

July 20, 2015

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**VIA MESSENGER**

Mr. Zach Pelz  
City of West Linn Planning and Building Department  
22500 Salamo Road, Suite 1000  
West Linn, OR 97068

**Re: City of West Linn Planning File Numbers DR-15-11/LLA-15-01;  
Applicant's Response to July 16, 2015 Incompleteness Determination**

Dear Mr. Pelz:

This office represents the applicant, ConAm Properties, LLC in the above-referenced applications. This letter responds to the incompleteness determination pursuant to ORS 227.178(3) by the City of West Linn (the "City") dated July 16, 2015.

ConAm Properties, LLC has submitted all of the missing information listed in Items 1-5 of the July 16, 2015 letter pursuant to ORS 227.178(2)(a). The application is deemed complete for purposes of ORS 227.178(1) upon receipt today, July 20, 2015, by the City of all of the missing materials.

Please let me know if you have any questions.

Very truly yours,

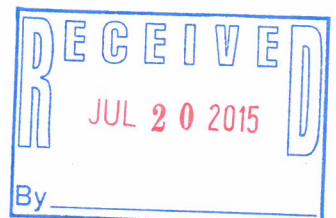


Michael C. Robinson

MCR:sv

Enclosures

cc: Mr. Mike Mahoney (via email) (w/o encls.)  
Mr. Rob Morgan (via email) (w/o encls.)  
Mr. Pete Miller (via email) (w/o encls.)  
Mr. Gary Alfson (via email) (w/o encls.)  
Mr. John Boyd (via email) (w/o encls.)



# Memorandum



808 SW 3<sup>rd</sup> Avenue  
Suite 300  
Portland, OR 97204  
Phone (503) 287-6825  
Fax (503) 415-2304

**To:** Zach Pelz, AICP City of West Linn Associate Planner  
**From:** Gary Alfson, PE  
Mike Peebles, PE  
**Copies:** Pete Miller, Otak, Inc.  
Mike Robinson, Perkins Coie  
Mike Mahoney, ConAm  
**Date:** July 20, 2015  
**Subject:** West Linn Completeness Letter dated July 16, 2015,  
Planning File No. DR-15-11/LLA-15-01  
**Project No.:** 17122

RE: Application for proposed mixed-use development at the northwest corner of Tannler Drive and Blankenship Road.

The following are responses to completeness items provided by the City of West Linn in the July 16, 2015 completeness determination letter: (*City comments in italics*, Otak responses follow)

1. 55.070(C)

- a. 99.038(E)(4) - *A copy of the minutes of the meetings, produced by the neighborhood association, or the applicant if the NA did not produce minutes.*

**Response:** Meeting minutes have been added to Appendix B (Neighborhood Meeting Documents) of the application.

2. 55.070(D)(2)(a-i)

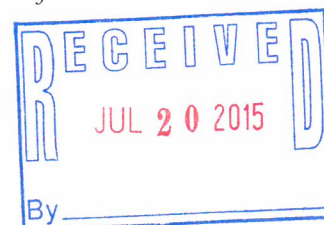
- a. *Site Analysis per CDC 55.110*  
i. 55.110(B)(6)(d) - *Site analysis must include areas shown on Map 17 as areas vulnerable to landslide.*

**Response:** Map 17 area shown on Sheet P1.3 in NE corner of the site. A reference to Map 17 and the project area has been added to Appendix F (Geotechnical Report) of the application.

b. *Site Plan per CDC 55.120*

- ii. 55.120(E) - *site plan must show easements on site and on adjacent properties.*  
iii. 55.120(F)(2) - *the site plan must show the location, dimensions and setback distances of all existing structures and driveways on adjoining properties.*

**Response:** Information added on sheets P1.2 and P2.1





*e. Landscape Plan per CDC 55.150*

- i. 55.150(B)(1) - the landscape plan does not detail the proposed erosion control measures.*

**Response:** A new sheet EC1.0 (Preliminary Erosion Control) has been added to the plan set.

*f. Please include a graphic or drawing to depict the various luminaires proposed throughout the site.*

**Response:** Luminaire cut sheets have been added to Appendix G (Lighting Report) of the application.

*3. 46.030(H) - requires that the plan show specifications for parking area signage and bumper guards.*

**Response:** Information added on sheet P2.1

*4. Traffic Impact Analysis -*

- a. Proposed mitigations for Blankenship Rd/Tannler Dr do not adequately address the project traffic impacts shown. Applicant should further evaluate potential mitigation strategies (right-in, right out, signalization, realignment, etc.) for this intersection and include strategies to maintain pre-development operating conditions (or better).*
- b. Compatibility with long-range transportation system plan improvements for Tannler Drive needs to be addressed. This development would preclude the preferred Tannler Drive realignment alternative from the 2008 City of West Linn Transportation System Plan.*
- c. Additional traffic from the proposed project does indeed contribute to the operational issues at 10" Street/g" Avenue, including increased vehicle queuing. Update discussion of this in the TIA and provide ideas for how this project could mitigate its impacts to this intersection.*

**Response:** An updated Traffic Impact Analysis has been included as Appendix E (Traffic Impact Report)

*5. Other Engineering-related details required*

- a. Please show the access to the stormwater detention pond.*

**Response:** Added to sheets P3.0 and P4.0.

- b. Please show the proposed street lighting on the site plan.*

**Response:** Added Tannler Drive street light symbols to sheet P2.0.

- c. Please show the proposed stormwater treatment/detention facility that will capture runoff from a new sidewalk along the west side of Tannler Dr.*

**Response:** Added proposed LIDA facility along Tannler Drive to sheet P2.0, P2.1, and P3.0.

- d. Please correct conflicting information regarding right-of-way dedication along Tannler Dr.: two-feet is proposed on page 29 of the submittal but a 1-foot dedication is shown on the site plan (P2.1).*

**Response:** Updated narrative to reference 1-foot dedication to match site plan (P2.1).

*e. Please show an 8-foot public utility easement along Tannler Drive.*

**Response:** Added to sheet P1.2.

*f. Please correct conflicting information regarding the width of parking and travel lanes along Tannler Dr.: page 29 of the submittal mentions an 11-foot parking lane and 13-foot travel lane; however, an 8-foot parking lane and 14-foot travel lane are shown on the site plan (page P1.1) and a 9-foot parking lane and 13-foot travel lane are shown on page P2.1.*

**Response:** Updated narrative to reference parking (8') and travel lane (13') widths on Tannler Drive to match site plan (P2.1).

*g. The 26-foot wide proposed driveway approach on Tannler Dr (including the standard 6-foot wings) will exceed the maximum approach width of 36-feet.*

**Response:** Driveway approach revised to 24' throat with 6' wings (total width 36') as shown on sheet P2.1.

*h. Please show the water meter in a public easement or in the public right-of-way.*

**Response:** Added to sheet P4.0.

*i. Please show a manhole at the connection of the sanitary sewer.*

**Response:** Added to sheet P4.0.

*j. Please show the proposed pavement improvements along Tannler Dr.*

**Response:** No additional pavement widening is proposed on Tannler Drive. Limits of Tannler Drive frontage improvements are hatched on sheet P2.0

*k. Please correct the striping plan on Tannler Dr. to terminate the on-street parking at an appropriate distance from the proposed left turn lane.*

**Response:** Updated striping and labeling for on-street parking on Tannler Drive on sheet P2.1.

*l. Please show the mitigation plan at 10th and Blankenship (Figure 10, page 42 of the Traffic Impact Analysis) on the site plan set.*

**Response:** Added new sheet P2.2. to the plan set.

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# Tannler Drive Mixed-Use Development

West Linn, Oregon

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Request for  
Class II Design Review Approval  
and  
Property Line Adjustment Approval

Prepared for  
ConAm Properties, LLC

Prepared by  
Otak, Inc.



**Hanmi**Global Partner

Otak Project No. 17122  
Submitted July 13, 2015  
Updated and resubmitted July 20, 2015

## APPLICATION SUMMARY

### REQUEST:

**Class II Design Review** approval is requested for development of a mixed use project consisting of seven mixed-use buildings and an accessory clubhouse on the west side of Tannler Drive north of Blankenship Road. Each of the seven buildings will have a commercial space located on their ground levels. The upper levels of each building above the first floor will include multi-family residential units. Garages for the multi-family units will be provided on the ground levels of each mixed-use building. A total of 192 multi-family residential dwelling units are proposed.

The proposed mixed-use development project's driveway system will connect with the driveways and parking area of the Willamette 205 office development to the west. A reciprocal access agreement has been recorded between these properties. The driveways and sidewalks of the Willamette 205 office development will provide for a pedestrian and vehicular connection between the proposed Tannler Drive Mixed-Use project to Blankenship Road.

**Property Line Adjustment** approval is requested amongst the three involved properties. The property line between tax lot 200 and tax lot 102 would be moved to the south to result in tax lot 200 being reduced to approximately 1.17-acres in size. The property line between tax lot 102 and tax lot 100 would be relocated to the north. This would result in tax lot 100 being decreased in size to approximately 3.18-acres in size. As a result of the adjustment of these two property boundaries, tax lot 102 would be increased to approximately 7.01-acres in size.

Tax lots 102 and 100 included in the Design Review application as the proposed site of the mixed-use development with a combined size of 10.19-acres. Tax lot 200 should be considered as an out parcel for the purposes of that application.

### LOCATION:

2444, 2422 and 2410 Tannler Drive. The proposed development project site is located on the west side of Tannler Drive, north of a vacant parcel which fronts on Blankenship Road

### PARCEL DESCRIPTION:

Tax lots 100, 102 and 200 of CCTM 2S1E 35C.

