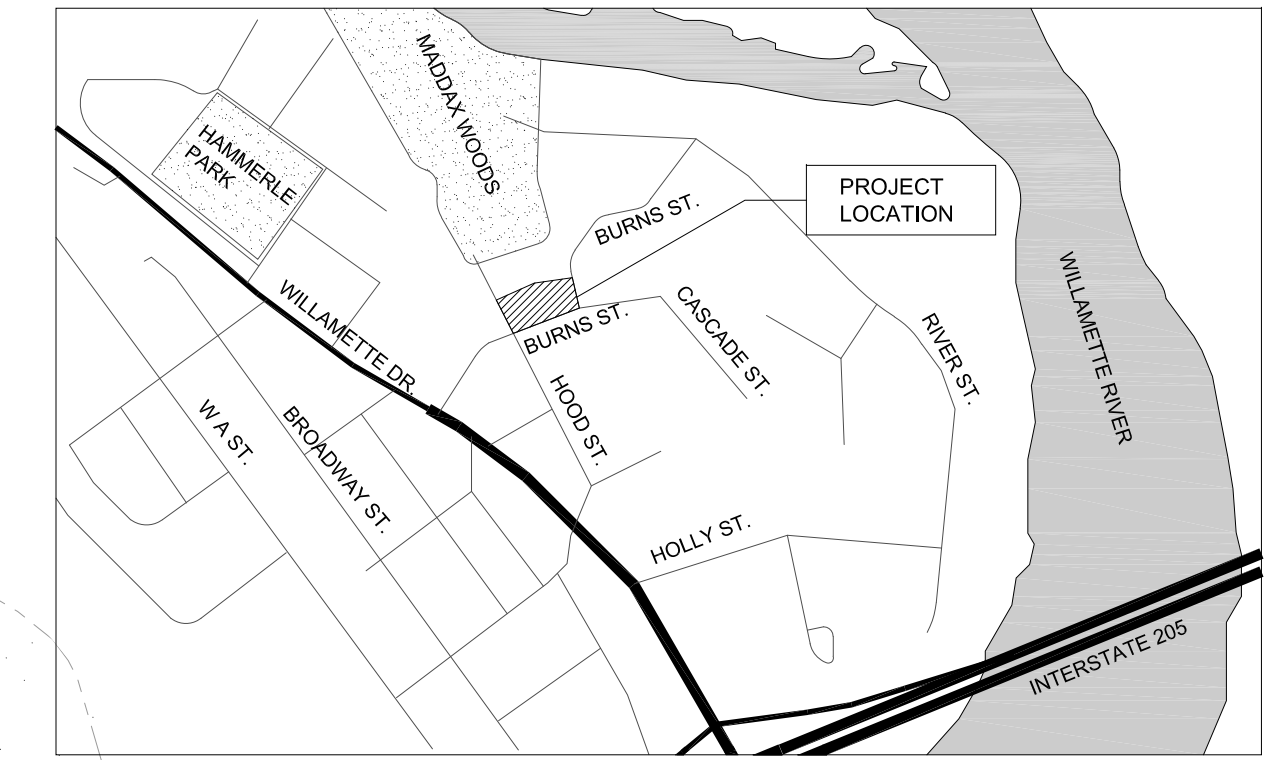
**SITE PLAN LEGEND**

- # = KEYNOTE TAG
- [Solid Line] = BUILDING FOOTPRINT
- [Dotted Pattern] = CONCRETE PAVING AREA
- [Stippled Pattern] = LANDSCAPED AREA
- [Circle with 'L'] = SITE LIGHTING LOCATION. SEE PHOTOMETRICS & ELEC. DRAWINGS.

**SITE PLAN KEYNOTES**

- 1 NEW BIKE RACK FOR 4 BIKES, 2 SPACES UNDER EXTENDED ROOF
- 2 COVERED BRICK-CLAD WASTE ENCLOSURE. EXTEND ROOF OVER BIKE PARKING.
- 3 SITE STAIR DOWN TO LOWER PARKING AREA
- 4 6' WIDE PEDESTRIAN CIRCULATION WALKWAY. ADDITIONAL 2' ADDED AT PARKING FOR BUMPER OVERHANGS.
- 5 CANOPY ABOVE ENTRYWAY SHOWN DASHED.
- 6 30'X30' VISION CLEARANCE TRIANGLE.

**VICINITY MAP** N.T.S.



**PROJECT STATS:**

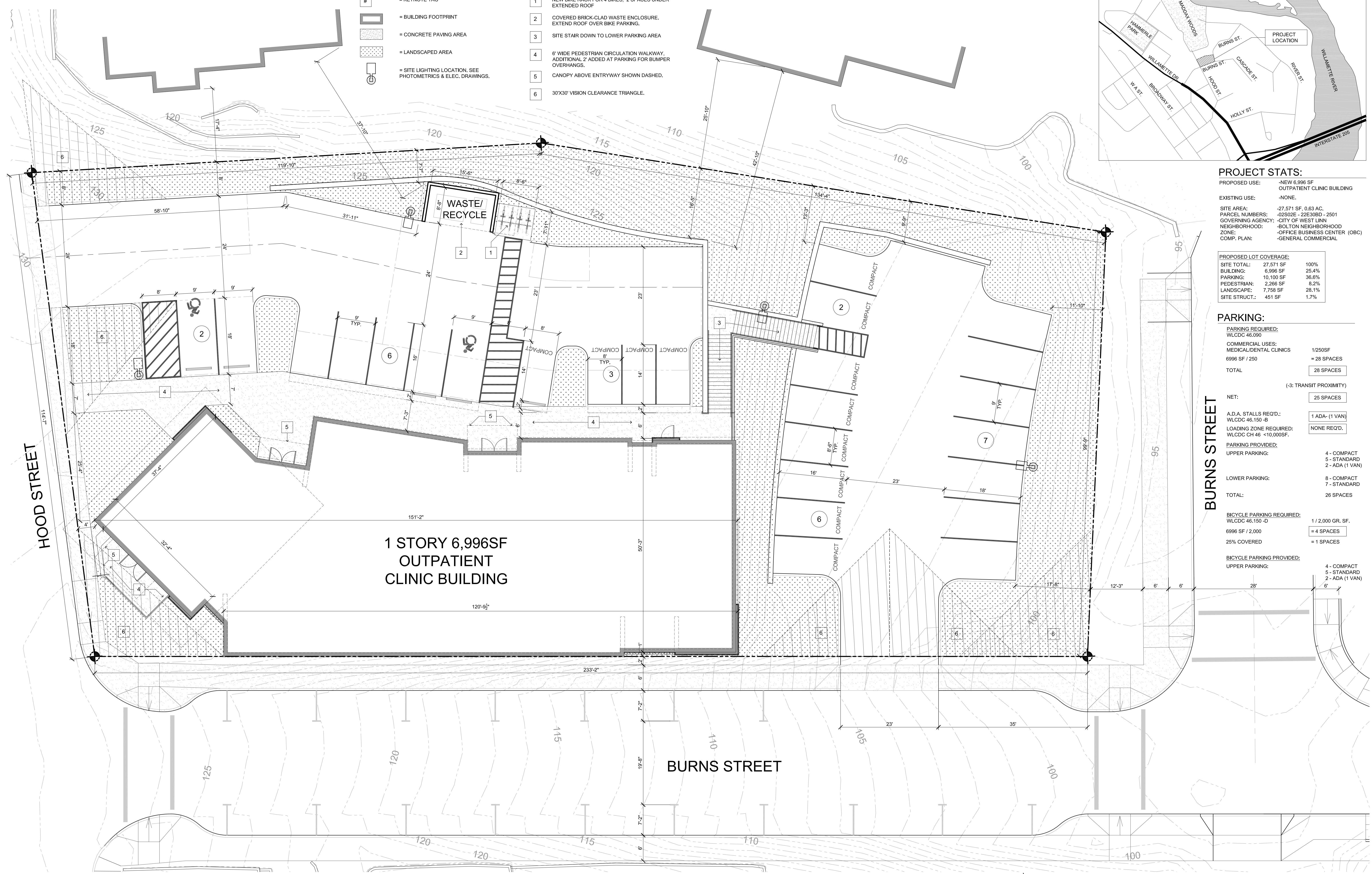
PROPOSED USE: NEW 6,996 SF OUTPATIENT CLINIC BUILDING  
 EXISTING USE: NONE  
 SITE AREA: -27,571 SF, 0.63 AC.  
 PARCEL NUMBERS: -02502E - 22E30BD - 2501  
 GOVERNING AGENCY: CITY OF WEST Linn  
 NEIGHBORHOOD: -BOLTON NEIGHBORHOOD  
 ZONE: -OFFICE BUSINESS CENTER (OBC)  
 COMP. PLAN: -GENERAL COMMERCIAL

**PROPOSED LOT COVERAGE:**

SITE TOTAL:	27,571 SF	100%
BUILDING:	6,996 SF	25.4%
PARKING:	10,100 SF	36.6%
PEDESTRIAN:	2,266 SF	8.2%
LANDSCAPE:	7,758 SF	28.1%
SITE STRUCT.:	451 SF	1.7%

**PARKING:**

PARKING REQUIRED:  
 WLCDC 46.090  
 COMMERCIAL USES:  
 MEDICAL/DENTAL CLINICS  
 6996 SF / 250  
 TOTAL  
 28 SPACES  
 (-3: TRANSIT PROXIMITY)  
 25 SPACES  
 NET:  
 A.D.A. STALLS REQ'D:  
 WLCDC 46.150 - B  
 1 ADA - (1 VAN)  
 LOADING ZONE REQUIRED:  
 WLCDC CH 46 <10,000SF.  
 NONE REQ'D.  
 PARKING PROVIDED:  
 UPPER PARKING:  
 4 - COMPACT  
 5 - STANDARD  
 2 - ADA (1 VAN)  
 LOWER PARKING:  
 8 - COMPACT  
 7 - STANDARD  
 TOTAL:  
 26 SPACES  
 BICYCLE PARKING REQUIRED:  
 WLCDC 46.150 - D  
 6996 SF / 2,000  
 25% COVERED  
 1 / 2,000 GR. SF.  
 = 4 SPACES  
 = 1 SPACES  
 BICYCLE PARKING PROVIDED:  
 UPPER PARKING:  
 4 - COMPACT  
 5 - STANDARD  
 2 - ADA (1 VAN)



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**lenity**  
 architecture, inc.  
 3150 Kettle Court SE, Salem, Oregon 97301  
 P 503.399.1050 F 503.399.0565 W lenityarchitecture.com

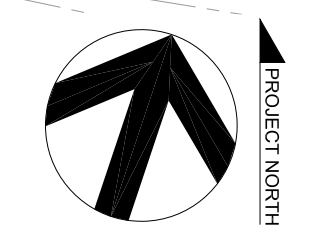
**EMMETT PHAIR**  
 CONSTRUCTION  
 6305 SW ROSEWOOD ST. SUITE E,  
 LAKE OSWEGO, OR 97035  
 phone: 503-572-8606

**NEW BUILDING  
 FOR ADVANCE DENTAL  
 ARTS CENTER**  
 1575 BURNS ST., WEST LINN, OR 97068

**SITE  
 PLAN**

DATE  
 2/14/2020  
 REVISED DATE  
 SHEET  
 A1.1

DESIGN REVIEW SET



1 SITE PLAN  
 SCALE: 1" = 10'-0"



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phone: 503-572-8806

NEW BUILDING  
FOR ADVANCE DENTAL  
ARTS CENTER  
1575 BURNS ST., WEST LINN, OR 97068

EXTERIOR  
BUILDING  
ELEVATIONS

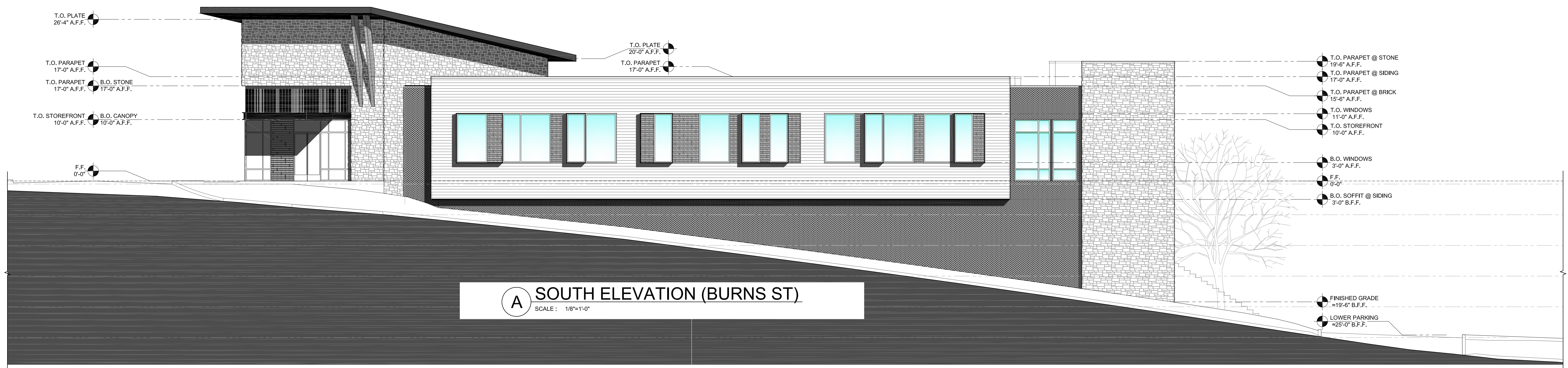
DATE  
2/14/2020

REVISED DATE

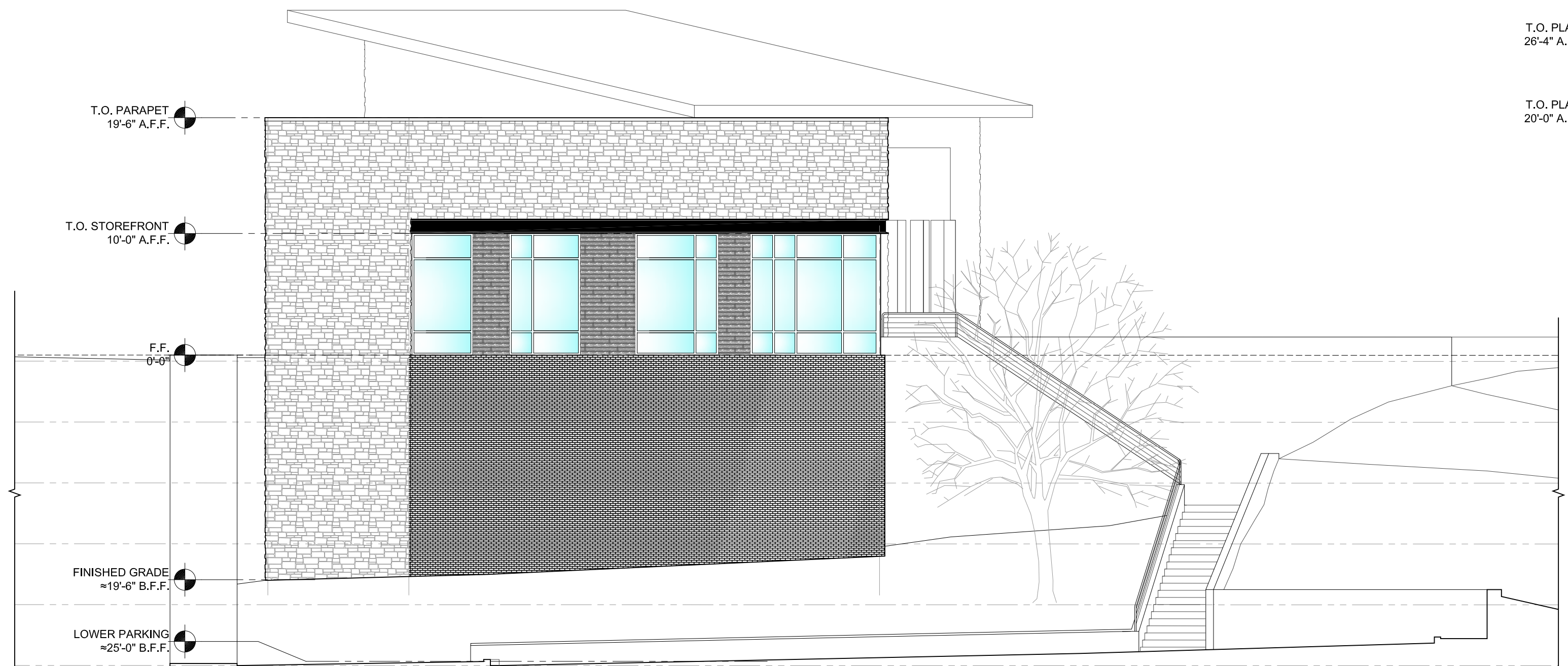
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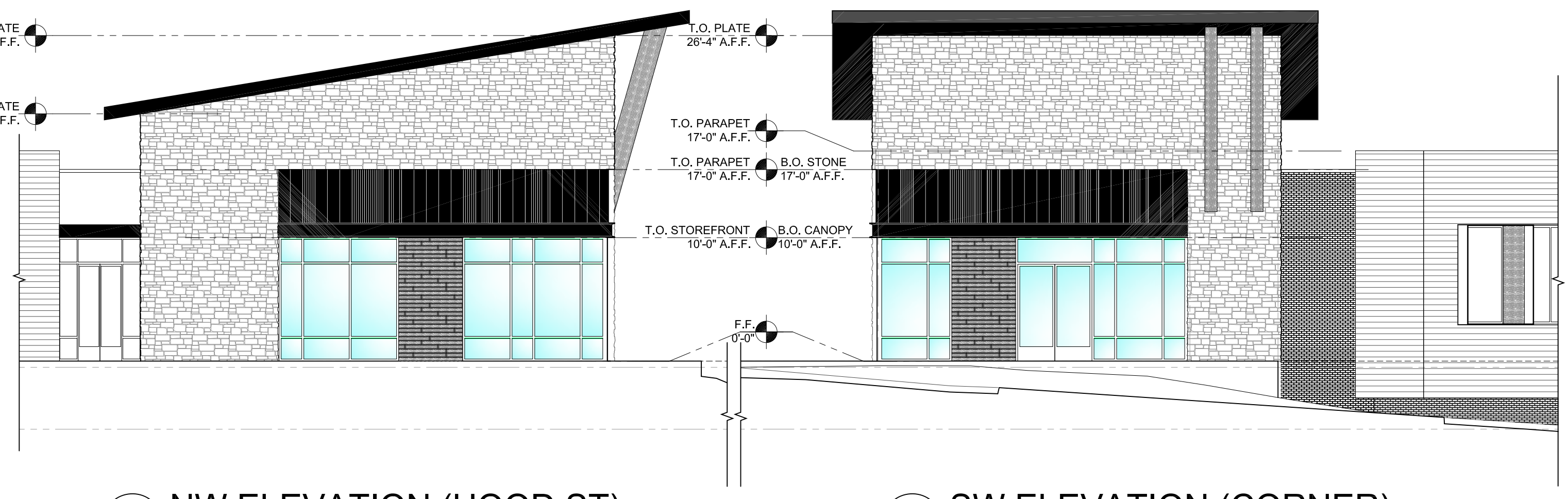
DESIGN REVIEW SET



**A SOUTH ELEVATION (BURNS ST)**  
SCALE: 1/8"=1'-0"



**B EAST ELEVATION (BURNS ST)**  
SCALE: 1/8"=1'-0"



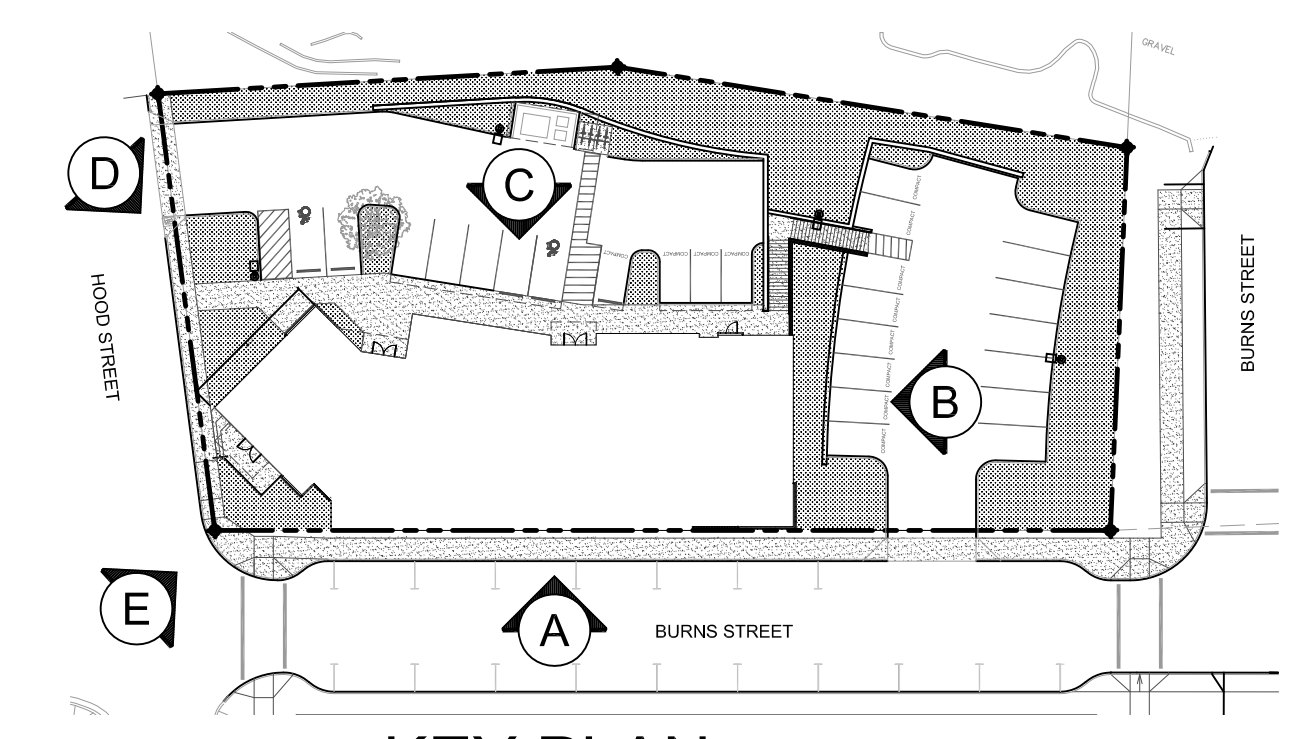
**D NW ELEVATION (HOOD ST)**  
SCALE: 1/8"=1'-0"



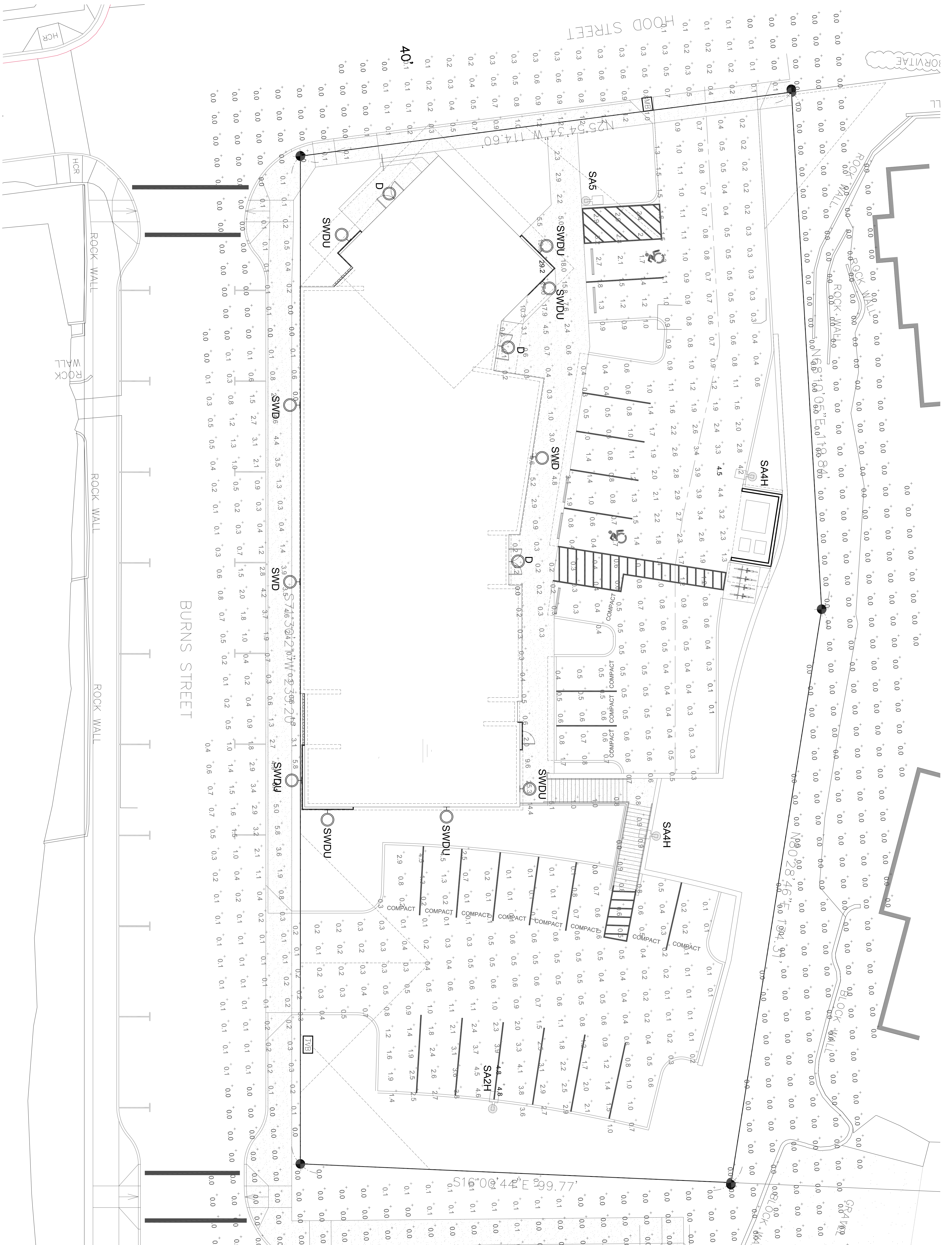
**E SW ELEVATION (CORNER)**  
SCALE: 1/8"=1'-0"



**C NORTH ELEVATION (PARKING LOT)**  
SCALE: 1/8"=1'-0"



KEY PLAN  
NTS



DATE: 2/14/2020  
 REVISED DATE:  
 SHEET: E1.1  
 DESIGN REVIEW SET

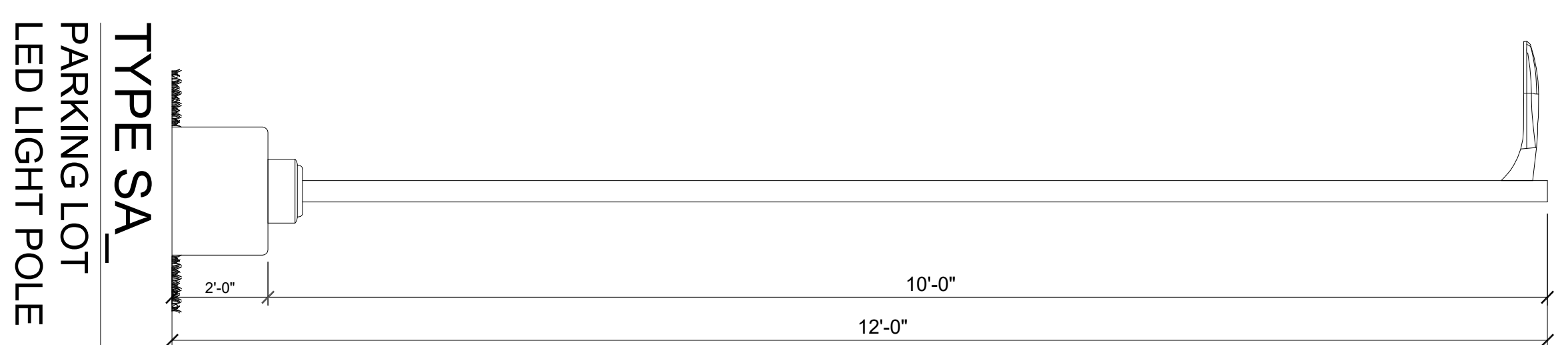
# ELECTRICAL SITE PLAN

**NEW BUILDING FOR ADVANCED DENTAL ARTS CENTER**  
 1575 BURNS ST. WEST LINN, OR 97068

**EMMETT PHAIR**  
 CONSTRUCTION  
 6305 SW ROSEWOOD ST. SUITE E,  
 LAKE OSWEGO, OR 97035  
 phone: 503-572-8606

**lenity**  
 architecture, inc.  
 3150 Kettle Court SE, Salem, Oregon 97301  
 503 399 1090 503 399 0565 lenityarchitecture.com

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 NOT FOR  
 CONSTRUCTION



**TYPE SA**  
PARKING LOT  
LED LIGHT POLE

TYPE	DESCRIPTION	LAMP	MANUFACTURE
	<b>CATEGORY:</b> 7- SURFACE DOWNLIGHT <b>HOUSING:</b> ALUMINUM <b>LENS/REFL:</b> WAVESTREAM POLYMER <b>BALLAST:</b> ELECTRONIC <b>D VOLTAGE:</b> 120 <b>WATTAGE:</b> 13 <b>LISTING/STND:</b> UL, L70/50,000 <b>FINISH:</b> WHITE <b>MISC:</b>	<b>TYPE:</b> LED <b>QUANTITY:</b> 3000 <b>CCT (K):</b> 3000 <b>CRI:</b> 80 <b>LUMENS:</b> 1200 <b>MISC:</b> <b>LIFE:</b> L70/50,000	JUNO LIGHTING JSE-71N1DLA-30K-90CRI-AM-VOLT-TZ1-WH
	<b>CATEGORY:</b> LED SITE AREA LUMINAIRE - 10 POLE <b>HOUSING:</b> 25"x13"x7" (LXVWH) CAST ALUMINUM <b>LENS/REFL:</b> TYPE 2 MEDIUM <b>BALLAST:</b> ELECTRONIC <b>S24H VOLTAGE:</b> MVOLT <b>WATTAGE:</b> 49 <b>LISTING/STND:</b> IP66 <b>FINISH:</b> BRONZE <b>MISC:</b> PROVIDE HOUSE SIDE SHIELD	<b>TYPE:</b> LED <b>QUANTITY:</b> 3000 <b>CCT (K):</b> 3000 <b>CRI:</b> 70 <b>LUMENS:</b> 5,593 <b>MISC:</b> BUG - .01 <b>LIFE:</b> L85/100,000	LITHONIA LIGHTING DSXO LED-P23BK-12M-AM-VOLT-PIR HS-DOBXO
	<b>CATEGORY:</b> LED SITE AREA LUMINAIRE - 10 POLE <b>HOUSING:</b> 25"x13"x7" (LXVWH) CAST ALUMINUM <b>LENS/REFL:</b> TYPE 4 MEDIUM <b>BALLAST:</b> ELECTRONIC <b>S24H VOLTAGE:</b> MVOLT <b>WATTAGE:</b> 49 <b>LISTING/STND:</b> IP66 <b>FINISH:</b> BRONZE <b>MISC:</b> PROVIDE HOUSE SIDE SHIELD	<b>TYPE:</b> LED <b>QUANTITY:</b> 3000 <b>CCT (K):</b> 3000 <b>CRI:</b> 70 <b>LUMENS:</b> 5,458 <b>MISC:</b> BUG - .02 <b>LIFE:</b> L85/100,000	LITHONIA LIGHTING DSXO LED-P23BK-12M-AM-VOLT-PIR HS-DOBXO
	<b>CATEGORY:</b> LED SITE AREA LUMINAIRE - 10 POLE <b>HOUSING:</b> 25"x13"x7" (LXVWH) CAST ALUMINUM <b>LENS/REFL:</b> TYPE 5 MEDIUM <b>BALLAST:</b> ELECTRONIC <b>S45 VOLTAGE:</b> MVOLT <b>WATTAGE:</b> 49 <b>LISTING/STND:</b> IP66 <b>FINISH:</b> BRONZE <b>MISC:</b> PROVIDE HOUSE SIDE SHIELD	<b>TYPE:</b> LED <b>QUANTITY:</b> 3000 <b>CCT (K):</b> 3000 <b>CRI:</b> 70 <b>LUMENS:</b> 5,789 <b>MISC:</b> BUG - .01 <b>LIFE:</b> L85/100,000	LITHONIA LIGHTING DSXO LED-P23BK-12M-AM-VOLT-PIR HS-DOBXO
	<b>CATEGORY:</b> WALL MOUNTED LED <b>HOUSING:</b> (4.5"x4.5"x7.125") ALUMINUM <b>LENS/REFL:</b> 33-DEGREE DOWNLIGHT FLOOD <b>BALLAST:</b> ELECTRONIC <b>SWD VOLTAGE:</b> MVOLT <b>WATTAGE:</b> 25 <b>LISTING/STND:</b> IP66 <b>FINISH:</b> BRONZE <b>MISC:</b>	<b>TYPE:</b> LED <b>QUANTITY:</b> 3000 <b>CCT (K):</b> 3000 <b>CRI:</b> 85 <b>LUMENS:</b> 2390 <b>MISC:</b> <b>LIFE:</b> L70/90,000	WAC LIGHTING DC-WS95-F-830S-BZ
	<b>CATEGORY:</b> WALL MOUNTED LED <b>HOUSING:</b> (5.5"x6.5"x18") ALUMINUM <b>LENS/REFL:</b> 38-DEGREE UP/DOWN FLOOD <b>BALLAST:</b> ELECTRONIC <b>SWDU VOLTAGE:</b> MVOLT <b>WATTAGE:</b> 35 <b>LISTING/STND:</b> IP66 <b>FINISH:</b> BRONZE <b>MISC:</b>	<b>TYPE:</b> LED <b>QUANTITY:</b> 3000 <b>CCT (K):</b> 3000 <b>CRI:</b> 85 <b>LUMENS:</b> 7090 <b>MISC:</b> <b>LIFE:</b> L70/90,000	WAC LIGHTING DC-WD96-F-830S-BZ

# LUMINAIRE SCHEDULE & DETAIL SCHEDULE

**NEW BUILDING FOR ADVANCE DENTAL ARTS CENTER**  
1575 BURNS ST. WEST LINN, OR 97068

**EMMETT PHAIR CONSTRUCTION**  
6305 SW ROSEWOOD ST. SUITE E,  
LAKE OSWEGO, OR 97035  
phone: 503-572-8606

**lenity architecture, inc.**  
3150 Kettle Court SE, Salem, Oregon 97301  
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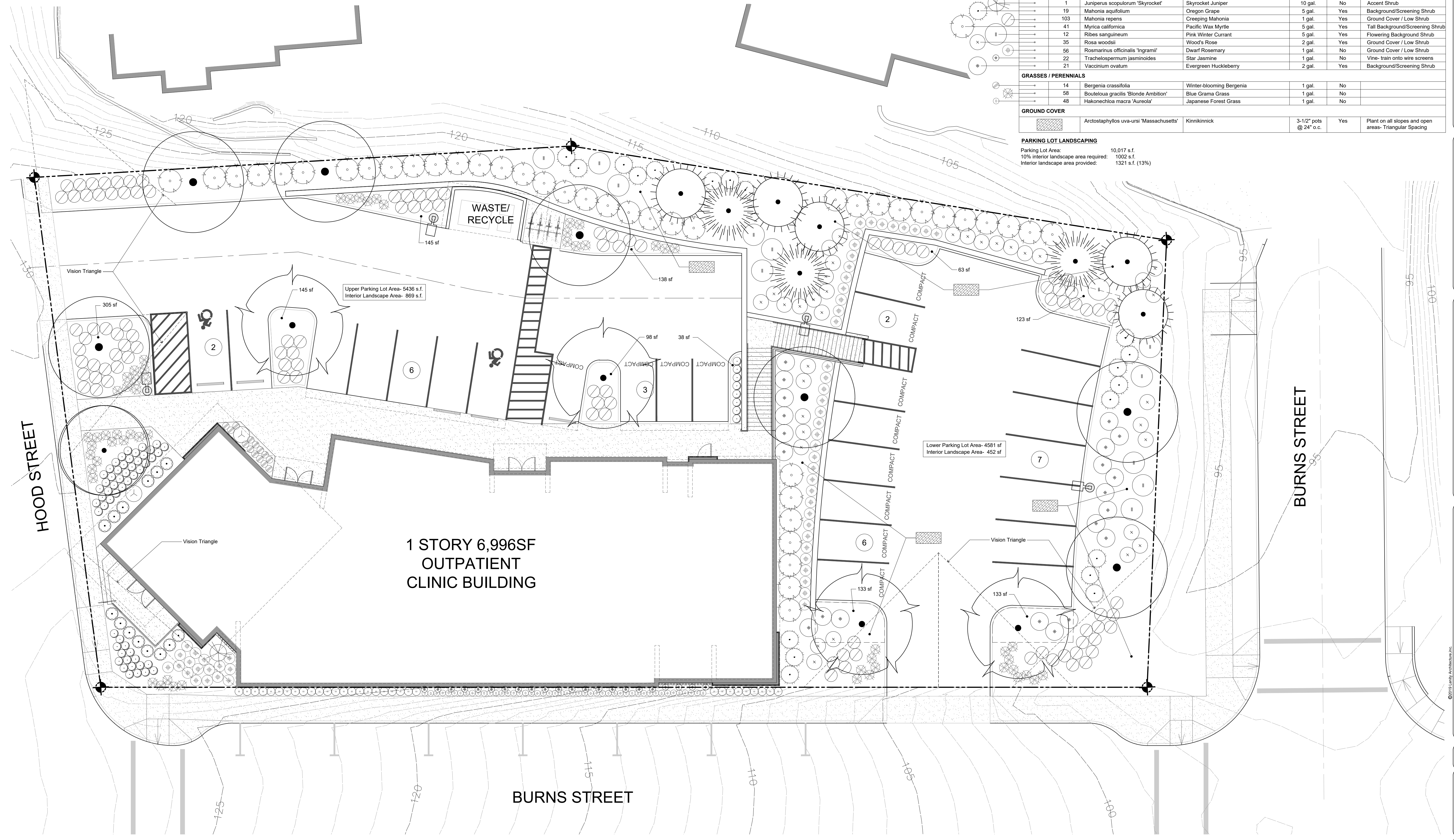
PRELIMINARY  
NOT FOR CONSTRUCTION

DATE: 2/14/2020  
REVISIONS:  
SHEET E1.2

- Notes-
- Soil Preparation for all building area planting beds (per 1000 s.f.):  
5 cu. yds. organic compost free of biosolids & harmful pathogens  
100 lbs. Gro-Power Plus w/M (mycorrhizae)  
Spread evenly and rototill into soil in two directions to a depth of 8"  
Do not disturb slopes (no soil preparation)
  - Backfill mixture for trees and shrubs (per cu. yd.):  
2/3 site soil  
1/3 organic compost free of biosolids & harmful pathogens  
10 lbs. Gro-Power 12-8-8 Controlled Release fertilizer  
3 lbs. Gro-Power Gro-Life granular fertilizer
  - All shrub/ground cover beds to receive a 2" layer of bark mulch, submit samples to Owner for selection.
  - All landscape areas shall be irrigated with a permanent automated irrigation system utilizing SMART Technology. Landscape Contractor shall submit a Design/Build Irrigation Plan and bid to Owner for approval. Provide additional irrigation bubblers or drip emitter assemblies for all trees.

PLANTING SCHEDULE						
SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	NATIVE	REMARKS
<b>TREES</b> Note-some tree symbols are reduced in scale in Planting Schedule						
→	4	<i>Cercis canadensis</i>	Eastern Redbud	2" cal. B&B	No	Standard- branching @ 7 ft.
→	1	<i>Styrax obassia</i>	Fragrant Snowbell Tree	1-1/2" cal. B&B	No	Accent Tree- natural form
→	5	<i>Thuja plicata 'Fastigiata'</i>	Hogan Cedar	6-7 ft. B&B	Yes	Low-branching
→	3	<i>Tsuga heterophylla</i>	Western Hemlock	6-7 ft. B&B	Yes	Low-branching
→	7	<i>Zeikova serrata 'City Sprite'</i>	City Sprite Sawleaf Zeikova	2" cal. B&B	No	Standard- branching @ 7 ft.
<b>SHRUBS</b>						
→	2	<i>Camellia sasanqua 'Setsugekka'</i>	Setsugekka Camellia	5 gal.	No	Accent Shrub
→	61	<i>Erica vagans 'Mrs D.F. Maxwell'</i>	Mrs D.F. Maxwell Cornish Heath	1 gal.	No	Ground Cover / Low Shrub
→	14	<i>Hebe pinguifolia 'Sutherlandii'</i>	Sutherland's Hebe	2 gal.	No	Foundation Shrub
→	32	<i>Ilex crenata 'Helleri'</i>	Heller's Japanese Holly	2 gal.	No	Foundation Shrub
→	1	<i>Juniperus scopulorum 'Skyrocket'</i>	Skyrocket Juniper	10 gal.	No	Accent Shrub
→	19	<i>Mahonia aquifolium</i>	Oregon Grape	5 gal.	Yes	Background/Screening Shrub
→	103	<i>Mahonia repens</i>	Creeping Mahonia	1 gal.	Yes	Ground Cover / Low Shrub
→	41	<i>Myrica californica</i>	Pacific Wax Myrtle	5 gal.	Yes	Tall Background/Screening Shrub
→	12	<i>Ribes sanguineum</i>	Pink Winter Currant	5 gal.	Yes	Flowering Background Shrub
→	35	<i>Rosa woodii</i>	Wood's Rose	2 gal.	Yes	Ground Cover / Low Shrub
→	56	<i>Rosmarinus officinalis 'Ingramii'</i>	Dwarf Rosemary	1 gal.	No	Ground Cover / Low Shrub
→	22	<i>Trachelospermum jasminoides</i>	Star Jasmine	1 gal.	No	Vine- train onto wire screens
→	21	<i>Vaccinium ovatum</i>	Evergreen Huckleberry	2 gal.	Yes	Background/Screening Shrub
<b>GRASSES / PERENNIALS</b>						
→	14	<i>Bergenia crassifolia</i>	Winter-blooming Bergenia	1 gal.	No	
→	58	<i>Bouteloua gracilis 'Blonde Ambition'</i>	Blue Grama Grass	1 gal.	No	
→	48	<i>Hakonechloa macra 'Aureola'</i>	Japanese Forest Grass	1 gal.	No	
<b>GROUND COVER</b>						
→		<i>Arctostaphylos uva-ursi 'Massachusetts'</i>	Kinnikinnick	3-1/2" pots @ 24" o.c.	Yes	Plant on all slopes and open areas- Triangular Spacing

**PARKING LOT LANDSCAPING**  
 Parking Lot Area: 10,017 s.f.  
 10% interior landscape area required: 1002 s.f.  
 Interior landscape area provided: 1321 s.f. (13%)



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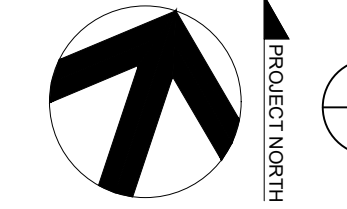
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 phone: 503.399.1050

**EMMETT PHAIR**  
 CONSTRUCTION  
 6305 SW ROSEWOOD ST., SUITE E,  
 LAKE OSWEGO, OR 97035  
 phone: 503-572-8606

NEW BUILDING  
FOR ADVANCE DENTAL  
ARTS CENTER  
1575 BURNS ST., WEST LINN, OR 97068

LANDSCAPE  
PLAN  
L1.1

DATE  
2/14/2020  
 REVISED DATE  
 SHEET  
L1.1  
 DESIGN REVIEW SET

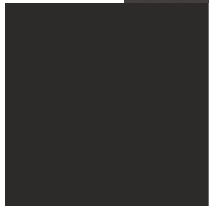


1 LANDSCAPE PLAN  
SCALE: 1" = 10'





# MATERIAL AND COLOR BOARD

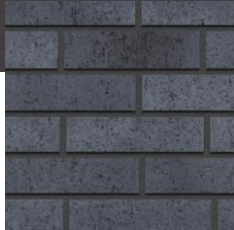


**Metal Siding**

MFR: Morin

Color: Bristol Black

Trim/Fascia to match

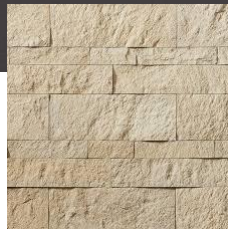


**Brick**

MFR: Pacific Clay

Color: Dark Iron Spot

Texture: Modular Smooth



**Stone**

MFR: Boral

Series: Talus

Color: Hewn Stone



**Siding**

MFR: James Hardie

Color: Dovetail - SW 7108



**Wood Lap**

MFR: Woodtone on Allura

Style: Rustic Series

Colors: Aspen Ridge/Maple/Old Cherry

New Building for Advance Dental Arts Center - 1575 Burns Street

EXTERIOR LIGHTING  
CUTSHEETS

New Building for Advance Dental Arts  
Center

1575 Burns St. West Linn, OR 97068



# JUNO SLIMFORM™ LED SURFACE MOUNT DOWNLIGHTS

FOR J-BOX INSTALLATION  
5", 7", 11", 13" ROUND

## JSF SERIES

Project: \_\_\_\_\_

Fixture Type: \_\_\_\_\_

Location: \_\_\_\_\_

Contact/Phone: \_\_\_\_\_



### PRODUCT DESCRIPTION

Sleek, ultra-low profile energy efficient LED surface mount downlights in multiple sizes from 5" to 13" • Provides economical installation by mounting directly over standard and fire-rated junction boxes • Optional finish trims and shrouds available for custom, designer look similar to standard recessed downlights • Provides general illumination in residential and commercial applications including multi-family and hospitality • Ideal for use in corridors, living spaces, closets, hallways, pantries, stairways, outdoor covered areas and much more.

### PRODUCT SPECIFICATIONS

**Construction** Shallow, less than 1", solid ring with white finish

• Non conductive fixture for shower light applications • Optional, field installable finish trims available for 5" and 7" versions to change the exterior finish of fixture • Optional, field installable decorative baffle and cone shrouds for 5" and 7" versions provide the aesthetic and source shielding similar to the experience of a fully recessed downlight.

**Optics** Light guide technology combined with diffusing lens conceals the LEDs from direct view and provides uniform lens luminance.

**LED Light Engine** LEDs mounted directly to heatsink designed to provide superior thermal management and ensure long life • 2700K, 3000K, 3500K or 4000K LED color temperature • LEDs binned for 4-step MacAdam ellipse color consistency • 90 CRI minimum.

**LED Driver** Choice of dedicated 120 volt (120) driver or universal voltage (MVOLT) driver that accommodates input voltages from 120-277 volts AC at 50/60Hz • Power factor > 0.9 at 120V input • 120 volt driver is dimmable with the use of most incandescent, magnetic low voltage and electronic low voltage wall box dimmers • Universal voltage driver is dimmable with the use of most 0-10V wall box dimmers • External driver is only available on 5" and 7" models • For a list of compatible dimmers, see [JUNOSLIMFORM-DIM](#).

**Emergency Battery Option** Available on fixture sizes 11" and larger • Battery factory assembled to fixture with integral test switch (EL option) • Drives LEDs for 90 minutes to meet Life Safety Code (NFPA-LSC), National Electrical Code (NEC), and UL requirements • Emergency battery not available in California due to Title 20 restrictions • EBX option provides back box without battery for consistent look when used in same space as fixtures with EL emergency option.

**Life** Rated for 50,000 hours at >70% lumen maintenance.

**Labels** ENERGY STAR® certified • Certified to the high efficacy requirements of California T24 JA8-2016 • CSA listed for US and Canada • Suitable for wet locations (covered ceilings).

**Testing** All reports are based on published industry procedures; actual performance may differ as a result of the end-user environment and applications. All values are design or typical values, measured under laboratory conditions at 25 °C.

**Warranty** 5-year limited warranty. Complete warranty terms located at [www.acuitybrands.com/CustomResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomResources/Terms_and_conditions.aspx)

Specifications subject to change without notice.

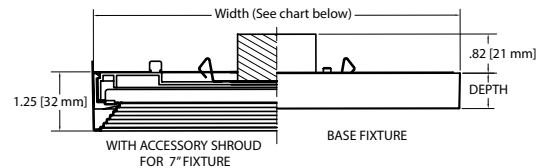
### INSTALLATION

**Junction Box Mounting** Fixture provided with leads for direct wire connection in j-box • Installs directly to industry standard junction boxes • Compatible boxes include 4" metal or plastic octagonal standard and fire-rated junction boxes (3 1/2" junction box screw-hole spacing required for installation) • Minimum 2 1/8" deep junction box required for 5" and 7" fixtures (no depth requirement for 11" and larger fixtures) • Quick mount bracket provides fast installation of fully assembled fixture to junction box • Suitable for ceiling mount • Suitable for use within closet storage spaces when installed per NEC requirements.

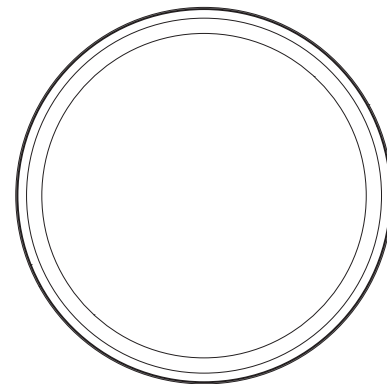
*Junction box sizes vary - Verify compatibility with fixture prior to installation*



### DIMENSIONS



External driver available on 5" and 7" models only.

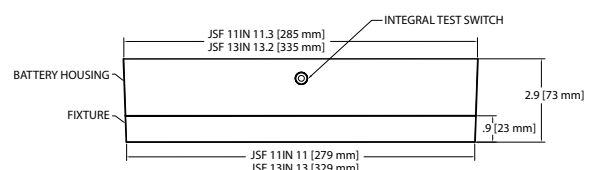


### ROUND SPECIFICATIONS

	Width	Depth
JSF 5IN	5.25 (13.34)	0.75 (1.91)
JSF 7IN	7.77 (19.74)	0.75 (1.91)
JSF 11IN	11.08 (28.14)	0.9 (2.29)
JSF 13IN	13.05 (33.15)	0.9 (2.29)

All dimensions are in inches (centimeters) unless otherwise indicated.

### EMERGENCY BATTERY FOR 11" AND 13"



# JUNO SLIMFORM™ LED SURFACE MOUNT DOWNLIGHTS

FOR J-BOX INSTALLATION  
5", 7", 11", 13" ROUND  
**JSF SERIES**

## PERFORMANCE DATA

	JSF 5IN		JSF 7IN		JSF 11IN		JSF 13IN	
	120V	MVOLT	120V	MVOLT	120V	MVOLT	120V	MVOLT
Lumens	700	700	1000	1000	1300	1300	1800	1800
CRI	90CRI		90CRI		90CRI		90CRI	
CCT	27K, 30K, 35K, 40K		27K, 30K, 35K, 40K		27K, 30K, 35K, 40K		27K, 30K, 35K, 40K	
Voltage	120V	120V-277V	120V	120V-277V	120V	120V-277V	120V	120V-277V
Input Power	10W	10W	13W	13W	15W	15W	20W	20W
Input Current	110MA	50MA	150MA	60MA	180MA	80MA	240MA	110MA
Frequency	50/60Hz		50/60Hz		50/60Hz		50/60Hz	
Power Factor	>0.9		>0.9		>0.9		>0.9	

## ORDERING INFORMATION

Example: JSF 5IN 07LM 27K 90CRI 120 FRPC WH

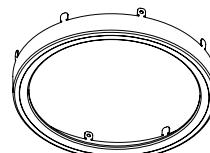
Series	Size/Lumens	Color Temperature	CRI	Voltage/Driver	Finish	Emergency Battery <sup>1,2,3</sup>
JSF SlimForm Surface Mount Downlight - Round	5IN 07LM 5", 700 Lumens	27K 2700K	90CRI 90+ CRI	120 FRPC Dedicated 120V, Forward Reverse Phase Dimmign MVOLT ZT Universal Voltage 120V-277V, 0-10V Dimming	WH White	EL <sup>3</sup> Battery Back-up Option EBX Empty Back Box for Aesthetics
	7IN 10LM 7", 1000 Lumens	30K 3000K				
	11IN 13LM 11", 1300 Lumens	35K 3500K				
	13IN 18LM 13", 1800 Lumens	40K 4000K				

## ACCESSORIES

**TRIM** – Optional, field installable finish trim rings available to change the exterior finish of fixture.

Example: JSFTRIM 5IN BL

Series	Size	Finish
JSFTRIM SlimForm Accessory- Trim	5IN 5 inches	BL Black
	7IN 7 inches	BZ Bronze
		SN Satin Nickel

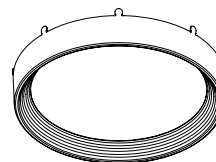


**TRIM**

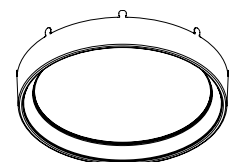
**SHROUD** – Optional, field installable decorative baffle and cone shrouds provides the aesthetic and source shielding similar to the experience of a fully recessed downlight.

Example: JSFSHROUD 5IN DB WWH

Series	Size	Shroud Style	Finish
JSFSHROUD SlimForm Accessory Shroud - Round	5IN 5 inches	DB Downlight Baffle	WWH White trim, white shroud
	7IN 7 inches	DC Downlight Cone	BWH <sup>4</sup> Black trim, white shroud
			HZWH Haze trim, white shroud
			WHZWH Wheat Haze trim, white shroud



**BAFFLE SHROUD**



**CONE SHROUD**

Note:

- 1 Emergency battery available with 11IN and 13IN only.
- 2 Emergency battery is only available with MVOLT ZT.
- 3 Emergency battery option not available in California due to Title 20 restrictions.
- 4 BWH only available with downlight baffle.

# JUNO SLIMFORM™ LED SURFACE MOUNT DOWNLIGHTS

FOR J-BOX INSTALLATION

5", 7", 11", 13" ROUND

## JSF SERIES

### PHOTOMETRICS

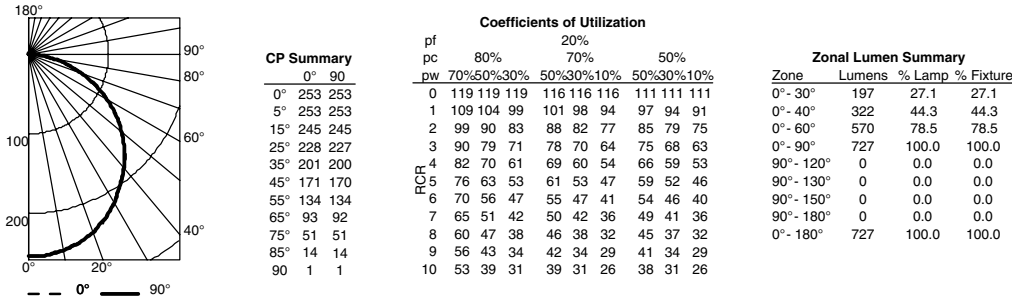
**Distribution Curve**

**Distribution Data**

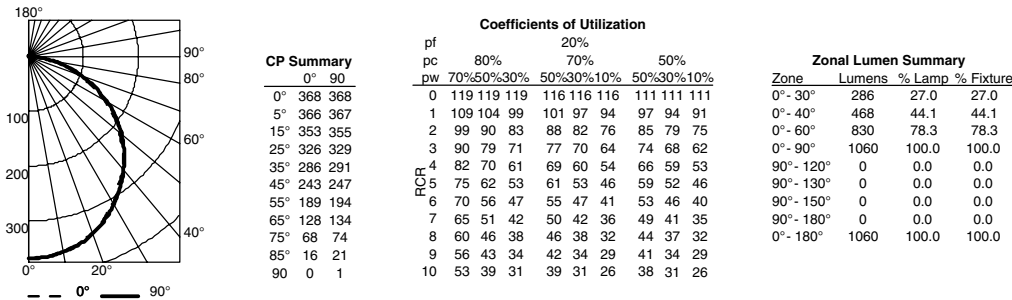
**Coefficient of Utilization**

**Illuminance Data at 30" Above Floor for a Single Luminaire**

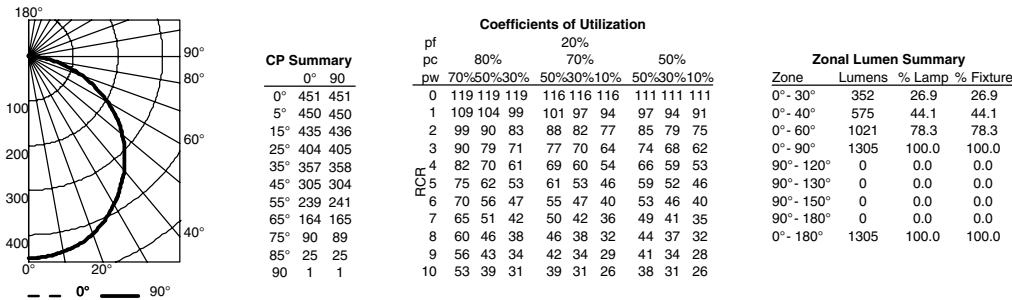
**JSF 5IN 27K**, 2700K LEDs, input watts: 9.72, delivered lumens: 727, LM/W = 74.8, test no. ISF 33599, tested in accordance to IESNA LM-79.



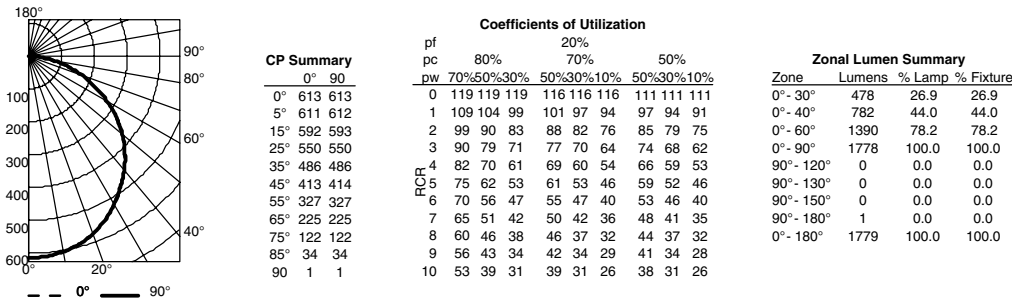
**JSF 7IN 27K**, 2700K LEDs, input watts: 12.8, delivered lumens: 1060, LM/W = 82.8, test no. ISF 33600, tested in accordance to IESNA LM-79.



**JSF 11IN 27K**, 2700K LEDs, input watts: 15.2, delivered lumens: 1305, LM/W = 85.9, test no. ISF 33661, tested in accordance to IESNA LM-79.



**JSF 13IN 27K**, 2700K LEDs, input watts: 20.2, delivered lumens: 1779, LM/W = 88, test no. ISF 33663, tested in accordance to IESNA LM-79.



For 30K fixtures, use 1.02 multiplier; For 35K fixtures, use 1.03 multiplier, For 40K fixtures, use 1.07 multiplier.



# D-Series Size 0 LED Area Luminaire



Catalog Number
Notes
Type

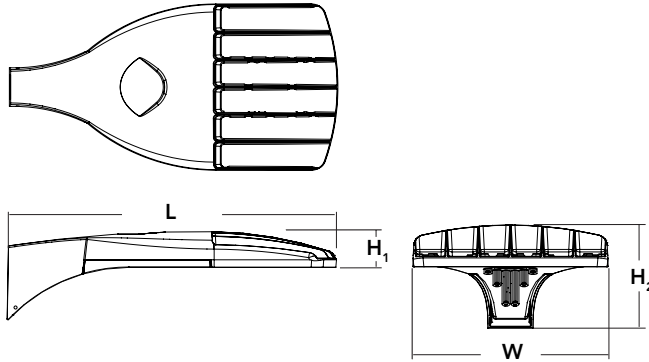
Hit the Tab key or mouse over the page to see all interactive elements.

## Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 70% and expected service life of over 100,000 hours.

## Specifications

EPA:	0.95 ft <sup>2</sup> (.09 m <sup>2</sup> )
Length:	26" (66.0 cm)
Width:	13" (33.0 cm)
Height <sub>1</sub> :	3" (7.62 cm)
Height <sub>2</sub> :	7" (17.8 cm)
Weight (max):	16 lbs (7.25 kg)



A+ Capable options indicated by this color background.

## Ordering Information

**EXAMPLE:** DSX0 LED P6 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED	LEDs	Color temperature	Distribution	Voltage	Mounting	
DSX0 LED	<b>Forward optics</b>	30K 3000 K	T1S Type I short (Automotive)	T5S Type V short <sup>2</sup>	MVOLT <sup>4,5</sup>	<b>Shipped included</b> SPA Square pole mounting RPA Round pole mounting WBA Wall bracket <sup>2</sup> SPUMBA Square pole universal mounting adaptor <sup>7</sup> RPUMBA Round pole universal mounting adaptor <sup>7</sup> <b>Shipped separately</b> KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) <sup>8</sup>
	P1 P4 P7	40K 4000 K	T2S Type II short	T5M Type V medium <sup>2</sup>	120 <sup>5</sup>	
	P2 P5	50K 5000 K	T2M Type II medium	T5W Type V wide <sup>2</sup>	208 <sup>5</sup>	
	P3 P6		T3S Type III short	BLC Backlight control <sup>3</sup>	240 <sup>5</sup>	
	<b>Rotated optics</b>		T3M Type III medium	LCCO Left corner cutoff <sup>3</sup>	277 <sup>5</sup>	
	P10 <sup>1</sup> P12 <sup>1</sup>		T4M Type IV medium	RCCO Right corner cutoff <sup>3</sup>	347 <sup>5,6</sup>	
	P11 <sup>1</sup> P13 <sup>1</sup>		TFTM Forward throw medium		480 <sup>5,6</sup>	
			T5VS Type V very short <sup>2</sup>			

Control options	Other options	Finish (required)
<b>Shipped installed</b> NLTAIR2 nLight AIR generation 2 enabled <sup>9,10</sup> PIRHN Network, high/low motion/ambient sensor <sup>11</sup> PER NEMA twist-lock receptacle only (control ordered separate) <sup>12</sup> PER5 Five-pin receptacle only (control ordered separate) <sup>12,13</sup> PER7 Seven-pin receptacle only (leads exit fixture) (control ordered separate) <sup>12,13</sup> DMG 0-10V dimming extend out back of housing for external control (control ordered separate) <sup>14</sup>	PIR High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc <sup>15,16</sup> PIRH High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc <sup>15,16</sup> PIR1FC3V High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc <sup>15,16</sup> PIRH1FC3V High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc <sup>15,16</sup> FAO Field adjustable output <sup>17</sup>	<b>Shipped installed</b> HS House-side shield <sup>18</sup> SF Single fuse (120, 277, 347V) <sup>5</sup> DF Double fuse (208, 240, 480V) <sup>5</sup> L90 Left rotated optics <sup>1</sup> R90 Right rotated optics <sup>1</sup> DDL Diffused drop lens <sup>18</sup> <b>Shipped separately</b> BS Bird spikes <sup>19</sup> EGS External glare shield
		DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white



## Ordering Information

### Accessories

Ordered and shipped separately.

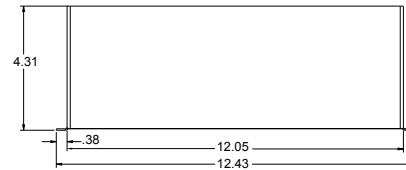
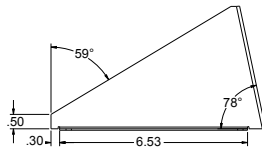
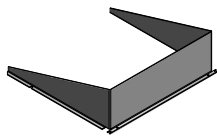
DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) <sup>20</sup>
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) <sup>20</sup>
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) <sup>20</sup>
DSHORT SBK U	Shorting cap <sup>23</sup>
DSX0HS 20C U	House-side shield for P1,P2,P3 and P4 <sup>18</sup>
DSX0HS 30C U	House-side shield for P10,P11,P12 and P13 <sup>18</sup>
DSX0HS 40C U	House-side shield for P5,P6 and P7 <sup>18</sup>
DSX0DDL U	Diffused drop lens (polycarbonate) <sup>18</sup>
PUMBA DDBXD U*	Square and round pole universal mounting bracket adaptor (specify finish) <sup>21</sup>
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) <sup>17</sup>
DSX0EGS (FINISH) U	External glare shield

For more control options, visit [DTL](#) and [ROAM](#) online. Link to [nLight Air 2](#)

### NOTES

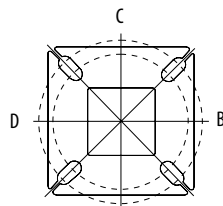
- P10, P11, P12 and P13 and rotated options (L90 or R90) only available together.
- Any Type 5 distribution with photocell, is not available with WBA.
- Not available with HS or DDL.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- Not available with BL30, BL50 or PNMT options.
- Universal mounting brackets intended for retrofit on existing pre-drilled poles only. 1.5 G vibration load rating per ANCI C136.31.
- Must order fixture with SPA mounting. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" mast arm (not included).
- Must be ordered with PIRHN.
- Sensor cover available only in dark bronze, black, white and natural aluminum colors.
- Must be ordered with NLTAIR2. For more information on nLight Air 2 visit [this link](#).
- Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
- If ROAM<sup>®</sup> node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Shorting Cap included.
- DMG not available with PIRHN, PER5, PER7, PIR, PIRH, PIR1FC3V or PIR1FC3V.
- Reference Motion Sensor table on page 3.
- Reference PER Table on page 3 to see functionality.
- Not available with other dimming controls options.
- Not available with BLC, LCCO and RCCO distribution.
- Must be ordered with fixture for factory pre-drilling.
- Requires luminaire to be specified with PER, PER5 or PER7 option. See PER Table on page 3.
- For retrofit use only.

## EGS – External Glare Shield

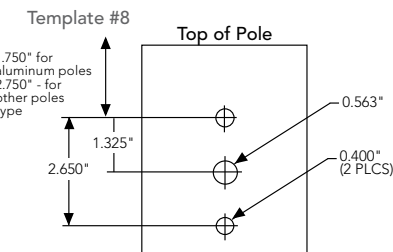


## Drilling

### HANDHOLE ORIENTATION (from top of pole)



A  
Handhole



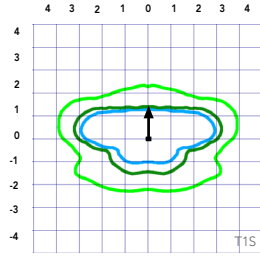
### Tenon Mounting Slipfitter

Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2-3/8"	AST20-190	AST20-280	AST20-290	AST20-320	AST20-390	AST20-490
2-7/8"	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4"	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

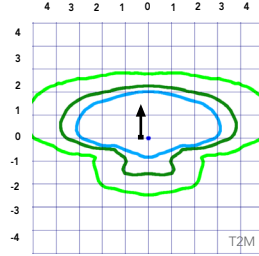
Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
<b>Minimum Acceptable Outside Pole Dimension</b>							
SPA	#8	2-7/8"	2-7/8"	3.5"	3.5"		3.5"
RPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
SPUMBA	#5	2-7/8"	3"	4"	4"		4"
RPUMBA	#5	2-7/8"	3.5"	5"	5"	3.5"	5"

Isofootcandle plots for the DSX0 LED 40C 1000 40K. Distances are in units of mounting height (20').

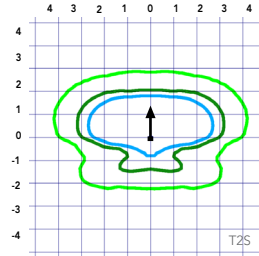
**LEGEND**



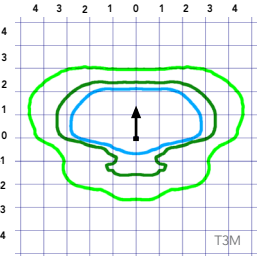
Test No.



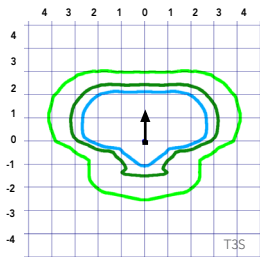
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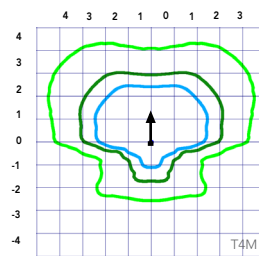
Test No. LTL23457P25 tested in accordance with IESNA LM-79-08.



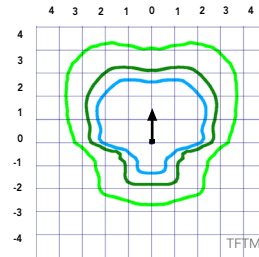
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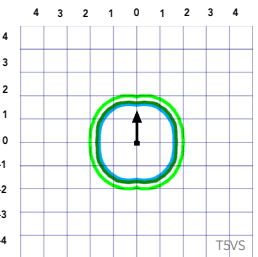
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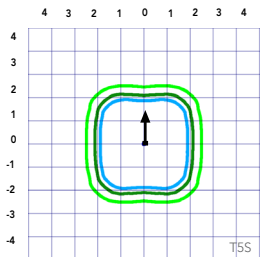
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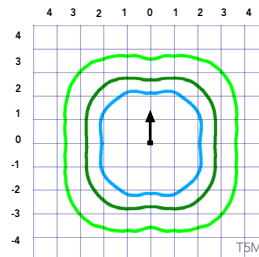
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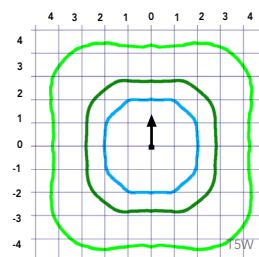
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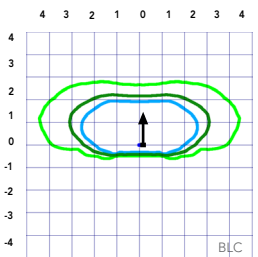
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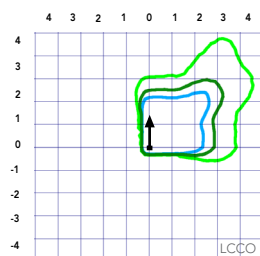
Test No.



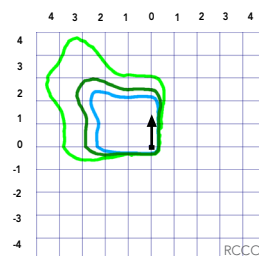
Test No. LTL23451P25 tested in accordance with IESNA LM-79-08.



Test No.



Test No.



Test No.



## Performance Data

### Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
<b>25°C</b>	<b>77°C</b>	<b>1.00</b>
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

### Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
25,000	0.96
50,000	0.92
100,000	0.85

Motion Sensor Default Settings						
Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min

\*for use with separate Dusk to Dawn or timer.

### Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current	Wattage	120	208	240	277	347	480
Forward Optics (Non-Rotated)	P1	20	530	38	0.32	0.18	0.15	0.15	0.10	0.08
	P2	20	700	49	0.41	0.23	0.20	0.19	0.14	0.11
	P3	20	1050	71	0.60	0.37	0.32	0.27	0.21	0.15
	P4	20	1400	92	0.77	0.45	0.39	0.35	0.28	0.20
	P5	40	700	89	0.74	0.43	0.38	0.34	0.26	0.20
	P6	40	1050	134	1.13	0.65	0.55	0.48	0.39	0.29
	P7	40	1300	166	1.38	0.80	0.69	0.60	0.50	0.37
Rotated Optics (Requires L90 or R90)	P10	30	530	53	0.45	0.26	0.23	0.21	0.16	0.12
	P11	30	700	72	0.60	0.35	0.30	0.27	0.20	0.16
	P12	30	1050	104	0.88	0.50	0.44	0.39	0.31	0.23
	P13	30	1300	128	1.08	0.62	0.54	0.48	0.37	0.27

### Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PERS or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire
PIR or PIRH	Motion sensors with integral photocell. PIR for 8-15' mounting; PIRH for 15-30' mounting	Luminaires dim when no occupancy is detected.	Acuity Controls SBGR	Also available with PIRH1FC3V when the sensor photocell is used for dusk-to-dawn operation.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclipse.	nLight Air rSDGR	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app.

## Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics																			
Power Package	LED Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	20	530	38W	T1S	4,369	1	0	1	115	4,706	1	0	1	124	4,766	1	0	1	125
				T2S	4,364	1	0	1	115	4,701	1	0	1	124	4,761	1	0	1	125
				T2M	4,387	1	0	1	115	4,726	1	0	1	124	4,785	1	0	1	126
				T3S	4,248	1	0	1	112	4,577	1	0	1	120	4,634	1	0	1	122
				T3M	4,376	1	0	1	115	4,714	1	0	1	124	4,774	1	0	1	126
				T4M	4,281	1	0	1	113	4,612	1	0	2	121	4,670	1	0	2	123
				TFTM	4,373	1	0	1	115	4,711	1	0	2	124	4,771	1	0	2	126
				TSVS	4,548	2	0	0	120	4,900	2	0	0	129	4,962	2	0	0	131
				TSS	4,552	2	0	0	120	4,904	2	0	0	129	4,966	2	0	0	131
				TSM	4,541	3	0	1	120	4,891	3	0	1	129	4,953	3	0	1	130
				TSW	4,576	3	0	2	120	4,929	3	0	2	130	4,992	3	0	2	131
				BLC	3,586	1	0	1	94	3,863	1	0	1	102	3,912	1	0	1	103
				LCCO	2,668	1	0	1	70	2,874	1	0	2	76	2,911	1	0	2	77
				RCCO	2,668	1	0	1	70	2,874	1	0	2	76	2,911	1	0	2	77
				P2	20	700	49W	T1S	5,570	1	0	1	114	6,001	1	0	1	122	6,077
T2S	5,564	1	0					2	114	5,994	1	0	2	122	6,070	2	0	2	124
T2M	5,593	1	0					1	114	6,025	1	0	1	123	6,102	1	0	1	125
T3S	5,417	1	0					2	111	5,835	1	0	2	119	5,909	2	0	2	121
T3M	5,580	1	0					2	114	6,011	1	0	2	123	6,087	1	0	2	124
T4M	5,458	1	0					2	111	5,880	1	0	2	120	5,955	1	0	2	122
TFTM	5,576	1	0					2	114	6,007	1	0	2	123	6,083	1	0	2	124
TSVS	5,799	2	0					0	118	6,247	2	0	0	127	6,327	2	0	0	129
TSS	5,804	2	0					0	118	6,252	2	0	0	128	6,332	2	0	1	129
TSM	5,789	3	0					1	118	6,237	3	0	1	127	6,316	3	0	1	129
TSW	5,834	3	0					2	119	6,285	3	0	2	128	6,364	3	0	2	130
BLC	4,572	1	0					1	93	4,925	1	0	1	101	4,987	1	0	1	102
LCCO	3,402	1	0					2	69	3,665	1	0	2	75	3,711	1	0	2	76
RCCO	3,402	1	0					2	69	3,665	1	0	2	75	3,711	1	0	2	76
P3	20	1050	71W					T1S	7,833	2	0	2	110	8,438	2	0	2	119	8,545
				T2S	7,825	2	0	2	110	8,429	2	0	2	119	8,536	2	0	2	120
				T2M	7,865	2	0	2	111	8,473	2	0	2	119	8,580	2	0	2	121
				T3S	7,617	2	0	2	107	8,205	2	0	2	116	8,309	2	0	2	117
				T3M	7,846	2	0	2	111	8,452	2	0	2	119	8,559	2	0	2	121
				T4M	7,675	2	0	2	108	8,269	2	0	2	116	8,373	2	0	2	118
				TFTM	7,841	2	0	2	110	8,447	2	0	2	119	8,554	2	0	2	120
				TSVS	8,155	3	0	0	115	8,785	3	0	0	124	8,896	3	0	0	125
				TSS	8,162	3	0	1	115	8,792	3	0	1	124	8,904	3	0	1	125
				TSM	8,141	3	0	2	115	8,770	3	0	2	124	8,881	3	0	2	125
				TSW	8,204	3	0	2	116	8,838	4	0	2	124	8,950	4	0	2	126
				BLC	6,429	1	0	2	91	6,926	1	0	2	98	7,013	1	0	2	99
				LCCO	4,784	1	0	2	67	5,153	1	0	2	73	5,218	1	0	2	73
				RCCO	4,784	1	0	2	67	5,153	1	0	2	73	5,218	1	0	2	73
				P4	20	1400	92W	T1S	9,791	2	0	2	106	10,547	2	0	2	115	10,681
T2S	9,780	2	0					2	106	10,536	2	0	2	115	10,669	2	0	2	116
T2M	9,831	2	0					2	107	10,590	2	0	2	115	10,724	2	0	2	117
T3S	9,521	2	0					2	103	10,256	2	0	2	111	10,386	2	0	2	113
T3M	9,807	2	0					2	107	10,565	2	0	2	115	10,698	2	0	2	116
T4M	9,594	2	0					2	104	10,335	2	0	3	112	10,466	2	0	3	114
TFTM	9,801	2	0					2	107	10,558	2	0	2	115	10,692	2	0	2	116
TSVS	10,193	3	0					1	111	10,981	3	0	1	119	11,120	3	0	1	121
TSS	10,201	3	0					1	111	10,990	3	0	1	119	11,129	3	0	1	121
TSM	10,176	4	0					2	111	10,962	4	0	2	119	11,101	4	0	2	121
TSW	10,254	4	0					3	111	11,047	4	0	3	120	11,186	4	0	3	122
BLC	8,036	1	0					2	87	8,656	1	0	2	94	8,766	1	0	2	95
LCCO	5,979	1	0					2	65	6,441	1	0	2	70	6,523	1	0	3	71
	5,979	1	0					2	65	6,441	1	0	2	70	6,523	1	0	3	71

# Performance Data

## Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics																			
Power Package	LED Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P5	40	700	89W	T1S	10,831	2	0	2	122	11,668	2	0	2	131	11,816	2	0	2	133
				T2S	10,820	2	0	2	122	11,656	2	0	2	131	11,803	2	0	2	133
				T2M	10,876	2	0	2	122	11,716	2	0	2	132	11,864	2	0	2	133
				T3S	10,532	2	0	2	118	11,346	2	0	2	127	11,490	2	0	2	129
				T3M	10,849	2	0	2	122	11,687	2	0	2	131	11,835	2	0	2	133
				T4M	10,613	2	0	3	119	11,434	2	0	3	128	11,578	2	0	3	130
				TFTM	10,842	2	0	2	122	11,680	2	0	2	131	11,828	2	0	2	133
				TSVS	11,276	3	0	1	127	12,148	3	0	1	136	12,302	3	0	1	138
				T5S	11,286	3	0	1	127	12,158	3	0	1	137	12,312	3	0	1	138
				T5M	11,257	4	0	2	126	12,127	4	0	2	136	12,280	4	0	2	138
				T5W	11,344	4	0	3	127	12,221	4	0	3	137	12,375	4	0	3	139
				BLC	8,890	1	0	2	100	9,576	1	0	2	108	9,698	1	0	2	109
				LCCO	6,615	1	0	3	74	7,126	1	0	3	80	7,216	1	0	3	81
				RCCO	6,615	1	0	3	74	7,126	1	0	3	80	7,216	1	0	3	81
P6	40	1050	134W	T1S	14,805	3	0	3	110	15,949	3	0	3	119	16,151	3	0	3	121
				T2S	14,789	3	0	3	110	15,932	3	0	3	119	16,134	3	0	3	120
				T2M	14,865	3	0	3	111	16,014	3	0	3	120	16,217	3	0	3	121
				T3S	14,396	3	0	3	107	15,509	3	0	3	116	15,705	3	0	3	117
				T3M	14,829	2	0	3	111	15,975	3	0	3	119	16,177	3	0	3	121
				T4M	14,507	2	0	3	108	15,628	3	0	3	117	15,826	3	0	3	118
				TFTM	14,820	2	0	3	111	15,965	3	0	3	119	16,167	3	0	3	121
				TSVS	15,413	4	0	1	115	16,604	4	0	1	124	16,815	4	0	1	125
				T5S	15,426	3	0	1	115	16,618	4	0	1	124	16,828	4	0	1	126
				T5M	15,387	4	0	2	115	16,576	4	0	2	124	16,786	4	0	2	125
				T5W	15,506	4	0	3	116	16,704	4	0	3	125	16,915	4	0	3	126
				BLC	12,151	1	0	2	91	13,090	1	0	2	98	13,255	1	0	2	99
				LCCO	9,041	1	0	3	67	9,740	1	0	3	73	9,863	1	0	3	74
				RCCO	9,041	1	0	3	67	9,740	1	0	3	73	9,863	1	0	3	74
P7	40	1300	166W	T1S	17,023	3	0	3	103	18,338	3	0	3	110	18,570	3	0	3	112
				T2S	17,005	3	0	3	102	18,319	3	0	3	110	18,551	3	0	3	112
				T2M	17,092	3	0	3	103	18,413	3	0	3	111	18,646	3	0	3	112
				T3S	16,553	3	0	3	100	17,832	3	0	3	107	18,058	3	0	3	109
				T3M	17,051	3	0	3	103	18,369	3	0	3	111	18,601	3	0	3	112
				T4M	16,681	3	0	3	100	17,969	3	0	3	108	18,197	3	0	3	110
				TFTM	17,040	3	0	3	103	18,357	3	0	4	111	18,590	3	0	4	112
				TSVS	17,723	4	0	1	107	19,092	4	0	1	115	19,334	4	0	1	116
				T5S	17,737	4	0	2	107	19,108	4	0	2	115	19,349	4	0	2	117
				T5M	17,692	4	0	2	107	19,059	4	0	2	115	19,301	4	0	2	116
				T5W	17,829	5	0	3	107	19,207	5	0	3	116	19,450	5	0	3	117
				BLC	13,971	2	0	2	84	15,051	2	0	2	91	15,241	2	0	2	92
				LCCO	10,396	1	0	3	63	11,199	1	0	3	67	11,341	1	0	3	68
					10,396	1	0	3	63	11,199	1	0	3	67	11,341	1	0	3	68



## Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Rotated Optics																							
Power Package	LED Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)								
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW				
P10	30	530	53W	T1S	6,727	2	0	2	127	7,247	3	0	3	137	7,339	3	0	3	138				
				T2S	6,689	3	0	3	126	7,205	3	0	3	136	7,297	3	0	3	138				
				T2M	6,809	3	0	3	128	7,336	3	0	3	138	7,428	3	0	3	140				
				T3S	6,585	3	0	3	124	7,094	3	0	3	134	7,183	3	0	3	136				
				T3M	6,805	3	0	3	128	7,331	3	0	3	138	7,424	3	0	3	140				
				T4M	6,677	3	0	3	126	7,193	3	0	3	136	7,284	3	0	3	137				
				TFTM	6,850	3	0	3	129	7,379	3	0	3	139	7,472	3	0	3	141				
				TSVS	6,898	3	0	0	130	7,431	3	0	0	140	7,525	3	0	0	142				
				T5S	6,840	2	0	1	129	7,368	2	0	1	139	7,461	2	0	1	141				
				T5M	6,838	3	0	1	129	7,366	3	0	2	139	7,460	3	0	2	141				
				TSW	6,777	3	0	2	128	7,300	3	0	2	138	7,393	3	0	2	139				
				BLC	5,626	2	0	2	106	6,060	2	0	2	114	6,137	2	0	2	116				
				LCCO	4,018	1	0	2	76	4,328	1	0	2	82	4,383	1	0	2	83				
				RCCO	4,013	3	0	3	76	4,323	3	0	3	82	4,377	3	0	3	83				
				P11	30	700	72W	T1S	8,594	3	0	3	119	9,258	3	0	3	129	9,376	3	0	3	130
T2S	8,545	3	0					3	119	9,205	3	0	3	128	9,322	3	0	3	129				
T2M	8,699	3	0					3	121	9,371	3	0	3	130	9,490	3	0	3	132				
T3S	8,412	3	0					3	117	9,062	3	0	3	126	9,177	3	0	3	127				
T3M	8,694	3	0					3	121	9,366	3	0	3	130	9,484	3	0	3	132				
T4M	8,530	3	0					3	118	9,189	3	0	3	128	9,305	3	0	3	129				
TFTM	8,750	3	0					3	122	9,427	3	0	3	131	9,546	3	0	3	133				
TSVS	8,812	3	0					0	122	9,493	3	0	0	132	9,613	3	0	0	134				
T5S	8,738	3	0					1	121	9,413	3	0	1	131	9,532	3	0	1	132				
T5M	8,736	3	0					2	121	9,411	3	0	2	131	9,530	3	0	2	132				
TSW	8,657	4	0					2	120	9,326	4	0	2	130	9,444	4	0	2	131				
BLC	7,187	3	0					3	100	7,742	3	0	3	108	7,840	3	0	3	109				
LCCO	5,133	1	0					2	71	5,529	1	0	2	77	5,599	1	0	2	78				
RCCO	5,126	3	0					3	71	5,522	3	0	3	77	5,592	3	0	3	78				
P12	30	1050	104W					T1S	12,149	3	0	3	117	13,088	3	0	3	126	13,253	3	0	3	127
				T2S	12,079	4	0	4	116	13,012	4	0	4	125	13,177	4	0	4	127				
				T2M	12,297	3	0	3	118	13,247	3	0	3	127	13,415	3	0	3	129				
				T3S	11,891	4	0	4	114	12,810	4	0	4	123	12,972	4	0	4	125				
				T3M	12,290	3	0	3	118	13,239	4	0	4	127	13,407	4	0	4	129				
				T4M	12,058	4	0	4	116	12,990	4	0	4	125	13,154	4	0	4	126				
				TFTM	12,369	4	0	4	119	13,325	4	0	4	128	13,494	4	0	4	130				
				TSVS	12,456	3	0	1	120	13,419	3	0	1	129	13,589	4	0	1	131				
				T5S	12,351	3	0	1	119	13,306	3	0	1	128	13,474	3	0	1	130				
				T5M	12,349	4	0	2	119	13,303	4	0	2	128	13,471	4	0	2	130				
				TSW	12,238	4	0	3	118	13,183	4	0	3	127	13,350	4	0	3	128				
				BLC	10,159	3	0	3	98	10,944	3	0	3	105	11,083	3	0	3	107				
				LCCO	7,256	1	0	3	70	7,816	1	0	3	75	7,915	1	0	3	76				
				RCCO	7,246	3	0	3	70	7,806	4	0	4	75	7,905	4	0	4	76				
				P13	30	1300	128W	T1S	14,438	3	0	3	113	15,554	3	0	3	122	15,751	3	0	3	123
T2S	14,355	4	0					4	112	15,465	4	0	4	121	15,660	4	0	4	122				
T2M	14,614	3	0					3	114	15,744	4	0	4	123	15,943	4	0	4	125				
T3S	14,132	4	0					4	110	15,224	4	0	4	119	15,417	4	0	4	120				
T3M	14,606	4	0					4	114	15,735	4	0	4	123	15,934	4	0	4	124				
T4M	14,330	4	0					4	112	15,438	4	0	4	121	15,633	4	0	4	122				
TFTM	14,701	4	0					4	115	15,836	4	0	4	124	16,037	4	0	4	125				
TSVS	14,804	4	0					1	116	15,948	4	0	1	125	16,150	4	0	1	126				
T5S	14,679	3	0					1	115	15,814	3	0	1	124	16,014	3	0	1	125				
T5M	14,676	4	0					2	115	15,810	4	0	2	124	16,010	4	0	2	125				
TSW	14,544	4	0					3	114	15,668	4	0	3	122	15,866	4	0	3	124				
BLC	7919	3	0					3	62	8531	3	0	3	67	8639	3	0	3	67				
LCCO	5145	1	0					2	40	5543	1	0	2	43	5613	1	0	2	44				
									5139	3	0	3	40	5536	3	0	3	43	5606	3	0	3	44

## Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is A+ Certified when ordered with DTL® controls marked by a shaded background. DTL DLL equipped luminaires meet the A+ specification for luminaire to photocontrol interoperability<sup>1</sup>
- This luminaire is part of an A+ Certified solution for ROAM® or XPoint™ Wireless control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a shaded background<sup>1</sup>

To learn more about A+, visit [www.acuitybrands.com/aplus](http://www.acuitybrands.com/aplus).

1. See ordering tree for details.
2. A+ Certified Solutions for ROAM require the order of one ROAM node per luminaire.  
Sold Separately: [Link to Roam](#); [Link to DTL DLL](#)

## FEATURES & SPECIFICATIONS

### INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

### CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (0.95 ft<sup>2</sup>) for optimized pole wind loading.

### FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

### OPTICS

Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

### ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L85/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

### STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. Integrated motion sensors with on-board photocells feature field-adjustable programming and are suitable for mounting heights up to 30 feet.

### nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaires can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclipse. Additional information about nLight Air can be found [here](#).

### INSTALLATION

Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 0 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 0 utilizes the AERIS™ series pole drilling pattern (template #8). Optional terminal block and NEMA photocell receptacle are also available.

### LISTINGS

UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C minimum ambient. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org/QPL](http://www.designlights.org/QPL) to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

### WARRANTY

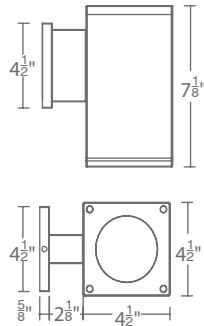
5-year limited warranty. Complete warranty terms located at: [www.acuitybrands.com/support/customer-support/terms-and-conditions](http://www.acuitybrands.com/support/customer-support/terms-and-conditions)

**Note:** Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.

## LED Wall Mounts



Fixture Type:

**SWD**

Catalog Number:

Project:

Location:

### PRODUCT DESCRIPTION

The latest energy efficient LED technology in an appealing cubical profile delivers accent and wall wash lighting. Comes in various light distribution and beam angle options.

### FEATURES

- High performance exterior rated LED wall mount light
- Fixture can install upside down to alter light distribution
- Solid aluminum construction
- 5 year warranty

### SPECIFICATIONS

- Input:** Universal voltage 120V - 277VAC, 50/60Hz
- Dimming:** Electronic low voltage (ELV) : 100% - 5%  
0-10V: 100% - 1%
- Light Source:** High output 3 Step Mac Adam Ellipse COB  
Rated life of 60,000 hours at L70
- Finish:** Electrostatically powder coated, white, black, bronze and graphite
- Standards:** IP65 rated, UL & cUL wet location listed, Energy Star® 2.2 rated Title 24 JA8-2016 Compliant
- Operating Temp:** -13°F to 122°F (-25°C to 50°C)

### ORDERING NUMBER

Diameter	Watt	Beam	Beam Angle	Color Temp	CRI	Reference Output <sup>1</sup> Lumen	CBCP	Efficacy (lm/w)	Light Distribution	Finish	
DC-WS05	5"	S Straight up or down	16°	927S	2700K	90	1825	10050	73		BK Black WT White BZ Bronze GH Graphite
				827S	2700K	85	2190	12057	88		
				930S	3000K	90	1895	10427	76		
				830S	3000K	85	2300	12644	92		
				835S	3500K	85	2350	12937	94		
		840S	4000K	85	2375	13062	95				
		N Straight up or down	25°	927S	2700K	90	1810	5280	72		
				827S	2700K	85	2170	6335	87		
				930S	3000K	90	1880	5478	75		
				830S	3000K	85	2275	6643	91		
835S	3500K			85	2330	6797	93				
840S	4000K	85	2350	6863	94						
DC-WS0517	5"	F Straight up or down	33°	927S	2700K	90	1900	4515	76		
				827S	2700K	85	2280	5417	91		
				930S	3000K	90	1970	4685	79		
				830S	3000K	85	2390	5681	96		
				835S	3500K	85	2445	5812	98		
		840S	4000K	85	2470	5870	99				
		F Away from the wall	N/A	927A	2700K	90	2000		80		
				827A	2700K	85	2400		96		
				930A	3000K	90	2075	N/A	83		
				830A	3000K	85	2520	N/A	101		
835A	3500K			85	2575		103				
840A	4000K	85	2600		104						
F Towards the wall	N/A	927B	2700K	90	2000		80				
		827B	2700K	85	2400		96				
		930B	3000K	90	2075	N/A	83				
		830B	3000K	85	2520	N/A	101				
		835B	3500K	85	2575		103				
840B	4000K	85	2600		104						

**DC-WS05-** \_\_\_\_\_ - \_\_\_\_\_ <sup>1</sup>Reference output shows 25W output. Multiply by 0.7 to determine output for 17W combinations.

Example: **DC-WS05-F930A-WT**

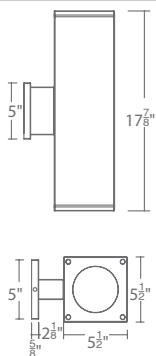
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## LED Wall Mounts



Fixture Type:

**SWDU**

Catalog Number:

Project:

Location:

### PRODUCT DESCRIPTION

The latest energy efficient LED technology in an appealing cubical profile delivers accent and wall wash lighting. Comes in various light distribution and beam angle options.

### FEATURES

- High performance exterior rated LED wall mount light
- Fixture can install upside down to alter light distribution
- Solid aluminum construction
- 5 year warranty

### SPECIFICATIONS

<b>Input:</b>	Universal voltage 120V - 277VAC, 50/60Hz
<b>Dimming:</b>	Electronic low voltage (ELV) : 100% - 5% 0-10V: 100% - 1%
<b>Light Source:</b>	High output 3 Step Mac Adam Ellipse COB Rated life of 60,000 hours at L70
<b>Finish:</b>	Electrostatically powder coated, white, black, bronze and graphite
<b>Standards:</b>	IP65 rated, UL & cUL wet location listed Title 24 JA8-2016 Compliant
<b>Operating Temp:</b>	-13°F to 122°F (-25°C to 50°C)

### ORDERING NUMBER

Diameter	Watt	Beam	Beam Angle	Color Temp	CRI	Reference Output <sup>1</sup>			Light Distribution	Finish	
						Lumen	CBCP	Efficacy (lm/w)			
<b>DC-WD06</b>	6" 35W x 2	<b>S</b> Straight up and down	16°	<b>927S</b>	2700K	90	2820 x 2	18842 x 2	81 x 2		<b>BK</b> Black <b>WT</b> White <b>BZ</b> Bronze <b>GH</b> Graphite
				<b>827S</b>	2700K	85	3385 x 2	22608 x 2	97 x 2		
				<b>930S</b>	3000K	90	2925 x 2	19543 x 2	84 x 2		
				<b>830S</b>	3000K	85	3535 x 2	23632 x 2	101 x 2		
				<b>835S</b>	3500K	85	3630 x 2	24255 x 2	104 x 2		
		<b>840S</b>	4000K	85	3665 x 2	24490 x 2	105 x 2				
		<b>N</b> Straight up and down	28°	<b>927S</b>	2700K	90	2800 x 2	7992 x 2	80 x 2		
				<b>827S</b>	2700K	85	3360 x 2	9589 x 2	96 x 2		
				<b>930S</b>	3000K	90	2900 x 2	8290 x 2	83 x 2		
				<b>830S</b>	3000K	85	3510 x 2	10024 x 2	100 x 2		
				<b>835S</b>	3500K	85	3600 x 2	10288 x 2	103 x 2		
		<b>840S</b>	4000K	85	3635 x 2	10388 x 2	104 x 2				
		<b>F</b> Straight up and down	38°	<b>927S</b>	2700K	90	2825 x 2	5451 x 2	81 x 2		
				<b>827S</b>	2700K	85	3390 x 2	6540 x 2	97 x 2		
				<b>930S</b>	3000K	90	2930 x 2	5654 x 2	84 x 2		
<b>830S</b>	3000K			85	3545 x 2	6836 x 2	101 x 2				
<b>835S</b>	3500K			85	3640 x 2	7017 x 2	104 x 2				
<b>840S</b>	4000K	85	3675 x 2	7085 x 2	105 x 2						
<b>DC-WD0644</b>	6" 22W x 2	<b>F</b> Away from the wall	N/A	<b>927A</b>	2700K	90	2860 x 2		82 x 2		
				<b>827A</b>	2700K	85	3435 x 2	N/A	98 x 2		
				<b>930A</b>	3000K	90	2970 x 2		85 x 2		
				<b>830A</b>	3000K	85	3590 x 2		103 x 2		
				<b>835A</b>	3500K	85	3685 x 2		105 x 2		
				<b>840A</b>	4000K	85	3720 x 2		106 x 2		
<b>F</b> Towards the wall	N/A	<b>927B</b>	2700K	90	2860 x 2		82 x 2				
		<b>827B</b>	2700K	85	3435 x 2	N/A	98 x 2				
		<b>930B</b>	3000K	90	2970 x 2		85 x 2				
		<b>830B</b>	3000K	85	3590 x 2		103 x 2				
		<b>835B</b>	3500K	85	3685 x 2		105 x 2				
		<b>840B</b>	4000K	85	3720 x 2		106 x 2				
<b>F</b> One side each	N/A	<b>927C</b>	2700K	90	2860 x 2		82 x 2				
		<b>827C</b>	2700K	85	3435 x 2		98 x 2				
		<b>930C</b>	3000K	90	2970 x 2	N/A	85 x 2				
		<b>830C</b>	3000K	85	3590 x 2		103 x 2				
		<b>835C</b>	3500K	85	3685 x 2		105 x 2				
		<b>840C</b>	4000K	85	3720 x 2		106 x 2				

**DC-WD06-** \_\_\_\_\_ - \_\_\_\_\_ Example: **DC-WD06-F930A-WT** <sup>1</sup>Reference output shows 35W output. Multiply by 0.7 to determine output for 22W combinations.

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# SITE STORMWATER AND DOWNSTREAM ANALYSIS REPORT

**Prepared For:**

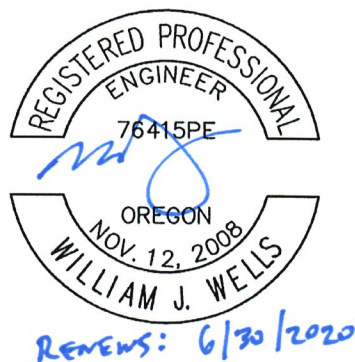
Lenity Architecture  
3150 Kettle Ct SE  
Salem, OR 97301

**Project Location:**

Bolton Terrace  
1575 Burns Street  
West Linn, OR 97068

**Permit Number:** CO -

**Prepared By:**



Westtech Engineering, Inc.  
3841 Fairview Industrial Drive SE, Suite 100  
Salem, OR 97302  
(503) 585-2474 FAX: (503) 585-3986



# TABLE OF CONTENTS

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Chapter	Page
<b>1 Project Overview &amp; Description .....</b>	<b>1-1</b>
1.1 Size & Location of Project .....	1-1
1.2 Brief description of project scope and proposed improvements.....	1-1
1.3 Description of Size of Watershed Draining to the Site.....	1-1
1.4 Description of the Existing Site Conditions, Trees & Native Vegetation, Constraints, Sensitive Areas & Waterways .....	1-1
1.5 Regulatory Permits Required.....	1-1
1.6 Emergency Storm Escape Routes.....	1-1
<b>2 Methodology .....</b>	<b>2-1</b>
2.1 Depth to Groundwater .....	2-1
2.2 Maximum Infiltration and Vegetative Treatment .....	2-1
2.3 Soil Information.....	2-1
2.4 Hazardous Material.....	2-1
<b>3 Analysis.....</b>	<b>3-1</b>
3.1 Methods & Software Used.....	3-1
3.2 Curve Number and Time of Concentration Calculations .....	3-1
3.3 Review of Resources & Drainage Basin .....	3-1
3.4 Inspection of Affected Area.....	3-1
3.5 Treatment & Water Quality .....	3-2
3.6 Conveyance System & Analysis of Downstream Effects.....	3-3
3.7 Summary.....	3-4

## LIST OF TABLES

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<b>Table</b>	<b>Page</b>
Table 1   City of West Linn 24-hour Design Storms .....	3-1
Table 2   Summary of Developed & Allowable Flow for 48-inch Manhole with Up-Flo Filter .....	3-2
Table 3   Summary of Site Peak Flows.....	3-2
Table 3   City of Gresham Conveyance Design Storm Sizing Criteria.....	3-3
Table 3   Summary of Cascade Springs Pond Creek During 50-year Storm .....	3-3

## APPENDICES

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Appendix A	Basin Maps & Resources
Appendix B	NRCS Soil Report
Appendix C	HydroCAD Summaries
Appendix D	Geotechnical Report

## 1.1 SIZE & LOCATION OF PROJECT

The proposed project is located on a primarily undeveloped 27,210 square foot lot at 1575 Burns Street in West Linn, Oregon. There is currently a 1,000 square foot house on the lot that will be removed prior to construction. Refer to the Civil Drawings for more detail.

## 1.2 BRIEF DESCRIPTION OF PROJECT SCOPE AND PROPOSED IMPROVEMENTS

The project scope is to develop the full 27,210 square foot lot. The new development will include two one new commercial building and associated parking and landscaping.

## 1.3 DESCRIPTION OF SIZE OF WATERSHED DRAINING TO THE SITE

The 27,210 square foot developed site will drain to an existing 12-inch stormwater pipe located in the southeast corner of the lot. No other areas drain to the developed site.

## 1.4 DESCRIPTION OF THE EXISTING SITE CONDITIONS, TREES & NATIVE VEGETATION, CONSTRAINTS, SENSITIVE AREAS & WATERWAYS

The existing site is currently undeveloped with a 1,000 square feet single family home on the lot. There are multiple trees on the site and the ground is covered with grass. The westerly portion of the lot is relatively flat, while the eastern portion is moderately sloped descending to the east. Numerous small to large sized trees exist on site.

## 1.5 REGULATORY PERMITS REQUIRED

City of West Linn permits are required. No other permits are required for this project.

## 1.6 EMERGENCY STORM ESCAPE ROUTES

Please refer to the Developed Basin Map in Appendix A for emergency overflow routes.

## 2.1 DEPTH TO GROUNDWATER

Per the Geotechnical Report in Appendix D, groundwater seepage was not encountered and is not expected during construction. See the Geotech Report in Appendix D for details.

## 2.2 MAXIMUM INFILTRATION AND VEGETATIVE TREATMENT

The proposed stormwater design will not provide detention for onsite runoff due to topography constraints. Detention is not required because Cascade Springs Pond Creek has adequate downstream capacity. An up-flow filter will be designed to treat the water quality storm event because the site is extremely steep and infiltration is not feasible. See the Civil Drawings for more details.

## 2.3 SOIL INFORMATION

The pre-developed project site contains hydrologic soil group C soils. Refer to the Soils Report in Appendix B for more details.

## 2.4 HAZARDOUS MATERIAL

The owner is not aware of any hazardous material contamination onsite.

## 3.1 METHODS & SOFTWARE USED

HydroCAD modeling software was used to size the stormwater facilities. The Santa Barbara Unit Hydrograph Type 1A storm was used to model the required design storms. Per the City of West Linn Design Standards the design storms used were the 1.2 inch, 24-hour (water quality storm), half the 2-year, 24-hour and the 10-year, 24-hour storm events.

**Table 1** | City of West Linn 24-hour Design Storms

	24-Hour Rainfall Depths for West Linn, OR							
Recurrence Interval, Years	2	5	10	25	50	100	500	WQ
24-Hour Depths, Inches	2.5	3.0	3.4	3.9	4.3	4.5	5.3	1.2

Source: City of West Linn Stormwater Management Plan

## 3.2 CURVE NUMBER AND TIME OF CONCENTRATION CALCULATIONS

Curve numbers were derived from the NRCS runoff curve numbers contained in TR-55 *Urban Hydrology for Small Watersheds* per the City of Gresham Standards. The developed impervious area and pervious areas were assigned curve numbers of 98 and 79 respectively. The impervious areas were assigned a curve number of 98 which corresponds to paved/parking areas. The pervious areas were assigned a curve number of 79 which corresponds to amended soil coverage with C-rated soils.

Time of concentration (Tc) for the pre-developed conditions was calculated to be 15 minutes using the sheet flow equation. See the Pre-Developed Basin Map in Appendix A for the flow path used and refer to the HydroCAD Summaries in Appendix C for calculations. A minimum time of concentration of 5 minutes is applied to the developed basin due to the minimum time-step used by the HydroCAD modeling software.

## 3.3 REVIEW OF RESOURCES & DRAINAGE BASIN

The entire 27,210 square foot lot will drain into Cascade Springs Pond Creek. There are five sub-basins within the Cascade Springs basin. The project site is located within the CS2N1 sub-basin per the West Linn Stormwater Management Plan. For more detail and resources refer to Appendix A.

## 3.4 INSPECTION OF AFFECTED AREA

No problem areas or areas of concern were notable during the review of resources. Additionally, there were no existing or potential areas where flooding, capacity problems, channel destruction, or significant destruction of aquatic habitat identified in the inspection.

### 3.5 TREATMENT & WATER QUALITY

The proposed design uses proprietary treatment in lieu of green stormwater management. A 48-inch manhole with an Up-Flo filter is proposed to treat the water quality storm event and provide adequate capacity for the 100-year storm event.

**Table 2 | Summary of Developed & Allowable Flow for 48-inch Manhole with Up-Flo Filter**

Design Storm	Developed Site Flow (cfs)	Allowable Flow (cfs)
WQ Event	0.14	0.17
Overflow 100-Year	0.62	3.40

<sup>1</sup>Allowable release rate for Up-Flo filter with 3 filter modules

Table 2 above displays that a 48-inch Manhole with an Up-Flo filter equipped with 3 filter modules will provide treatment for the water quality event and have capacity for the 100-year storm.

**Table 3 | Summary of Site Peak Flows**

Basin ID	Source (Roof/Road/Other)	Impervious Area (sq ft)	Pervious Area (sq ft)	Design Storms			CN	Tc
				WQ (cfs)	10 Year (cfs)	100 Year (cfs)		
PD	Native	-	27,210	-	0.15	0.29	79	15
DEV	Paved/Landscape	22,510	4,700	0.14	0.45	0.62	98/79 <sup>2</sup>	5.0

<sup>1</sup> PD = pre-developed site conditions (i.e., pre-developed release rates)

<sup>2</sup> The first curve number listed is for the impervious area in the basin (98), then for the pervious area (80)

Table 3 above depicts the runoff experience from developed site compared to that of the predeveloped site. The design storms analyzed were provided in the West Linn Stormwater Management Plan and consisted of the water quality, 10-year, and 100-year, 24-hour storm events.

### 3.6 CONVEYANCE SYSTEM & ANALYSIS OF DOWNSTREAM EFFECTS

Per City of West Linn Design Standards, this project is exempt from detention requirements due to adequate downstream capacity of conveyance system. However, a downstream analysis was conducted per the City of Gresham Standards to determine if Cascade Springs Pond Creek will have adequate capacity. The following table provides the COG design storm sizing criteria.

**Table 3 | City of Gresham Conveyance Design Storm Sizing Criteria**

Structure or Facility	Design Storm Recurrence Interval (years)	
Storm sewers, ditches, and outfall pipes	Draining less than 250 acres	10
	Draining greater than 250 acres	50
Creek or stream Channels	Without designated floodplain	50
	With designated floodplain	100
Culverts and bridges	100	

The downstream analysis was conducted using the 50-year, 24-hour design storm per COG Design Standards for a creek with drainage area less than 50 acres.

Peak flow rates for each sub-basin within the Cascade Springs basin were provided by the West Linn Stormwater Management Plan. Additionally, peak flow rates for the junction of sub-basins were also provided. The junction node CSJ2 was selected for this analysis. The peak flow of CSJ2 was combined with the added onsite runoff for the 50-year, 24-hour storm event to determine adequate downstream capacity. Based on inspection and mapping, the creek has 1,500 feet of length, 3:1 side slopes, width of 1 foot at the bottom, slope of 1.53%, and a Manning’s number of 0.03 was used, corresponding to a typical open, earth channel, that is grassed and winding. See below for water depth in channel, calculated using Manning’s Equation.

**Table 3 | Summary of Cascade Springs Pond Creek During 50-year Storm**

Basin ID	Drainage Area (acres)	50-Year (cfs)	Water Depth in Channel (ft) <sup>a</sup>
CSJ2	55.04	31.15	1.31
DEV	0.62	0.59	0.20
<b>Total</b>	<b>55.56</b>	<b>31.74</b>	<b>1.32<sup>a</sup></b>

<sup>a</sup>Totals do not sum to the addition of the individual flows. This is due to the fact that the time of concentration per basin varies. The totals are the combination of the basin hydrographs. Refer to Link: OUT in Appendix D.

The calculations in Table 3 above display the added runoff to the Cascade Springs Pond Creek that will result from the developed project. The undetained developed 50-year event runoff peak for the site is 0.52 cfs. The developed runoff only contributes to 2% of the total runoff conveyed by Cascade Springs Pond Creek. The peak water surface elevation will rise approximately a tenth of an inch with the added runoff from the developed site. Therefore, the conveyance system will provide adequate capacity for developed stormwater runoff and detention facilities are not required onsite.

### **3.7 SUMMARY**

The stormwater system consisting of a 48-inch manhole with an Up-Flo filter has been designed to treat the water quality storm, and have capacity for the 100-year storm event. Detention was not required to be provided on site because Cascade Springs Pond Creek has adequate downstream capacity. Therefore, the project can meet the flow control and treatment requirements as set forth in the City of West Linn Stormwater Management Plan and the City of Gresham Stormwater Management Manual.



**BOLTON TERRACE COMMERCIAL BUILDING**  
**Stormwater Calculations**  
**West Linn, Oregon**

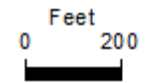
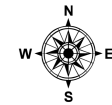
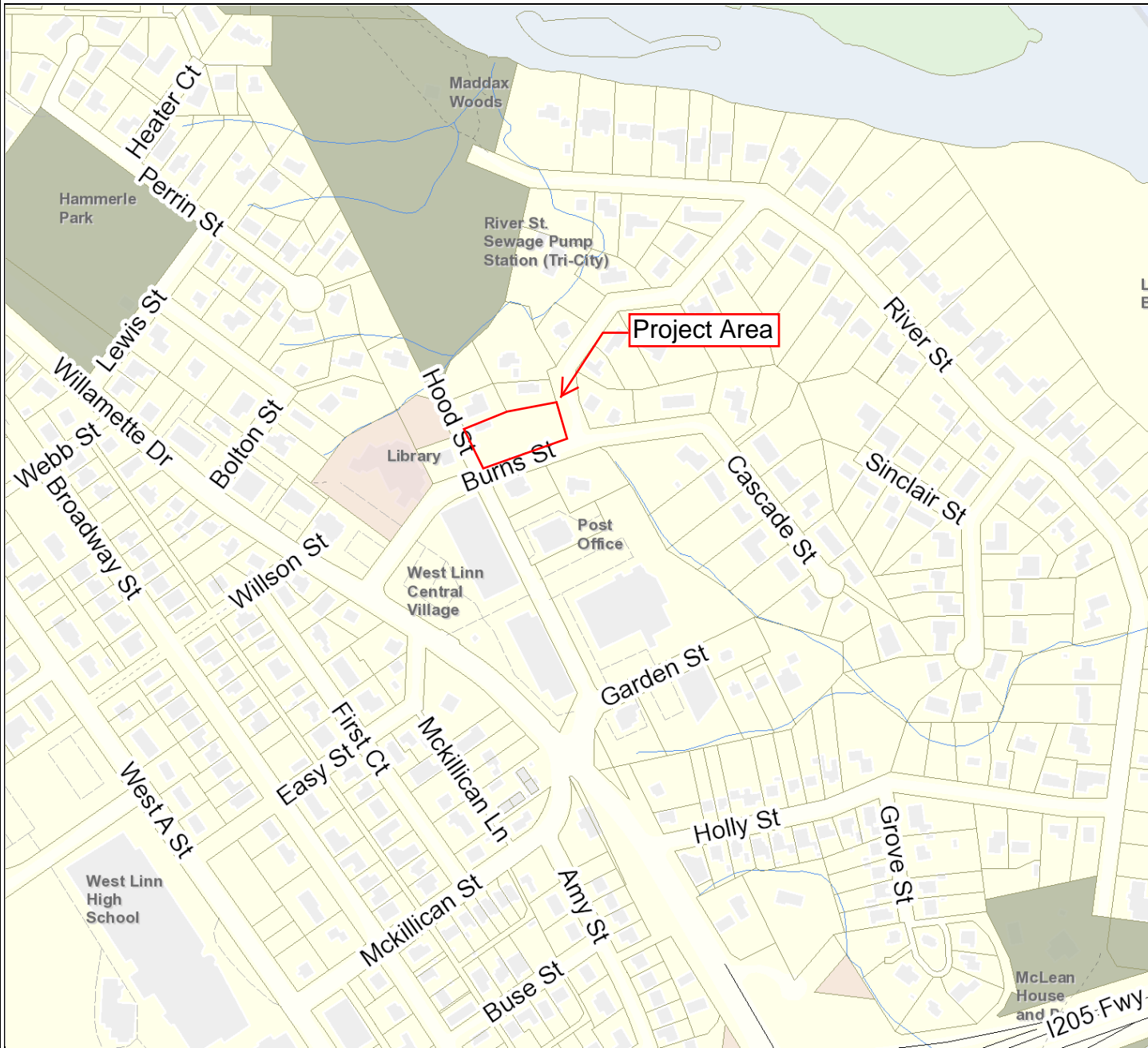
**APPENDIX A**

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**BASIN MAPS & RESOURCES**

# BASIN & AREA MAPS

# Project Area Map



Scale 1:4,800 - 1 in = 400 ft  
Scale is based on 8-1/2 x 11 paper size

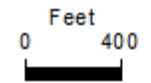
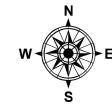
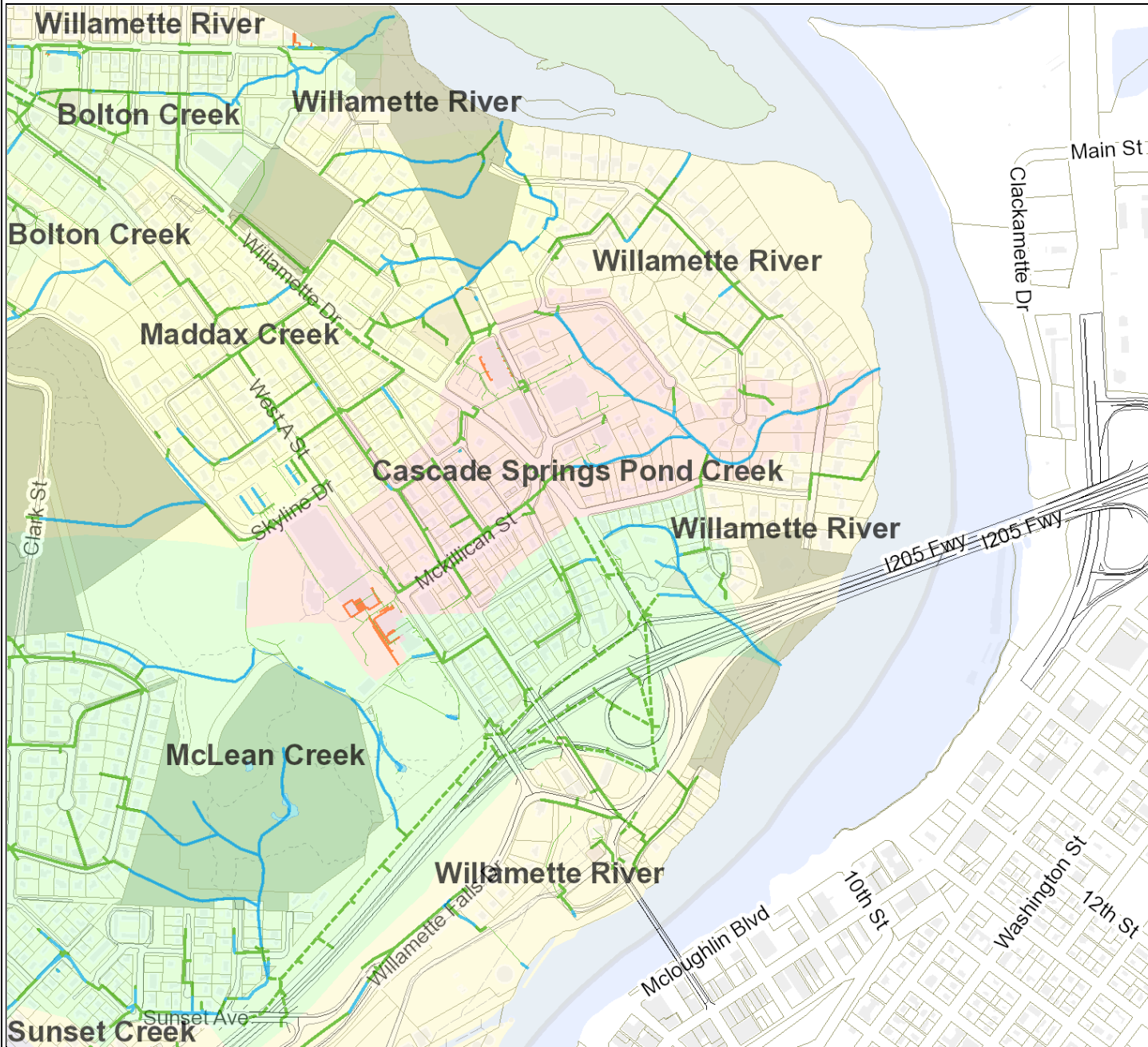


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# Drainage Basin Map



Scale 1:9,600 - 1 in = 800 ft  
Scale is based on 8-1/2 x 11 paper size



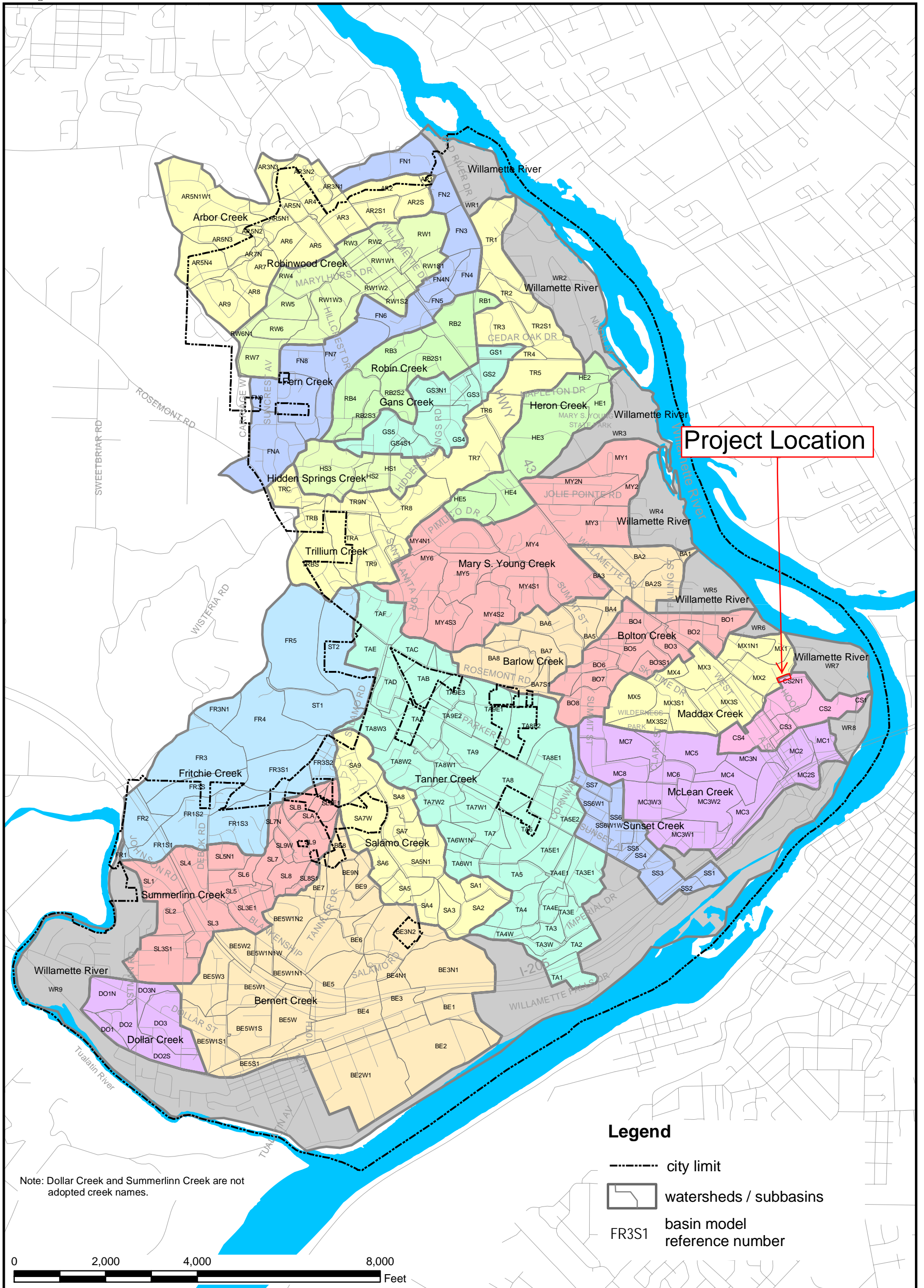
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# Surface Water Management Plan 2006



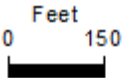
storm\_mp2004\watershed\_delineations.mxd | Lee | 9-14-06 (draft 8-03-04)

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### Figure 4.1 Watershed Delineations