### COMPREHENSIVE PLAN MAP DESIGNATION:

Commercial

### ZONING:

OBC (Office Business Center)



## PROJECT DEVELOPMENT TEAM

<b>APPLICANT:</b>	ConAm Properties, LLC 3990 Ruffin Road, Suite 100 San Diego, CA 92123 Contact: Rob Morgan 858-614-7378
<b>PROPERTY OWNERS:</b>	Jeffrey Parker and William S. Wilt 1800 Blankenship Road, Suite 200 West Linn, OR 97068
<b>PLANNER/ ENGINEER:</b>	Otak, Inc. 808 SW 3rd Avenue, Suite 300 Portland, Oregon 97204 Contact: Gary Alfson, P.E. (503) 287-6825
<b>ARCHITECT:</b>	Otak, Inc. 808 SW 3rd Avenue, Suite 300 Portland, Oregon 97204 Contact: Ron Dean (503) 287-6825
<b>ATTORNEY:</b>	Mike Robinson Perkins Coie 1120 NW Couch Street, Tenth Floor Portland, OR 97209-4128 (503) 727-2000
<b>TRAFFIC ENGINEER:</b>	Mackenzie PO Box 14310 Portland, Oregon 97293 Contact: Brent Ahrend, P.E. (503) 224-9560
<b>GEOTECHNICAL ENGINEER:</b>	Geo Design, Inc. 15575 SW Sequoia Parkway, Suite 100 Portland, Oregon 97224 Contact: George Saunders (503) 968-8787
<b>LIGHTING DESIGNER:</b>	MEC Engineering, Inc. 520 SW 6 <sup>th</sup> Ave. Suite 640 Portland, OR 97204 Contact: Rick Harrison, PE (503) 250-4863

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C. Preliminary Storm Drainage Report by Otak, Inc.	
D. Arborist Report by Morgan Holen, Consulting Arborist	

- E. Traffic Impact Report by Mackenzie
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P1.3 –	Slope Analysis Plan
P2.0 –	Preliminary Site Plan
P2.1 –	Preliminary Site Dimension Plan
P3.0 –	Preliminary Grading Plan
P4.0 –	Preliminary Composite Utility Plan
EC1.0 –	Preliminary Erosion Control Plan
L1.0 –	Preliminary Landscape Plan
L1.1 –	Typical Planting Plans
L1.2 –	Planting Notes and Details
TP1.0 –	Tree Removal and Preservation Plan
TP1.1 –	Tree Removal and Preservation Data
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A1.1 –	Site Sections
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A3.7A –	Building Type 7 Elevations
A3.7B –	Building Type 7 Elevations
A4.0 –	Site Information Sign
A4.1 –	Building Signage



## I. REQUEST

**Class II Design Review** approval is requested for plans for development of a mixed-use residential and commercial project consisting of seven buildings on the west side of Tannler Drive north of Blankenship Road. Each of the seven mixed-use buildings will have a commercial space located on its first floor. Covered parking serving the residential uses above will also be located on the first floors of the seven mixed-use buildings. Levels two, three, and four of each building will include multi-family residential units. A total of 192 multi-family residential dwelling units are proposed.

A clubhouse recreation center and leasing office building are proposed. Both commercial and residential tenants will have access to the clubhouse building and outdoor recreational facilities adjacent to that building and elsewhere on the site.

The proposed development project will have an entrance driveway from Tannler Drive approximately 670 feet north of Blankenship Road. A primary driveway will wind through the site from this entrance to the southwestern corner of the project site, connecting with an existing driveway within the adjacent Willamette 205 office project to the west. Eight short dead end driveways will extend off of this primary driveway providing access to the majority of the mixed-use project's parking spaces and to the commercial spaces within the project. Sidewalks will also extend through the site, including along the primary driveway and the eight dead end driveways.

The proposed development's driveway and sidewalk system will connect with the driveways and sidewalks of the Willamette 205 commercial office project. A reciprocal access agreement has been recorded between these properties. The driveways and sidewalks of the Willamette 205 office project will provide for a connection to Blankenship Road.

In addition, a **Property Line Adjustment** approval is requested for the three involved lots. The property line between tax lot 200 and tax lot 102 will be moved to the south to result in tax lot 200 being reduced to approximately 1.17-acres in size. The property line between tax lot 102 and tax lot 100 will be relocated to the north. This will result in tax lot 100 being decreased in size to approximately 3.18-acres in size. As a result of the adjustment of these two property boundaries, tax lot 102 will be increased to approximately 7.01-acres in size.

Tax lots 102 and 100 are included in the Design Review application as the proposed site of the mixed-use development. All site development activities will occur on tax lot 102. This parcel is what is generally referred to in this report as the development site. Tax lot 100 will be an open space parcel that is included as part of the mixed-use project development proposal but no development is proposed for this lot. Tax lot 200 is not part of the site for the purposes of the Design Review application.

## II. SITE AND VICINITY INFORMATION

### A. Location

The proposed development site is located approximately 240-feet north of the intersection of Tannler Drive and Blankenship Road. The site is located on the west side of Tannler Drive, a collector street. The property consists of portions of three existing tax lots

(Clackamas County Assessor Map No. 21E35C, Tax Lots 100, 102 and 200). Property line adjustments will be made amongst the three affected properties so that two parcels totaling 10.19 acres will be provided, with one smaller parcel to the south. Preliminary approval of the property line adjustments is requested as part of this application.

## B. Site Conditions

The proposed development site is currently undeveloped. The site is covered with native grasses, blackberry bushes, other bushes and shrubs, and a variety of trees including oak and Douglas fir among others. An aerial photo of the site and vicinity is included as Sheet P1.0. The development site slopes fairly steeply from an elevation of over 390 feet at the site's northern boundary with the Greene Street right-of-way to 230 feet at its southwest corner. Existing topography is included on the Aerial Photo/Site Analysis Plan, Sheet P1.0 and other plans. Most of the site has an existing slope of greater than 15 percent, with lesser gradient areas located primarily in the southeastern portion of the site. A slope analysis by percent slope as laid out by Development Code Section 55.110 is included as part of Sheet P1.3.

## C. Surrounding Land Uses and Zoning

The River Falls shopping center - which includes a Haggen's grocery store, restaurants and other services - is located across Blankenship Road to the south within one-tenth of a mile of the proposed mixed-use development project site. The site is also located within one-half mile of a variety of commercial services and employment uses within the Willamette commercial district on the south side of I-205, including the Marketplace Shopping center and the commercial uses on Willamette falls Drive.

Neighboring zoning and land uses are as follows:

- To the west and adjacent to the project site's western boundary, the property is zoned OBC and is developed with three office buildings within the Willamette 205 office complex;
- To the north is single-family residential development which is zoned R-10(insert number of adjacent houses bordering site; I think it's just 5 or 6); and to the north and northwest are multifamily residential development in the Madison Heights condominiums and the Summerlinn Apartments. This area is zoned R-2.1;

No adjacent residential development of any type borders the development portion of this site; the nearest residential uses are separated from the development portion of this site by the open space area on Tax Lot 100.

- To the east across Tannler Drive is the City of West Linn' White Oak Savanna Park and a vacant parcel which is in private ownership. The area to the east is zoned OBC; and
- Directly to the south of the proposed development site is a vacant parcel (tax lot 200) which is zoned OBC. Across Blankenship Road further to the south is the River Falls Shopping Center which is zoned GC.

## D. Emergency Services

The project site is served by the Tualatin Valley Fire and Rescue District (TVFRD). The nearest TVFRD station is Station 58 located at 1860 Willamette Falls Drive. City of West Linn Police Department is located at 22825 Willamette Drive. Both the Fire and Police stations are located within approximately one-half mile of the site.

## E. Parks

The project site is adjacent to the City of West Linn-owned White Oak Savanna Park to the east across Tannler Drive. The White Oak Savanna Park has trails, overlook areas, and natural areas. The project site is located within one-quarter mile of the developed North Willamette Neighborhood Park which is located to the northwest. The North Willamette Park includes two play structures, a tennis court, a basketball court, picnic areas, and trails.

## F. Schools

The site is served by the West Linn High School (located at 5464 West "A" Street); the Rosemont Ridge Middle School (located at 20001 Salamo Road); and the Willamette Primary School (located at 1403 12th Street).

## G. Transit

TriMet Route 154 travels east-to-west along Blankenship Road to the south of the site. The closest transit stop is located in front of the Willamette 205 commercial office project, approximately 200-foot walking distance south of the southwestern corner of the development site. Route 154 provides hourly transit service to the Oregon City Transit Center and to Highway 43 from 6:30 AM to 7:00 PM Monday through Friday. Connections to other transit routes from Route 154 can be made at the Oregon City Transit Center and to Highway 43.

# III. PROPOSED DEVELOPMENT PLAN

The proposed development plans include seven multi-purpose commercial spaces and 192 multi-family residential dwelling units within seven buildings. Commercial spaces and covered parking will occupy the south sides of the ground levels of all seven buildings. Residential units will occupy the second, third, and fourth floors of the buildings. All of the proposed buildings will be four-stories in height when viewed from the southern or lower side of the buildings. The buildings will appear as 3-story buildings when viewed from the uphill northern sides of the buildings.

## Commercial Uses

Together, the seven buildings will contain 1,973 square feet of leasable commercial space in seven different ground level spaces which will be available for use by any of the permitted use in the OBC zoning district (West Linn Community Development Code, the "CDC", Section 21.030), and any use allowed as a conditional use in that zone if a conditional use permit is first obtained from the City of West Linn (CDC 21.060). Each of the commercial spaces will have its own ground level entrance conveniently located near parking spaces and internal site walkways.

## Residential Uses

In addition, the seven multi-use buildings will provide 24 three-bedroom units, 102 two-bedroom units, and 66 one-bedroom residential dwelling units. All residential unit types are dispersed throughout all buildings. Like units generally stack from floor to floor. The residential units will be accessed by breezeway stair towers. All residential units will have private decks. (NOTE: Storage spaces available to each use to respond to issue of persons using covered parking/garages as storage)

The general appearance of the proposed multi-family residential buildings is a craftsman inspired style with gable roof forms, decorative trim and vertically oriented windows. A wainscot and column bases of cultured stone provide a distinguishable base element that provides texture to the pedestrian zone. A color palette of neutrals and earth-tones make up the main body of the buildings, while accent colors at bay windows and balconies provide dynamic elements that are scattered throughout the site.