Taxlot Base Source: Clackamas County GIS

# Flow Path and 1,500 ft Downstream Location



Scale 1:3,600 - 1 in = 300 ft  
Scale is based on 8-1/2 x 11 paper size

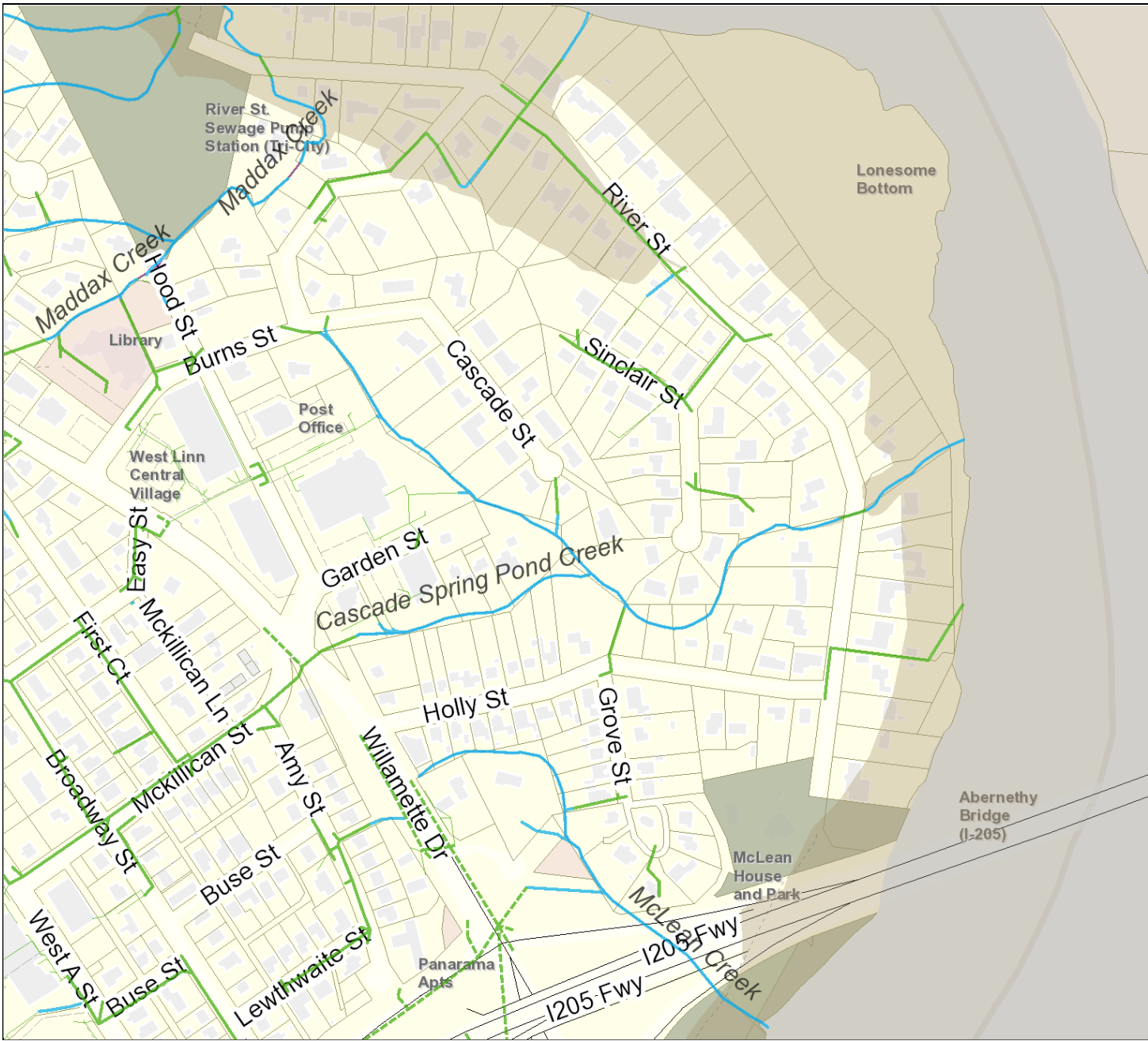


Map created by: public  
Date Created: 23-Jan-20 11:50 AM

**WEST LINN GIS**

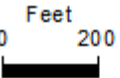
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# Floodplain Map



- Legend
- Storm Lines
  - Storm Pipes
  - - - Storm Pipes County
  - - - Storm Pipes ODOT
  - Ditches and Creeks
  - Private Pipes

Flood Management Areas



Scale 1:4,800 - 1 in = 400 ft  
Scale is based on 8-1/2 x 11 paper size



Map created by: public  
Date Created: 30-Jan-20 02:45 PM

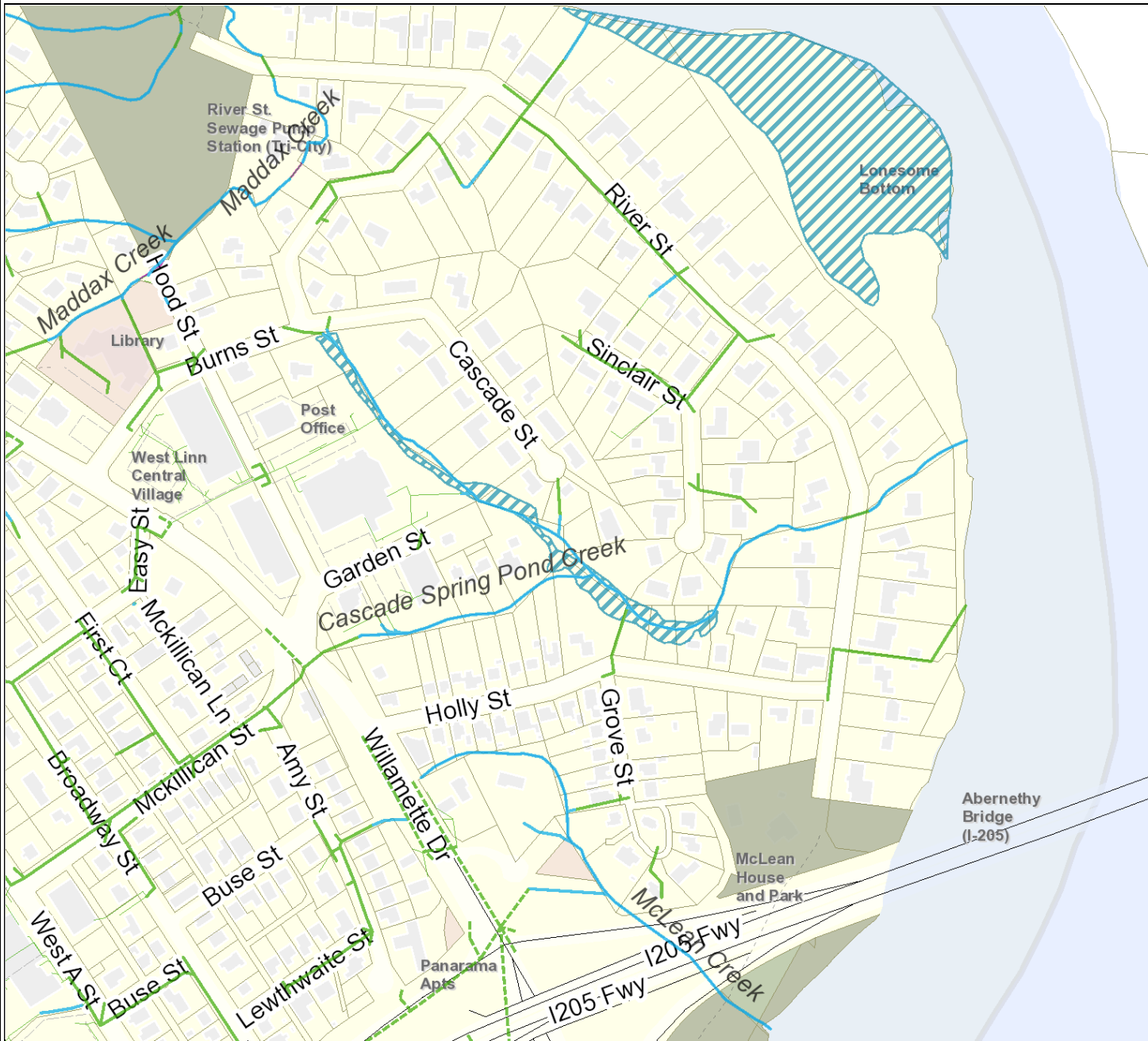
**WEST LINN GIS**

DISCLAIMER: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Map scale is approximate. Source: West Linn GIS (Geographic Information System) MapOptix.

# WETLAND, AND HABITAT INVENTORY



# Wetland Inventory Map

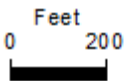
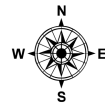


### Legend

- Storm Lines
- Storm Pipes
- - - Storm Pipes County
- - - Storm Pipes ODOT
- Ditches and Creeks
- Private Pipes

### Wetland Inventory 2005 Goal

5



Scale 1:4,800 - 1 in = 400 ft  
Scale is based on 8-1/2 x 11 paper size



Map created by: public  
Date Created: 30-Jan-20 02:47 PM

**WEST LINN GIS**

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**Mapping Procedures**

Field maps were prepared using Year 2001 digital color ortho-photographs at a scale of 1 inch = 200 feet. All data was geo-referenced and registered with the City parcel data in GIS. Information shown on the field maps included property boundaries, rights-of-way with street names, designated open space areas and public lands, map number (and corresponding City Atlas number), hydrologic basin boundaries, topography, hydric soils, streams and City storm system data (detention basins, ponds, ditches, etc), existing wetland data (including digitized DSL and City wetland determinations, NWI wetlands, Wetland Visual Sites (City point data), and 1988 Wetland Study (digitized point data)), and photo-interpreted potential wetland sites.

Wetlands and sample plots were mapped on the field maps. A combination of reference points was used to establish the location and perimeter of each wetland polygon and the location of sample plots. These references included property lines (e.g., survey corner markers), topography (4-foot contours, or less where available), building lines, streets, utilities, trees and other mapped physical features that could be used to determine location and distances on the ground.

Wetland boundaries and sample plots were digitized and registered with the base map in GIS. Inventory maps meeting the requirements of OAR 141-086-0210 and the Digital Map Standards of OAR 141-086-0225 were provided to the City and DSL.

**Inventory Results**

Forty-four wetlands were identified as part of the Local Wetland Inventory. Wetlands varied in size between 5,000 square feet and 15.5 acres, with a total combined acreage of 72.8 acres. Wetlands were distributed within 10 subwatersheds: Bernert Creek, Camassia, Cascade Springs Pond Creek, Fern Creek, Fritchie Creek, Tanner Creek, Trillium Creek, Turkey Creek, and the remaining portions of the Tualatin and Willamette River basins. Several additional subwatersheds were identified in the study area but did not contain wetlands. Table 3 summarizes the distribution and relative size of wetlands by subwatershed.

**Table 3. Wetland Size by Subwatershed**

Hydrologic Basin	Basin Area (acres)	Wetland (acres)	Percent wetland in basin
Barlow Creek	201	0.00	0
Bernert Creek	412	0.65	0.2%
Bolton Creek	117	0.00	0.0%
Camassia	219	2.55	1.2%
Cascade Springs Pond Creek	52	1.09	2.1%
Fern Creek	555	4.14	0.7%
Fritchie Creek	393	2.34	0.6%
Heron Creek	123	0.00	0
Maddax Creek	106	0.00	0



Hydrologic Basin	Basin Area (acres)	Wetland (acres)	Percent wetland in basin
Mary S Young Creek	269	0.00	0
McLean Creek	38	0.00	0
Sunset Creek	77	0.00	0
Tanner Creek	659	5.90	0.9%
Trillium Creek	543	5.50	1.0%
Tualatin River	309	7.30	2.4%
Turkey Creek	20	0.16	0.8%
Willamette River	1165	43.23	3.5%
<b>Study Area Total</b>	<b>5258</b>	<b>72.8</b>	<b>0.14%</b>

With the exception of a few wetlands in the Camassia and Tanner Creek basins, most wetlands were associated with rivers and streams. As a result, the hydrogeomorphic classification of wetlands was predominantly Riverine Flow-Through, as shown in Table 4.

**Table 4. Wetland Hydrogeomorphic Classifications**

Hydrogeomorphic Class/subclass	Area (acres)	Number of Wetland Units
Riverine Flow-Through (RFT)	65.51	32
Headwater Slope (SH)	4.59	5
Depressional Outflow (DOF)	1.04	2
Depressional Closed, Permanently Flooded (DCP)	0.89	1
Depressional Closed, Nonpermanently Flooded (DNCP)	0.79	3
Flats	0.04	1
<b>Total</b>	<b>72.8</b>	<b>44</b>

Table 5 summarizes the distribution of wetlands by Cowardin classification within the study area. Since some wetlands had multiple classifications, total acres of each class is shown without the number of wetland units affected.

**Table 5. Wetland Cowardin Classifications**

Cowardin Class	Area (acres)
Forested Wetlands (PFO)	37.48
Scrub-Shrub Wetlands (PSS)	9.61
Emergent Wetlands (PEM)	25.39
Open Water (POW)	0.36
<b>Total</b>	<b>72.8</b>

Table 6 provides a detailed summary of the distribution and size of wetlands within each sub-watershed and the approximate acreages of each wetland type (Cowardin class).



Table 6. Wetland Size and Class by Subwatershed

Sub-Watershed	Wetland code	Area (acres)	Cowardin Class			
			PEM	PSS	PFO	POW
Bernert Creek (BE)	BE-01	0.34	0.20		0.14	
	BE-02	0.32	0.15		0.16	
		<b>0.66</b>	<b>0.35</b>	<b>0.00</b>	<b>0.30</b>	<b>0.00</b>
Camassia (CA)	CA-01	0.71		0.54		0.18
	CA-02	0.89		0.89		
	CA-03P	0.35	0.35			
	CA-04	0.04*		0.04		
	CA-05	0.14		0.14		
	CA-06	0.42	0.42			
		<b>2.55</b>	<b>0.77</b>	<b>1.61</b>	<b>0.00</b>	<b>0.18</b>
<b>Cascade Springs Pond Creek (CS)</b>	<b>CS-01</b>	<b>1.09</b>	<b>1.09</b>			
		<b>1.09</b>	<b>1.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Fern Creek (FE) (incl. Robinwood-RO-tributary)	FE-01	1.52	1.52			
	FE-02	2.33	.26	2.07		
	RO-01	0.29	.05		0.24	
		<b>3.17</b>	<b>1.83</b>	<b>2.07</b>	<b>0.24</b>	<b>0.00</b>
Fritchie Creek (FR)	FR-01	1.42	1.42			
	FR-02	0.16	0.13		0.03	
	FR-03	0.35			0.35	
	FR-04	0.41	0.41			
		<b>2.34</b>	<b>1.96</b>	<b>0.00</b>	<b>0.38</b>	<b>0.00</b>
Tanner Creek (TA)	TA-01	0.37	0.37			
	TA-02	0.59		0.49	0.10	
	TA-03	0.48		0.48		
	TA-04	0.25		0.25		
	TA-05	1.34	0.53		0.69	0.15
	TA-06	0.18	0.18			
	TA-07	0.69			0.69	
	TA-08	0.39			0.39	
	TA-09	1.58		0.28	1.27	0.03
		<b>5.87</b>	<b>1.08</b>	<b>1.50</b>	<b>3.14</b>	<b>0.18</b>
Trillium Creek (TR) (incl. Hidden Springs-HI-tributary)	TR-01	1.59	0.16		1.43	
	TR-02	0.61		0.54	0.07	
	TR-03	2.06	0.30	0.20	1.56	
	TR-04	0.93		0.93		
	HI-01	0.33		0.33		
		<b>5.52</b>	<b>0.46</b>	<b>2.00</b>	<b>3.06</b>	<b>0.00</b>
Tualatin River (TU)	TU-01	1.14	1.14			
	TU-02	0.30	0.30			
	TU-03	1.89			1.89	
	TU-04	0.13	0.13			
	TU-05	3.83	3.39		0.44	



Sub-Watershed	Wetland code	Area (acres)	Cowardin Class			
			PEM	PSS	PFO	POW
		728	4.96	0.00	2.33	0.00
Turkey Creek (TY)	TY-01	0.16	0.16			
		0.16	0.16	0.00	0.00	0.00
Willamette River (WI)	WI-01	8.09	6.44		1.65	
	WI-01a	0.84	0.84			
	WI-02	15.55	6.55		9.00	
	WI-03	2.43		2.43**		
	WI-04	7.13	3.64		3.49	
	WI-05	0.21	0.21			
	WI-06	2.70	0.90		1.80	
	WI-07	6.28	6.28			
		43.23	24.86	2.43	15.94	0.00
<b>TOTAL</b>		<b>72.84</b>	<b>37.48</b>	<b>9.61</b>	<b>25.39</b>	<b>0.36</b>

\* Wetland was below the minimum size threshold but was included due to its local significance and protected status.

\*\* This area includes the wetland portion (60%) of the wetland mosaic area.

### OFWAM Assessment Results

Wetland quality was assessed for each wetland unit using the Oregon Freshwater Wetland Assessment Methodology (OFWAM). The OFWAM assesses wetland functions (wildlife habitat, fish habitat, water quality, hydrologic control), values (education and recreation), and conditions (sensitivity to impact, enhancement potential, and aesthetic quality). The assessment result is a determination of whether a function, value or condition is high (intact), moderate (impacted/degraded), or low (not present/appropriate).

Table 7 provides the results of the OFWAM assessments for each wetland unit in the study area. Certain categories were not applicable to particular wetlands. For example, if a wetland was not connected to a stream or other water body, fish habitat functions were not assessed. Also, if wildlife habitat functions were determined to be "diverse," then enhancement potential was considered inapplicable as provided in the OFWAM methodology.



Table 7. OFWAM Wetland Assessment Results

Wetland code	Area (acres)	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Sensitivity to Impact	Enhancement Potential	Education	Recreation	Aesthetic Quality
BE-01	0.337	some	impacted degraded	intact	impacted degraded	potentially sensitive	high opportunities	not appropriate	potential	moderately pleasing
BE-02	0.316	some	impacted degraded	intact	impacted degraded	potentially sensitive	high opportunities	not appropriate	potential	moderately pleasing
CA-01	0.714	diverse	N/A	impacted degraded	impacted degraded	potentially sensitive	N/A	educational	recreational	moderately pleasing
CA-02	0.887	some	N/A	not present	intact	potentially sensitive	moderate	educational	recreational	moderately pleasing
CA-03P	0.346	some	N/A	impacted degraded	impacted degraded	potentially sensitive	little	educational	recreational	pleasing
CA-04	0.041	some	N/A	not present	intact	potentially sensitive	moderate	educational	recreational	pleasing
CA-05	0.141	some	N/A	not present	intact	potentially sensitive	moderate	potential	recreational	pleasing
CA-06	0.421	some	impacted degraded	impacted degraded	impacted degraded	potentially sensitive	high opportunities	potential	not appropriate	pleasing
CS-01	1.09	some	impacted degraded	impacted degraded	impacted degraded	potentially sensitive	high opportunities	not appropriate	potential	moderately pleasing
FE-01	1.518	some	impacted degraded	not present	lost	potentially sensitive	moderate	not appropriate	not appropriate	moderately pleasing
FE-02	2.332	diverse	intact	impacted degraded	impacted degraded	potentially sensitive	N/A	potential	potential	moderately pleasing
FR-01	1.424	some	intact	impacted degraded	impacted degraded	potentially sensitive	high opportunities	not appropriate	not appropriate	not pleasing
FR-02	0.162	some	impacted degraded	impacted degraded	intact	potentially sensitive	high opportunities	not appropriate	not appropriate	pleasing
FR-03	0.349	some	impacted degraded	impacted degraded	impacted degraded	potentially sensitive	high opportunities	not appropriate	not appropriate	moderately pleasing
FR-04	0.409	some	impacted degraded	impacted degraded	intact	potentially sensitive	high opportunities	not appropriate	not appropriate	not pleasing

143

ORD 1545 A10



Table 8 summarizes the relative distribution of assessments for each function and condition, with the percentage of total wetlands ranking high in each category.

**Table 8. Wetland Assessment Results for the Study Area**

Function / Condition	High	Moderate	Low	N/A	% Wetlands Assessed High
Wildlife habitat	6	38	0		14%
Fish habitat	8	26	0	10	18%
Water quality	3	35	6		7%
Hydrologic control	20	21	3		45%
Sensitivity to impact	2	41	1		5%
Enhancement potential	26	11	1	6	59%
Education	14	10	20		32%
Recreation	18	14	12		41%
Aesthetic quality	7	28	9		16%

Each wetland was assessed to determine whether it should be considered a Wetland of Special Interest for Protection (WSIP). The questions in the WSIP category cover the presence of federal or state listed species and habitats, existing local, state or federal protections, and existing management plans. The following wetlands were found to be WSIP wetlands: TU-01 (red-legged frog breeding site) and CA-01 through CA-05 (part of Nature Conservancy's Camassia Preserve).

During field investigations, no vacant, former wetlands of five acres or larger in size were identified. Therefore, no potential wetland mitigation or restoration sites were noted in the LWI.

**Significant Wetlands Determination**

In Oregon, local government planning responsibilities include the determination, designation, and protection of significant wetlands. Wetlands are considered significant if the OFWAM evaluation determines that they:

1. provide diverse wildlife habitat, intact fish habitat, intact water quality function, or intact hydrologic control function;
2. are located within 1/4-mile of a "water quality limited stream" and have "intact" or "impacted or degraded" water quality function;
3. contain rare plant communities or federal or state-listed species; or
4. have a surface water connection to a stream that is habitat for indigenous anadromous salmonids and have "intact" or "impacted or degraded" fish habitat function.

As noted above, the City of West Linn chose to apply the two optional significance criteria:



1. wetlands that represent a locally unique native plant community; or
2. wetlands that are publicly owned and have educational uses.

A total of 38 wetlands met the criteria and were determined to be significant. These wetlands generally had 1) high wildlife or fish habitat, water quality, or hydrologic control function, 2) a surface water connection to a salmonid stream, or 3) were located within 1/4-mile of a water quality limited stream. Approximately one-half (20) of the significant wetlands were less than one-half acre in size. The six wetlands not meeting the criteria were:

- FE-01
- HI-01
- TA-06
- TA-07
- TA-08
- TU-04 (stormwater swale created from upland, excluded)





Appendix A

## Wetland Characterization

168

ORD 1545 A15

**West Linn Goal 5 Inventory  
Wetland Characterization Sheet**



**GENERAL INFORMATION**

Wetland: Cascade Springs      Code: CS-01      Field dates: 4/22/02  
 Plot #s: DP-1 to DP-4      Size: 1.09 acres      Method:  on-site     off-site  
 Cowardin Class: PEM      HGM Class: RFT      Investigators: TB, LW, AK  
 Basin: Willamette River      Sub-basin: Cascade Spring Pond Creek

**LOCATION**

Location/address: north of Holly St., south of Cascade St.  
 Legal description: Lots 200, 300, 400, 500, 900, 2100, 2103, 2105, 2106, 3800, 3900, 5003, 5004, 5005, 5400, 5600; T2S, R2E, Section 30 (Atlas #5235, 5236)

**WETLAND CHARACTERISTICS**

Description (incl. topo. position, land use, basis): Wetland CS-01 is associated with Cascade Spring Pond Creek, and is on a narrow floodplain at the bottom of a steep-sided canyon, surrounded by residential uses, with commercial at the west end of the site. The stream has a meandering and braided channel extending from side-slope to side-slope. The wetland is dominated by reed canarygrass near the sample site, but upstream there are also patches of skunk cabbage and other native emergents. Wetland hydrology is provided primarily by stream flow plus smaller amounts of sheet flow from the surrounding side-slopes. The wetland boundary is at a sharp topographic break at the foot of the canyon embankments. The forested canyon walls are relatively undisturbed, except for a few cleared residential back yards. Uplands are dominated by big-leaf maple and Himalayan blackberry (which, in addition to steep slopes, does provide a buffer).

Soils: Xerochrepts and Haploxerolls, very steep

Hydrologic Source: stream flow, sheetflow

Dominant Vegetation:

Trees	Shrubs	Vines	Herbs
red alder		climbing nightshade	reed canarygrass stinging nettle

Wetland Functions: high enhancement potential; not appropriate for education; other functions moderate

Significant?  Yes     No    Remarks: within 1/4 mile of WQ limited stream

Potential Restoration Opportunities: Manage invasive species, particularly reed canarygrass and Himalayan blackberry. Plant a variety of native emergents and shrubs (along perimeter) to diversify habitat.

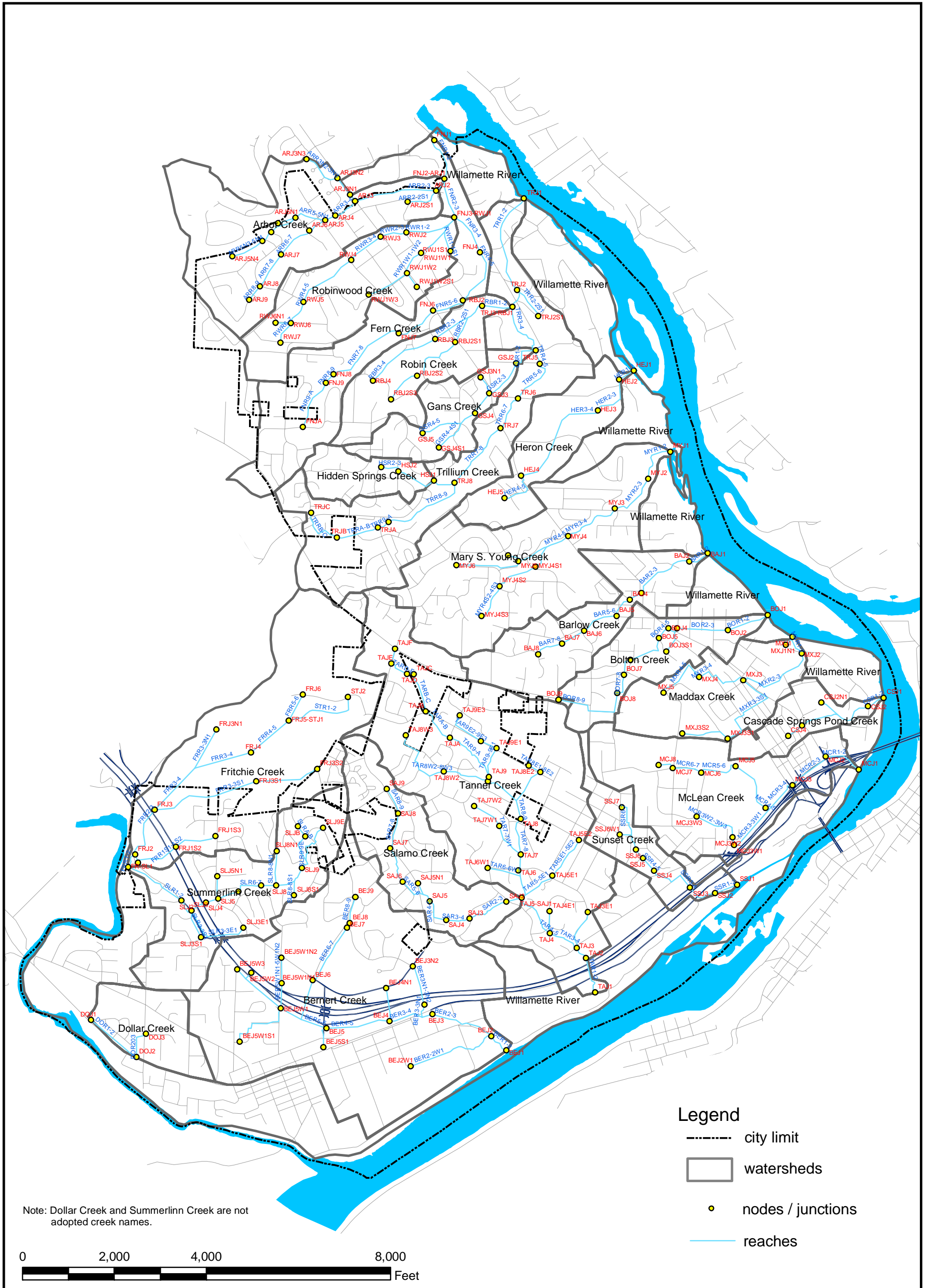
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177

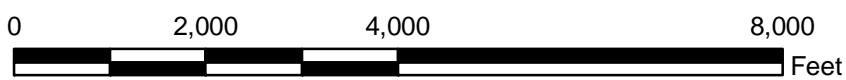
# BASIN INFORMATION



# Surface Water Management Plan 2006



Note: Dollar Creek and Summerlinn Creek are not adopted creek names.



### Legend

- city limit
- watersheds
- nodes / junctions
- reaches

storm\_mp2004\reaches\_junctions.mxd | Lee | 9-14-06 (draft 8-11-04)

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## Figure 4.2 HEC-HMS Reaches and Junctions

Taxlot Base Source: Clackamas County GIS



# Surface Water Management Plan 2006

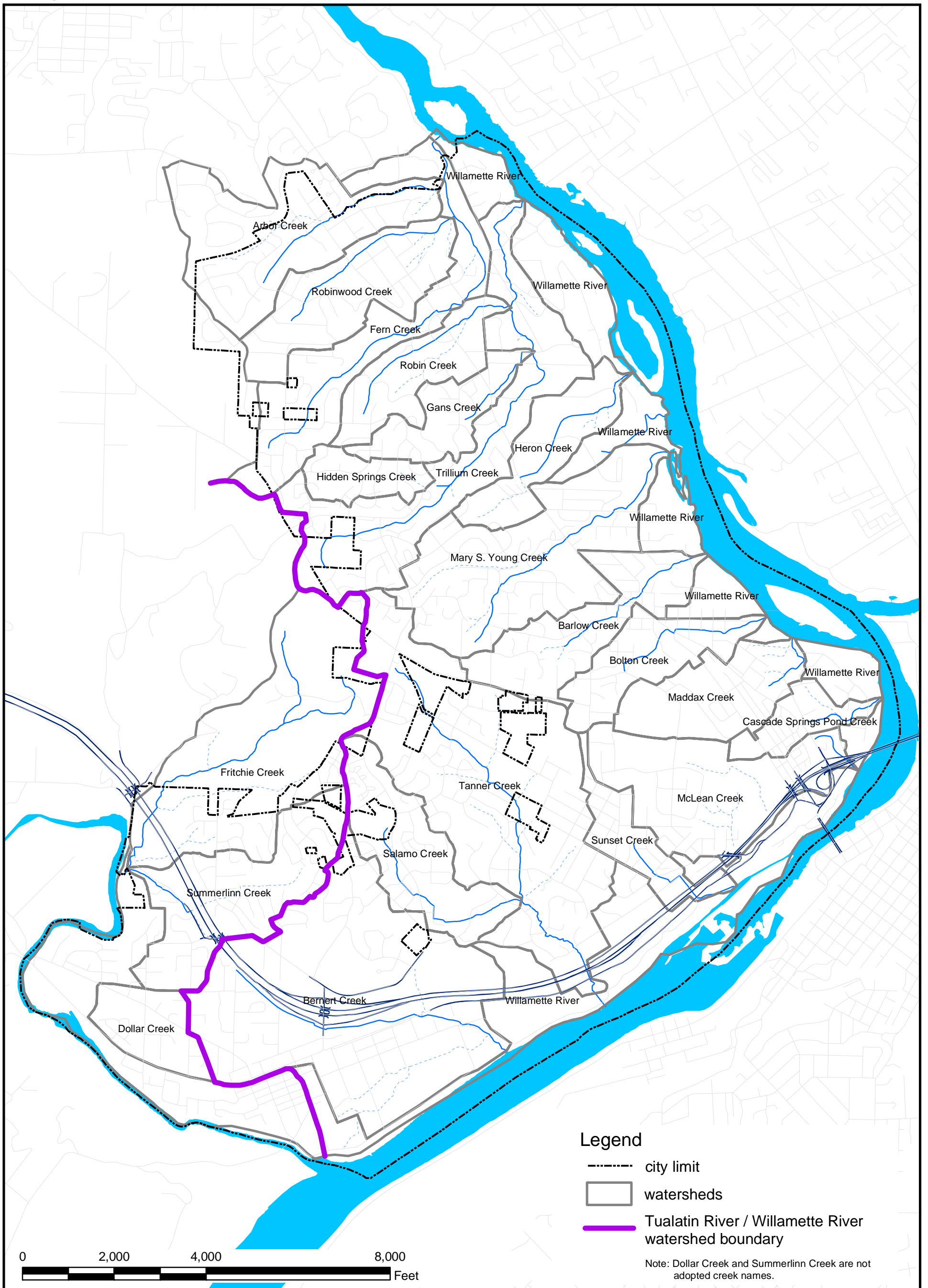
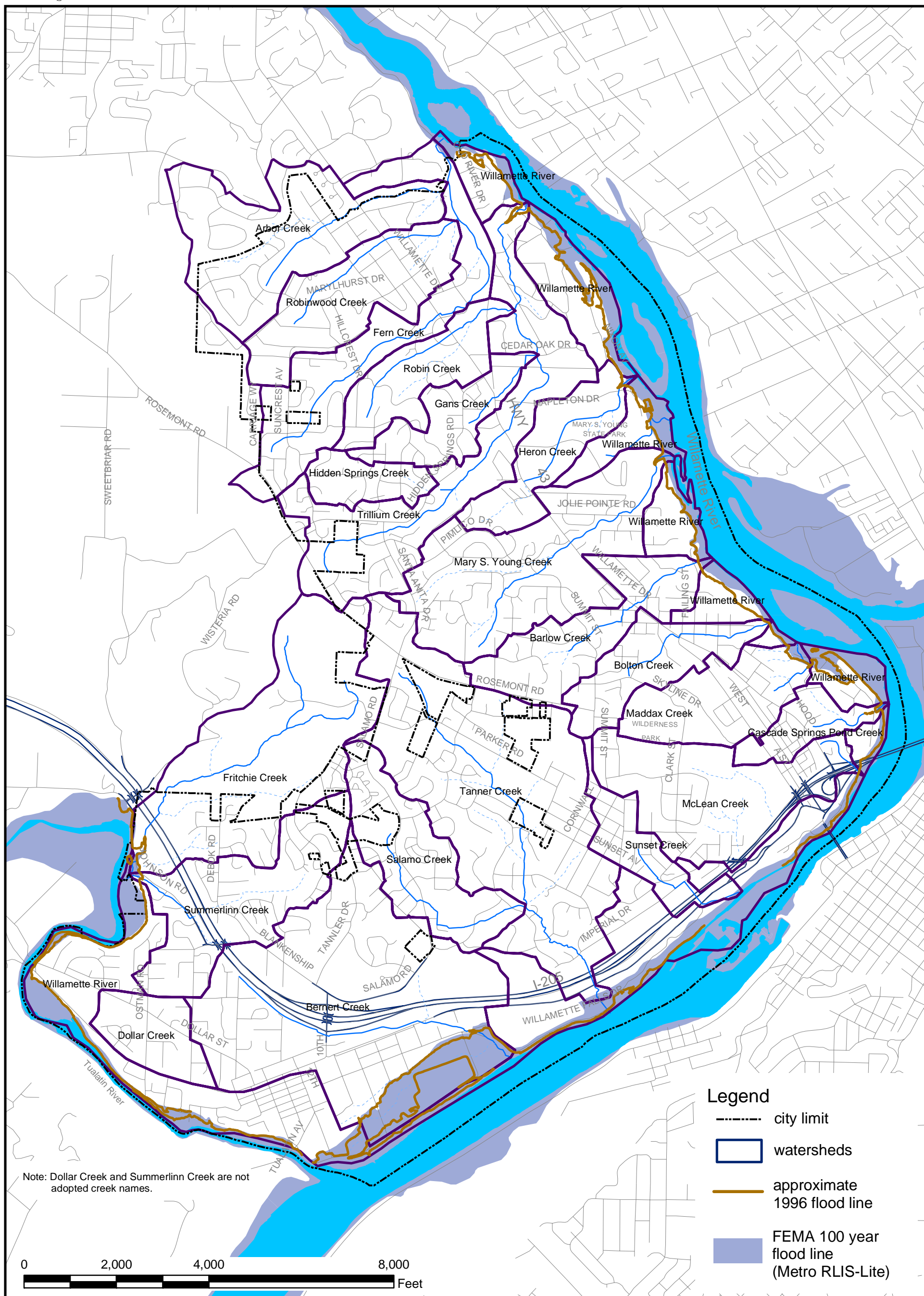


Figure 3.9 Study Area Watersheds



# Surface Water Management Plan 2006



storm\_mp2004/flood\_management.mxd | Lee | 9-14-06 (draft 8-10-04)

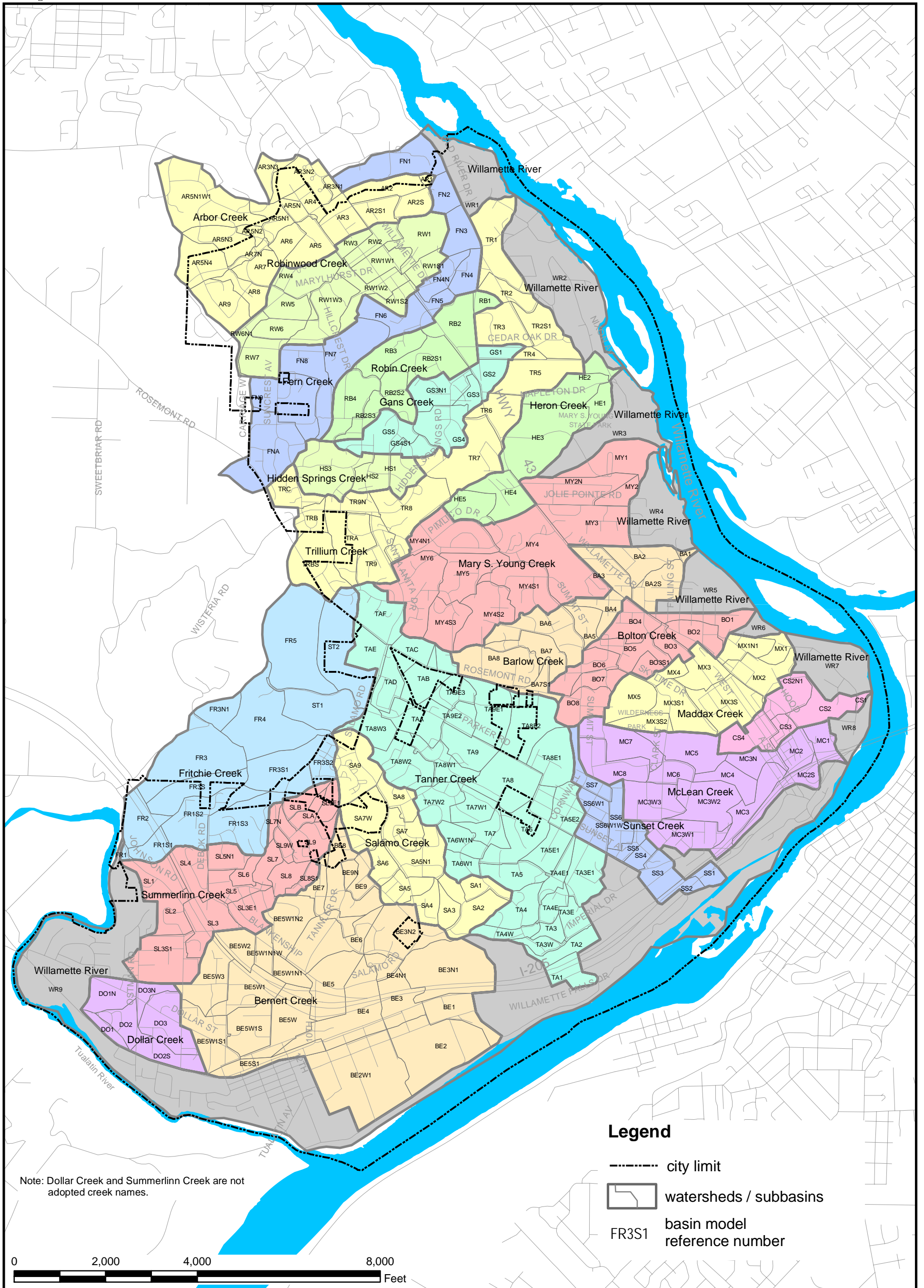
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### Figure 3.10 Flood Management Area

Taxlot Base Source: Clackamas County GIS



# Surface Water Management Plan 2006



storm\_mp2004\watershed\_delineations.mxd | Lee | 9-14-06 (draft 8-03-04)

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### Figure 4.1 Watershed Delineations