The clubhouse (approximately 3,800 square feet) and pool are of a complimentary style to the buildings. The use of gables, porches and dormers create a scale that provides a warmth and welcoming entry element. Being centrally located, the clubhouse and large pool area are an integral part to the entire complex helping to encourage a sense of community by providing both indoor and outdoor gathering places for activity.

## Access and Parking

A total of 357 parking spaces are proposed within the project site. Covered parking spaces will be provided on the ground levels of all seven multi-use buildings and freestanding throughout the site. A total of 178 covered parking spaces will be provided. Four disabled person accessible parking spaces are included within the covered parking space total. In addition, 159 surface parking spaces will be provided. Surface parking provided will include ten additional disabled accessible parking spaces. All parking spaces for commercial tenants and customers/clients are considered to be included in the designated visitor parking spaces on the site. These visitor spaces are included as part of the total surface parking spaces. An estimated 20 additional on-street parking spaces are provided on Tannler Drive adjacent to the proposed development site to serve visitors and guests.

## Site Utilities

The Preliminary Composite Utility Plan for the project is included as Sheet P4.0. The site will be served by the public sanitary sewer line in Tannler Drive. The sewer line is located on the west side of Tannler and has adequate depth and capacity to serve the site. A connection is proposed near the south end of the proposed development.

The project site is on the border between the City of West Linn's water system's Bland zone above the site and the Willamette zone below the site. The development of the site will be best served from the Bland zone above as recommended by the City's Engineering Department in the following comments received by the project team on June 30, 2015:

- Static pressure at the finished floor level would range between 120 psi and 138 psi across the proposed development, if served from the Bland pressure zone. This will require



installation of pressure reducing valves for all service connections, but would result in appropriate service pressures across the entire development.

- Assuming a required fire flow of 2,500 gpm (multi-family and commercial), main extension from the intersection of Tannler Road and Greene Street should be a minimum size of 8-inch diameter. Residual pressures at hydrants on Tannler at the south end of the development would still be near 80 psi under fire flow conditions.

The development plans propose extending an 8 inch public water line down Tannler from Greene Street to the main access driveway into the project site. Domestic and fire protection services would extend into the site from here. The private water line will be routed down the middle of the site to serve each building.

The storm water management plan for the project will consist of a surface detention pond in the southwestern corner of the site. The detention pond will be bordered by retaining walls on all sides except for the maintenance access to the pond. The retaining walls are necessary due to the steep slopes of the site and adjacent roads. The pond is fed by a water quality swale running east to west below the southern fill wall. The swale will be graded into the existing ground. The swale will be fed from a flow splitter manhole which will divert high flows directly into the pond and low flows to the swale.

A Preliminary Storm Drainage Report for the project is included as Appendix C.

#### IV. COMPLIANCE WITH CDC CHAPTER 21 –OFFICE BUSINESS CENTER, OBC, ZONE

Each applicable section of Chapter 21 is shown below in italics along with a response following each section explaining how applicable standards are met.

##### PROPOSED USES

###### ***21.020 PROCEDURES AND APPROVAL PROCESS***

- A. *A use permitted outright, CDC 21.030, is a use that requires no approval under the provisions of this code. If a use is not listed as a use permitted outright, it may be held to be a similar unlisted use under the provisions of Chapter 80 CDC.*
- B. *A use permitted under prescribed conditions, CDC 21.050, is a use for which approval will be granted provided all conditions are satisfied, and:*
  1. *The Planning Director shall make the decision in the manner provided by CDC 99.060(A)(2), Administrative Procedures, except that no notice shall be required; and*
  2. *The decision may be appealed by the applicant to the Planning Commission as provided by CDC 99.240(A).*
- C. *The approval of a conditional use (CDC 21.060) is discretionary with the Planning Commission. The approval process and criteria for approval are set forth in Chapter 60 CDC, Conditional Uses. If a use is not listed as a conditional use, it may be held to be a similar unlisted use under the provisions of Chapter 80 CDC.*

**Response:** No response to these procedural provisions is necessary.

###### ***21.030 PERMITTED USES***

*The following uses are permitted outright in this zone:*

*Tannler Drive Mixed-Use Project – Design Review Application*

1. *Business equipment sales and services.*
2. *Business support services.*
3. *Communications services.*
4. *Cultural exhibits and library services.*
5. *Family day care.*
6. *Financial, insurance and real estate services.*
7. *Hotel/motel, including those operating as extended hour businesses.*
8. *Medical and dental services.*
9. *Parking facilities.*
10. *Participant sports and recreation, indoor.*
11. *Personal services and facilities.*
12. *Professional and administrative services.*
13. *Utilities, minor.*
14. *Transportation facilities (Type I).*

**Response:** Seven commercial spaces are proposed within the Tannler Drive mixed-use project. The commercial spaces are all located on the first floor of each of the proposed mixed-use buildings. The commercial spaces range from 280 to 314 square feet in size. The total gross leasable floor area of the seven commercial spaces is 1,973-square feet. The uses which will occupy the commercial spaces will likely be amongst the permitted use types listed above – especially the types which are typically found in smaller commercial spaces such as financial, insurance and real estate services; business support services; communication services; personal services; or professional and administrative uses. Future tenants of the commercial spaces within the mixed-use project will be directed to the City of West Linn to ascertain if their use type is permitted in the zone; whether there is sufficient parking provided for their type of use; and to obtain a business license.

### ***21.050 USES AND DEVELOPMENT PERMITTED UNDER PRESCRIBED CONDITIONS***

*The following uses are allowed in this zone under prescribed conditions:*

1. *Animal sales and services; veterinary (small animals) as prescribed with no exterior runs or storage.*
2. *Multiple-family units, as a mixed use in conjunction with commercial development, only above the first floor of the structure.*
3. *Signs, subject to the provisions of Chapter 52 CDC.*
4. *Temporary use, subject to the provisions of Chapter 35 CDC.*
5. *Home occupation, subject to provisions of Chapter 37 CDC.*
6. *Wireless communication facilities, subject to the provisions of Chapter 57 CDC.*
7. *Eating and drinking establishments, subject to the following limitations:*
  - a. *The use shall constitute no more than 20 percent of the total floor area of the building in which it is located.*
  - b. *The use shall not include any drive-through facilities.*

**Response:** Similar to the response above, it is possible that the uses which will occupy the commercial spaces will be amongst the limited use types listed above – especially the types which are typically found in smaller commercial spaces such as small veterinary clinics and small eating and drinking establishments with no drive-through facilities. Future tenants of the commercial spaces within the mixed-use project will be directed to the City of West Linn to ascertain if their use type meets the requirements for a limited use allowed in the zone; whether there is sufficient parking provided for their type of use; and to obtain a business license. The one difference to this statement is that the limited use type – multiple-family units is already proposed, as a mixed use in conjunction with commercial development. All

192 of the proposed multi-family dwelling units will be located above the first floor of each of the proposed buildings.

CDC 21.050.2 allows multiple-family units, as a mixed use in conjunction with commercial development, only above the first floor of each structure. CDC 21.020.A and B distinguish between uses permitted outright (those uses allowed by CDC 21.030) and uses permitted under prescribed conditions allowed by CDC 21.050. CDC 21.020.B provides that uses allowed under prescribed conditions “is a use for which approval will be granted provided all conditions are satisfied...”. This section explains why the prescribed conditions for multi-family residential units are satisfied.

A use permitted under prescribed conditions is not a conditional use. *Anderson v Pedan*, 587 P2d 59, 284 Or 313(1978). Further, CDC 02.010 defines “conditional use” in a way that makes it clear that it is different from either permitted uses, or uses permitted under specified conditions. Finally, each zoning district in the CDC calls out permitted uses, uses permitted under prescribed conditions, and conditional uses separately from one another.

The applicant proposes a mixed use project consisting of 192 unit multi-family units, above the first floor only, in seven structures, with commercial development on the first floor of each of the seven structures. The Planning Commission must approve the use as long as the prescribed conditions for the multi-family residential use are satisfied.

The prescribed conditions for the use are described below, followed by findings explaining how each prescribed condition is satisfied.

**A. Multiple-family Units.** The proposed residential dwelling units meet the definition of “multiple family residential units” in CDC 02.010 because each of the seven structures contains 3 or more dwelling units in a horizontal or vertical arrangement.

**B. Mixed-Use.** The CDC does not define the term “mixed use” but the Planning Commission can find that the proposed arrangement of residential and commercial development in each of the seven structures on the same site constitutes a mixed use, a combination of two uses.

**C. In Conjunction with Commercial Development.** The phrase “commercial development” is not defined in the CDC but CDC 02.010 defines “development” as it is defined in ORS 227.215(1). The term includes any manmade change that involves, among other activities, the construction of buildings. The Applicant proposes the construction of seven buildings and a clubhouse on the site. The construction of the seven commercial spaces constitutes development.

Further, the term “commercial” is not defined in the CDC but Webster’s Third New International Dictionary of the English Language, Unabridged (1993) definition of commercial is something concerned with or engaged in commerce.

The uses that can occupy the seven tenant spaces on the first floor of each of the seven buildings can be any of the commercial uses allowed as permitted uses in CDC 21.030, uses permitted under prescribed conditions in CDC 21.050, conditional uses in CDC 21.060, or home occupations allowed by CDC Chapter 37, as long as the home occupation is a use allowed by the OBC zone.

CDC 21.050.2 does not require any certain commercial use allowed in the OBC zone, nor that there be a minimum number of commercial uses, nor a minimum amount of commercial square footage, nor that the commercial development have a tenant when the development is proposed or constructed but only that there be commercial development construction of a tenant space for a commercial use. To require anything beyond what the plain language of the CDC requires for the prescribed use is to insert words in the standard not inserted by the legislative body that enacted this provision, the West Linn City Council. Nevertheless, the applicant has a vested interest in leasing the commercial development spaces so that they are not vacant but this is not one of the prescribed conditions.