Taxlot Base Source: Clackamas County GIS

**Appendix A**  
**HEC-HMS Input Parameter Values**

Subbasin	Total Area (acres)	Impervious Area (acres)		Lag Time (hours)		Aerially Averaged Infiltration Rate	
		Existing	Future	Existing	Future	Existing	Future
AR1	1.60	0.16	0.16	1.03	1.03	0.398	0.398
AR2	15.29	1.06	1.76	1.82	1.51	0.475	0.371
AR2S	9.50	1.97	1.99	0.48	0.48	0.163	0.158
AR2S1	10.64	2.12	2.23	0.50	0.49	0.183	0.158
AR3	15.19	3.11	2.21	0.50	0.50	0.231	0.299
AR3N1	2.21	0.04	0.04	1.81	1.81	0.59	0.59
AR3N2	19.38	2.55	1.71	0.64	0.64	0.41	0.41
AR3N3	7.75	0.17	0.16	0.79	0.79	0.46	0.46
AR4	7.13	0.95	1.42	0.62	0.47	0.42	0.18
AR5	15.93	2.44	3.32	0.44	0.40	0.35	0.17
AR5N	4.94	0.60	1.04	0.54	0.40	0.41	0.16
AR5N1	10.27	0.90	1.27	0.60	0.50	0.33	0.28
AR5N1W1	49.87	1.00	1.03	2.49	2.48	0.59	0.59
AR5N2	3.62	0.17	0.44	0.96	0.69	0.86	0.46
AR5N3	16.15	0.62	0.62	1.80	1.80	0.68	0.68
AR5N4	19.96	2.25	2.05	0.67	0.67	0.44	0.46
AR6	8.27	0.36	1.41	1.34	0.70	0.35	0.20
AR7	12.22	1.69	2.15	0.55	0.44	0.28	0.20
AR7N	3.48	0.71	0.73	0.41	0.41	0.18	0.16
AR8	10.24	2.15	2.14	0.38	0.38	0.16	0.16
AR9	21.32	4.48	4.04	0.41	0.41	0.16	0.20
BA1	1.80	0.38	0.38	0.34	0.34	0.16	0.16
BA2	18.96	3.56	3.81	0.47	0.46	0.22	0.20
BA2S	18.61	3.79	3.76	0.45	0.45	0.19	0.17
BA3	15.02	3.20	3.15	0.58	0.58	0.16	0.16
BA4	10.79	1.70	2.32	0.40	0.37	0.52	0.16
BA5	9.62	1.23	1.69	0.48	0.37	0.53	0.31
BA6	27.67	5.49	5.55	0.48	0.48	0.21	0.20
BA7	16.04	2.39	2.40	0.54	0.54	0.43	0.43
BA7S1	7.30	0.92	1.53	0.67	0.49	0.31	0.16
BA8	30.72	2.85	6.45	1.96	1.13	0.37	0.16
BE1	18.00	7.00	8.62	0.60	0.48	0.19	0.15
BE2	51.24	28.88	30.22	0.25	0.23	0.15	0.15
BE2W1	70.88	10.19	15.80	0.58	0.43	0.28	0.17
BE3	19.68	12.30	12.47	0.15	0.15	0.15	0.15
BE3N1	47.53	28.87	29.16	0.16	0.16	0.15	0.15
BE3N2	31.59	4.01	6.56	1.92	1.33	0.33	0.16
BE4	39.89	22.79	23.35	0.14	0.14	0.18	0.15
BE4N1	6.91	1.27	1.27	0.52	0.52	0.29	0.29
BE5	26.76	18.94	19.64	0.16	0.16	0.19	0.15
BE5S1	13.29	7.05	7.12	0.22	0.22	0.15	0.15
BE5W	25.68	16.86	17.39	0.22	0.21	0.15	0.15
BE5W1	23.58	11.47	11.54	0.39	0.38	0.15	0.15
BE5W1N1	7.87	6.69	6.69	0.12	0.12	0.15	0.15



Subbasin	Total Area (acres)	Impervious Area (acres)		Lag Time (hours)		Aerially Averaged Infiltration Rate	
		Existing	Future	Existing	Future	Existing	Future
BE5W1N1W	7.98	3.69	4.13	0.19	0.17	0.15	0.15
BE5W1N2	22.23	12.17	12.17	0.19	0.19	0.15	0.15
BE5W1S	21.41	4.14	4.79	0.56	0.53	0.20	0.16
BE5W1S1	24.38	5.20	5.36	0.45	0.45	0.16	0.16
BE5W2	11.82	6.88	6.88	0.16	0.16	0.15	0.15
BE5W3	24.52	6.32	6.96	0.44	0.42	0.20	0.15
BE6	29.82	18.49	18.66	0.16	0.16	0.15	0.15
BE7	13.19	2.51	2.74	0.47	0.45	0.20	0.17
BE8	26.40	2.73	5.45	0.67	0.43	0.35	0.17
BE9	8.72	1.81	1.82	0.37	0.37	0.16	0.16
BE9N	3.52	0.74	0.74	0.50	0.50	0.16	0.16
BO1	14.19	3.03	2.55	0.52	0.52	0.32	0.26
BO2	14.53	3.62	3.77	0.39	0.38	0.19	0.17
BO3	7.81	1.76	1.67	0.40	0.40	0.20	0.16
BO3S1	5.62	0.98	1.18	0.45	0.43	0.18	0.16
BO4	15.97	2.81	3.35	0.43	0.41	0.36	0.16
BO5	14.87	2.12	3.12	0.60	0.46	0.35	0.16
BO6	14.62	2.68	3.07	0.38	0.37	0.25	0.16
BO7	8.91	1.50	1.57	0.52	0.52	0.31	0.31
BO8	16.81	2.28	3.46	0.53	0.40	0.31	0.17
CS1	1.80	0.38	0.38	0.50	0.50	0.16	0.16
CS2	16.54	4.62	4.95	0.45	0.43	0.17	0.15
CS2N1	15.83	9.04	9.31	0.38	0.16	0.15	0.15
CS3	5.47	1.81	1.61	0.30	0.30	0.20	0.15
CS4	17.50	4.35	3.67	0.44	0.44	0.19	0.16
DO1	5.11	1.76	1.11	0.40	0.40	0.15	0.16
DO1N	16.33	2.22	3.43	1.12	0.80	0.42	0.16
DO2	11.99	3.30	2.52	0.38	0.38	0.19	0.16
DO2S	13.34	2.61	2.81	0.52	0.50	0.19	0.16
DO3	24.87	4.83	5.22	0.55	0.53	0.19	0.16
DO3N	6.79	1.35	1.43	0.54	0.53	0.18	0.16
FN1	31.06	1.08	1.08	2.65	2.65	0.35	0.35
FN2	9.87	1.42	2.04	1.43	1.06	0.30	0.17
FN3	13.99	1.34	1.61	1.44	1.34	0.36	0.46
FN4	10.69	2.18	2.24	0.46	0.45	0.16	0.16
FN4N	10.85	3.30	3.53	0.43	0.42	0.18	0.15
FN5	5.45	3.13	3.13	0.15	0.15	0.15	0.15
FN6	18.38	4.02	4.72	0.46	0.43	0.37	0.28
FN7	25.80	2.98	3.08	1.35	1.33	0.60	0.61
FN8	24.57	4.49	4.75	0.45	0.44	0.22	0.22
FN9	33.55	4.09	6.00	0.69	0.53	0.35	0.26
FNA	41.36	6.18	6.24	0.70	0.61	0.26	0.29
FR1	1.36	0.11	0.29	0.70	0.43	0.60	0.16
FR1S1	9.19	3.49	4.47	0.34	0.31	0.23	0.15
FR1S2	29.27	5.09	6.92	0.52	0.46	0.27	0.15
FR1S3	32.94	5.47	6.92	0.51	0.47	0.24	0.16
FR2	17.20	7.23	8.98	0.33	0.17	0.29	0.15
FR3	47.64	1.20	2.11	2.40	2.15	0.49	0.42
FR3N1	10.73	0.21	0.21	1.31	1.31	0.59	0.59

Appendix B

HEC-HMS SUMMARY OF PEAK FLOWS WITH DETENTION FACILITIES

ID	Drainage Area (mi <sup>2</sup> )	2-YEAR		5-YEAR		10-YEAR		25-YEAR		50-YEAR		100-YEAR		500-YEAR	
		Existing	Future	Existing	Future	Existing	Future	Existing	Future	Existing	Future	Existing	Future	Existing	Future
		Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)
BER3-4	0.528	91.62	96.49	116.46	121.81	128.94	134.26	165.69	171.26	175.88	181.51	191.89	198.99	218.02	233.30
BER3N1-3N2	0.049	3.20	4.72	4.01	6.01	4.43	6.69	5.73	8.73	6.09	9.29	6.66	10.12	7.63	11.52
BER4-4N1	0.011	0.79	0.79	0.93	0.93	1.00	1.00	2.09	2.09	2.40	2.40	2.83	2.83	3.48	3.48
BER4-5	0.455	78.94	82.35	99.65	103.64	110.23	114.20	141.34	145.76	150.12	154.83	164.11	172.53	186.46	202.96
BER5-5S1	0.021	4.66	4.66	5.91	5.91	6.53	6.53	8.37	8.37	8.86	8.86	9.59	9.59	10.80	10.80
BER5-5W1	0.224	39.28	41.07	49.70	51.96	54.94	57.38	72.04	74.57	77.32	79.89	84.72	87.54	96.08	98.98
BER5-6	0.128	18.29	18.70	22.73	23.19	24.87	25.42	31.25	33.56	32.93	37.60	35.44	44.12	39.57	54.33
BER5W1-5W1N1	0.059	13.32	13.49	16.57	16.77	18.15	18.37	22.82	23.09	25.02	25.08	28.95	29.13	33.87	34.20
BER5W1-5W1S1	0.038	6.97	6.97	8.76	8.76	9.65	9.65	12.29	12.29	12.99	12.99	14.04	14.04	15.77	15.77
BER5W1-5W2	0.018	5.15	5.15	6.42	6.42	7.05	7.05	8.91	8.91	9.35	9.35	10.10	10.10	11.30	11.30
BER5W1-5W3	0.038	5.58	6.49	7.27	8.32	8.14	9.24	10.81	11.98	11.52	12.70	12.60	13.78	14.39	15.58
BER5W1N1-5W1N	0.035	9.00	9.00	11.22	11.22	12.32	12.32	15.57	15.57	16.43	16.43	17.71	17.71	19.84	19.84
BER6-7	0.081	7.45	7.93	8.82	11.10	9.49	13.92	15.10	23.61	17.37	26.00	20.58	29.32	25.49	34.01
BER7-8	0.06	5.95	6.27	7.06	8.90	7.61	11.71	10.87	18.82	12.49	20.50	14.83	22.65	18.36	25.52
BER8-9	0.019	3.65	3.65	4.58	4.58	5.04	5.04	6.42	6.42	6.78	6.78	7.33	7.33	8.23	8.23
BO1	0.022	2.40	2.67	3.20	3.52	3.62	3.95	4.92	5.32	5.28	5.69	5.82	6.27	6.75	7.24
BO2	0.029	4.42	5.10	5.75	6.52	6.44	7.23	8.54	9.35	9.10	9.91	9.94	10.75	11.33	12.14
BO3	0.012	2.13	2.34	2.72	2.94	3.01	3.23	3.91	4.12	4.15	4.35	4.50	4.70	5.09	5.28
BO3S1	0.013	2.18	2.44	2.77	3.06	3.07	3.37	3.98	4.29	4.23	4.53	4.59	4.90	5.20	5.50
BO4	0.025	3.35	4.77	4.40	5.99	4.94	6.59	6.58	8.39	7.03	8.87	7.71	9.58	8.87	10.76
BO5	0.019	2.32	3.42	2.98	4.30	3.32	4.74	4.37	6.04	4.66	6.39	5.09	6.90	5.83	7.75
BO6	0.023	3.76	4.54	4.83	5.70	5.38	6.27	7.08	7.98	7.53	8.43	8.22	9.10	9.37	10.22
BO7	0.014	1.89	1.89	2.43	2.43	2.71	2.71	3.56	3.56	3.79	3.79	4.14	4.14	4.74	4.74
BO8	0.028	2.98	4.79	3.97	6.14	4.48	6.81	6.08	8.81	6.53	9.34	7.20	10.13	8.35	11.45
BOJ1	0.184	24.99	31.59	32.48	40.12	36.32	44.39	48.15	57.21	51.38	60.63	56.24	65.76	64.44	74.27
BOJ2	0.162	22.60	28.92	29.32	36.63	32.76	40.47	43.32	51.97	46.19	55.01	50.52	59.58	57.79	67.15
BOJ3	0.134	18.33	24.03	23.74	30.34	26.52	33.48	35.05	42.90	37.38	45.40	40.89	49.14	46.81	55.35
BOJ3S1	0.013	2.18	2.44	2.77	3.06	3.07	3.37	3.98	4.29	4.23	4.53	4.59	4.90	5.20	5.50
BOJ4	0.108	14.07	19.29	18.31	24.38	20.50	26.93	27.25	34.54	29.10	36.56	31.90	39.59	36.63	44.63
BOJ5	0.083	10.80	14.55	14.02	18.43	15.67	20.37	20.78	26.18	22.18	27.73	24.29	30.05	27.87	33.91
BOJ6	0.064	8.51	11.17	11.04	14.18	12.36	15.69	16.47	20.21	17.59	21.42	19.28	23.23	22.14	26.23
BOJ7	0.042	4.87	6.67	6.38	8.54	7.17	9.47	9.61	12.30	10.28	13.06	11.31	14.20	13.06	16.10
BOJ8	0.028	2.98	4.79	3.97	6.14	4.48	6.81	6.08	8.81	6.53	9.34	7.20	10.13	8.35	11.45
BOR1-2	0.162	22.59	28.91	29.28	36.60	32.70	40.44	43.24	51.90	46.10	54.94	50.42	59.48	57.68	67.03
BOR2-3	0.134	18.33	23.96	23.71	30.26	26.47	33.39	34.97	42.77	37.29	45.26	40.79	48.99	46.69	55.17
BOR3-3S1	0.013	2.17	2.42	2.76	3.04	3.06	3.35	3.98	4.27	4.22	4.51	4.58	4.88	5.19	5.48
BOR3-4	0.108	14.07	19.27	18.31	24.36	20.49	26.90	27.23	34.51	29.08	36.53	31.88	39.56	36.62	44.59
BOR4-5	0.083	10.79	14.52	14.01	18.40	15.66	20.34	20.76	26.15	22.15	27.70	24.27	30.01	27.85	33.87
BOR5-6	0.064	8.47	11.12	11.04	14.12	12.36	15.63	16.44	20.14	17.56	21.35	19.25	23.15	22.11	26.15
BOR6-7	0.042	4.86	6.65	6.37	8.51	7.15	9.45	9.60	12.27	10.28	13.03	11.31	14.17	13.06	16.06
BOR7-8	0.028	2.98	4.78	3.95	6.13	4.46	6.80	6.06	8.80	6.50	9.33	7.18	10.12	8.34	11.44
CS1	0.003	0.49	0.49	0.62	0.62	0.68	0.68	0.87	0.87	0.92	0.92	0.99	0.99	1.11	1.11
CS2	0.026	4.25	4.35	5.45	5.57	6.05	6.18	7.84	8.01	8.32	8.50	9.03	9.22	10.20	10.42
CS2N1	0.025	4.40	6.47	5.63	8.14	6.24	8.96	8.07	11.43	8.56	12.08	9.28	13.06	10.48	14.68

**Appendix B**  
**HEC-HMS SUMMARY OF PEAK FLOWS WITH DETENTION FACILITIES**

ID	Drainage Area (mi <sup>2</sup> )	2-YEAR		5-YEAR		10-YEAR		25-YEAR		50-YEAR		100-YEAR		500-YEAR	
		Existing	Future	Existing	Future	Existing	Future	Existing	Future	Existing	Future	Existing	Future	Existing	Future
		Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)	Qpeak (cfs)
CS3	0.009	1.68	1.84	2.14	2.31	2.38	2.54	3.08	3.23	3.26	3.41	3.54	3.68	4.00	4.13
CS4	0.027	4.00	4.53	5.21	5.81	5.83	6.45	7.74	8.37	8.25	8.87	9.02	9.63	10.30	10.88
CSJ1	0.089	14.67	16.54	18.87	21.08	20.98	23.36	27.37	30.13	29.06	31.93	31.60	34.59	35.81	39.02
CSJ2	0.086	14.21	16.16	18.29	20.60	20.34	22.81	26.53	29.41	28.18	31.15	30.64	33.74	34.72	38.06
CSJ2N1	0.025	4.40	6.47	5.63	8.14	6.24	8.96	8.07	11.43	8.56	12.08	9.28	13.06	10.48	14.68
CSJ3	0.036	5.60	6.30	7.26	8.03	8.11	8.90	10.70	11.47	11.39	12.15	12.42	13.17	14.14	14.86
CSJ4	0.027	4.00	4.53	5.21	5.81	5.83	6.45	7.74	8.37	8.25	8.87	9.02	9.63	10.30	10.88
CSR1-2	0.086	14.18	16.06	18.25	20.49	20.30	22.70	26.50	29.29	28.15	31.05	30.61	33.64	34.70	37.95
CSR2-2N1	0.025	4.39	6.43	5.61	8.09	6.22	8.92	8.04	11.31	8.53	12.00	9.24	12.98	10.45	14.57
CSR2-3	0.036	5.59	6.29	7.25	8.01	8.09	8.88	10.67	11.44	11.36	12.13	12.39	13.14	14.11	14.83
CSR3-4	0.027	4.00	4.53	5.20	5.81	5.82	6.45	7.73	8.36	8.25	8.86	9.01	9.62	10.29	10.87
DO1	0.008	1.53	1.53	1.93	1.93	2.12	2.12	2.70	2.70	2.85	2.85	3.08	3.08	3.46	3.46
DO1N	0.025	1.81	3.12	2.35	4.02	2.62	4.47	3.49	5.85	3.73	6.21	4.10	6.76	4.75	7.68
DO2	0.019	3.36	3.68	4.28	4.62	4.74	5.09	6.15	6.48	6.53	6.84	7.09	7.39	8.01	8.30
DO2S	0.021	2.80	3.25	3.64	4.18	4.08	4.64	5.43	6.03	5.79	6.40	6.34	6.95	7.24	7.86
DO3	0.039	5.97	6.62	7.54	8.31	8.35	9.15	10.84	11.68	11.50	12.35	12.50	13.35	14.15	15.01
DO3N	0.011	1.40	1.60	1.82	2.06	2.03	2.29	2.71	2.98	2.89	3.16	3.17	3.43	3.62	3.89
DOJ1	0.123	16.49	19.37	21.00	24.57	23.31	27.17	30.37	34.98	32.26	37.05	35.10	40.15	39.84	45.28
DOJ2	0.089	13.40	15.04	17.13	19.03	19.05	21.02	24.93	26.98	26.50	28.55	28.86	30.91	32.78	34.82
DOJ3	0.049	7.37	8.22	9.36	10.37	10.39	11.44	13.55	14.66	14.39	15.51	15.66	16.78	17.77	18.90
DOR1-2	0.089	13.38	15.02	17.10	19.01	19.01	21.00	24.89	26.95	26.46	28.52	28.81	30.88	32.73	34.79
DOR2-3	0.049	7.35	8.20	9.36	10.35	10.38	11.42	13.55	14.63	14.39	15.48	15.66	16.75	17.77	18.86
FN1	0.049	4.16	4.16	4.96	4.96	5.37	5.37	6.65	6.65	7.00	7.00	7.53	7.53	8.42	8.42
FN2	0.015	1.56	1.93	1.92	2.40	2.10	2.63	2.66	3.35	2.81	3.54	3.03	3.84	3.41	4.32
FN3	0.022	1.53	1.42	1.95	1.83	2.16	2.04	2.84	2.69	3.03	2.87	3.32	3.15	3.82	3.62
FN4	0.017	3.01	3.06	3.78	3.85	4.16	4.24	5.31	5.40	5.61	5.71	6.07	6.17	6.82	6.93
FN4N	0.017	2.91	3.22	3.70	4.04	4.10	4.45	5.32	5.67	5.65	5.99	6.13	6.47	6.94	7.26
FN5	0.009	2.43	2.43	3.02	3.02	3.31	3.31	4.17	4.17	4.40	4.40	4.74	4.74	5.31	5.31
FN6	0.029	2.93	3.39	4.00	4.55	4.55	5.15	6.25	7.02	6.72	7.54	7.44	8.32	8.67	9.65
FN7	0.04	2.26	2.26	2.95	2.96	3.33	3.34	4.46	4.48	4.77	4.79	5.24	5.27	6.04	6.07
FN8	0.038	5.58	5.63	7.26	7.32	8.12	8.19	10.79	10.89	11.51	11.61	12.58	12.69	14.36	14.49
FN9	0.052	4.60	6.26	6.11	8.23	6.90	9.25	9.38	12.44	10.08	13.32	11.14	14.67	12.94	16.94
FNA	0.065	6.76	6.52	8.82	8.63	9.90	9.73	13.25	13.18	14.19	14.14	15.64	15.59	18.08	18.08
FNA-R	0.065	3.93	3.81	4.46	4.34	4.72	4.58	11.66	10.40	13.36	12.24	15.60	14.77	18.88	17.65
FNJ1	1.042	111.88	122.15	141.79	154.65	156.87	171.00	202.85	220.41	215.32	233.65	234.06	253.51	265.54	286.70
FNJ2-ARJ1	0.994	107.97	118.39	137.38	150.30	152.20	166.38	197.59	214.99	209.92	228.06	228.42	247.66	259.55	280.45
FNJ3-RWJ1	0.564	63.93	69.91	81.46	88.82	90.34	98.39	117.42	127.20	124.80	134.95	135.86	146.59	156.01	166.00
FNJ4	0.267	24.82	27.46	31.77	35.11	35.27	38.96	45.99	50.75	48.92	53.96	55.35	58.77	68.81	72.03
FNJ5	0.233	19.14	21.38	24.58	27.44	27.32	30.52	35.79	40.04	39.31	42.63	46.40	48.38	57.36	60.33
FNJ6	0.224	17.83	20.04	22.91	25.73	25.48	28.64	33.52	37.63	38.10	40.09	44.84	46.79	55.47	58.48
FNJ7	0.196	15.21	16.96	19.30	21.53	21.39	23.85	30.16	30.99	34.04	34.64	39.69	41.07	48.77	51.17
FNJ8	0.155	13.00	14.75	16.52	18.79	18.30	20.82	25.76	27.12	29.61	30.41	34.94	36.36	43.30	45.60
FNJ9	0.117	7.80	9.28	9.63	11.59	10.60	12.78	18.74	18.95	21.45	22.25	25.15	26.58	30.97	33.31
FNJA	0.065	3.93	3.81	4.46	4.34	4.72	4.58	11.66	10.40	13.36	12.24	15.60	14.77	18.88	17.65

Appendix C  
 CULVERT AND PIPE INVENTORY WITH HYDRAULIC DEFICIENCIES

Count	Watershed	PWR ID	HEC-HMS Subbasin	Drainage Area (mi²)	Location / Description	Existing Structure										25-Year Design Flow (cfs)		Is it Deficient?		100-Year Design Flow (cfs)		Is it Deficient?	
						Dia (ft)	Length (ft)	Inlet Type	Material	Shape	Slope (ft/ft)	Capacity (cfs)	Structure Type	Existing	Future	Now	Future	Existing	Future	Now	Future		
1	ARBOR	495	ARJ5N1	0.156	PIPE FROM SCENIC DR TO HILLSIDE DR.	1.50	400	HW45	CONC	CIRC	0.170	24.5	P	18.6	19.4	NO	NO	21.4	22.3	NO	NO		
2	ARBOR	496	ARJ9	0.033	FROM BRAEMAR CT TO SKYE PARKWAY	4.00	390	HW45	CMP	CIRC	0.164	4.0	P	11.2	10.7	YES	YES	12.8	12.3	YES	YES		
3	ARBOR	497	ARR5-6	0.087	ENTRANCE TO PIEP SYSTEM UNDER UPPER MIDHILL	3.00	92	HW90	CONC	CIRC	0.158	103.9	C	24.2	26.4	NO	NO	27.7	30.4	NO	NO		
4	ARBOR	657	ARJ3	0.356	CULVERT UNDER PACIFIC HIGHWAY NR ARBOR DR.	2.00	72	HW90	CONC	CIRC	0.083	70.8	C	66.2	72.8	NO	NO	76.6	84.0	YES	YES		
5	ARBOR	659	ARR5-5M1	0.156	ENTRANCE TO PIEP SYSTEM UNDER COLLEGE HILL PL.	1.50	275	HW90	CONC	CIRC	0.113	55.1	C	18.6	19.4	NO	NO	21.4	22.3	NO	NO		
6	ARBOR	660	ARR5-6	0.087	PIPE UNDER UPPER MIDHILL NR COLLEGE HILL PL.	2.00	33	HW45	CONC	CIRC	0.086	109.8	P	24.2	26.4	NO	NO	27.7	30.4	NO	NO		
7	ARBOR	661	ARJ6	0.062	UNDER HILLSIDE DR.	4.00	150	PROJ	CMP	CIRC	0.173	161.6	C	24.2	26.4	NO	NO	27.7	30.4	NO	NO		
8	ARBOR	662	ARR5J2	0.062	ENTRANCE TO PIEP SYSTEM UNDER SKYE PARKWAY	3.00	420	HW90	CONC	CIRC	0.217	34.5	P	9.1	9.4	NO	NO	10.6	11.0	NO	NO		
9	ARBOR	663	ARSN1W1	0.078	ENTRANCE TO PIEP SYSTEM AT SCENIC DR.	2.25	170	HW90	CONC	CIRC	0.382	19.7	P	7.4	7.4	NO	NO	8.5	8.5	NO	NO		
10	ARBOR	664	ARJ8	0.049	UPSTREAM OF BRAEMAR CT.	4.00	120	HW45	CONC	CIRC	0.017	12.5	P	16.7	16.2	YES	YES	19.1	18.6	YES	YES		
11	BARLOW	481	BAJ8	0.048	UNDER ROSE PARK DR. AT LUPIN CT.	3.00	60	PROJ	CMP	CIRC	0.117	39.9	C	7.3	10.2	NO	NO	8.3	11.6	NO	NO		
12	BARLOW	597	BAJ6	0.127	UNDER SUMMIT ST AT HORTON RD.	3.00	140	PROJ	CMP	CIRC	0.050	10.9	C	26.2	29.8	YES	YES	30.0	34.4	YES	YES		
13	BARLOW	598	BAJ5	0.142	UNDER RANDALL ST.	2.00	265	HW45	CONC	CIRC	0.159	70.8	P	28.5	33.4	NO	NO	32.8	38.7	NO	NO		
14	BARLOW	599	BAJ5	0.142	PIPE ENTRANCE AT BUCK ST.	2.50	164	HW90	CMP	CIRC	0.048	46.8	C	28.5	33.4	NO	NO	32.8	38.7	NO	NO		
15	BARLOW	600	BAJ3	0.184	PIPE UNDER LOWRY DR.	2.00	70	HW90	CONC	CIRC	0.214	34.5	C	39.2	46.0	YES	YES	45.2	53.1	YES	YES		
16	BARLOW	601	BAJ4	0.159	UNDER WILLAMETTE DR. NR RANDALL ST.	2.25	87	PROJ	CMP	CIRC	0.082	39.9	C	32.2	38.9	NO	NO	37.2	45.0	YES	YES		
17	BARLOW	602	BAJ4	0.159	UNDER WILLAMETTE DR. NR RANDALL ST.	2.00	110	PROJ	CMP	CIRC	0.167	22.8	C	32.2	38.9	YES	YES	37.2	45.0	YES	YES		
18	BARLOW	603	BAR2-3	0.184	UNDER WILLAMETTE VIEW CT.	2.00	150	PROJ	CMP	CIRC	0.140	14.8	C	39.2	46.0	YES	YES	45.2	53.0	YES	YES		
19	BARLOW	604	BAJ2	0.241	CULVERT UNDER FAILING STREET	2.00	317	PROJ	CMP	CIRC	0.098	9.1	C	55.6	62.9	YES	YES	64.3	72.6	YES	YES		
20	BERNERT	443	BEJ5S1	0.021	UNDER 10TH STREET	1.00	600	HW45	CONC	CIRC	0.044	12.5	P	8.4	8.4	NO	NO	9.6	9.6	NO	NO		
21	BERNERT	444	BER5W1-5W1S1	0.038	ALONG 13TH AVENUE	3.00	120	HW45	CONC	CIRC	0.029	4.5	P	12.3	12.3	YES	YES	14.0	14.0	YES	YES		
22	BERNERT	445	BEJ5W1S1	0.038	FROM 16TH AVENUE TO 13TH AVENUE	1.25	1000	HW45	CONC	CIRC	0.050	4.5	P	12.3	12.3	YES	YES	14.1	14.1	YES	YES		
23	BERNERT	446	BEJ5W1N1	0.059	UNDER I-205 AT 13TH AVENUE	2.50	526	HW45	CONC	CIRC	0.009	36.9	P	22.9	23.2	NO	NO	29.2	29.3	NO	NO		
24	BERNERT	447	BEJ5W2	0.018	UNDER I-205 AT VIRGINIA LN.	3.50	288	HW45	CONC	CIRC	0.010	5.2	P	8.9	8.9	YES	YES	10.1	10.1	YES	YES		
25	BERNERT	448	BEJAN1	0.011	UNDER I-205	2.50	538	HW90	CMP	CIRC	0.210	8.1	C	2.1	2.1	NO	NO	2.8	2.8	NO	NO		
26	BERNERT	449	BEJAN1	0.011	ABOVE I-205	3.00	115	HW90	CONC	CIRC	0.280	7.9	C	6.4	6.4	NO	NO	2.8	2.8	NO	NO		
27	BERNERT	450	BEJ9	0.019	ALONG TANNLER NR FALCON DR	1.50	214	HW90	CONC	CIRC	0.114	12.5	P	6.4	6.4	NO	NO	7.3	7.3	NO	NO		
28	BERNERT	451	BEJ9	0.019	ALONG TANNLER NR FALCON DR	2.00	214	HW90	CONC	CIRC	0.079	9.1	P	6.4	6.4	NO	NO	7.3	7.3	NO	NO		
29	BERNERT	452	BER3N1-3N2	0.049	DOWN TO WILLAMETTE FALLS DR.	3.00	484	PROJ	CMP	CIRC	0.178	28.6	C	5.7	8.7	NO	NO	6.7	10.1	NO	NO		
30	BERNERT	453	BEJ3N2	0.049	UNDER SALAMO NR HALL CT.	1.50	150	HW45	CONC	CIRC	0.020	6.6	P	5.7	8.7	NO	YES	6.7	10.1	YES	YES		
31	BERNERT	454	BE2W1	0.111	UNDER 9TH ST. NR VOLPP ST.	1.00	80	PROJ	CMP	CIRC	0.004	7.0	C	23.3	34.5	YES	YES	27.6	39.7	YES	YES		
32	BERNERT	523	BERG-7	0.081	ALONG TANNER RD TO BLANKENSHIP RD	2.00	900	HW45	CONC	CIRC	0.128	70.8	P	15.1	23.6	NO	NO	20.6	29.3	NO	NO		
33	BERNERT	524	BEJ7	0.081	ALONG TANNER D DOWNSTREAM OF GREENE ST	1.50	335	HW45	CMP	CIRC	0.119	26.1	P	15.2	23.7	NO	NO	20.6	29.6	NO	YES		
34	BERNERT	525	BEJ8	0.06	ALONG TANNER RD UNDER GREENE STREET	1.50	100	HW45	CONC	CIRC	0.250	25.7	P	10.9	18.8	NO	NO	14.8	22.7	NO	NO		
35	BERNERT	526	BEJ9	0.019	AT TANNLER AND REMINGTON	1.25	83	HW90	CONC	CIRC	0.081	12.5	P	6.4	6.4	NO	NO	7.3	7.3	NO	NO		
36	BERNERT	527	BERJ6	0.128	UNDER SALAMO AT TANNER DR.	3.00	237	HW45	CONC	CIRC	0.019	70.8	P	31.8	39.8	NO	NO	35.8	44.2	NO	NO		
37	BERNERT	528	BEJ6	0.128	UNDER I-205	3.00	538	HW90	CMP	CIRC	0.026	35.9	C	31.6	33.6	NO	NO	35.9	44.2	NO	YES		
38	BERNERT	529	BER5-5W1	0.224	UNDER 10TH	1.25	150	HW90	CONC	CIRC	0.040	70.8	C	72.0	74.6	YES	YES	84.7	87.5	YES	YES		
39	BERNERT	530	BEJ4	0.528	NR 7TH	1.00	100	HW90	CONC	CIRC	0.050	25.7	C	166.0	171.5	YES	YES	192.4	199.5	YES	YES		
40	BERNERT	531	BER3-4	0.528	UNDER WILLAMETTE FALLS DR NR 6TH ST.	1.25	160	PROJ	CMP	CIRC	0.040	92.5	C	165.7	171.3	YES	YES	191.9	199.0	YES	YES		
41	BERNERT	532	BEJ3N1	0.124	UNDER WILLAMETTE FALLS DR AT 6TH ST.	3.50	90	HW45	CMP	CIRC	0.043	105.8	P	39.0	40.4	NO	NO	44.3	46.2	NO	NO		
42	BERNERT	533	BEJ3N1	0.124	PAIR UNDER WILLAMETTE FALLS DR AT 6TH ST.	3.00	50	HW45	CONC	CIRC	0.132	25.7	P	39.0	40.4	YES	YES	44.3	46.2	YES	YES		
43	BERNERT	534	BER2-3	0.682	UNDER 5TH AVENUE AT MOEHNKE ST.	2.00	37	PROJ	CMP	CIRC	0.076	49.9	C	213.2	220.6	YES	YES	245.6	254.5	YES	YES		
44	BERNERT	535	BER2-2W1	0.111	UNDER 4TH ST. NR OUTFALL	1.50	45	PROJ	CMP	CIRC	0.016	66.0	C	21.7	31.9	NO	NO	25.8	36.8	NO	NO		
45	BOLTON	590	BOJ2-3	0.134	PIPE FROM HWY 43 TO HOLMES ST S. OF BUCK	1.75	520	HW45	CONC	CIRC	0.052	23.4	P	35.0	42.9	YES	YES	40.8	49.0	YES	YES		
46	BOLTON	591	BOJ2	0.134	PIPE FROM HWY 43 TO FAILING ST. S. OF BUCK	2.50	250	HW45	CONC	CIRC	0.065	28.6	P	35.1	42.9	YES	YES	40.9	49.1	YES	YES		
47	BOLTON	592	BOJ3	0.134	UNDER HIGHWAY 43 AT WEST A ST.	2.67	90	HW90	CONC	BOX	0.001	81.9	C	35.1	42.9	NO	NO	40.9	49.1	NO	NO		
48	BOLTON	593	BOJ4	0.108	PIPE ALONG HWY 43 AT WEST A ST.	2.00	228	HW45	CONC	CIRC	0.036	25.7	P	27.2	34.5	YES	YES	31.9	39.6	YES	YES		
49	BOLTON	594	BOJ5	0.083	UNDER CAULFIELD ST.	2.25	61	PROJ	CMP	CIRC	0.033	49.9	C	20.8	26.2	NO	NO	24.3	30.1	NO	NO		
50	BOLTON	595	BOJ6	0.064	UNDER FIRWOOD CT.	2.00	230	PROJ	CMP	CIRC	0.130	20.5	C	16.5	20.2	NO	NO	19.3	23.2	NO	NO		
51	BOLTON	596	BOJ7	0.042	UNDER SKYLINE DR NR. WOODWINDS CT.	2.50	140	PROJ	CMP	CIRC	0.057	22.8	C	9.6	12.3	NO	NO	11.3	14.2	NO	NO		
52	CASCADE SPRINGS	475	CSJ3	0.036	DOWNSTREAM OF MCKILLICAN ST.	1.50	250	HW45	CONC	CIRC	0.011	25.5	P	10.7	11.5	NO	NO	12.4	13.2	NO	NO		
53	CASCADE SPRINGS	474	CSJ4	0.027	PIPE ALONG MCKILLICAN FROM WEST A ST. TO	2.00	975	HW45	CONC	CIRC	0.105	12.5	P	7.7	8.4	NO	NO	9.0	9.6	NO	NO		
54	CASCADE SPRINGS	475	CSJ5	0.036	UNDER PACIFIC HIGHWAY AT MCKILLICAN	2.50	167	HW45	CONC	CIRC	0.079	42.0	P	11.5	11.5	NO	NO	13.0	13.2	YES	YES		
55	CASCADE SPRINGS	476	CSJ2	0.086	CULVERT UNDER RIVER STREET	2.00	60	PROJ	CMP	CIRC	0.142	48.9	C	26.5	29.4	NO	NO	30.8	33.0	NO	NO		
56	DOLLAR	520	DOJ1	0.123	OUTFALL PIPE	2.00	325	HW45	CMP	CIRC	0.110	12.7	P	30.4	35.0	YES	YES	35.1	40.1	YES	YES		
57	DOLLAR	521	DOJ2	0.089	ALONG BORLAND FROM OSTMAN TO OUTFALL PIPE	2.00	1200	HW45	CONC	CIRC	0.037	25.7	P	24.9	27.0	NO	YES	28.9	30.9	YES	YES		
58	DOLLAR	522	DOJ3	0.049	FROM BEXHILL TO BORLAND	1.50	420	HW45	CONC	CIRC	0.053	25.7	P	13.5	14.7	NO	NO	15.7	16.8	NO	NO		
59	FERN	434	FNJ2-ARJ1	0.994	CULVERTS NR ARBOR DRIVE (8", 12", 30" UNDER PVT.	#N/A	20	PROJ	CMP	CIRC	0.010	25.5	C	197.6	215.0	YES	YES	228.4	247.7	YES	YES		
60	FERN	500	FNJA	0.065	PAIR UNDER CARRIAGE WAY	2.00	100	PROJ	CMP	CIRC	0.050	23.8	C	11.7	10.4	NO	NO	15.6	14.8	NO	NO		
61	FERN	500	FNJA	0.065	PAIR UNDER CARRIAGE WAY	2.00	100	PROJ	CMP	CIRC	0.050	20.6	C	11.7	10.4	NO	NO	15.6	14.8	NO	NO		
62	FERN	636	FNJ7	0.196	CULVERT NR KANTARA WAY	3.50	65	PROJ	CMP	CIRC	0.108	28.6	C	30.2	31.0	YES	YES	39.7	41.1	YES	YES		
63	FERN	637	FNJ7	0.196	NEAR KANTARA WAY	3.50	28	PROJ	CMP	CIRC	0.071	20.3	C	30.2	31.0	YES	YES	39.7	41.1	YES	YES		
64	FERN	638	FNJ6	0.224	UNDER PACIFIC HIGHWAY NR NORTH END OF	2.67	400	HW90	CONC	CIRC	0.043	37.1	P	37.8	40.4	YES	YES	44.8	48.8	YES	YES		
65	FERN	639	FNJR-6	0.196	ENTRANCE PIPE TO SYSTEM UNDER PACIFIC	3.00	85	HW90	CONC	CIRC	0.076	104.1	C	29.9	30.9	NO	NO	39.6	41.0	NO	NO		
66	FERN	640	FNJ5	0.233	CULVERT UNDER ROSE WAY	2.67	205	PROJ	CMP	CIRC													