The phrase “in conjunction” is not defined by the CDC but the *Webster’s* dictionary definition of “conjunction” means the action of two or more events or things occurring at the same time. Webster’s, *Id.* Because the applicant proposes the construction of commercial and residential uses at the same time, the Planning Commission can find that the multiple-family units are in conjunction with the commercial development.

**D. First Floor.** The CDC does not define “first floor” but CDC 02.010 defines “story, first” as the lowest level of a building which qualifies as a story. The Planning Commission can find that the first floor of each of the seven structures (excluding the clubhouse) is the first story as defined and that the Applicant satisfies the prescribed condition that each structure have a commercial development on the first floor if multiple-family units are proposed on the floors above.

As explained above, the Planning Commission can find that the proposed use is allowed in the OBC zone and satisfies the prescribed conditions.

## COMPLIANCE WITH REQUIRED DIMENSIONAL REQUIREMENTS

### ***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.*

**Response:** The proposed development site (tax lot 102) will have over 600 feet of frontage along Tannler Drive, and will have a minimum average lot width (north-south) of 580-feet. These standards are satisfied.

- 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.*

**Response:** The proposed development site plan provides for a 20-front yard setback along Tannler Drive (after dedication of additional right-of-way) for buildings 7, 8 and the clubhouse consistent with the maximum setback standard for buildings along the street. The front yard areas will be occupied by a combination of landscaping, a paved ramped sidewalk from the public sidewalk to the internal sidewalk system, and the retaining walls adjacent to the ramped sidewalk.

All primary buildings will be located at least 25-feet from the western or rear property line. All buildings will exceed the minimum 7.5-foot interior side yard setback standards as they apply to the northern and southern property lines of the adjusted tax lot 102. All secondary buildings such as the clubhouse and separate garage buildings are also located consistent with the setback standards of Section 21.070A.4.

5. *The maximum lot coverage shall be 50 percent.*

**Response:** The proposed development's site plan provides for 1.88 acres of lot coverage of the 7.01 acre site, or approximately 27 percent lot coverage. The CDC Section 02.030 definitions define "lot coverage" as "the area covered by a building or buildings." This definition does not include other impervious surfaces such as parking areas, driveways, sidewalks, or recreational facilities such as the proposed pool and pool deck.

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.*

**Response:** The proposed buildings will be located over 200 feet from the closest low or medium zoned area (the R-10 zoned area to the east across Tannler Drive and north of the White Oak Savanna Park). Therefore, the maximum building height standard is three and one-half stories or 45 feet for all of the proposed structures. The maximum height of any of the proposed buildings is 42 feet as measured from the uphill side or front of the building, using the method described in CDC Section 41.005.A.

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.*

**Response:** No modifications of the requirements of subsections (A)(1) through (4) are requested. This subsection is not applicable.

#### ***21.080 DIMENSIONAL REQUIREMENTS, CONDITIONAL USES***

*Except as may otherwise be established by this code, the appropriate lot or parcel size for a conditional use shall be determined by the approval authority at the time of consideration of the application based upon criteria set forth in CDC 60.070(A) and (B).*

**Response:** The proposed development plan does not propose any conditional uses within the mixed-use project. Therefore, this section is not applicable.

## **21.090 OTHER APPLICABLE DEVELOPMENT STANDARDS**

*A. The following standards apply to all development including permitted uses:*

1. Chapter 34 CDC, Accessory Structures, Accessory Dwelling Units, and Accessory Uses.
2. Chapter 35 CDC, Temporary Structures and Uses.
3. Chapter 38 CDC, Additional Yard Area Required; Exceptions to Yard Requirements; Storage in Yards; Projections into Yards.
4. Chapter 40 CDC, Building Height Limitations, Exceptions. Repealed
5. Chapter 42 CDC, Clear Vision Areas.
6. Chapter 44 CDC, Fences.
7. Chapter 46 CDC, Off-Street Parking, Loading and Reservoir Areas.
8. Chapter 48 CDC, Access, Egress and Circulation.
9. Chapter 52 CDC, Signs.
10. Chapter 54 CDC, Landscaping.

**Response:** See the responses elsewhere in this report addressing the applicable standards of the above-listed CDC chapters.

*B. The provisions of Chapter 55 CDC, Design Review, apply to all uses except detached single-family dwellings. (Ord. 1590 § 1, 2009)*

**Response:** The proposed development does not provide for development of a detached single-family residence. Therefore, Design Review approval of the proposed development plans is required. See the responses to the applicable standards of CDC Chapter 55, Design Review, below.

## **V. COMPLIANCE WITH CHAPTER 55 DESIGN REVIEW**

### **I. Why Class II Design Review?**

**Response:** Section 55.020.A specifies what kind of development proposal qualifies for a Class I Design Review application, and also lists very minor items which require no design review approval at all. The proposed mixed-use development is not consistent with any of the development-related activities listed as qualifying for Class I Design Review. Section 55.020.B provides that Class II design review applies to all uses/activities, except those uses/activities listed under Class I design review, and the exemptions of CDC 55.025. The proposed development plans for the Tannler Drive Mixed-Use project also do not satisfy the exemption listed in Section 55.025. Therefore, a Class II Design Review is required.

### **2. Comment on Applicability of Certain Approval Standards of Chapter 55 Relative to this Application**

Proposed multi-family residential dwelling units are “needed housing.” ORS 197.303(1) defines “needed housing” as “housing types determined to meet the need shown for housing within an urban growth boundary at particular price ranges and rent levels” and includes “multiple family housing for both owner and renter occupancy...” ORS 197.303(1). Local governments must permit needed housing in one or more zoning districts and "with sufficient buildable land to satisfy that need." ORS 197.307(3). Local governments may only impose “clear and objective standards, conditions and procedures regulating the development of needed housing.” ORS 197.307(4).

The local government's standards must be clear and objective on the face of the ordinance. ORS 227.173(2). Furthermore, in any appeal to LUBA or an appellate court that involves an ordinance required to contain clear and objective approval standards, conditions, and procedures for needed housing, the local government bears the burden of demonstrating that the standards, conditions, and procedures are capable of being imposed only in a clear and objective manner. ORS 197.831. Finally, these “clear and objective” standards, conditions, and procedures must not have the effect of “discouraging needed housing through unreasonable cost or delay.” ORS 197.307(4).

The legislature's policy goal in enacting the “needed housing” statutes “was to prevent local governments from using their “land use regulations to exclude certain housing type\*\*\*\*.” *Rogue Valley Association of Realtors v. City of Ashland*, 35 Or LUBA 139, 156 (1998) *aff'd* 158 Or App 1, 970 P2d 685, *rev den* 328 Or 594 (1999). In fact, ORS 197.307(1) states that the “availability of affordable, decent, safe and sanitary housing opportunities for persons of lower, middle and fixed income \* \* \* \* is a matter of statewide concern.”

LUBA has interpreted these statutes to preclude local governments from applying subjective, discretionary criteria to applications for needed housing:

*“‘Needed housing’ is not to be subjected to standards, conditions or procedures that involve subjective, value-laden analyses that are designed to balance or mitigate impacts of the development on (1) the property to be developed or (2) the adjoining properties or community. Such standards, conditions or procedures are not clear and objective and could have the effect ‘of discouraging needed housing through unreasonable costs or delay.’”*

*Rogue Valley Association of Realtors*, 35 Or LUBA at 158 (emphasis added). Further, LUBA has specifically held that a standard requiring that a development be “compatible with surrounding development” was not clear and objective. *Rogue Valley Association of Realtors*, 35 Or LUBA at 157 (citing Land Conservation and Development Commission policy that served as basis for legislative enactment of needed housing statute). *See also Clark v. Coos County*, 53 Or LUBA 325 (2007) (local code approval standard that requires that proposed uses be compatible with surrounding uses is subjective). The Court of Appeals has also held that a local code standard is not “clear and objective” when it can “plausibly be interpreted in more than one way.” *Tirumali v. City of Portland*, 169 OR App 241, 246, 7 P3d 761 (2000).

The City of West Linn has determined that it will provide an opportunity for development of apartments and multiplex units. West Linn Comprehensive Plan (the “Plan”), Goal 10, “Housing”, Policy 2. The Plan also requires the City to “[a]dhere to clear and objective standards to promote timely and predictable plan review.” Plan, *Id.*, Policy 8.

Therefore, the application for the Tannler Drive mixed-use project—which proposes 192 units of multiple-family housing in the OBC zoning district—constitutes “needed housing” for the purposes of ORS 197.307. As a result, the City of West Linn must only apply clear and objective standards, conditions and procedures to the housing portion of the application. Furthermore, these standards, conditions and procedures cannot have the effect of discouraging needed housing through unreasonable cost or delay. In the narrative below, the applicant identifies those provisions of the CDC that are not clear and objective and thus not applicable to

the application. Within this legal framework, the applicant attempts to provide as much information as possible about the project.

### 3. Responses to the Applicable Sections of CDC Chapter 55

Each applicable section of Chapter 55 is shown below in italics along with a response following each section explaining how the standard is met.

#### *CDC SECTION 55.070 SUBMITTAL REQUIREMENTS*

*A. The design review application shall be initiated by the property owner or the owner's agent, or condemnor.*

**Response:** The application is by ConAm Properties, LLC. ConAm Properties, LLC has an option to purchase the development site. The application form has been signed by one of the property owners, Jeff Parker, on behalf of himself and by a representative of the other property owner William S. Wilt.

*B. A pre-application conference, per CDC 99.030(B), shall be a prerequisite to the filing of an application.*

**Response:** A pre-application conference regarding the proposed development application was held on June 18, 2015. The City of West Linn's notes for the pre-application conference are included in Appendix A.

*C. Documentation of any required meeting with the respective City-recognized neighborhood association per CDC 99.038.*

**Response:** The site is located within the boundaries of the Willamette Neighborhood Association. A meeting with the Willamette Neighborhood Association which included a discussion of the proposed development application was held on July 8, 2015. The site is located adjacent to the boundaries of the Savanna Oaks Neighborhood Association. A meeting with the Savanna Oaks Neighborhood Association which included a discussion of the proposed development application was held on July 7, 2015. Documentation regarding contact with both neighborhood associations to set up the meetings is included in Appendix B to this report.

*D. The applicant shall submit a completed application form and:*

**Response:** A completed application form was submitted to the City of West Linn Planning Department on July 10, 2015.

2. *The development plan for a Class II design review shall contain the following elements:*
  - a. *A site analysis (CDC 55.110);*

**Response:** The attached plan set (and enclosed large scale plan set) includes Sheet P0.0, Cover Sheet; Sheet P1.0 Aerial Photo/Site Analysis Plan; Sheet P1.1 Existing Conditions Plan; and Sheet P1.3 Slope Analysis Plan. Together, these plan sheets include all applicable information listed in CDC Section 55.110;

- b. *A site plan (CDC 55.120);*

**Response:** The attached plan set (and enclosed large scale plan set) includes Sheet P2.0, Preliminary Site Plan; Sheet P2.1 Preliminary Dimensioned Site Plan; Sheet

P4.0 Preliminary Composite Utility Plan; Sheet L1.1 Preliminary Landscape Plan; Sheet A1.0 Architectural Site Plan. Together, these plan sheets include all applicable information listed in CDC Section 55.120;

c. *A grading plan (CDC 55.130);*

**Response:** The plan set includes a Preliminary Grading Plan illustrating all applicable information listed in CDC Section 55.130. See Sheet P3.0:

d. *Architectural drawings, indicating floor plan and elevation (CDC 55.140);*

**Response:** The plan set includes architectural plans, elevations, and building sections;

e. *A landscape plan (CDC 55.150);*

**Response:** The plan set includes Preliminary Landscaping Plans illustrating all applicable information listed in CDC Section 55.150. See Sheets L1.0;

f. *A utility plan appropriate to respond to the approval criteria of CDC 55.100(I)(1) through (5) relating to streets, drainage, municipal water, sanitary sewers, solid waste, and recycling storage;*

**Response:** The plan set includes a Preliminary Composite Utility Plan illustrating all applicable information listed in CDC Section 55.100 (1) through (5). See Sheet P4.0. Proposed trash and recycling enclosures are illustrated on the Preliminary Site Plan (Sheet P2.0) and other site-related plans. Elevations and a plan view of the trash enclosures are included as Sheet A3.08;

g. *A light coverage plan with photometric data, including the location and type of outdoor lighting, with specific consideration given to compliance with CDC 55.100(J) pertaining to crime prevention and, if applicable, CDC 46.150(A)(13) pertaining to parking lot lighting;*

**Response:** Preliminary Lighting Plans are included with a Lighting Report in Appendix G to this application narrative. Together, the plans and report address all applicable information required by CDC Section 55.100(J) and CDC 46.150(A)(13);

h. *If staff determines before or during the pre-application conference that the land use is expected to generate noise that may exceed DEQ standards, the application shall include a noise study conducted by a licensed acoustical engineer that demonstrates that the application and associated noise sources will meet DEQ standards. Typical noise sources of concern include, but are not limited to, vehicle drive-throughs, parking lots, HVAC units, and public address systems; and*

**Response:** CDC 55.070.D.2.h requires submittal of a noise study demonstrating that the application will meet Oregon Department of Environmental Quality (“DEQ”) noise standards if requested by City of West Linn staff before or during the pre-application conference. City of West Linn staff did not make such a request. Therefore, the DEQ noise standards may not be applicable approval standards.

However, CDC 55.100.D.4 requires that activities or businesses that can reasonably be expected to generate noise in excess of the standards in West Linn Municipal Code 5.487 must submit a noise study and mitigate the noise. The uses in the proposed Tannler Drive mixed-use project are not reasonably anticipated to exceed the standards of the West Linn Municipal Code. Typical noise associated with the proposed small scale commercial and multi-family development types are car-related noises, laundry exhaust noise, lawn care equipment noise, and music and other resident-related noises.

The proposed Tannler Drive mixed-use project will provide an open space buffer between the site and existing developments to the north. In addition, the ambient noise level in the area due primarily to highway-related noise from I-205 and from the parking area at the River Falls shopping center are such that the proposed development is not expected to lead to significant noise conflicts arising between the proposed development on site and neighboring uses. Development of portions of the site with any sort of developed use may cause some noise impacts upon adjacent open space uses.

In addition, small-scale retail, service, or office uses which might be anticipated to occupy the commercial spaces within the development also would be anticipated to have lesser noise levels than the ambient noise levels produced by the large scale commercial uses and the highway. The proposed commercial spaces are all located on ground levels of the buildings facing south so that noises from these uses would be expected to travel primarily southward, and that the proposed buildings would block any transmission of noises from the commercial uses towards the north.

*i. Documents as required per the Tree Technical Manual.*

**Response:** Appendix D includes an arborist's report prepared by consulting arborist Morgan Holen. The report includes all of the documents required by the Tree Technical Manual.

3. *A narrative, based on the standards contained in this code, which supports any requested exceptions as provided under CDC 55.170.*

**Response:** No exceptions to CDC standards have been requested. Therefore, this requirement is not applicable.

4. *Submit full written responses to approval criteria of CDC 55.100 for Class II design review, plus all applicable referenced approval criteria.*

**Response:** An application narrative which includes a tree report, a geotechnical report, a traffic impact analysis report and other documents; and 11 x 17 copies of the required plans listed above; were submitted to the City of West Linn Planning Department.

- E. *The applicant shall submit samples of all exterior building materials and colors in the case of new buildings or building remodeling.*

**Response:** A materials and colors board which provides samples of proposed exterior building materials and preliminary color selections has been submitted as part of the Design Review application submittal.

*F. The applicant shall pay the required deposit and fee.*

**Response:** A completed application form; 11 x 17 copies of the required plans listed above; an application narrative which includes a tree report, a geotechnical report, a traffic impact analysis report and other documents; a materials and colors board, and the required application fee and deposit of \$20,800.00 were submitted to the City of West Linn Planning Department on July 10, 2015.

#### ***55.085 ADDITIONAL INFORMATION REQUIRED AND WAIVER OF REQUIREMENTS***

*A. The Planning Director may require additional information as part of the application subject to the provisions of CDC 99.035(A).*

**Response:** No additional information was requested by the City of West Linn Planning Director.

*B. The Planning Director may waive any requirements for the application subject to the provisions of CDC 99.035(B) and (C).*

**Response:** No waivers to the submittal requirements have been requested.

#### ***55.090 APPROVAL STANDARDS – CLASS I DESIGN REVIEW ...***

**Response:** This section is not applicable because the current request is not a request for Class I Design Review approval as explained in Section V.1. of this application narrative. The current application instead request Class II Design Review approval. The standards applicable to a Class II Design Review request are addressed below.

#### ***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.*

**Response:** Accessory structures are defined in CDC Section 0.2030, Specific Words and Terms, as “a subordinate structure with a maximum area of 1,500 square feet...located on a lot or parcel with a principal use, the use of which is clearly incidental to and associated with the principal use.” The only accessory structures with total areas of 1,500 square feet proposed are the eight separate garage buildings (maximum size of 1,000 square foot) and the two 580 square foot trash enclosures. Therefore, the accessory use provisions of this CDC chapter are applicable to these garages and trash enclosure structures. Compliance of these structures with the standards of Chapter 34 are addressed under Section VI of this report below.

The clubhouse (approximately 3,800 square feet) and pool are uses which are incidental and subordinate to the principal uses of the project for various commercial uses and for multi-family residential use. CDC Chapter 34 contains standards (please cite) which apply to accessory uses, such as proposed in this application, which exceed 1,500 square feet in size. Therefore, this accessory use and its structures is required to meet the minimum OBC district minimum or maximum setback standards and other development standards that apply to the principal uses.

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

**Response:** No yard area exceptions are proposed, nor do any of the situations requiring a yard area exception due to existing development on an abutting lot exist adjacent to the site. No storage will be allowed or provided for within the project's required front yard along Tannler Drive. Therefore, none of the provisions of CDC Chapter 38 are applicable to the current review.

3. *Chapter 40 CDC, Building Height Limitations, Exceptions.*

**Response:** This entire Chapter has been repealed. There are therefore no applicable standards of this Chapter which need to be responded to.

4. *Chapter 42 CDC, Clear Vision Areas.*

**Response:** The applicable standards of Chapter 42 are addressed in Section VII of this report below.

5. *Chapter 44 CDC, Fences.*

**Response:** The applicable standards of Chapter 44 are addressed in Section VIII of this report below.

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

**Response:** Responses to applicable standards of CDC Chapter 46 are addressed below in Section IX of this report.

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

**Response:** Responses to applicable standards of this CDC Chapter are addressed below.

8. *Chapter 52 CDC, Signs.*

**Response:** Responses to applicable standards of CDC Chapter 52 are addressed below.

9. *Chapter 54 CDC, Landscaping.*

**Response:** Responses to applicable standards of CDC Chapter 54 are addressed below.



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*

**Response:** There are no designated heritage trees on the subject site based upon the findings of the attached arborist's report by Morgan Holen (Appendix D) and concurred with by City Arborist Mike Perkins. Therefore, this standard is not applicable to the current review.

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 either the dedication of these areas or establishing tree conservation easements. 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 + 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.*

**Response:** The development site does not include any Type I or II lands as defined in CDC Chapter 02.020. Therefore, this standard is not applicable.

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

**Response:** The project site slopes relatively steeply from north to south. There are no defined drainageways on the site. The proposed development plan orients the proposed buildings, parking areas, and driveways parallel to the slope in order to limit changes to the site as much as practical. Nevertheless, substantial cutting is necessary in the northern portion of the mixed-use project site and filling is necessary in the southern portion of the site to reduce slopes internal to the development so as to limit gradients on the main driveway and walkways through the site. Retaining walls will be located at both the northern and southern edges of the proposed development area, as well as along the site's eastern and western sides and internal to the site near the clubhouse and along the northern and western edges of the stormwater pond. Existing orientation of the site's slope and drainage will be maintained.