**Appendix C  
CULVERT AND PIPE INVENTORY WITH HYDRAULIC DEFICIENCIES**

Count	Watershed	PWR ID	HEC-HMS Subbasin	Drainage Area (mi <sup>2</sup> )	Location / Description	Existing Structure						25-Year Design Flow (cfs)		Is it Deficient?		100-Year Design Flow (cfs)		Is it Deficient?			
						Diam (ft)	Length (ft)	Inlet Type	Material	Shape	Slope (ft/ft)	Capacity (cfs)	Structure Type	Existing	Future	Now	Future	Existing	Future	Now	Future
192	SUNSET	468	SSR6-7	0.016	RUNNING PARALLEL TO BITTNER ST.	1.50	275	HW45	CONC	CIRC	0.051	7.9	P	3.7	4.8	NO	NO	4.4	5.6	NO	NO
193	SUNSET	470	SSJ7	0.016	PIPE UNDER EXETER STREET	2.00	180	HW45	CONC	CIRC	0.018	18.4	P	3.7	4.8	NO	NO	4.4	5.6	NO	NO
194	SUNSET	471	SSR6-7	0.016	PIPE UNDER LONG ST.	1.75	125	HW45	CONC	CIRC	0.208	9.3	P	3.7	4.8	NO	NO	4.4	5.6	NO	NO
195	SUNSET	472	SSJ6	0.061	UNDER CHARMAN ST.	1.25	81	PROJ	CMP	CIRC	0.025	19.3	C	18.4	19.9	NO	YES	21.3	22.8	YES	YES
196	SUNSET	473	SSR3-4	0.079	PIPE FROM SUNSET AVE. TO IMPERIAL DR.	2.00	250	HW90	CONC	CIRC	0.028	25.7	P	24.4	26.0	NO	YES	28.1	29.8	YES	YES
197	SUNSET	558	SSJ5	0.07	UNDER KELLEY STREET	1.33	60	PROJ	CMP	CIRC	0.050	22.8	C	21.5	23.1	NO	YES	24.8	26.5	YES	YES
198	SUNSET	559	SSJ4	0.079	ENTRANCE PIPE FROM SUNSET AVE. TO IMPERIAL DR.	2.00	412	HW90	CONC	CIRC	0.143	14.8	C	24.4	26.1	YES	YES	28.2	29.9	YES	YES
199	SUNSET	560	SSR3-4	0.079	FROM IMPERIAL DR. TO I-205	2.00	188	HW45	CONC	CIRC	0.128	25.3	P	24.4	26.0	NO	YES	28.1	29.8	YES	YES
200	SUNSET	561	SSJ3	0.101	UNDER I-205	2.00	172	HW45	CONC	CIRC	0.023	7.0	P	31.3	33.5	YES	YES	36.2	38.4	YES	YES
201	SUNSET	562	SSJ3	0.101	UNDER WILLAMETTE FALLS DR.	2.25	90	PROJ	CONC	CIRC	0.007	20.1	C	31.3	33.5	YES	YES	36.2	38.4	YES	YES
202	SUNSET	563	SSR1-2	0.109	CULVERT TO OUTFALL	1.25	420	PROJ	CONC	CIRC	0.075	28.6	C	34.1	36.3	YES	YES	39.4	41.6	YES	YES
203	TANNER	455	TAJBW2	0.061	CHELAN DR TO PONDERAY DR.	3.00	179	HW45	CONC	CIRC	0.035	25.7	P	21.4	21.4	NO	NO	25.5	25.5	NO	NO
204	TANNER	456	TAR8W2-8W3	0.022	FROM BELKNAP TO CHELAN	2.00	278	HW45	CONC	CIRC	0.031	25.7	P	8.5	8.5	NO	NO	11.3	11.3	NO	NO
205	TANNER	457	TAJBW3	0.022	FROM SALAMO TO BELKNAP	2.00	668	HW45	CONC	CIRC	0.032	25.7	P	8.9	8.9	NO	NO	11.5	11.5	NO	NO
206	TANNER	458	TAJ3E1	0.033	PIPE UNDER FAIRHAVEN DR	1.75	601	HW45	CONC	CIRC	0.080	7.9	P	8.5	10.0	YES	YES	10.0	11.5	YES	YES
207	TANNER	459	TAJF	0.035	NEW PIPE NR MIDDLE SCHOOL	1.75	339	HW90	CONC	CIRC	0.025	44.9	C	8.8	10.2	NO	NO	10.3	11.7	NO	NO
208	TANNER	460	TAJF	0.059	CULVERT UNDER DAY RD. NR HOOD CT.	2.00	76	PROJ	CONC	CIRC	0.011	45.7	P	13.3	14.2	NO	NO	15.6	16.4	NO	NO
209	TANNER	461	TAJB	0.122	PIPE UNDER PARKER RD.	2.50	150	HW90	CONC	CIRC	0.029	70.8	P	19.9	25.4	NO	NO	25.2	31.6	NO	NO
210	TANNER	536	TAJF	0.035	UNDER ROSEMONT NR PARKER RRD	2.50	50	PROJ	CONC	CIRC	0.118	20.5	C	8.8	10.2	NO	NO	10.3	11.7	NO	NO
211	TANNER	536	TAJF	0.035	UNDER ROSEMONT NR PARKER RRD	2.50	50	HW90	CONC	CIRC	0.118	18.4	C	8.8	10.2	NO	NO	10.3	11.7	NO	NO
212	TANNER	537	TAJF	0.098	CULVERT UNDER PARKER RD.	1.25	40	PROJ	CONC	CIRC	0.088	49.9	C	16.9	19.7	NO	NO	21.7	25.3	NO	NO
213	TANNER	538	TAJB	0.122	CULVERT UNDER PARKER RD	4.50	50	PROJ	CONC	CIRC	0.065	28.6	C	19.9	25.4	NO	NO	25.2	31.6	NO	YES
214	TANNER	539	TARA-B	0.122	CULVERT UNDER PATH	4.50	20	PROJ	CMP	CIRC	0.030	6.1	C	19.8	25.2	YES	YES	25.1	31.6	YES	YES
215	TANNER	540	TAJ8E1	0.079	UNDER PARKER RD NR COHO LN	1.00	65	HW45	CONC	CIRC	0.054	25.7	C	11.3	23.5	NO	NO	14.9	28.5	NO	YES
216	TANNER	541	TAJ8E1	0.075	UNDER PARKER RD.	2.00	66	PROJ	CONC	CIRC	0.030	13.9	C	12.3	19.5	NO	YES	16.5	24.2	YES	YES
217	TANNER	548	TAJ8E1	0.042	UNDER FAIRHAVEN DR.	3.00	60	PROJ	CONC	CIRC	0.017	78.7	C	8.7	11.8	NO	NO	10.2	13.6	NO	NO
218	TANNER	549	TAJ5-SAJ1	0.93	CULVERTS BETWEEN PONDS	1.50	78	HW90	CMP	CIRC	0.004	66.2	C	164.3	203.0	YES	YES	210.2	263.2	YES	YES
219	TANNER	549	TAJ5-SAJ1	0.93	CULVERTS BETWEEN PONDS	6.00	78	HW90	CMP	CIRC	0.004	66.2	C	164.3	203.0	YES	YES	210.2	263.2	YES	YES
220	TANNER	549	TAJ5-SAJ1	0.93	CULVERTS BETWEEN PONDS	4.50	78	HW90	CMP	CIRC	0.004	66.2	C	164.3	203.0	YES	YES	210.2	263.2	YES	YES
221	TANNER	550	TAJ4E1	0.013	FROM WELLINGTON DR TO WELLINGTON CT.	2.00	325	HW45	CONC	CIRC	0.129	11.5	P	3.7	4.1	NO	NO	4.4	4.7	NO	NO
222	TANNER	551	TAR4-4E1	0.013	ALONG WELLINGTON CT.	1.25	82	HW45	CONC	CIRC	0.265	25.7	P	3.7	4.1	NO	NO	4.4	4.7	NO	NO
223	TANNER	552	TAR4-4E1	0.013	UNDER WELLINGTON CT.	2.50	50	HW45	CONC	CIRC	0.005	17.4	P	3.7	4.1	NO	NO	4.4	4.7	NO	NO
224	TANNER	553	TAR4-5	0.93	UNDER WELLINGTON CT.	8.50	100	PROJ	CMP	CIRC	0.005	162.6	C	164.0	202.6	YES	YES	210.1	262.7	YES	YES
225	TANNER	554	TAR3-3E1	0.033	PIPE FROM RADCLIFF TO IMPERIAL	5.00	83	HW90	CONC	CIRC	0.012	12.5	P	8.5	9.9	NO	NO	10.0	11.4	NO	NO
226	TANNER	555	TAR3-4	0.995	UNDER IMPERIAL DR	2.00	90	PROJ	CMP	CIRC	0.011	613.8	C	179.2	220.2	NO	NO	228.4	282.5	NO	NO
227	TANNER	556	TAJ2	1.076	CULVERT UNDER I-205 NR RADCLIFF CT.	5.00	592	HW90	CONC	BOX	0.001	194.5	C	195.7	242.9	YES	YES	250.6	306.4	YES	YES
228	TANNER	557	TAJ1	1.094	WILLMETTE FALLS DR TO OUTFALL	2.00	280	PROJ	CONC	CIRC	0.246	282.2	C	199.6	247.0	NO	NO	254.7	310.4	NO	YES
229	TRILLIUM	494	TRJ6	0.046	PIPE SYSTEM UNDER MAPLETON, OUTFALL TO POND	2.00	75	HW45	CONC	CIRC	0.009	105.9	P	93.0	96.4	NO	NO	107.5	111.6	YES	YES
230	TRILLIUM	612	TRRA-B	0.046	CULVERT UNDER PRIVATE DRIVE NR CLUB HOUSE	2.25	49	PROJ	CONC	CIRC	0.027	35.2	C	19.9	21.9	NO	NO	23.0	25.2	NO	NO
231	TRILLIUM	613	TRJA	0.046	PIPE UNDER SANTA ANITA DR.	2.00	150	PROJ	CONC	CIRC	0.053	36.2	C	29.8	33.7	NO	NO	34.3	38.8	NO	YES
232	TRILLIUM	618	TRJ7	0.046	UNDER PACIFIC HIGHWAY NR CHOW MEIN LN. (HAS	2.25	90	HW90	CONC	CIRC	0.111	44.9	C	90.0	93.5	YES	YES	103.7	108.1	YES	YES
233	TRILLIUM	619	TRJ6	0.046	PIPE BETWEEN MAPLETON AND POND	2.00	180	PROJ	CONC	CIRC	0.041	52.9	P	93.0	96.4	YES	YES	107.5	111.6	YES	YES
234	TRILLIUM	620	TRJ6	0.046	ENTRANCE PIPE TO SYSTEM UNDER MAPLETON DR.	2.50	75	HW90	CONC	CIRC	0.011	25.4	C	93.0	96.4	YES	YES	107.5	111.6	YES	YES
235	TRILLIUM	620	TRJ6	0.046	ENTRANCE PIPE TO SYSTEM UNDER MAPLETON DR.	2.50	75	HW90	CONC	CIRC	0.011	25.4	C	93.0	96.4	YES	YES	107.5	111.6	YES	YES
236	TRILLIUM	625	TRJ5	0.046	PAIR UNDER KENTHORPE WAY	3.00	50	PROJ	CONC	CIRC	0.056	20.2	C	51.6	108.0	YES	YES	119.3	124.9	YES	YES
237	TRILLIUM	628	TRJ5	0.046	PAIR UNDER KENTHORPE WAY	4.00	50	PROJ	CONC	CIRC	0.056	90.7	C	103.2	108.0	YES	YES	119.3	124.9	YES	YES
238	TRILLIUM	627	TRR4-5	0.046	THREE CULVERTS UNDER CEDAR OAK DR	1.75	50	PROJ	CONC	CIRC	0.028	44.2	C	103.2	107.8	YES	YES	119.2	124.8	YES	YES
239	TRILLIUM	627	TRR4-5	0.046	THREE CULVERTS UNDER CEDAR OAK DR	3.50	50	PROJ	CONC	CIRC	0.028	65.4	C	103.2	107.8	YES	YES	119.2	124.8	YES	YES
240	TRILLIUM	627	TRR4-5	0.046	THREE CULVERTS UNDER CEDAR OAK DR	2.50	50	PROJ	CONC	CIRC	0.028	65.4	C	103.2	107.8	YES	YES	119.2	124.8	YES	YES
241	TRILLIUM	633	TRJ3-RBJ1	0.046	NEW CULVERT - TRILLIUM DR AT GLEN TERRACE	3.00	85	PROJ	CONC	CIRC	0.035	147.2	C	201.4	211.7	YES	YES	232.6	244.5	YES	YES
242	TRILLIUM	634	TRJ2	0.046	THREE CULVERTS UNDER ELMRAN AVE NR TRILLIUM	3.00	90	PROJ	CONC	CIRC	0.007	36.4	C	211.9	224.0	YES	YES	244.8	258.7	YES	YES
243	TRILLIUM	634	TRJ2	0.046	THREE CULVERTS UNDER ELMRAN AVE NR TRILLIUM	4.50	90	PROJ	CONC	CIRC	0.007	36.4	C	211.9	224.0	YES	YES	244.8	258.7	YES	YES
244	TRILLIUM	634	TRJ2	0.046	THREE CULVERTS UNDER ELMRAN AVE NR TRILLIUM	2.50	90	PROJ	CONC	CIRC	0.007	36.4	C	211.9	224.0	YES	YES	244.8	258.7	YES	YES
245	TRILLIUM	635	TRR1-2	0.046	UNDER CALAROGA DR.	2.50	54	PROJ	CONC	CIRC	0.059	190.6	C	211.7	223.6	YES	YES	244.8	258.6	YES	YES

Note: Prior to project design all field conditions shall be verified

Fish barriers: Drop to river  
Channel type: Moderately steep narrow valley channel  
Bank/channel conditions: Natural / semi-natural  
Notes: Mature trees provide good habitat, LWD recruitment potential.  
Recommendations: Restore and daylight channel in new park.

***CASCADE SPRINGS POND BASIN***  
**Cascade Springs Pond Creek**

**Cascade Springs Pond Creek (CS-R-1)**

Tributary to Willamette River

Location: Willamette River to Cascade Street  
Description: Perennial spring fed stream within a small forested ravine; wide central terrace contains braided channels and emergent wetlands.  
Fish bearing? No  
Fish barriers: River Drive culvert, 5-6-foot drop  
Channel type: Steep narrow valley channel  
Bank/channel conditions: Some downcutting, well vegetated  
Notes: Major ivy problem upstream, potential amphibian breeding.  
Recommendations: Remove trash; manage invasive species, particularly ivy and blackberry.

***MCLEAN CREEK BASIN***  
**McLean Creek**

**McLean Creek (MC-R-1)**

Tributary to Willamette River

Location: Willamette River to Highway 43 (under I-205 bridge)  
Description: Small free-flowing stream within forested ravine flows through McLean Park and cascades over rocky ledge before entering the Willamette River. Invasive species encroachment is high.  
Fish bearing? No  
Fish barriers: Steep drop to Willamette River  
Channel type: Moderately steep narrow valley channel  
Bank/channel conditions: Some grading below I-205  
Notes: Peregrine falcon aerie on I-205 bridge  
Recommendations: Remove ivy and blackberry, which have infested large areas of the corridor. Reestablish diverse native floral community.

***CAMASSIA BASIN***  
**Camassia Creek (No name on LWI / RCI maps)**

**Camassia Creek (CA-R-1)**

Tributary to Willamette River

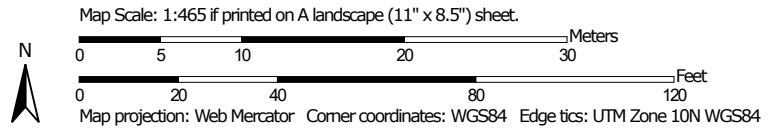
Location: I-250 to Wilderness Park

**BOLTON TERRACE COMMERCIAL BUILDING**  
**Stormwater Calculations**  
**West Linn, Oregon**

**APPENDIX B**

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**NRCS SOIL REPORT**





Hydrologic Soil Group—Clackamas County Area, Oregon  
(Bolton Terrace Hydrologic Map)

### MAP LEGEND

**Area of Interest (AOI)**









 Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**





-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

**Soil Rating Lines**


-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

**Soil Rating Points**






-  A
-  A/D
-  B
-  B/D

-  C
-  C/D
-  D
-  Not rated or not available


**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 15, Sep 10, 2019

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

Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014

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.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
91B	Woodburn silt loam, 3 to 8 percent slopes	C	0.6	100.0%
<b>Totals for Area of Interest</b>			<b>0.6</b>	<b>100.0%</b>

### Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

### Rating Options

*Aggregation Method: Dominant Condition*

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher

Soil Map—Clackamas County Area, Oregon  
(Bolton Terrace Soil Map)



Map Scale: 1:465 if printed on A landscape (11" x 8.5") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84



## 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 15, Sep 10, 2019

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

Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014

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

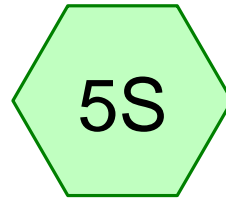
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
91B	Woodburn silt loam, 3 to 8 percent slopes	0.6	100.0%
<b>Totals for Area of Interest</b>		<b>0.6</b>	<b>100.0%</b>

**BOLTON TERRACE COMMERCIAL BUILDING**  
**Stormwater Calculations**  
**West Linn, Oregon**

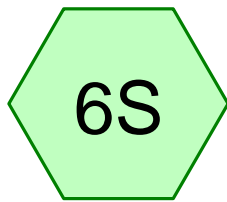
**APPENDIX C**

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**HYDROCAD SUMMARIES**



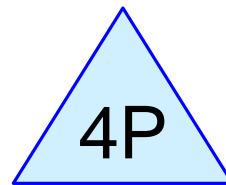
Existing Site



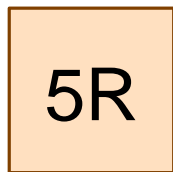
CSJ2



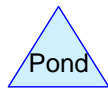
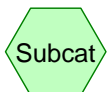
Site Developed



Infiltration



Cascade Springs Pond  
Creek



**Routing Diagram for Bolton Terrace**  
Prepared by Westech Engineering, Inc., Printed 1/31/2020  
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**Bolton Terrace**

Type IA 24-hr West Linn 10 YR Rainfall=3.40"

Prepared by Westech Engineering, Inc.

Printed 1/31/2020

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Page 3

**Summary for Subcatchment 5S: Existing Site**

Runoff = 0.18 cfs @ 8.03 hrs, Volume= 0.078 af, Depth= 1.49"

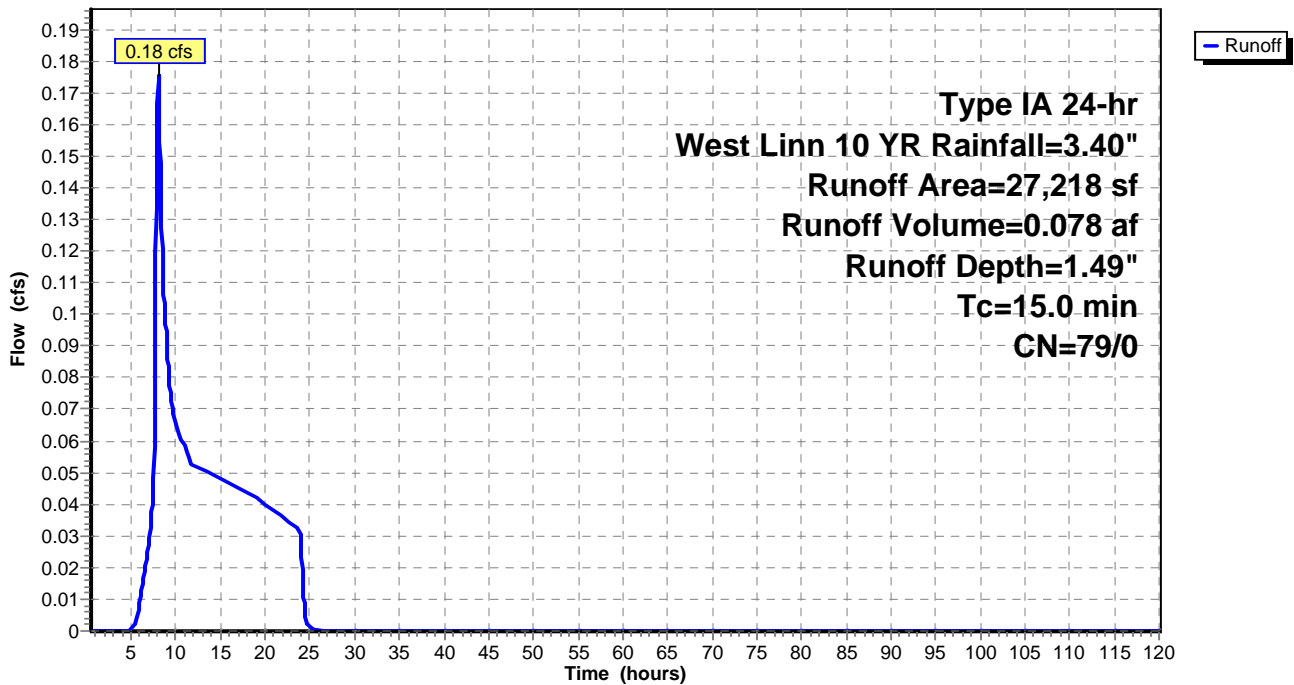
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs  
Type IA 24-hr West Linn 10 YR Rainfall=3.40"

Area (sf)	CN	Description
* 27,218	79	
27,218		100.00% Pervious Area

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

**Subcatchment 5S: Existing Site**

Hydrograph



**Bolton Terrace**

Type IA 24-hr West Linn 100 YR Rainfall=4.50"

Prepared by Westech Engineering, Inc.

Printed 1/31/2020

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Page 4

**Summary for Subcatchment 5S: Existing Site**

Runoff = 0.31 cfs @ 8.02 hrs, Volume= 0.124 af, Depth= 2.38"

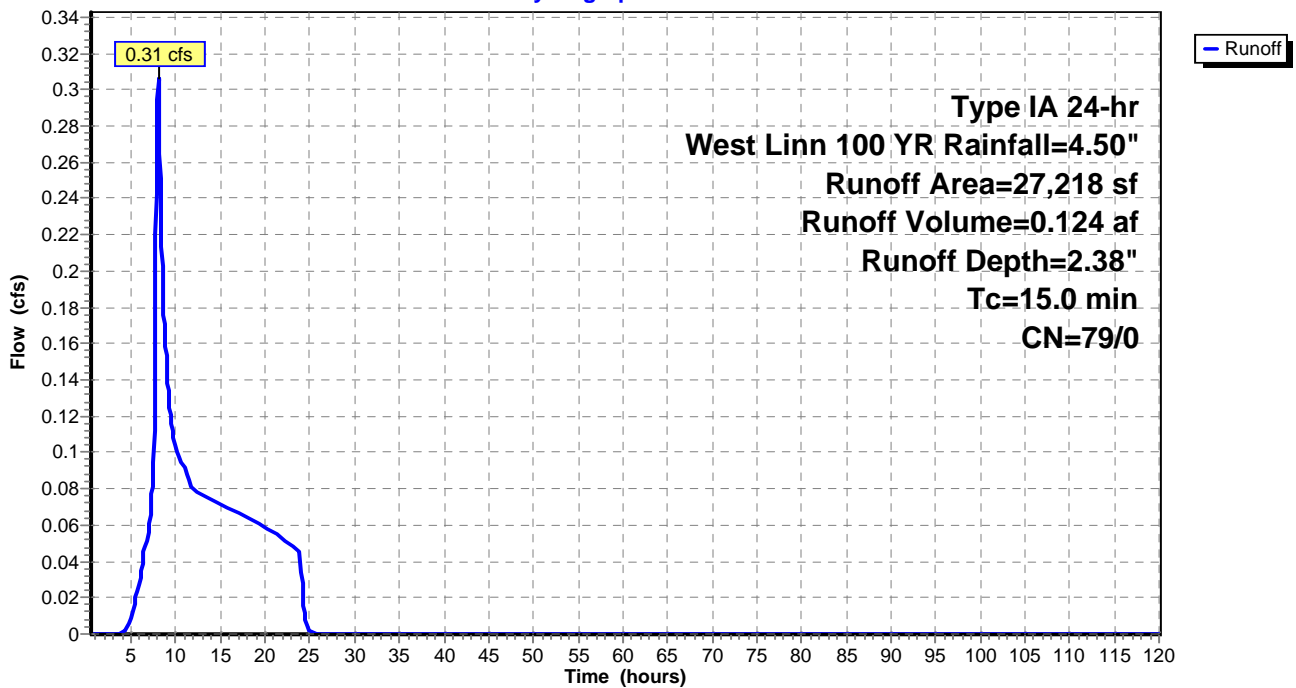
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr West Linn 100 YR Rainfall=4.50"

Area (sf)	CN	Description
* 27,218	79	
27,218		100.00% Pervious Area

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

**Subcatchment 5S: Existing Site**

Hydrograph



**Bolton Terrace**

Prepared by Westech Engineering, Inc.

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Type IA 24-hr West Linn WQ Rainfall=1.20"

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Page 6

**Summary for Subcatchment 5S: Existing Site**

Runoff = 0.01 cfs @ 17.99 hrs, Volume= 0.007 af, Depth= 0.13"

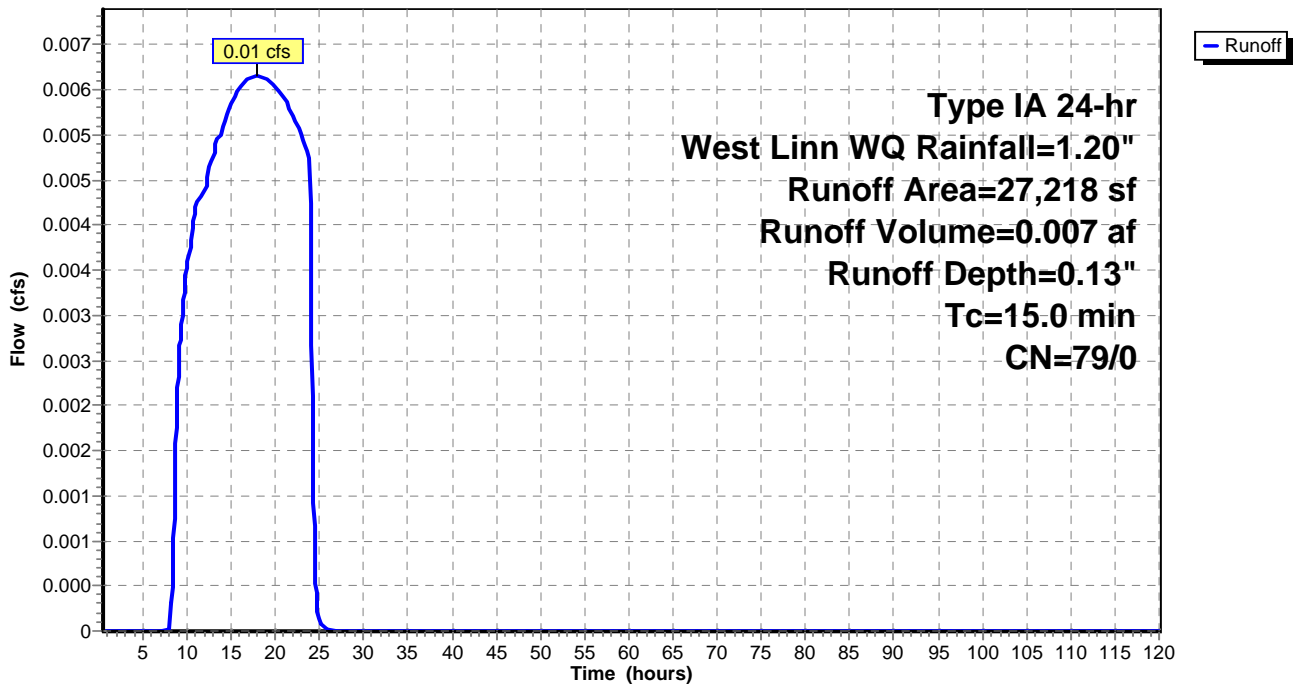
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs  
Type IA 24-hr West Linn WQ Rainfall=1.20"

Area (sf)	CN	Description
* 27,218	79	
27,218		100.00% Pervious Area

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

**Subcatchment 5S: Existing Site**

Hydrograph



**Summary for Subcatchment DEV: Site Developed**

Runoff = 0.45 cfs @ 7.91 hrs, Volume= 0.152 af, Depth= 2.92"

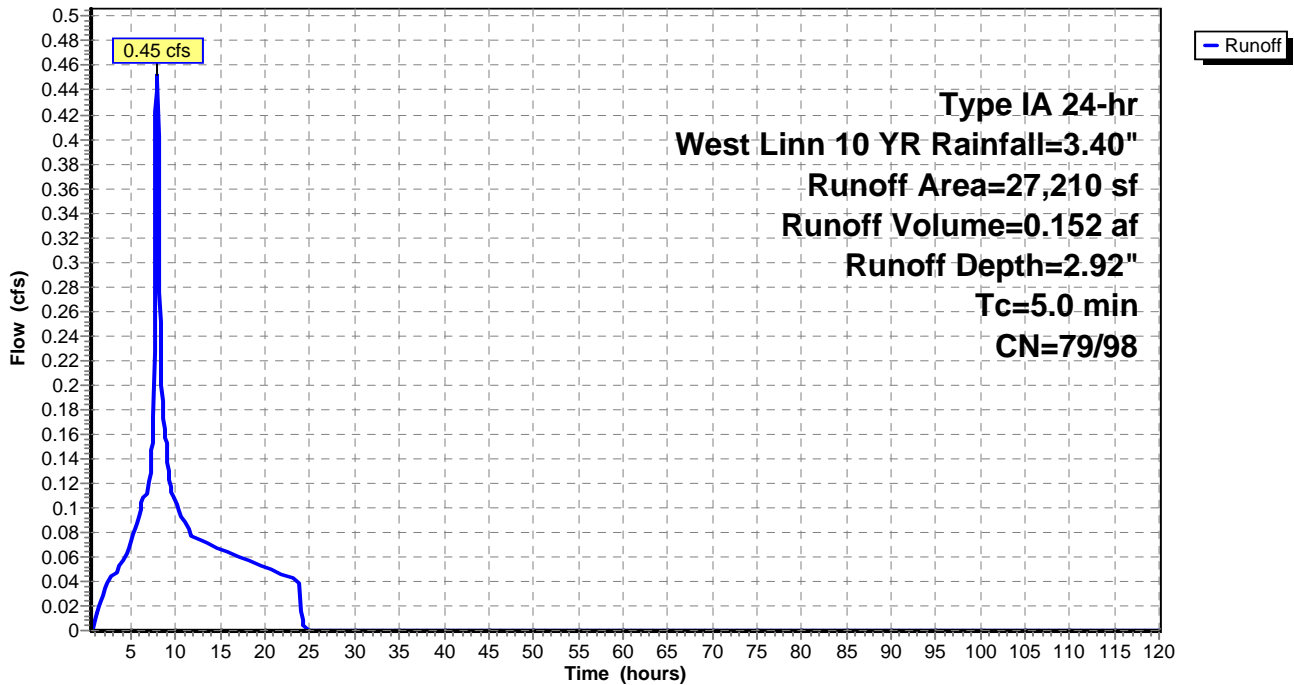
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr West Linn 10 YR Rainfall=3.40"

	Area (sf)	CN	Description
*	23,130	98	rooftop
	4,080	79	50-75% Grass cover, Fair, HSG C
	27,210	95	Weighted Average
	4,080		14.99% Pervious Area
	23,130		85.01% Impervious Area

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

**Subcatchment DEV: Site Developed**

Hydrograph



**Summary for Subcatchment DEV: Site Developed**

Runoff = 0.62 cfs @ 7.90 hrs, Volume= 0.207 af, Depth> 3.98"

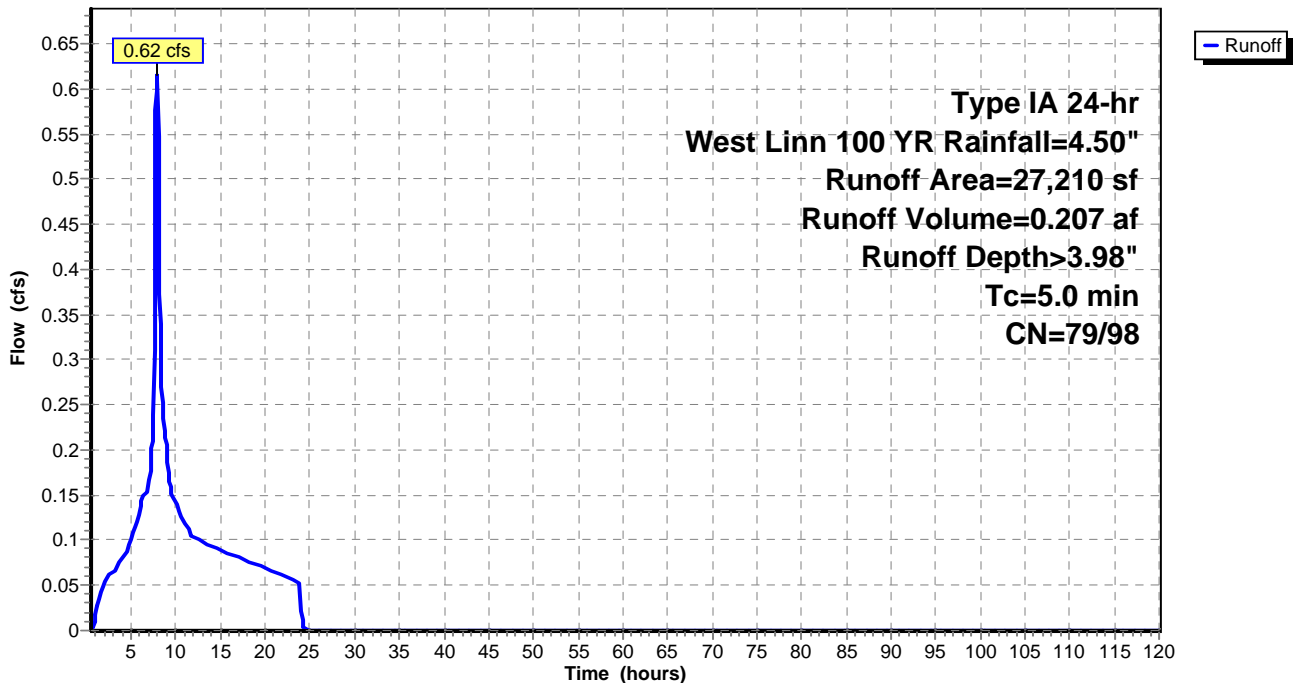
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr West Linn 100 YR Rainfall=4.50"

	Area (sf)	CN	Description
*	23,130	98	rooftop
	4,080	79	50-75% Grass cover, Fair, HSG C
	27,210	95	Weighted Average
	4,080		14.99% Pervious Area
	23,130		85.01% Impervious Area

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

**Subcatchment DEV: Site Developed**

Hydrograph



**Summary for Subcatchment DEV: Site Developed**

Runoff = 0.59 cfs @ 7.90 hrs, Volume= 0.197 af, Depth> 3.79"

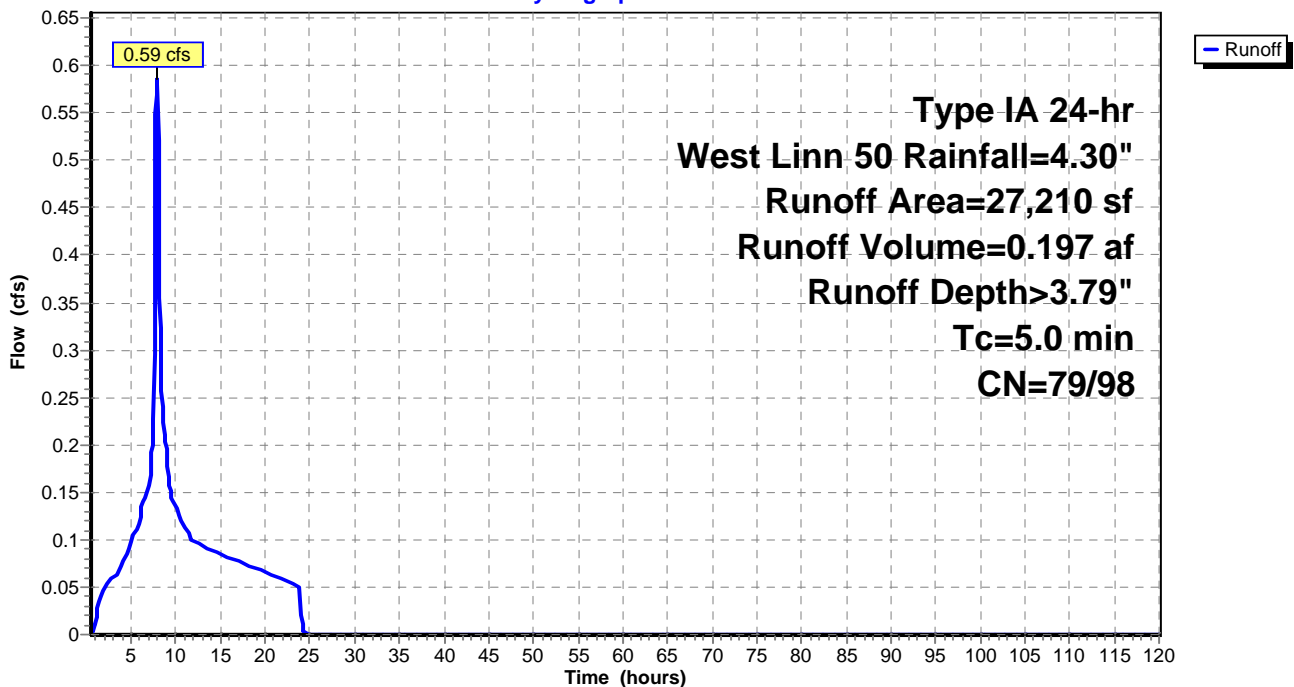
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr West Linn 50 Rainfall=4.30"

	Area (sf)	CN	Description
*	23,130	98	rooftop
	4,080	79	50-75% Grass cover, Fair, HSG C
	27,210	95	Weighted Average
	4,080		14.99% Pervious Area
	23,130		85.01% Impervious Area

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

**Subcatchment DEV: Site Developed**

Hydrograph



**Summary for Subcatchment DEV: Site Developed**

Runoff = 0.14 cfs @ 7.91 hrs, Volume= 0.045 af, Depth= 0.86"

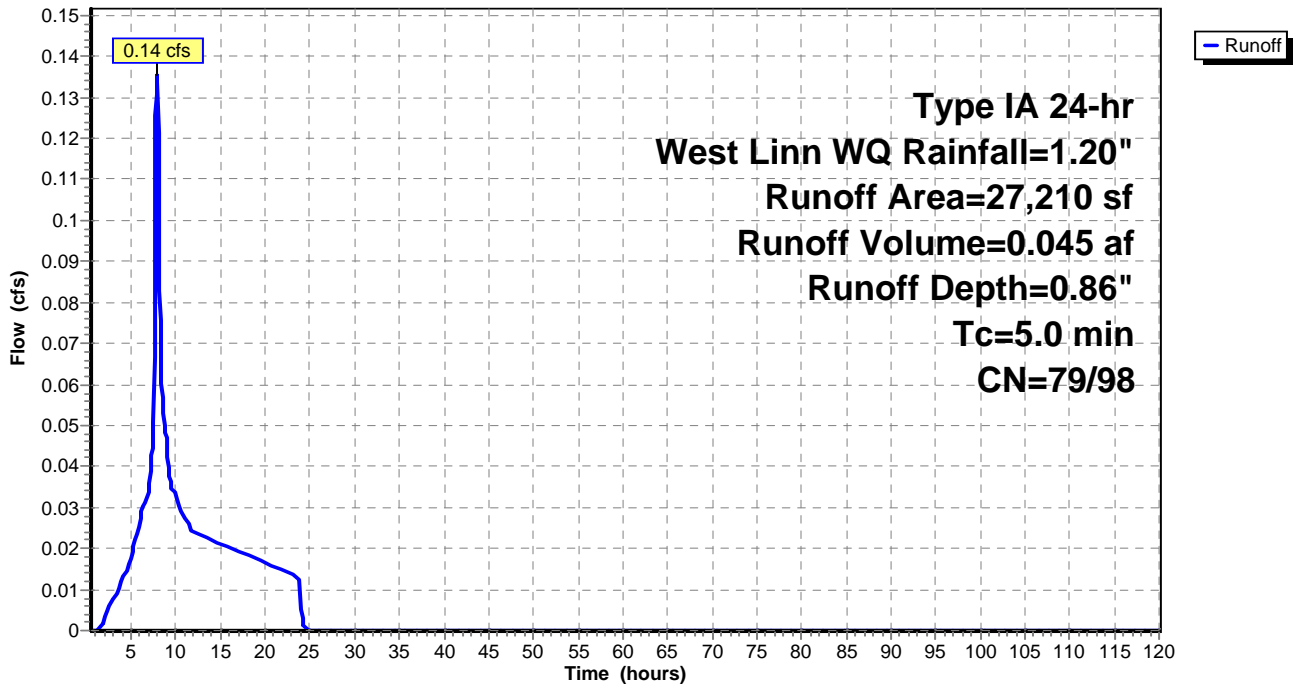
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Type IA 24-hr West Linn WQ Rainfall=1.20"

	Area (sf)	CN	Description
*	23,130	98	rooftop
	4,080	79	50-75% Grass cover, Fair, HSG C
	27,210	95	Weighted Average
	4,080		14.99% Pervious Area
	23,130		85.01% Impervious Area

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

**Subcatchment DEV: Site Developed**

Hydrograph



# Bolton Terrace

Prepared by Westech Engineering, Inc.

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Type IA 24-hr West Linn 50 Rainfall=4.30"

Printed 1/31/2020

Page 1

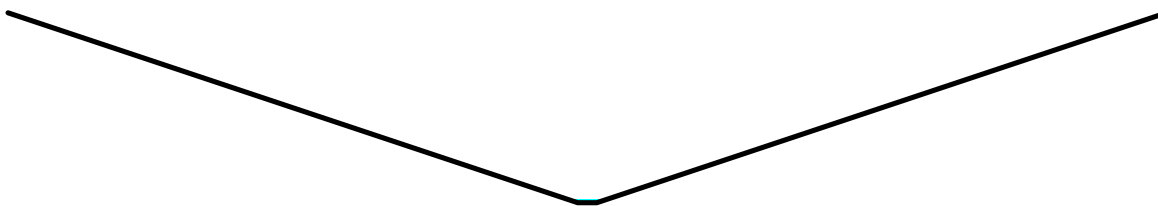
## Summary for Reach 5R: Cascade Springs Pond Creek

Inflow Area = 0.625 ac, 85.01% Impervious, Inflow Depth > 3.79" for West Linn 50 event  
Inflow = 0.59 cfs @ 7.90 hrs, Volume= 0.197 af  
Outflow = 0.52 cfs @ 8.05 hrs, Volume= 0.197 af, Atten= 11%, Lag= 8.6 min

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs  
Max. Velocity= 1.66 fps, Min. Travel Time= 15.1 min  
Avg. Velocity = 1.16 fps, Avg. Travel Time= 21.6 min

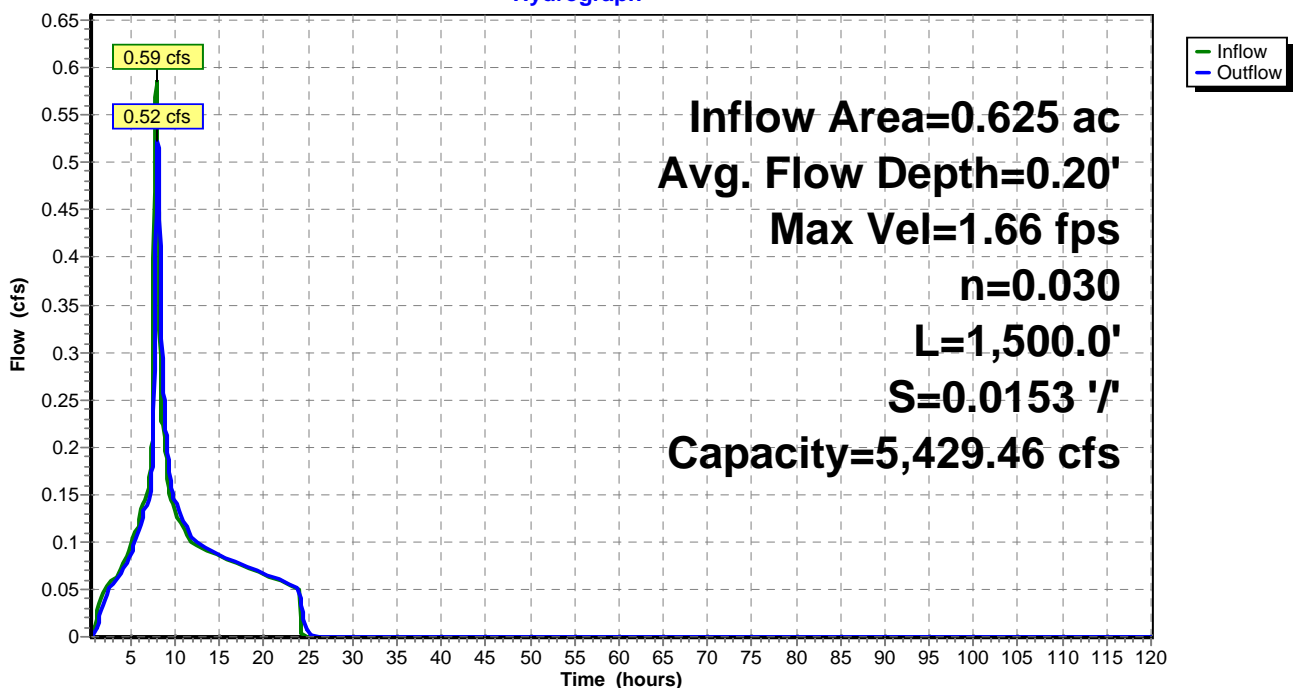
Peak Storage= 473 cf @ 8.05 hrs  
Average Depth at Peak Storage= 0.20'  
Bank-Full Depth= 10.00' Flow Area= 310.0 sf, Capacity= 5,429.46 cfs

1.00' x 10.00' deep channel, n= 0.030 Earth, grassed & winding  
Side Slope Z-value= 3.0 '/' Top Width= 61.00'  
Length= 1,500.0' Slope= 0.0153 '/'  
Inlet Invert= 80.00', Outlet Invert= 57.00'



## Reach 5R: Cascade Springs Pond Creek

Hydrograph





# Bolton Terrace

Prepared by Westech Engineering, Inc.

HydroCAD® 10.00-24 s/n 07289 © 2018 HydroCAD Software Solutions LLC

Type IA 24-hr West Linn 50 Rainfall=4.30"

Printed 1/31/2020

Page 1

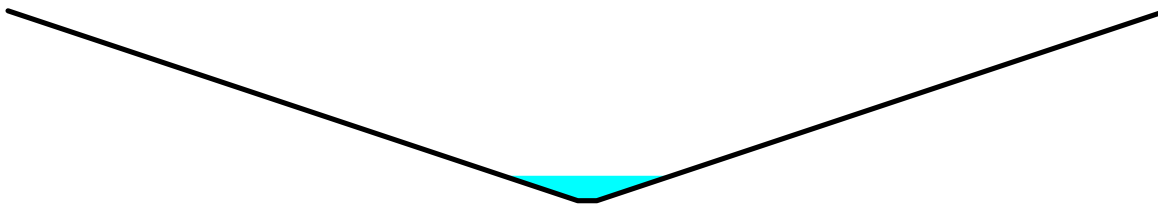
## Summary for Reach 5R: Cascade Springs Pond Creek

Inflow Area = 55.665 ac, 0.95% Impervious, Inflow Depth = 2.39" for West Linn 50 event  
Inflow = 32.15 cfs @ 7.97 hrs, Volume= 11.095 af  
Outflow = 31.63 cfs @ 8.00 hrs, Volume= 11.095 af, Atten= 2%, Lag= 1.8 min

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs  
Max. Velocity= 4.84 fps, Min. Travel Time= 5.2 min  
Avg. Velocity = 2.66 fps, Avg. Travel Time= 9.4 min

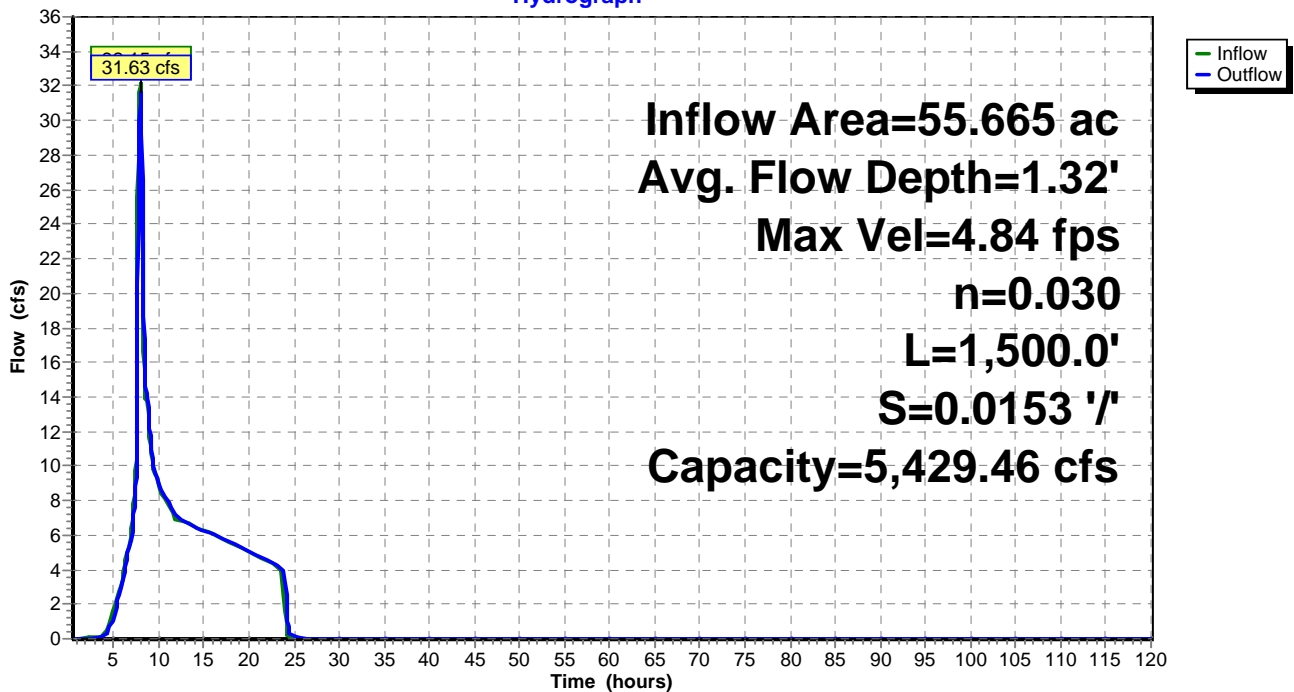
Peak Storage= 9,807 cf @ 8.00 hrs  
Average Depth at Peak Storage= 1.32'  
Bank-Full Depth= 10.00' Flow Area= 310.0 sf, Capacity= 5,429.46 cfs

1.00' x 10.00' deep channel, n= 0.030 Earth, grassed & winding  
Side Slope Z-value= 3.0 '/' Top Width= 61.00'  
Length= 1,500.0' Slope= 0.0153 '/'  
Inlet Invert= 80.00', Outlet Invert= 57.00'



## Reach 5R: Cascade Springs Pond Creek

Hydrograph



**BOLTON TERRACE COMMERCIAL BUILDING**  
**Stormwater Calculations**  
**West Linn, Oregon**

**APPENDIX D**

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**GEOTECHNICAL REPORT**



# REDMOND & ASSOCIATES

**Geotechnical Investigation**

**Proposed Commercial Building Site**

**1575 Burns Street**

**West Linn (Clackamas County), Oregon**

**for**

**Mr. Rolf Olson**

**Project No. 943.001.G  
May 20, 2005**



# REDMOND & ASSOCIATES

Project No. 943.001.G  
Page No. 1

May 20, 2005

Mr. Rolf Olson  
3453 Augusta National Drive South  
Salem, Oregon 97302

Dear Mr. Olson:

**Re: Geotechnical Investigation, Proposed Commercial Building Site, 1575 Burns Street,  
West Linn (Clackamas County), Oregon**

## INTRODUCTION

In accordance with the request of Mr. Rolf Olson, we have completed our Geotechnical Investigation at the above subject proposed commercial building site. The site, a rectangular shaped property, is located to the north of Burns Street and to the east of Hood Street in West Linn (Clackamas County), Oregon.

We understand that present plans are to develop the site by constructing a new commercial building. Although the project is still in the preliminary planning and design stages, we understand that the commercial structure will be a one- and/or two-story structure which will include a below grade parking level. Specific building materials are not presently known but are anticipated to include wood- and/or metal frame with concrete and/or masonry blocks walls. The planned commercial structure is anticipated to be supported on conventional continuous (strip) and/or individual spread (column) footings with a concrete slab-on-grade floor. Structural loading is anticipated to result in maximum dead plus live continuous footing and column footing loads on the order of about 2.0 to 4.0 kips per lineal foot (klf) and 50 to 100 kips, respectively. Other associated site improvements will include asphalt pavements for both automobile drive and parking areas, underground utility services and landscaping.

## SITE DESCRIPTION

The proposed commercial site, located within Township 2 South, Range 2 East, and Section 30 of the Willamette Meridian, is presently unimproved and consists of existing open commercial lot.

Topographically, the westerly portion of the site is characterized as relatively flat-lying terrain while the easterly portion of the site is characterized as moderately sloping terrain descending down to the east with overall topographic relief across the entire estimated at about 10 to 15 feet and is estimated lie near to Elevation 180 feet.

Vegetation across most of the site consists of a moderate growth of grass, weeds, and brush as well as numerous small to large sized trees.

### SCOPE OF WORK

The purpose of our geotechnical studies is to evaluate the overall site subsurface soil and ground water characteristics as well as any associated impacts or concerns with regard to the planned construction and development of the site. Specifically, our geotechnical investigation included the following scope of work items:

1. Site exploration by means of three (3) exploratory backhoe test pit excavations. The exploratory test pits were excavated at various locations across the site as shown on the Site Exploration Map, Figure No. 2 to depths ranging from about 8 to 11 feet beneath existing site grades. Detailed logs of the exploratory test pit excavations, presenting conditions encountered at each location explored, are presented on the Log of Test Pits, Figure No's. 5 and 6. Additionally, representative samples of the subsurface soils encountered at the site were collected at selected depths and/or intervals and returned to our laboratory for further examination and testing.
2. A laboratory testing program to assess the pertinent physical and engineering characteristics of the subsurface soils. The laboratory program consisted of tests to evaluate the natural (field) moisture content and dry density, Atterberg Limits, gradational properties and Direct Shear Strength tests. Results of the moisture content and dry density tests are shown on their respective test pit log, Figure No's. 5 and 6. Results of the Atterberg Limits, gradation and direct shear strength tests are shown graphically on Figure No's. 7 through 9.
3. Recommendations and our final written report presenting the results of our investigation. Our report includes recommendations for site preparation and grading including any overexcavation of unsuitable materials revealed by the explorations, placement and compaction of any required structural fill(s), suitability of the on-site soils for use as structural fill as well as criteria for import fill materials, and preparation of pavement and foundation areas.
4. Recommendations for foundation support and design including allowable contact bearing pressures for proportioning footings, minimum width and embedment depths, and estimates of foundation settlement as well as lateral earth pressures for below grade walls. Additionally, we have developed flexible pavement sections for automobile and/or truck traffic areas.

### SUBSURFACE CONDITIONS

Our understanding of the subsurface conditions which underlie the site was developed by means of three (3) exploratory test pits excavated on April 23, 2005 with a rubber-tired excavator at the approximate locations shown on Figure No. 2. The test pits revealed that the site is underlain by native soil deposits comprised of lacustrine and fluvial sedimentary soil deposits of Pleistocene age. Specifically, the native soil materials were comprised of very moist to wet, medium stiff to stiff, clayey, sandy silt to the maximum depth explored of about 11.0 feet beneath existing site grades. These clayey, sandy silt subgrade soils are best characterized by relatively low to moderate strength and compressibility.

Ground water was not encountered at the site during our field exploration work and is not expected to be a factor during construction. However, topsoil materials were encountered at the site and consist of about 12 to 16 inches of organic, clayey and sandy silt. All soils encountered at the site were classified in accordance with the Unified Soil Classification System (USCS) which is outlined on Figure No. 4.

### **CONCLUSIONS AND RECOMMENDATIONS**

From a geotechnical engineering and constructability standpoint, we are of the opinion that the site is suitable for the planned new commercial structure and its associated site improvements provided that the recommendations contained within this report are properly incorporated into the design and construction of the project.

The primary feature of concern at the site is the moisture sensitivity characteristics of the underlying clayey, sandy silt subgrade soil materials

In regards to the moisture sensitivity characteristics of the underlying clayey, sandy silt subgrade soils, we recommend that all foundation excavation and site grading work be performed during the drier summer months which is typically June through September.

The following sections of this report present specific recommendations for site preparation and grading as well as foundation design and construction for the commercial building project.

### **SITE PREPARATION**

In general, we recommend that all planned structural improvement areas for the commercial building and pavements be stripped and cleared of any existing site improvements, vegetation, topsoil materials, and any deleterious materials present at the time of construction. In general, we envision that about 12 to 16 inches of topsoil stripping may be required to remove existing topsoil materials. Holes resulting from the removal of any buried obstructions, such as old foundation remnants and/or boulders, should be backfilled and compacted with structural fill materials. Areas resulting in deeper stripping and removals should be evaluated at the time of construction by the Geotechnical Engineer. The stripped and cleared materials should be properly disposed of as they are generally not considered suitable for use/reuse as structural fill.

Following the stripping and clearing operations, and prior to the placement of any required structural fills and/or structural improvements, the exposed subgrade soils within the planned building and pavement areas should be inspected by the Geotechnical Engineer and possibly proof-rolled with a half-loaded dump truck. Areas found to be soft or otherwise unsuitable for support of structural loads or improvements should be scarified and recompacted or overexcavated and replaced with structural fill. During wet or inclement weather conditions, proof-rolling as recommended above will not be appropriate.

The on-site native clayey, sandy silt subgrade soils are considered suitable for use/reuse as structural fill provided that they are free of organic materials, debris, and rock fragments in excess of 8 inches in dimension. If grading is conducted during wet weather, the use of the on-site clayey, sandy silt soils may be difficult and the use of an import granular fill material may be required. In general, we recommend that a free-draining (clean) granular fill (sand & gravel) containing no more than about 5 percent fines be used during wet weather grading. Representative samples of the material(s) to be used as structural fill should be submitted to our laboratory for approval and to determine the maximum dry density and optimum moisture content for compaction.

All required structural fill materials placed within the building and pavement (structural) areas should be moistened or dried as necessary to near (within 3 percent) optimum moisture conditions and compacted by mechanical means to a minimum of 92 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Fill materials should be placed in lifts (layers) such that when compacted do not exceed about 8 inches.

### **FOUNDATION SUPPORT**

Based on the results of our investigation, it is our opinion that the proposed commercial building structure may be supported directly on the underlying native medium stiff to stiff, clayey, sandy silt subgrade soil deposits and/or by structural fill materials with conventional continuous and individual spread footings. As such, were foundations are constructed on approved native subgrade soils and/or properly placed and compacted structural fill materials, an allowable contact bearing pressure of about 2,500 pounds per square foot (psf) is recommended for design. However, where higher allowable contact bearing pressures are required, an allowable contact bearing pressure of 3,000 psf may be used for design where the foundations are supported by a minimum of at least 12 inches of compacted crushed aggregate base rock structural fill materials. These allowable contact bearing pressures are intended for dead loads and sustained live loads and may be increased by one-third for the total of all loads including short-term wind or seismic loads.

In general, continuous strip footings should have a minimum width of at least 16 inches and be embedded at least 18 inches below the lowest adjacent finish grade (includes frost protection). Individual column footings (if required) should be embedded at least 16 inches below grade and have a minimum width of about 24 inches.

Total and differential settlements of foundations constructed as recommended above and supported directly by approved native subgrade soils or on properly placed and compacted structural fill materials are expected to be well within tolerable limits for this type of structure and should generally be less than about 1-inch and 1/2-inch, respectively.

Allowable lateral frictional resistance between the base of the footings and the clayey, sandy silt or a gravel subgrade soil can be expressed as the applied vertical load multiplied by a coefficient of friction of 0.35 and 0.45, respectively. In addition, lateral loads may be resisted by passive pressures on footings poured "neat" against in-situ native soils or properly compacted structural fill materials. For passive earth pressure resistance we recommend that an equivalent fluid density of 300 pounds per cubic foot (pcf) be used for design.

### **FLOOR SLAB SUPPORT**

In order to provide uniform subgrade reaction beneath concrete slab-on-grade floors, we recommend that the floor slabs be underlain by a minimum of 6 inches of free-draining (less than 5 percent passing the No. 200 sieve), well-graded, crushed rock. The crushed rock should provide a capillary break to prevent migration of moisture through the slab. Additional moisture protection can be provided by using a 6-mil visqueen vapor barrier covered with a 1-inch protective layer of sand on the top and bottom. The base course materials should be compacted to at least 95 percent of the maximum dry density obtainable by the ASTM D-1557 (AASHTO T-180) test procedures.

**BELOW GRADE/RETAINING WALLS**

Below grade walls should be designed to resist lateral earth pressures imposed by native soils and/or granular backfill materials as well as any adjacent surcharge loads. For walls which are fully restrained from rotation at the top and supporting level backfill, we recommend that at-rest earth pressures be computed on the basis of an equivalent fluid density of 50 pcf and 60 pcf for granular backfill or sandy silt soil backfill materials, respectively. However, for walls which are free to rotate at the top and retaining level backfill, we recommend that active earth pressures be computed on the basis of an equivalent fluid density of 30 pcf and 40 pcf for granular backfill and sandy silt soil backfill materials, respectively. The above recommended lateral earth pressure values assume that the wall(s) will adequately drained to prevent the buildup of hydrostatic pressures. Where wall drainage will not be present and/or where adjacent surcharge loading and/or sloping ground conditions are present, the above recommended lateral earth pressure values will be higher.

Non structural backfill materials behind retaining walls should be compacted to at least 85 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Where structural backfill materials are required, the degree of compaction should be at least 90 percent of the maximum dry density. However, special care should be taken to avoid overcompaction near the wall(s) which could result in higher lateral earth pressures than those indicated herein. In an area within about three (3) to five (5) feet behind walls, we recommend the use of light hand operated compaction equipment.

**EXCAVATIONS**

Temporary excavations within native subgrade soils of up to four (4) feet in depth are expected to remain fairly stable at near vertical inclinations. Excavations to depths of between four (4) feet to ten (10) feet should be properly braced and shored or backcut to inclinations of at least 1 to 1 (Horizontal to Vertical). Where excavations are planned to exceed ten (10) feet, this office should be consulted. Additionally, at present levels, we do not anticipate that ground water will not be a factor during construction.

**PAVEMENTS**

Flexible pavement design for the project was determined on the basis of projected traffic volume and loading conditions relative to assumed subgrade soil strength characteristics. Based on an assumed subgrade "R"-value of 35 (CBR = 4.0) and utilizing the Oregon State Highway Flexible Pavement Design Procedures, we recommend that the asphaltic concrete pavement sections for automobile parking and drive area use at the site consist of the following:

	<b><u>Asphaltic Concrete Thickness (Inches)</u></b>	<b><u>Crushed Base Rock Thickness (Inches)</u></b>
Automobile Parking Areas	2.5	8.0
Automobile Drive Areas	3.0	9.0

Note: Where heavy vehicle traffic is anticipated, we recommend that the main access drive area pavement section be increased by adding 1.0 inches of asphalt and 3.0 inches of aggregate base rock. Additionally, for wet and/or winter time construction, we recommend that a minimum of at least 12 inches of aggregate base rock be used in all pavement areas.



The above recommended pavement section(s) assume that the subgrade will be prepared as recommended herein, that the exposed subgrade soils will be properly protected from rain and construction traffic, and that the subgrade is firm and unyielding at the time of paving. Additionally, it assumes that the subgrade is graded to prevent any ponding of water which may tend to accumulate in the base course. Further, the above recommended flexible pavement section(s) assumes a design life of about 20 years.

Pavement base course materials should consist of well-graded 1 1/2-inch and/or 3/4-inch minus crushed base rock having less than 5 percent fine materials passing the No. 200 sieve. The base course and asphaltic concrete materials should conform to the requirements set forth in the latest edition of the Oregon Department of Transportation, Standard Specifications of Highway Construction. The base course materials should be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. The asphaltic concrete materials should be compacted to at least 91 percent of the theoretical maximum density as determined by the ASTM D-2041 (Rice Gravity) test method.

#### SEISMIC DESIGN CONSIDERATIONS

Subgrade acceleration coefficients for the project were obtained from the seismic hazard/design mapping project performed by Geomatrix Consultants. Geomatrix mapping indicates that a peak ground acceleration on bedrock soils in the area of the site are 0.19g with a return period of about 500 years. The UBC seismic zone factor (Z) for the subject site is 0.30. Additionally, the IBC soil profile for the subject site to estimate the site class is recommended at D.

#### USE OF REPORT

This report is intended for the exclusive use of the addressee and their representatives to use to design the proposed commercial building structure and its associated site improvements described herein and to prepare any construction documents. The data, analyses, and recommendations may not be appropriate for other structures or purposes. We recommend that parties contemplating other structures or purposes contact our office. In the absence of our written approval, we make no representation and assume no responsibility to other parties regarding this report.

#### LEVEL OF CARE

Services performed by the Geotechnical Engineer for this project have been conducted with that level of care and skill ordinarily exercised by members of the profession currently practicing in the area under similar budget and time restraints. No warranty, either expressed or implied, is made.

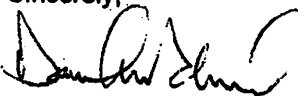
#### CONSTRUCTION MONITORING AND TESTING

We recommend that **Redmond & Associates** be retained to provide construction monitoring and testing services during all earthwork operations. The purpose of our monitoring services would be to confirm that the site conditions which are encountered are as anticipated, provide field recommendations as necessary based on the actual conditions encountered, and document the activities of the contractor and assess his/her compliance with the project specifications and recommendations.

It is important that we meet with the grading contractor prior to any site grading work to establish a plan that will minimize costly overexcavation and site preparation work. Of primary importance will be observations made during the site preparation, structural fill placement, footing excavation and preparation, and construction of all below grade retaining walls.

We will be pleased to provide such additional assistance or information as you may require in the balance of the design phase of this project and to aid in construction control or solution of unforeseen conditions which may arise during the construction period.

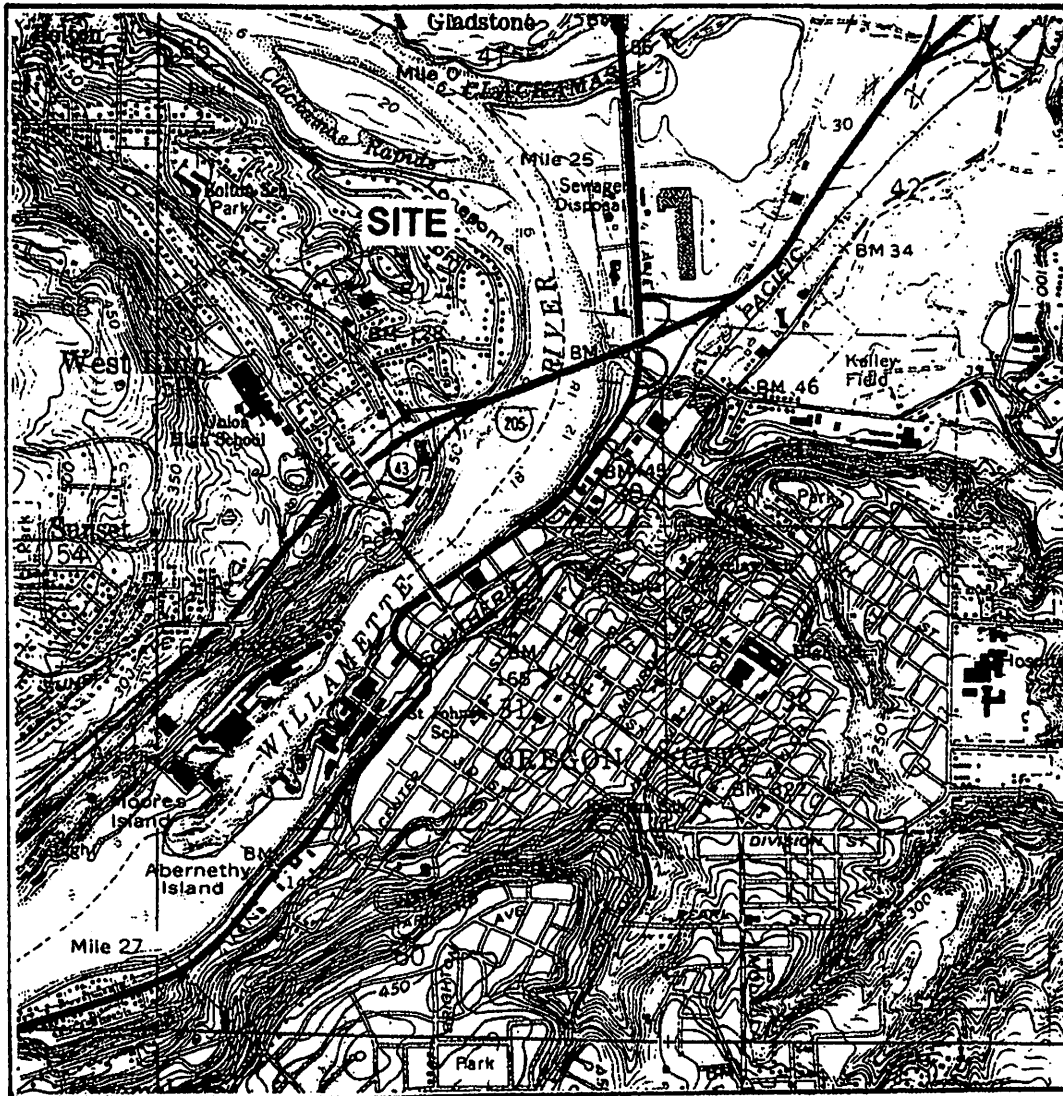
Sincerely,



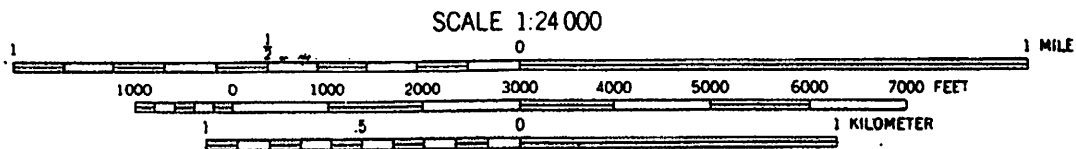
Daniel M. Redmond, P.E.  
President/Principal Geotechnical Engineer



*Expires 12-31-06*



OREGON CITY QUADRANGLE  
 OREGON-CLACKAMAS CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 SE/4 OREGON CITY 15' QUADRANGLE



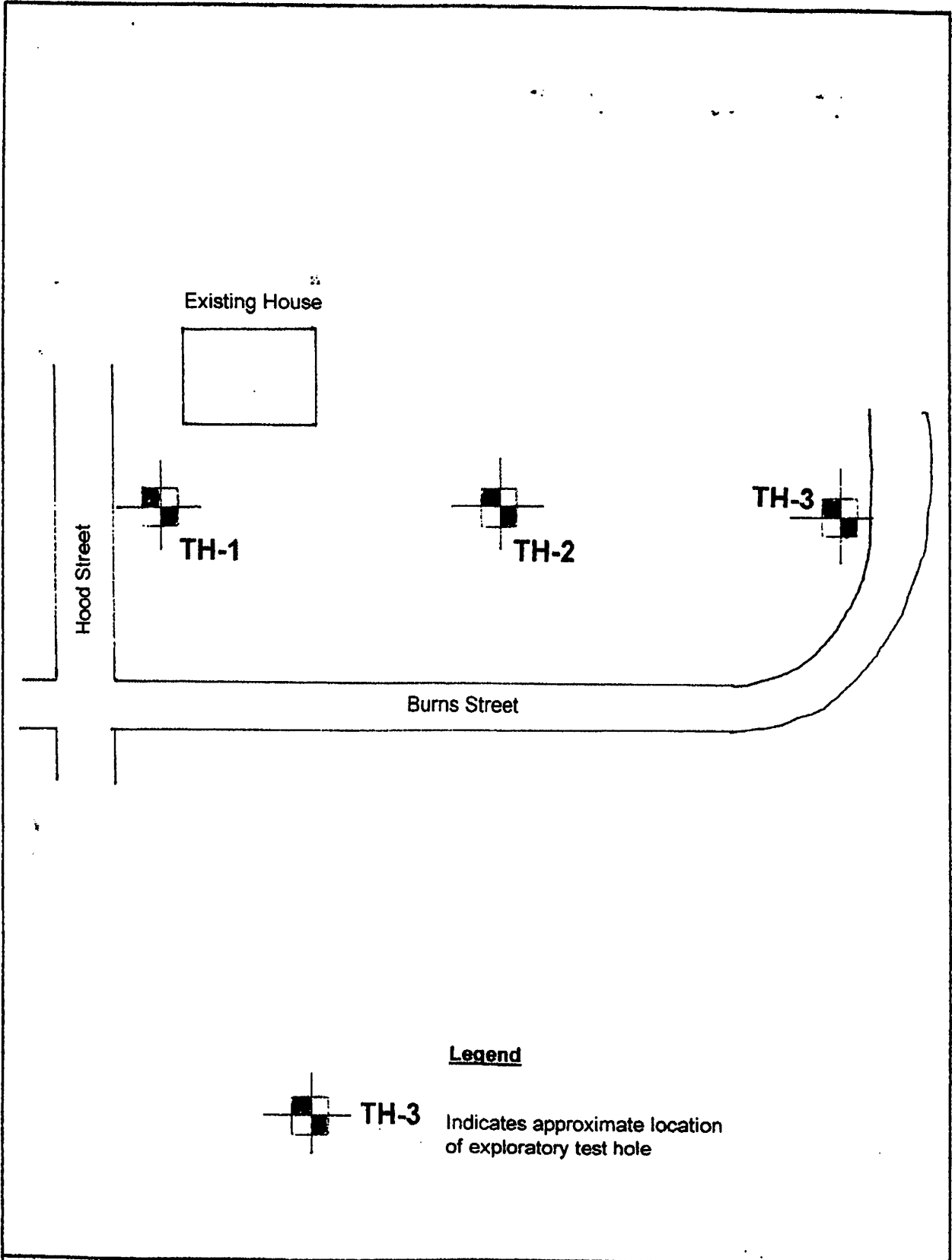
CONTOUR INTERVAL 10 FEET  
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

**SITE VICINITY MAP**

Project No. 943.001.G

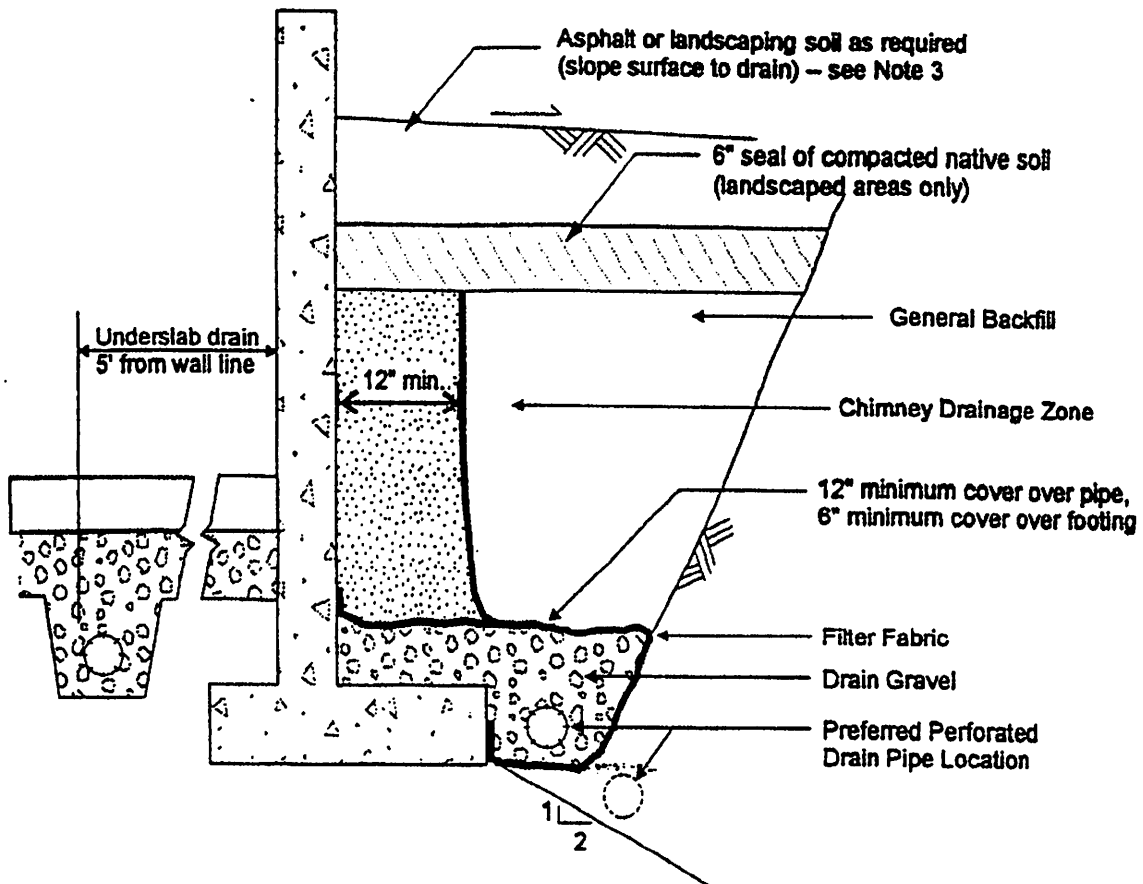
1575 BURNS STREET

Figure No. 1



**SITE EXPLORATION MAP**

Project No. 943.001.G	1575 BURNS STREET	Figure No. 2
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**SCHEMATIC - NOT TO SCALE**

**NOTES:**

1. Filter Fabric to be non-woven geotextile (Amoco 4545, Mirafi 140N, or equivalent)
2. Lay perforated drain pipe on minimum 0.5% gradient, widening excavation as required. Maintain pipe above 2:1 slope, as shown.
3. All-granular backfill is recommended for support of slabs, pavements, etc. (see text for structural fill).
4. Drain gravel to be clean, washed ¾" to 1½" gravel.
5. General backfill to be on-site gravels, or ¾"-0 or 1½"-0 crushed rock compacted to 92% Modified Proctor (AASHTO T-180).
6. Chimney drainage zone to be 12" wide (minimum) zone of clean washed, medium to coarse sand or drain gravel if protected with filter fabric. Alternatively, prefabricated drainage structures (Miradrain 6000 or similar) may be used.

**FOOTING/RETAINING WALL DRAIN**

Project No. 943.001.G

1575 BURNS STREET

Figure No. 3

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
			GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
		GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.	
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
		SANDS WITH FINES	SP	Poorly graded sands or gravelly sands, little or no fines.
			SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

**DEFINITION OF TERMS**

SILTS AND CLAYS	U.S. STANDARD SERIES SIEVE			CLEAR SQUARE SIEVE OPENINGS			COBBLES	BOULDERS
	200	40	10	4	3/4"	3"		
	SAND			GRAVEL				
	FINE	MEDIUM	COARSE	FINE	COARSE			

**GRAIN SIZES**

SANDS, GRAVELS AND NON-PLASTIC SILTS	BLOWS/FOOT <sup>1</sup>
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

CLAYS AND PLASTIC SILTS	STRENGTH <sup>‡</sup>	BLOWS/FOOT <sup>‡</sup>
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

**RELATIVE DENSITY**

<sup>1</sup>Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).

<sup>‡</sup>Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

**CONSISTENCY**

**REDMOND & ASSOCIATES**  
P.O. Box 301545 • Portland, OR 97230

**KEY TO EXPLORATORY TEST PIT LOGS  
Unified Soil Classification System (ASTM D-2487)**

1575 BURNS STREET COMMERCIAL SITE  
WEST LINN, OREGON

134 PROJECT NO.	DATE
943 001 C	May 20, 2005

Figure 4

BACKHOE COMPANY: **Kavik, Inc.**

BUCKET SIZE: **24 inches**

DATE: **4/23/05**

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION	
						TEST PIT NO. <b>TH-1</b>	ELEVATION
0					ML	Dark brown, very moist to wet, soft, organic, sandy and clayey SILT (Topsoil)	
	X			24.4	ML	Medium brown to olive-brown, very moist, medium stiff to stiff, clayey, sandy SILT	
5	X			27.2			
10						Total Depth - 9.0 feet No ground water encountered	

						TEST PIT NO. <b>TH-2</b>	ELEVATION
0					ML	Dark brown, very moist to wet, soft, organic, sandy and clayey SILT (Topsoil)	
	X			26.1	ML	Medium brown to olive-brown, very moist, medium stiff to stiff, clayey, sandy SILT	
5							
	X			28.3			
10							
15						Total Depth = 11.0 feet No ground water encountered	

**LOG OF TEST PITS**

PROJECT NO. **943.001.G**

**1575 BURNS STREET COMMERCIAL SITE**

FIGURE NO. **5**

BACKHOE COMPANY: Kavik, Inc.