The phrase "shall be preserved to the greatest extent possible" in the above standard is subjective because it requires the exercise of discretion to determine if the topography is preserved "to the greatest extent possible" and may, therefore, not be a basis for denial under the residential design review standards under ORS 197.307(4).

4. *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.*

**Response:** Section 4.5.1 - Slope Stability in the GeoDesign report dated July 28, 2014 (at p. 10) related to this site states "Published geologic hazard data indicate that the site is not mapped within an area of landslide topography, slump, debris flow, or other hazards (including faulting or seismic hazards). The nearest ancient landslide feature is mapped more than ½ mile to the west of the site, which resulted from the excavation of the nearby interstate at the toe of the landslide." The site is within the limits of the "Landslide Hazard Area" shown on Map 17 of the West Linn Natural Hazards Mitigation Plan document (see map in Appendix F). The "Landslide Hazard Area" shown on Map 17 is in the NE corner of the site in the location of steep slopes identified on the Site Analysis Plan (P1.3). There are no buildings proposed with this "Landslide Hazard Area" shown on P1.3.

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.*

**Response:** All proposed residential buildings will be separated by a minimum of 50 feet. All proposed residential buildings will be separated from all other buildings (garage buildings, trash enclosures) by a minimum of 35 feet. The closest neighboring building to the west within the Willamette 205 office complex will be located over 50-feet from proposed buildings 3 and 4. Garage buildings located to the south of the clubhouse will be separated from the clubhouse by a minimum of approximately 10-feet. The garages and the clubhouse will be single-story buildings. Therefore, substantial distances will be provided between the proposed on-site buildings and other on-site buildings and neighboring buildings on adjoining properties such that adequate light and air circulation will be provided, as well as adequate separation for fire protection purposes.

The phrase "adequate distance" in this standard is subjective and requires the exercise of discretion to determine if there is adequate distance between on- and off-site buildings and may, therefore, not be a basis for denial under ORS 197.307(4).

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.*

**Response:** There are no other buildings on the subject site. There is substantial separation between the proposed development site and other neighboring developments other than the 205 Willamette office park immediately to the west. The proposed mixed-use project is of a totally different mixture of land uses than that adjacent project. Therefore, design clues for the proposed mixed-use project were sought instead from the Summerlinn apartments further to the west. The proposed Tannler Drive Mixed-Use project's buildings are designed to be similar in scale and design to the Summerlinn apartment buildings. The proposed buildings'

pitched roofs, materials such as masonry bases and fiber cement siding, and the use of lots of windows are complementary to the character.

The words ‘compatible’ and ‘complimentary’ are subjective because they require the exercise of discretion and may, therefore, not be the basis for a denial under the residential design review standards under ORS 197.30794).

*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.*

**Response:** The location of the nearest single family home in the neighborhood to the north is over 250-feet north of the northwestern-most building in the proposed mixed-use project (building 2). To the east of the project site is dedicated open space within the White Oak Savana Park. To the west is the commercial office park.

*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.*

**Response:** The proposed design of the buildings is compatible with city architecture and draws on the styles of homes in the nearby neighborhoods to create a pleasing aesthetic, proportions and massing.

The phrases ‘manifestly superior’ and ‘adequately separated’ are subjective because they require the exercise of discretion and may, therefore, not be a basis for denial under ORS 197.307(4).

*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.*

**Response:** The proposed mixed-use project addresses human scale by eliminating long flat facades and by breaking them with exterior porches and decks. Garages are set back to help define the ground floor. Garage entrances are enhanced with wood and stone columns. Main stairway entrances are surrounded by single-story frames that create a more intimate entry. Façade articulation, utilizing bays and balconies, breaks building façades vertically into visibly understandable building masses.

- 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.*

**Response:** The commercial space utilizes a glass storefront system that spans 90% of the front wall. This provides ample viewing and daylighting into the space. The side of the commercial space is also glazed, providing 40% of total wall transparency to the side wall.

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

**Response:** The building façades are broken up with numerous indentations and relief for decks and entryways. The elevation also incorporates bay projections to add depth to the façade.

Multiple pitch roofs provide variation in both height and overhangs.

There are no flat elevations that exceed 100-feet in length. Cultured stone accents are provided at the garage column bases and along the front elevation.

- 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.*

**Response:** The proposed buildings are oriented towards the southwest to maximize passive solar gain to units on the southern sides of the buildings, as well as to take advantage of views towards the Willamette River Valley.

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

**Response:** The proposed development plans call for providing an 8-foot wide public sidewalk and street trees along the site's Tanner Drive frontage. The internal site improvements include a network of interconnected sidewalks, landscaping, lighting, and benches to provide a safe and attractive pedestrian environment within the

proposed development. All internal sidewalks adjacent to vehicular access drives and parking spaces are 8-feet in width.

- 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.*

**Response:** The proposed mixed-use development does not include any commercial spaces immediately adjacent to the public sidewalk along Tannler Drive. Therefore, this guideline is not applicable to the proposed development. Nevertheless, the proposed development plans provide for the placement of street furniture at the base of the ramp into the site from the public sidewalk along Tannler Drive, as well as at several locations along the internal driveways through the site.

7. *Transportation Planning Rule (TPR) compliance. 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,...*

**Response:** Proposed commercial spaces on the ground levels of buildings F and G are located in the southeast corners of those buildings, thereby placing the commercial spaces within 20 feet of Tannler Drive. Commercial spaces in the other buildings are located close to the primary internal driveway through the site. Parking areas are located to the sides of the buildings, and not between the buildings and Tannler Drive.

- 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.*

**Response:** Proposed parking for the project is located off of internal driveways which places the parking at the sides of the proposed mixed-use buildings which front on Tannler Drive.

- 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.*

**Response:** Proposed mixed-use buildings F and G and the clubhouse are located within 20-feet of the Tannler Drive right-of-way, despite the steep slope between the buildings and the road. A main walkway into the site will bring potential customers/clients into the site between these commercial spaces.

- 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.*

**Response:** The proposed site plan provides for a network of pedestrian sidewalks through the site. Sidewalks will all be 8-feet wide when located adjacent to parking areas or driveways, as illustrated on the plans. An 8-foot wide public sidewalk will be located along the site's Tannler Drive frontage. Appropriate landscaping is provided adjacent to the sidewalks to provide a pleasant experience for pedestrians. Benches will be provided as illustrated on the Preliminary Landscaping Plan, Sheet L1.0.

The subject site is not located on an arterial. Therefore, the standard related to sidewalks along arterials is not applicable.

- 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.*

**Response:** The sidewalk system within the project site has been designed to provide direct, convenient, and safe pedestrian access. Crosswalk markings will be provided as illustrated on the Preliminary Site Plan, Sheet P2.0, to provide for safe parking area and driveway crossings.

- f. *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.*

**Response:** The proposed commercial spaces within buildings F and G are to be located in the southeastern corners of those buildings at the closet points of the buildings to Tannler Drive. The entrances to those commercial spaces will not face the street, but will be as close as possible to the corners of those buildings.

- 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.*

**Response:** The proposed mixed-use development site is not directly served by transit, nor is anticipated to be provided directly to the site. Therefore, this standard is not applicable to the current request. Nevertheless, the proposed sidewalk connection with the sidewalks in front of the Willamette 205 office project to the southwest makes a direct pedestrian connection to Blankenship Road where the existing transit stop is located.

*b. 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.*

**Response:** The proposed mixed-use development plan provides for buildings 6 and 7 and the clubhouse to be located within 20-feet of Tannler Road consistent with the maximum setback standard of the ODC zoning district. Buildings 6 and 7 will be 3.5 story buildings. The height of these buildings, in addition to retaining walls and pedestrian connection near Tannler Drive will enhance the height-to-width ratio along that street.

*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.*

**Response:** The proposed mixed-use project will not be a public facility. Therefore, this standard is not applicable.

*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.*

**Response:** The proposed mixed-use development does not include a trailhead. This standard is therefore not applicable.

C. Compatibility between adjoining uses, buffering, and screening

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.*

**Response:** The proposed mixed-use buildings will be separated from the City of West Linn's White Oak Savanna Park and the privately-owned undeveloped space to the south of the park by Tannler Drive. Tannler Drive will provide a substantial separation of over 90 feet from these uses to the east.

The proposed open space at the northern edge of the subject site will provide a separation of over 200 feet between existing single-family homes to the north and the east and the proposed mixed-use development.

The proposed mixed-use buildings will be separated from the closest building in the adjacent Willamette 205 office complex to the west by 45 feet and from the commercial buildings in the River Falls shopping center to the south by over 400 feet.

Please note that the factors listed in 1.a.-e. above are subjective because they require discretion to determine if there is compatibility, which is itself a subjective term and may, therefore, not be a basis for denial under the residential design review standards under ORS 197.307(4).

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.*

**Response:** The proposed parking areas and trash enclosures will be visually separated from views from Tannler Drive and Blankenship Road by a combination of differences in elevation, distance from the roads, landscaping adjacent to the trash enclosures and parking areas, and the larger mixed-use buildings screening views of the trash enclosures and parking areas.

Please note that the factors listed in 2.a.-e. above are subjective because they require the exercise of discretion to determine if on-site screening is adequate, which is itself subjective, and may, therefore, not be a basis for denial under ORS 197.307(4).

3. *Rooftop air cooling and heating systems and other mechanical equipment shall be screened from view from adjoining properties.*

**Response:** No rooftop air conditioning or heating systems or other rooftop mechanical systems are proposed. Therefore, this standard is not applicable.