BUCKET SIZE: 24 inches

DATE: 4/23/05

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION	
						TEST PIT NO. TH-3	ELEVATION
0					ML		Dark brown, very moist to wet, soft, organic, sandy and clayey SILT (Topsoil)
	X			35.5	ML		Gray-brown, wet, soft to medium stiff, sandy, clayey SILT
5	X			32.6	ML		Medium brown to olive-brown, very moist to wet, medium stiff to stiff, clayey, sandy SILT
10							Total Depth = 8.0 feet No ground water encountered

						TEST PIT NO.	ELEVATION
0							
5							
10							
15							

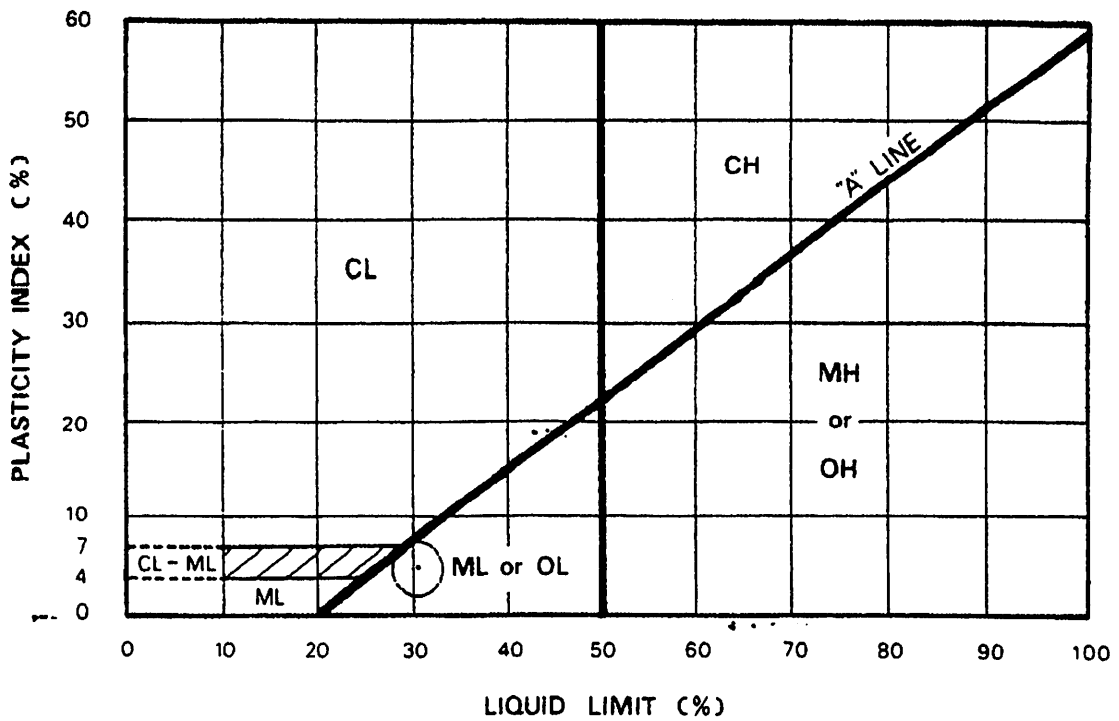
**LOG OF TEST PITS**

PROJECT NO. 943.001.G

1575 BURNS STREET COMMERCIAL SITE

FIGURE NO. 6





KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
	TH-2	3.0	28.3	30.6	5.5	76.0		ML

**REDMOND & ASSOCIATES**  
P.O. Box 301545 • PORTLAND, OR 97294

PLASTICITY CHART AND DATA

1575 BURNS STREET COMMERCIAL SITE  
West Linn, Oregon

PROJECT NO.

DATE

943 001 C

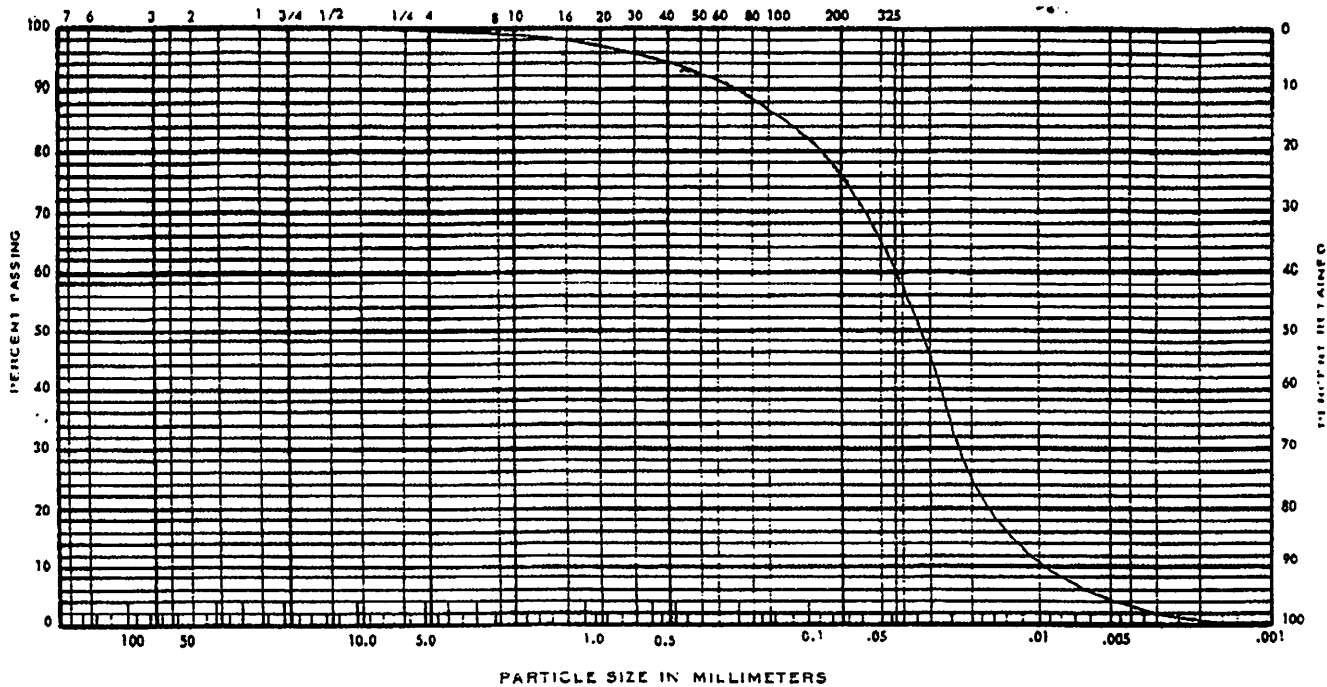
May 20 2005

Figure 7

## UNIFIED SOIL CLASSIFICATION SYSTEM

(ASTM D 422-72)

### U. S. STANDARD SIEVE SIZES



COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	ELEV (feet)	UNIFIED SOIL CLASSIFICATION SYMBOL	SAMPLE DESCRIPTION
—	TH-1	3.0		ML	Medium brown to olive-brown, clayey, sandy SILT

**REDMOND & ASSOCIATES**  
 P.O. Box 301545 • PORTLAND, OR 97294

GRADATION TEST DATA

**1575 BURNS STREET COMMERCIAL SITE**  
 West Linn, Oregon

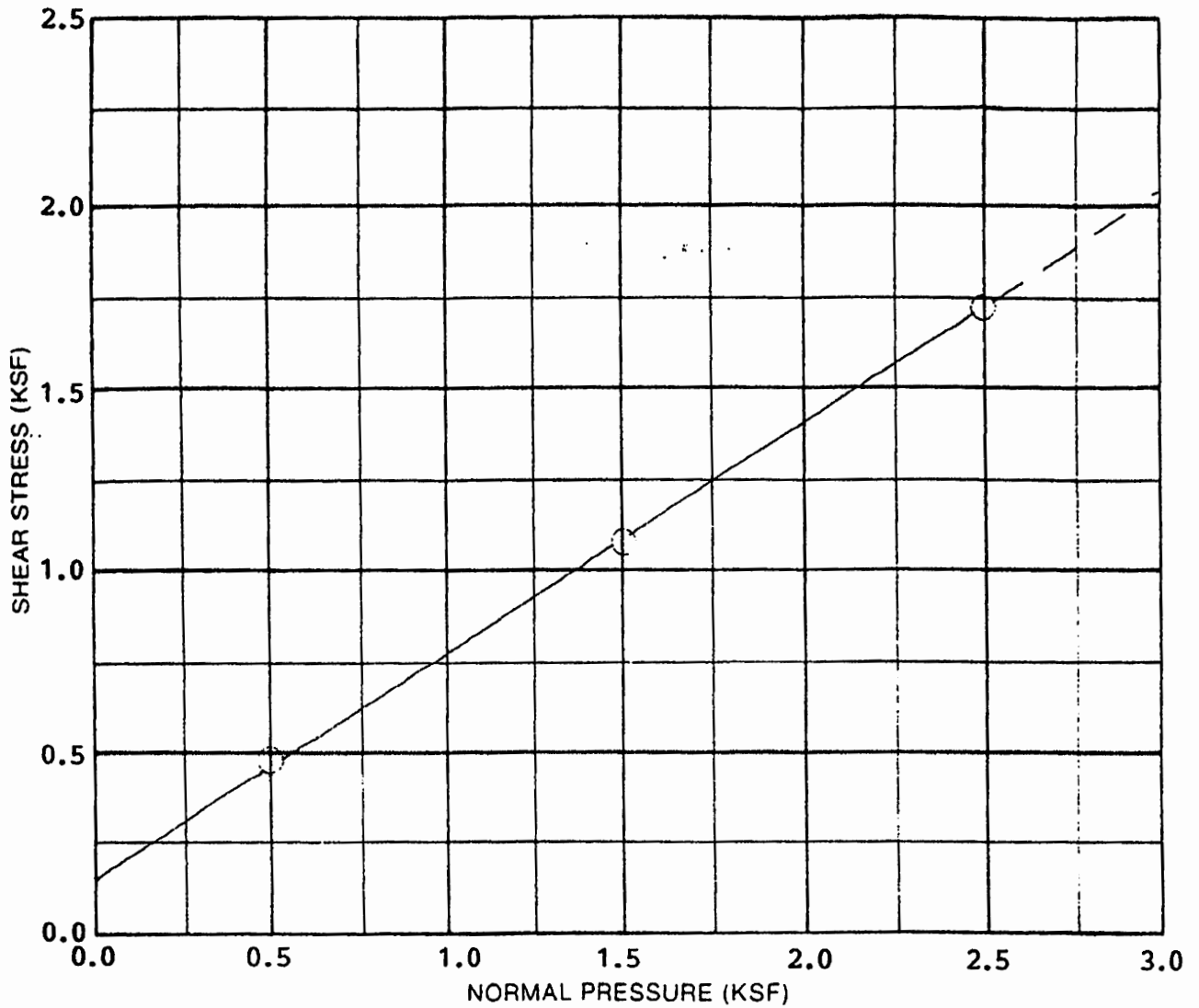
PROJECT NO.

DATE

FIGURE **8**

**943.001.C**

**May 20, 2005**



SAMPLE DATA	
DESCRIPTION: <b>Medium to olive-brown, clayey, sandy SILT</b>	
BORING NO.: <b>TH-2</b>	
DEPTH (ft.): <b>3.0'</b>	ELEVATION (ft.):
TEST RESULTS	
APPARENT COHESION (C): <b>150 psf</b>	
APPARENT ANGLE OF INTERNAL FRICTION ( $\phi$ ): <b>32°</b>	

TEST DATA				
TEST NUMBER	1	2	3	4
NORMAL PRESSURE (KSF)	0.5	1.5	2.5	
SHEAR STRENGTH (KSF)	0.48	1.09	1.74	
INITIAL H <sub>2</sub> O CONTENT (%)	26.0	26.0	26.0	
FINAL H <sub>2</sub> O CONTENT (%)	25.9	24.2	22.1	
INITIAL DRY DENSITY (PCF)	91.1	91.1	91.1	
FINAL DRY DENSITY (PCF)	91.6	93.1	95.4	
STRAIN RATE: <b>0.02 inches per minute</b>				

**REDMOND & ASSOCIATES**  
P.O. Box 301545 • Portland, OR 97294

**DIRECT SHEAR TEST DATA**

**1575 BURNS STREET COMMERCIAL SITE**  
**West Linn, Oregon**

PROJECT NO.

DATE

943.001.G

May 20 2005

Figure 9

Arborist

**MEMORANDUM**

**DATE:** August 31, 2010

**TO:** Rolf Olson

**FROM:** Morgan E. Holen, ISA Certified Arborist (PN-6145A)

**RE:** Tree Preservation and Construction for Street Improvements  
0944 Olson Project

---

At your request, I met with you and Wink Brooks on your project site located at the northwest intersection of Hood and Burns in West Linn on Friday, July 16, 2010, in order to evaluate three Douglas-fir trees in terms of proposed construction impacts. This memorandum documents the site visit and provides arborist recommendations.

Earlier this year I met with Mike Perkins, West Linn City Arborist, at the site for the purpose of identifying any trees he found to be significant. At that time he concluded that three Douglas-fir trees, in a cluster along the south property line, were significant. We looked at other trees that had potential significance but no others were identified as significant. The trees have a crown radius of approximately 18-feet towards the street and 22-feet towards the construction site. If protection is not feasible, the applicant must demonstrate why. Design alternatives were evaluated by the applicant in an effort to retain these trees. Irrespective of the development plan however, the City is requiring half street improvements on Burns Street, along the south property line which include a required 8-foot sidewalk due to the commercial nature of the project.

Refer to attached Exhibit C "Site Plan, Street and Sidewalk Study Plan." The street improvements include new curbs and sidewalks along the northern edge of Burns Road, approximately 9-feet from the largest of the three Douglas-firs. The back of the sidewalk is at elevation 116.5-feet and the approximate base of the largest Douglas-fir is at elevation 123.5-feet, a difference of 7-feet.

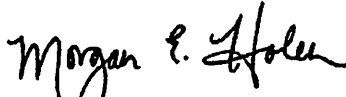
Based on the proposed site plans depicting the street improvement requirements, the trees are not suitable for preservation with construction. The existing curb is approximately 16-feet from the face of the trees, and the edge of the new sidewalk will come within 9-feet of the trees. As shown in the photograph below, the area between the road and the trees is a steep slope which limits the ability to provide recommendations for alternative tree protection measures—grading in this area appears unavoidable. While on site, we discussed the potential for constructing a retaining wall to help maintain the existing grade at the trees, however this does not seem feasible considering

drainage and any sloughing of material from the slope. The drawing shows graphically why the largest Douglas-fir tree must be removed due to the required half street improvements.

While the tree illustrated on the drawing is the one in the cluster located closest to the existing curb, Burns Street slopes downward to the east at a grade of approximately 12%, which increases the elevation difference between the sidewalk and the other two Douglas-firs in the cluster and thereby increases the after construction slope between the sidewalk and those trees. Based on the cross-section, approximately 50% of the root system will be impacted, and the trees will become hazardous and have inadequate growing space. In addition, Mr. Foster agreed that using a retaining wall is also not a viable solution since a wall would have to be located on the project site outside of the right-of-way and a wall ~6-feet tall would require an additional 4-feet or more of excavation into the slope towards the trees.

Removal of these three trees is recommended because they are not suitable for retention considering the City requested sidewalk and half street improvements. If there was a requirement to retain these trees, not only would the trees have very limited growing space after the sidewalk and street construction, they also would likely become hazardous considering the change in grade south of the trees and the unavoidable root impacts. Removal and replacement in a more appropriate on-site location is preferred since construction impacts are unavoidable.

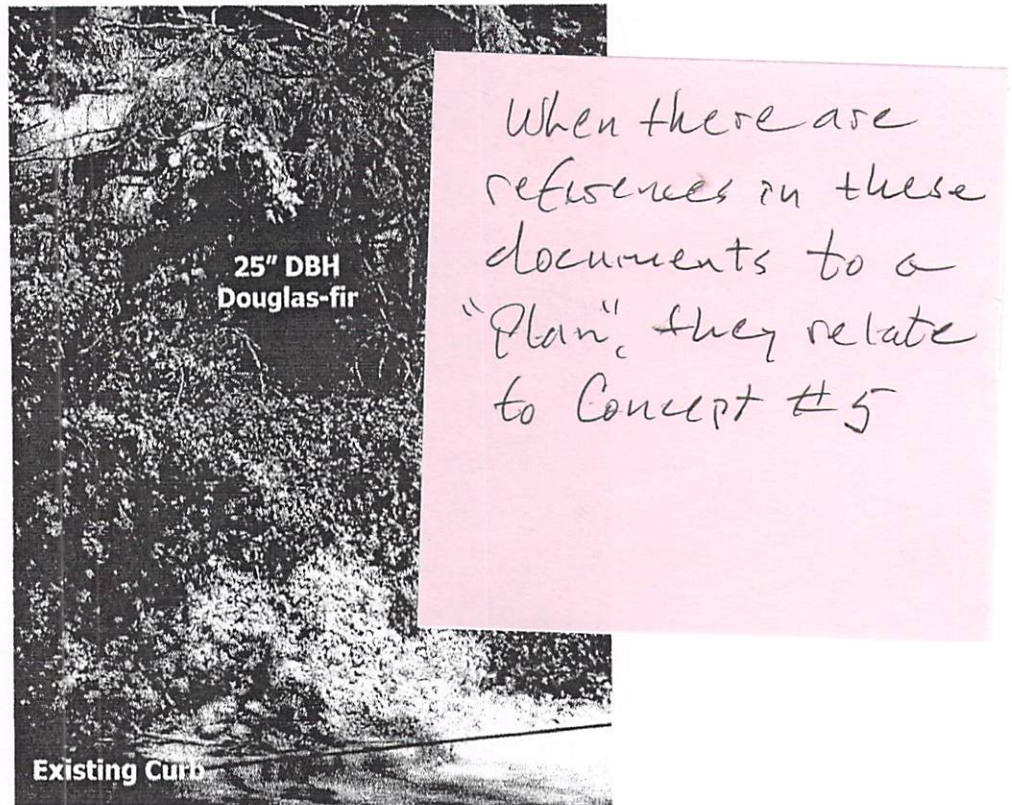
Please contact us if you have questions, concerns, or need any additional information.



Morgan E. Holen  
ISA Certified Arborist, PN-6145A  
ISA Certified Tree Risk Assessor, PN-449  
Forest Biologist, PBS Environmental

Enclosures: Exhibit C "Site Plan, Street and Sidewalk Study Plan  
Cross Section Drawing at Douglas-fir

the engineering requirements of such a wall and the relatively narrow width between the new sidewalk and the trees.



**Photo 1.** Existing curb and 25-inch Douglas-fir on top of slope.

Since my last visit to the site, Landscape Architect Bob Foster has provided a scaled north to south cross section at the point of the largest of the three Douglas-firs (attached). In addition, Mr. Foster and I spoke over the telephone regarding his drawing and the proposed construction impacts to the three Douglas-firs. The drawing illustrates the proposed impacts resulting from the required half street improvements. Only the largest of the three Douglas-firs is illustrated—this tree is sufficient for the illustration since retention of the other two trees is not recommended if one is removed. Since the trees are growing in a cluster and have adapted to being so close to one another over time, removal of one or more trees will expose the remaining tree, revealing a one-sided crown and increased probability for windthrow. This is potentially hazardous considering the primary targets are powerlines, the roadway, and project site.

The drawing illustrates the Douglas-fir tree that is located furthest to the west in the group of trees and an 8-foot wide sidewalk installed along the north side of Burns Street. A 2:1 slope is used, which is the recognized standard maximum for maintained slopes. In addition to the sidewalk and curb, there is an 18-inch flat area at the bottom of the slope, which is needed for

**rolf olson**

---

**From:** Soppe, Tom [tsoppe@westlinnoregon.gov]

**Sent:** Monday, September 13, 2010 9:11 AM

**To:** 'rolf olson'


**Subject:** RE: Pre-App Conference ✓

The way to measure the gable height looks fine. Mike Perkins agrees the street improvements themselves would take out the significant group of trees, so the tree variance shouldn't be needed, and this will be discussed in the notes. Let me check up on the other two issues. I will get you draft notes this week as soon as I have them ready.

Tom Soppe  
Associate Planner  
City of West Linn  
22500 Salamo Road  
West Linn, OR 97068  
ph. (503) 742-8660  
fax (503) 656-4106  
[tsoppe@westlinnoregon.gov](mailto:tsoppe@westlinnoregon.gov)

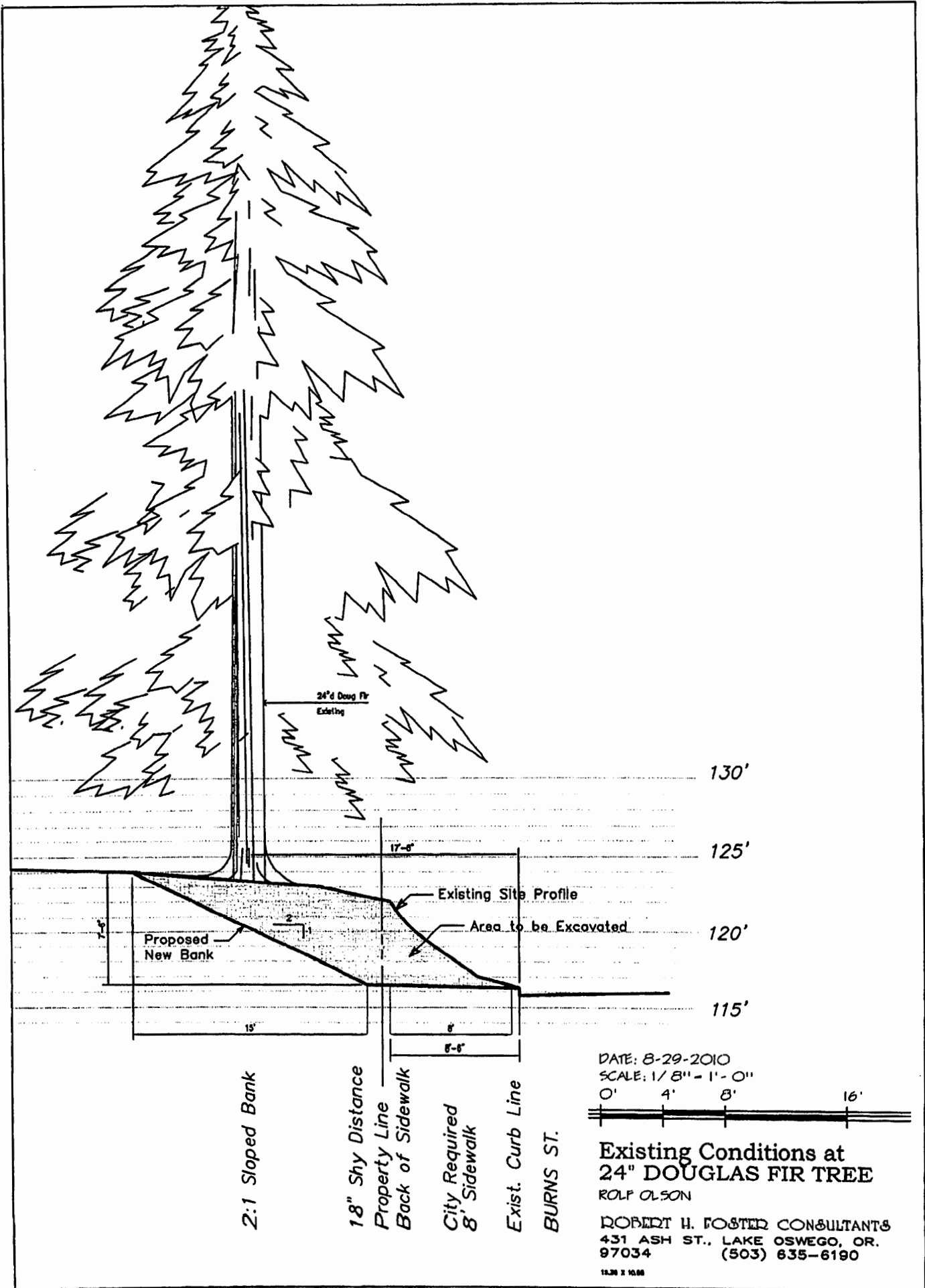
Tom Soppe  
[tsoppe@westlinnoregon.gov](mailto:tsoppe@westlinnoregon.gov)

*Associate Planner*

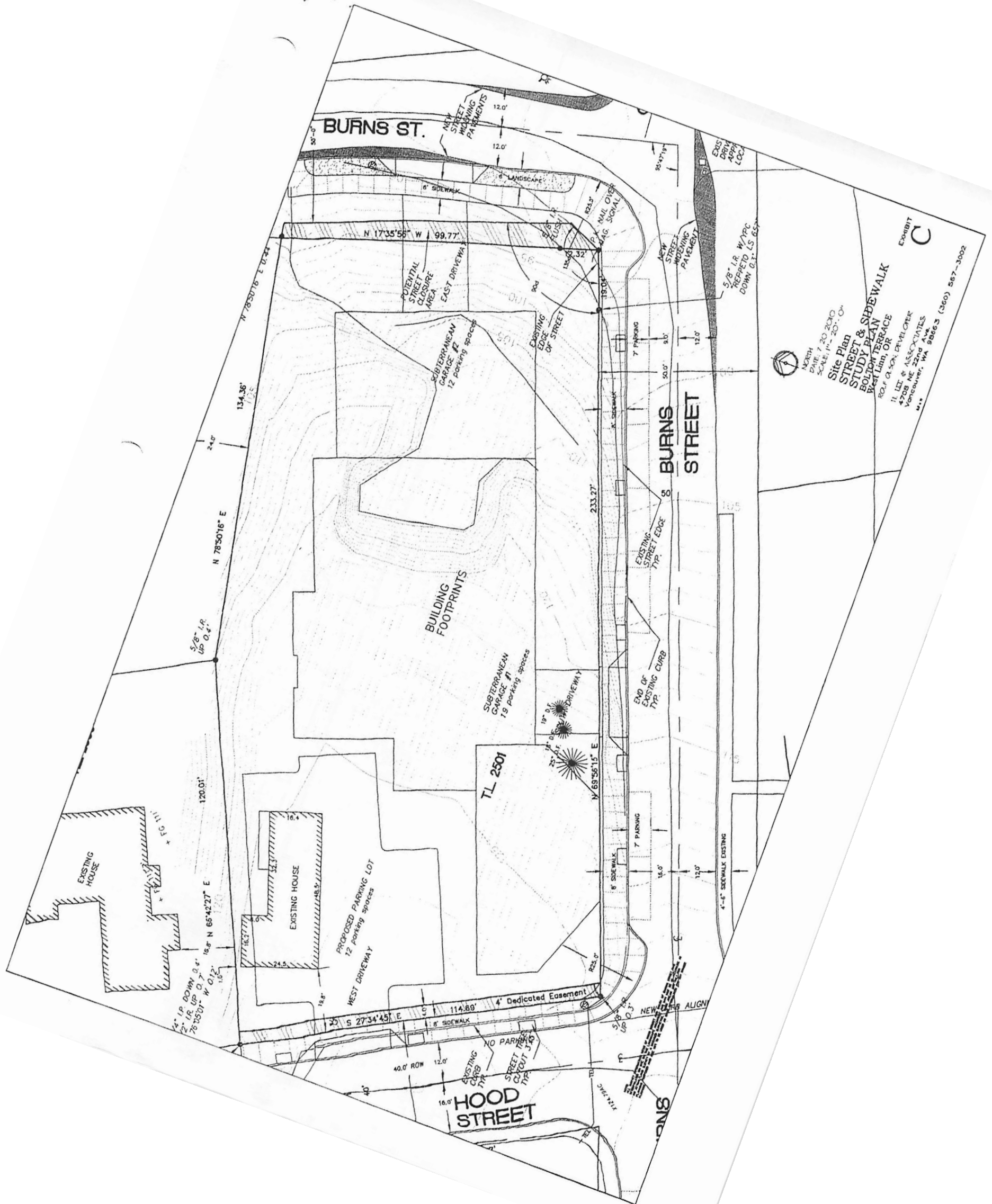
 22500 Salamo Rd  
West Linn, OR, 97068  
P: (503) 742-8660  
F: (503) 656-4106  
Web: [westlinnoregon.gov](http://westlinnoregon.gov)

**West Linn Sustainability** Please consider the impact on the environment before printing a paper copy of this email.

**Public Records Law Disclosure** This e-mail is subject to the State Retention Schedule and may be made available to the public.







NORTH  
 DATE: 7/20/2010  
 SCALE: 1" = 20'-0"  
**Site Plan**  
**STREET & SIDEWALK**  
**STUDY PLAN**  
 BOLTON TERRACE  
 WEST LUMB, OR  
 RD. 1 G-53X DEVELOPER  
 T.L. LEE & ASSOCIATES  
 4708 NE 22nd Ave.  
 Vancouver, WA 98663 (360) 567-3002  
 EXHIBIT **C**



# MEMORANDUM

DATE: June 27, 2019

TO: Josh Wells | Westech Engineering, Inc.

FROM: Lacy Brown, Ph.D., P.E. | DKS Associates  
Daniel Thompson, Intern | DKS Associates

SUBJECT: West Linn: 1575 Burns Street Trip Generation and TIA Determination

This memorandum provides a site plan review and trip generation analysis to determine the need for a traffic impact analysis. The following sections describe the average daily, AM peak hour and PM peak hour trip generation for the proposed office development in West Linn, Oregon. The proposed development is located at 1575 Burns Street and will consist of 8,500 square feet of office.

## TRIP GENERATION

The expected trip generation of the proposed office building was estimated using the ITE Trip Generation Manual, 10th Edition.<sup>1</sup> The trip generation estimates are summarized in Table 1.

**Table 1: Trip Generation**

Land Use [ITE Code]	Trip Generation Rate <sup>a</sup>		Units	AM Peak Hour			PM Peak Hour			Daily Trips
	AM Peak	PM Peak		In	Out	Total	In	Out	Total	
General Office [710]	4.0/KSF <sup>b</sup>	1.29/KSF <sup>b</sup>	8.5 KSF <sup>b</sup>	29	5	34	2	9	11	97

<sup>a</sup>Trip Generation Rate calculated using fitted curve equation.  
<sup>b</sup>KSF = 1,000 Square Feet

As shown, the development is expected to generate 97 daily trips, 34 AM peak hour trips, and 11 PM peak hour trips. Based on section 5.0014 of the City of West Linn Public Works Design Standards, the proposed development will not require a full transportation impact analysis since it generates less than 1,000 vehicle trips per weekday.

## SITE PLAN REVIEW

The preliminary site plan was provided by Westech Engineering, Inc. and is attached in the appendix. Based on the site plan, the proposed project is expected to have vehicle access to Hood Street via a new driveway that is to be constructed. Sight distance and site access spacing requirements were evaluated for the new driveway. Hood Street is a local street with a posted speed limit of 25 miles per hour in the vicinity of the site.

<sup>1</sup> Trip Generation, 10th Edition, Institute of Transportation Engineers, 2017.

## Sight Distance

A preliminary sight distance evaluation was conducted at the proposed access on Hood Street. Based on AASHTO standards for 25 miles per hour speeds, 280 feet of intersection sight distance would be required in the north and south directions.<sup>2</sup> A preliminary sight distance review indicated that the available sight distance is adequate for vehicles traveling 25 miles per hour or less. Prior to occupancy, sight distance will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.

## Access Spacing

The proposed office development plans to provide access onto Hood Street with a driveway placed approximately 65 feet north of Burns Street. Based on the City of West Linn access spacing standards, driveways on local streets should be spaced at least 35 feet from intersecting streets.<sup>3</sup> Hood Street is classified as a local road and the proposed driveway meets access spacing standards.

## Parking

The proposed site plan includes 25 off-street parking spaces (2 van-accessible, 8 compact, and 15 standard spaces). Based on the City of West Linn parking requirements, professional office buildings are required to provide one parking space per 370 square feet of building area.<sup>4</sup> For an 8,500 square foot office building, the minimum number of parking spaces required is 23, with a minimum of one accessible space. The parking provided meets the City's requirements.

## SUMMARY

Key findings for the proposed office development in West Linn, Oregon are as follows:

- The 8,500 square feet of office space would generate 97 daily trips, 34 AM peak hour trips, and 11 PM peak hour trips. Based on the City of West Linn Public Works Design Standards, the proposed development will not require a full transportation impact study since it generates less than 1,000 vehicle trips per weekday.
- A preliminary sight distance evaluation indicated that the existing sight distance at the proposed driveway located on Hood Street meets AASHTO requirements. Prior to occupancy, sight distance will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.
- The preliminary site plan meets the City's requirements for access spacing and off-street parking.

Please let us know if you have any questions.

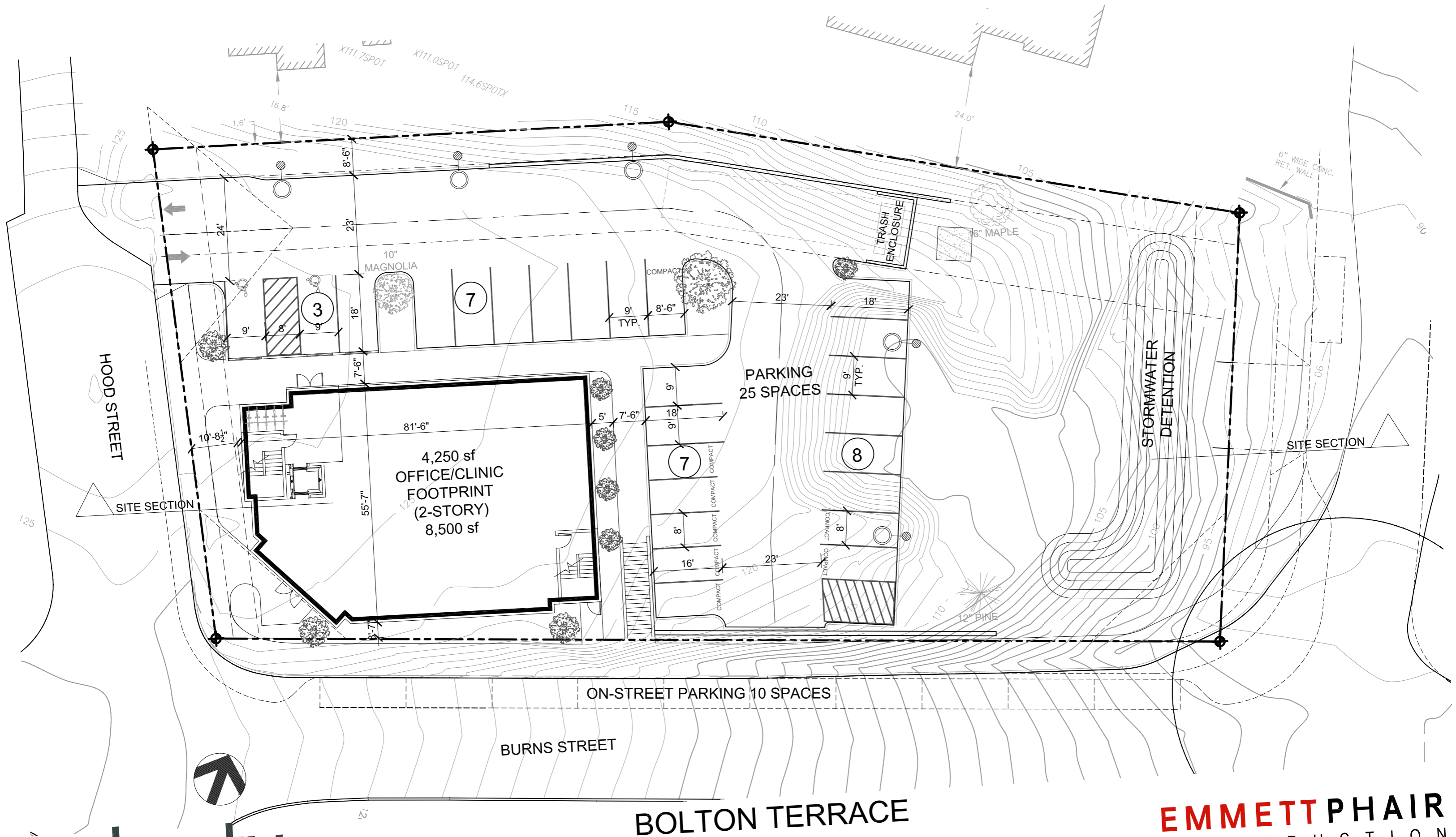
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<sup>2</sup> *A Policy on Geometric Design of Highways and Streets, 6th Edition*, Table 9-6, AASHTO, 2011.

<sup>3</sup> *City of West Linn Public Works Design Standards*, Section 5 – Street Requirements.

<sup>4</sup> *City of West Linn Community Development Code*, Section 46.090.C and 46.150.B.

**APPENDIX A – SITE PLAN**



**lenity**  
architecture

3150 Kettle Court SE, Salem, Oregon 97301  
P 503 399 1090 F 503 399 0565 w lenityarchitecture.com

**SITE PLAN**  
SCALE: 1" = 20'-0"

**BOLTON TERRACE**

DATE: 5-28-19

**EMMETT PHAIR**  
CONSTRUCTION

NEIGHBORHOOD MEETING NOTICE  
AFFADAVIT OF MAILING

STATE OF OREGON )  
 )  
City of West Linn )

I, Carolyn A. Kellogg, being duly sworn, depose and say that on the 17<sup>th</sup>

Day of Sept 2019, I caused a written notice to be sent by regular U.S. Mail to property owners within 500 feet of the subject property to discuss a proposed development at 1575 Burns Street,

a copy of such notice is attached hereto and made a part hereof.

Signature: Carolyn A. Kellogg

ACKNOWLEDGEMENT

Subscribed and sworn to, or affirmed, before me this 18<sup>th</sup> day of September  
2019

STATE OF OREGON )  
County of Marion )

On 9/18/19, before me personally appeared

Whose identity was established to my satisfaction, and who executed the foregoing instrument, acknowledging to me that the same was executed freely and voluntarily,

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal on the date first written above.

Lisa M. Crouch  
Notary Public for Oregon  
My commission expires 5/8/23



7016 1370 0000 7294 2058

**U.S. Postal Service™  
CERTIFIED MAIL® RECEIPT**  
Domestic Mail Only

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WEST LINN, OR 97068

Certified Mail Fee \$3.50

Extra Services & Fees (check box; add fee as appropriate)

<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To: Bob McCarthy  
Street and Apt. No. or PO Box: 1535 Burns St.  
City, State, ZIP+4®: West Linn, OR 97068

Postmark: SEP 09 2019  
09/09/2019  
USPS

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7016 1370 0000 7294 2065

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WEST LINN, OR 97068

Certified Mail Fee \$3.50

Extra Services & Fees (check box; add fee as appropriate)

<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To: Steve Miron  
Street and Apt. No. or PO Box: 1535 Holmes St.  
City, State, ZIP+4®: West Linn, OR 97068

Postmark: SEP 09 2019  
09/09/2019  
USPS

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

## PROPERTY DEVELOPMENT PROPOSAL ANNOUNCEMENT

To: Neighbors in the Vicinity of 1575 Burns Street, West Linn, OR 97068

From: Lenity Architecture Inc., on behalf of Kim Wright, DMD

What: Proposed new medical/professional office at 1575 Burns Street

Please join us during the regular Bolton Neighborhood Association meeting to discuss the project with you in further detail.

Where: **Bolton Fire Station – 6050 Failing Street, West Linn, OR 97068**

When: **Tuesday, October 15<sup>th</sup> @ 7pm**

This meeting is open to the public and we welcome your participation and comments.

Please note that there may be other development proposals and/or Bolton Neighborhood Association business discussed at the meeting.

We encourage you to contact the Bolton Neighborhood Association President, or designee, with any questions you may want to relay to us.

You may also contact me with any questions: [samt@lenityarchitecture.com](mailto:samt@lenityarchitecture.com)

We look forward to meeting with you soon!

Sincerely,



Sam Thomas  
Senior Land Use Specialist  
Lenity Architecture, Inc.



# **PUBLIC MEETING NOTICE**

Design Review - Class II  
Medical/Professional Office

Site: 1575 Burns Street

**Meeting Location/Time:**

**Bolton Fire Station**

**6050 Failing Street**

**7:00 PM - October 15, 2019**

Contact Sam Thomas

for more information:

[samt@lenityarchitecture.com](mailto:samt@lenityarchitecture.com)


NEIGHBORHOOD MEETING  
AFFIDAVIT OF POSTING

STATE OF OREGON     )  
                                  )  
City of West Linn     )

I, Samuel A. Thomas, being duly sworn, depose and say that on the 17<sup>th</sup>

Day of September 2019, I caused to be posted a notice of a meeting to discuss a proposed development  
at 1575 Burns Street,

a copy of such posting is attached hereto and made a part hereof.

Signature: 

ACKNOWLEDGEMENT


Subscribed and sworn to, or affirmed, before me this 20<sup>th</sup> day of SEPTEMBER  
2019

STATE OF OREGON     )  
County of MARION     )

On 9/20/19 - SAMUEL THOMAS, before me personally appeared

Whose identity was established to my satisfaction, and who executed the foregoing instrument,  
acknowledging to me that the same was executed freely and voluntarily,

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal on the date  
first written above.

  
Notary Public for Oregon  
My commission expires 5/8/2023