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.*



**Response:** No ground level residential units are proposed. Residential units on north sides of the second floor of all buildings will be at grade with the ground surface. Patios will be provided for all north side second floor units. Physical separation of adjacent patios will be accomplished by inseting the patios as compared to the patios of other 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.*

**Response:** The greatest source of noise in the area of the site is traffic on Interstate 205 to the south. It is not possible to locate the proposed residential units anywhere on the site any further from the exposure to that ambient noise because the site is located substantially above the highway. However, because this standard uses the phrase “to the extent possible”, the planning commission can find that given the site slope and its exposure to I-205 to the south, this standard is met because it is not possible to locate the buildings in such a way as to have minimal noise exposure. No other nearby use generates noise to which the proposed buildings will be exposed.

The phrase “minimal noise exposure” is subjective because it requires the exercise of discretion to make this determination and may, therefore, not be a basis for denial under the residential design review standards under ORS 197.307(4).

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.*

**Response:** The proposed clubhouse and pool areas are considered to be portions of the development which may generate more noise and lights than the proposed residential and commercial uses. Therefore, the proposed clubhouse, pool, and related patio areas have been buffered from residential uses on the site by being surrounded by parking and circulation areas which will separate these uses from the residences.

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.*

**Response:** The small scale commercial uses and multi-family residential units proposed to be located within the mixed-use project are not anticipated to generate noise in excess of the standards included in the West Linn Municipal Code Section 5.487. Therefore, no noise study has been requested, nor has one been prepared for the subject project.

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.*

**Response:** Each of the proposed multi-family residential units will provide a private outdoor area in the form of a patio or a deck. The minimum size of the proposed patios or decks is needed to fill in square feet. Units on the south sides of the proposed buildings will have great southern views towards the Willamette River valley, and will receive plenty of sunshine. Patios and decks are separated from their neighbors by nine foot high walls. Landscaping is proposed external to ground level patios to screen views from circulation and parking areas.

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.*

**Response:** 192 multi-family residential units are included within the mixed-use project, including 168 2-bedroom or smaller units and 24 3-bedroom units. A minimum of 40,800 square feet of shared outdoor recreation area is required consistent with the standards of subsection (1) above. Proposed shared outdoor recreation areas serving the proposed mixed-use project include the pool and pool deck; an open area west of building 3; and a large area east of building 1 with a trail and playground area. These proposed indoor and outdoor shared spaces will provide over 42,200 square feet of shared outdoor areas, thereby satisfying the minimum required usable space standard.

In addition to these relatively large usable areas, several smaller areas of shared usable space are distributed around the site and approximately 3,800 square feet of shared indoor area within the clubhouse.

The word “useable” is subjective because it requires the exercise of discretion to determine if there is useable recreation space and may, therefore, not be a basis for denial under ORS 197.307(4).

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.*

**Response:** Private balconies are enclosed with railings or landscaping, semi-public spaces, including the clubhouse and pool areas are contained within the building or within the pool fencing.

Public outdoor space contains benches or other amenities to facilitate active use.

The phrase “are clearly defined” is subjective because it requires the exercise of discretion and may, therefore, not be a basis for denial under ORS 197.307(4).

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.*

**Response:** The site does not directly abut an existing or planned public transit route. Therefore, this standard is not applicable. Nevertheless, the proposed site plan provides for a connection by easement along the shared driveway with the Willamette 205 office complex to lead residents, guests, employees, or clients between the proposed development and an existing bus stop for TriMet Route 154 on Blankenship Road approximately 200-foot walking distance via public sidewalks from the southwestern corner of the site.

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.*

**Response:** This section is not applicable because the subject site does not abut an existing or planned public transit route. Nonetheless the site provides a direct connection to the location of the transit stop via a pedestrian route as described above.

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.*

**Response:** There is no requirement for the applicant to address at this time with regard to this consideration. If it is desirable to relocate the existing nearby transit stop, the applicant is willing to discuss this with the City and TriMet.

5. *If a commercial business center or multi-family project is adjacent to an existing or planned public transit stop, the parking requirement may be reduced by the multiplier of 0.9, or 10 percent. If a commercial center is within 200 feet of a multi-family project, with over 80 units and pedestrian access, the parking requirement may be reduced by 10 percent or by a 0.90 multiplier.*

**Response:** No reductions to the parking standards are requested. This section is not applicable.

6. *Standards of CDC 85.200(D), Transit Facilities, shall also apply.*

**Response:** There is no transit stop or other transit-related facilities on or adjacent to the site. Therefore, this Code section is not applicable to this application.

- 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 minimum standard of 20 feet (two 10-foot travel lanes) plus four-foot-wide curb flush sidewalks 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(H).*

*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.*

**Response:** The proposed development plans have followed the directions of the City Engineer for Tannler Drive which includes provision of an 8-foot wide sidewalk with street trees (in tree grates). The existing pavement and curb provide a 9-foot parking lane, and 13 foot through lane west of the road's centerline. The existing 6" curb, proposed 8' sidewalk, and 6" clear behind sidewalk and will require 1-foot of additional right-of-way. Additional right-of-way width may be dedicated at locations were LIDA facilities are provided for stormwater management along Tannler Drive for new impervious area from the curb tight sidewalks. In these areas, 6' wide LIDA facilities will be located between the curb and sidewalk. The additional dedication is indicated on the plan set. The sidewalks and street trees will be installed along the site's street frontage consistent with City standards for local streets contained in Chapter 85.

Mackenzie, the transportation engineering firm for the project, has provided the following summary of their Transportation Impact Analysis report's findings and recommendations for improvements in order to mitigate for the anticipated transportation related impacts of the proposed development:

### **Safety**

- Historical crash data shows there are no significant safety concerns regarding the study area intersections.
- Intersection Sight distance is met at both the proposed Tannler Drive driveway and the existing driveway [to Blankenship Road]; no access issues are anticipated at either driveway.

## Site Development

- The proposed development is assumed to be opened in 2017 and will consist of 192 multifamily dwelling units and 2000 square feet of commercial space.
- Based on the Institute of Transportation Engineers (ITE), the accepted basis for determining vehicular trip rates trip generation rates, the proposed project is anticipated to generate 150 AM peak hour trips, 176 PM peak hour trips, and 1,655 daily trips.

## Traffic Operations

- Under existing conditions, the 10<sup>th</sup> Street/8<sup>th</sup> Avenue/8<sup>th</sup> Court intersection exceeds the City's Level of Service ("LOS") standard of D, and under pre-development conditions, the Blankenship/Tannler Drive intersection exceeds the City's LOS standard.
- As a result of the project, the 10<sup>th</sup> Street/I-205 Southbound Ramps intersection exceeds ODOT's capacity standard of 0.85.

## Queuing Analysis

- Existing queues at the 10th Street/Blankenship Road/Salamo Road exceed available storage lengths, and are increased with site traffic.

## Mitigation

- Recommended mitigation at the Blankenship Road/Tannler Drive intersection includes striping in order to create separate left and through/right lanes to reduce delays and increase capacity.
- Recommended mitigation at the 10th Street/Blankenship Road/Salamo Road intersection includes restriping and signal changes to provide a shared through/left lane in addition to the existing left turn lane on the westbound Salamo approach.

2. Repealed by Ord. 1635.
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.*

**Response:** The preliminary utility plans for the project were developed under the direction of Gary Alfson, PE, and Brad Swearingen, PE, of Otak.

The project site is on the border between the City of West Linn's water system's Bland zone above the site and the Willamette zone below the site. The development of the site will be best served from the Bland zone above as recommended by the City's Engineering Department in the following comments received by the project team on June 30, 2015:

- Static pressure at the finished floor level would range between 120 psi and 138 psi across the proposed development, if served from the Bland pressure

zone. This will require installation of pressure reducing valves for all service connections, but would result in appropriate service pressures across the entire development.

- Assuming a required fire flow of 2,500 gpm (multi-family and commercial), main extension from the intersection of Tannler Road and Greene Street should be a minimum size of 8-inch diameter. Residual pressures at hydrants on Tannler at the south end of the development would still be near 80 psi under fire flow conditions.

The proposed development plans propose extending an 8-inch public water line down Tannler Drive from Greene Street to the access driveway into the project site. Domestic and fire protection services would extend into the site from here. The private water line will be routed down the middle of the site to serve each building.

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.*

**Response:** The preliminary utility plans for the project were developed under the direction of Gary Alfson, PE, and Brad Swearingen, PE, of Otak.

The site will be served by the public sanitary sewer line in Tannler Drive. The sewer line is located on the west side of Tannler Drive. The sewer has adequate depth and capacity to serve the site. A connection is proposed near the south end of the proposed development.

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

**Response:** Two solid waste and recycling enclosures are proposed at each of the north and south ends of the central road through the site. The enclosures will each include approximately 526 square feet of storage area. Using the Metro standards, the proposed 192 multi-family units would be required to provide at least 960 square feet of trash and recycling storage at a ratio of 50 square feet of storage area per 10 units. The approximately 1,920 square feet of commercial space within the mixed-use buildings would be required to provide another 40 square feet of trash and recycling storage. Together, 1,000 square feet of trash and recycling storage area would be required. The proposed 1,052 square feet of storage area within the two proposed enclosures would therefore satisfy the trash and recycling demands anticipated from a mixed-use development of the size proposed.

- J. Crime prevention and safety/ defensible space.

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

**Response:** Windows are located along all building facades providing visual connection to most all site areas. Plantings adjacent to buildings will be low, not separating the site or blocking visual connections, but instead allowing long open views through the site to enhance safety and security.

Please note that the phrase “areas vulnerable to crime” is subjective because it requires the exercise of discretion and may, therefore, not be a basis for denial under the residential design review standards under ORS 197.3079(4).

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

**Response:** No joint laundry facilities are proposed. Each residential unit will include its own washer and dryer. No other joint service areas are proposed. Therefore, this standard is not applicable.

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

**Response:** The recycling and solid waste facilities for the project are located at the end of the main drive aisle with plenty of visual connection those entering and exiting the site regularly. The recycling and solid waste collection facilities are designed with roofs which will house lights to keep the facilities well-lighted inside at all hours. Additionally, the entries to the facilities are open and easy for people to visually look into them before entering for security. The mailboxes are centrally located at the entry to the community building. This area will be readily visible from the adjacent driveway and from other buildings.

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

**Response:** The proposed Lighting Plans in Appendix G provide for lighting of all parking areas, sidewalks and the trash enclosures which might be areas attractive for criminal activities or mischief.

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.*

**Response:** The proposed Lighting Plans provide for lighting of all parking areas, sidewalks and the trash enclosures.

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.*

**Response:** The proposed Lighting Plans provides photometric details which illustrate anticipated light levels throughout the site. Fixtures will be oriented, as practical, so that light patterns overlap at a height close to seven feet so as to provide sufficient lighting for the proposed uses. See the Lighting Report in Appendix G for details on the lights to be used.

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



**Response:** The proposed development plan provides for a main driveway through the site which will allow police, private security services personnel, or residents to quickly drive through the site and observe activities within the project.

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.*

**Response:** No power transformers, pump stations, pipeline control equipment, or wireless communication facilities are proposed as part of this development application. A 3.5-foot tall dark-colored vinyl covered chain-link fence is proposed around the proposed storm drainage detention pond in the southwestern corner of the site.

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.*

**Response:** On this steeply sloping site, accessible parking spaces have been placed in close proximity to accessible units and all site amenities, Crosswalks provide connection between project sidewalks to the extent that the site slope allows.

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.*
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.*

**Response to subsections 1 through 4:** Sheet A4.0 provides a preliminary plan for a Site Information Plan to be located adjacent to the driveway pull-out between Tannler Drive and building 1, north of the clubhouse. The Site Information Plan will provide guests, customers, clients, and emergency service providers with clear information with regard to the location of businesses and multi-family units within the project. The proposed lettering and plan style will contribute to a sense of project identity. The sign is simple and clear and readily conveys information with regard to particular uses within the project. Due to the nature of rental commercial units, the identification signs for businesses will be easily changeable. The Site Identification Sign will be located off of the main driveway into the site and far enough off of Tannler Drive so that it will not obscure drivers' vision on the driveway or at the driveway's intersection with Tannler Drive.

Sheet A4.1 provides plans for identification of building numbers and unit numbers on the buildings themselves.

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

**Response:** No future public facilities are planned for the subject site. This standard is not applicable.

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.*

**Response:** Signs will be posted internal to the site to provide appropriate traffic control and directions. Primary crosswalks will be indicated on the pavement by painting or other markings. Primary crosswalks are indicated on the site plan.

- 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.*

**Response:** All utility lines within and adjacent to the proposed development site will be placed below ground level.

- 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.*

**Response:** No wireless communication facilities are proposed as part of this application. Therefore, this standard is not applicable.

- 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.*

**Response:** The proposed mixed-use development project contains both commercial spaces and more than five residential units. Therefore, these standards are applicable. No modifications to these standards are requested.

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.*

**Response:** The proposed trash and recycling enclosures will be located on level concrete pads with a minimum thickness of 4-inches. The trash and recycling enclosures will include roofs in order to minimize runoff from the enclosures.

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.*

**Response:** The two proposed trash and recycling collection facilities will have a variety of sizes of containers provided for residents to dispose of wastes, glass, and mixed recyclables. The applicant will coordinate with West Linn Disposal requiring details on the trash and recycling facilities during the building permit process.

- 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.*

**Response:** Recycling collection containers will be included within the trash enclosures which will also include trash receptacles. The sizes of containers will be determined in consultation with the waste hauler.

- 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.*

**Response:** Recycling and trash enclosures will have roofs as illustrated on Sheet A4.1 of the plan set.

- d. *The location of the recycling area and method of storage shall be approved by the local fire marshal.*

**Response:** The applicant has coordinated with the Tualatin Valley Fire and Rescue District regarding fire/life safety issues related to the proposed trash and recycling facilities .

- 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.*

**Response:** Both proposed solid waste and recycling enclosures are located separate from the buildings; at ground level; and are readily accessible by standard solid waste franchise hauling vehicles. The applicant will coordinate with the solid waste disposal franchisee on the final plans for the design of the solid waste and recycling enclosures during building permit plan preparation.

- 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.*

**Response:** The solid waste and recycling enclosures are designed to be fully utilized for trash and recycling collection/storage purposes and will not allow additional area for other purposes such as storage.

*g. Recyclable material service areas shall be maintained in a clean and safe condition.*

**Response:** This condition of approval is not related to the review of the plans for trash and recycling facilities, but instead is a requirement that will apply during the operation of the proposed mixed-use project. The proposed trash and recycling collection facilities have been designed of durable materials which should be relatively easy to maintain 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.*

**Response:** No special wastes or special recyclable materials are expected to be generated by the small scale commercial uses and multi-family residential uses which will be located within the mixed-use project. Therefore, this standard is not applicable.

*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.*

**Response:** Two fully contained trash and recycling enclosures are provided. The enclosures will be roofed and will appear to be very similar to the separate garage buildings. The enclosures are not located adjacent to any residentially zoned properties or street frontages. Areas adjacent to the enclosures will include landscaping to minimize visual impacts of the enclosures.

*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.*
- c. 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.*

**Response:** No litter receptacles are currently proposed. If receptacles are added to the site furnishings, the receptacles will be located outside of rights-of-ways and sidewalks consistent with the standards of this section.

### **55.110 SITE ANALYSIS**

*The site analysis shall include:*

- A. A vicinity map showing the location of the property in relation to adjacent properties, roads, pedestrian and bike ways, transit stops and utility access.*
- B. A site analysis on a drawing at a suitable scale (in order of preference, one inch equals 10 feet to one inch equals 30 feet) which shows:*
  - 1. The property boundaries, dimensions, and gross area.*
  - 2. Contour lines at the following minimum intervals:*
    - a. Two-foot intervals for slopes from zero to 25 percent; and*
    - b. Five- or 10-foot intervals for slopes in excess of 25 percent.*
  - 3. A slope analysis which identifies portions of the site according to the slope ranges as follows:*
    - a. Type I (under 15 percent);*
    - b. Type II (between 15 to 25 percent);*
    - c. Type III (between 25 to 35 percent);*
    - d. Type IV (over 35 percent).*
  - 4. The location and width of adjoining streets.*
  - 5. The drainage patterns and drainage courses on the site and on adjacent lands.*
  - 6. Potential natural hazard areas including:*
    - a. Floodplain areas pursuant to the site's applicable FEMA Flood Map panel;*
    - b. Water resource areas as defined by Chapter 32 CDC;*
    - c. Landslide areas designated by the Natural Hazard Mitigation Plan, Map 16; and*
    - d. Landslide vulnerable analysis areas, designated by the Natural Hazard Mitigation Plan, Map 17.*
  - 7. Resource areas including:*
    - a. Wetlands;*
    - b. Riparian corridors;*
    - c. Streams, including intermittent and ephemeral streams;*
    - d. Habitat conservation areas; and*
    - e. Large rock outcroppings.*
  - 8. Potential historic landmarks and registered archaeological sites. The existence of such sites on the property shall be verified from records maintained by the Community Development Department and other recognized sources.*
  - 9. Identification information including the name and address of the owner, developer, project designer, lineal scale and north arrow.*
  - 10. Identify Type I and II lands in map form. Provide a table which identifies square footage of Type I and II lands also as percentage of total site square footage.*

**Response:** The attached plan set (and enclosed large scale plan set) includes Sheet P0.0, Cover Sheet; Sheet P1.0 Aerial Photo/Site Analysis Plan; Sheet P1.1 Existing Conditions Plan; and Sheet P1.3 Slope Analysis Plan. Together, these plan sheets include all applicable information listed in CDC Section 55.110.

### **55.120 SITE PLAN**

*The site plan shall be at the same scale as the site analysis (CDC 55.110) and shall show:*

- A. The applicant's entire property and the surrounding property to a distance sufficient to determine the relationship between the applicant's property and proposed development and adjacent property and development.*
- B. Boundary lines and dimensions for the perimeter of the property and the dimensions for all proposed lot or parcel lines.*
- C. Streams and stream corridors.*

- D. Identification information, including the name and address of the owner, developer, project designer, lineal scale and north arrow.
- E. The location, dimensions, and names of all existing and proposed streets, public pathways, easements on adjacent properties and on the site, and all associated rights-of-way.
- F. The location, dimensions and setback distances of all:
  - 1. Existing and proposed structures, improvements, and utility facilities on site; and
  - 2. Existing structures and driveways on adjoining properties.
- G. The location and dimensions of:
  - 1. The entrances and exits to the site;
  - 2. The parking and circulation areas;
  - 3. Areas for waste disposal, recycling, loading, and delivery;
  - 4. Pedestrian and bicycle routes, including designated routes, through parking lots and to adjacent rights-of-way;
  - 5. On-site outdoor recreation spaces and common areas;
  - 6. All utilities, including stormwater detention and treatment; and
  - 7. Sign locations.
- H. The location of areas to be landscaped.

**Response:** The attached plan set (and enclosed large scale plan set) includes Sheet P2.0, Preliminary Site Plan; Sheet P2.1 Preliminary Dimensioned Site Plan; Sheet P4.0 Preliminary Composite Utility Plan; Sheet L1.0 Preliminary Landscape Plan; and Sheet A1.0 Architectural Site Plan. Together, these plan sheets include all applicable information listed in CDC Section 55.120.

#### **55.125 TRANSPORTATION ANALYSIS**

*Certain development proposals required that a Traffic Impact Analysis (TIA) be provided which may result in modifications to the site plan or conditions of approval to address or minimize any adverse impacts created by the proposal. The purpose, applicability and standards of this analysis are found in CDC 85.170(B)(2). (Ord. 1584, 2008)*

**Response:** A Transportation Impact Analysis report has been prepared for the proposed multi-use development by the transportation engineering firm Mackenzie. That report is included in Appendix E. The report addresses the potential impacts of the proposed development upon the nearby road and pedestrian system. This report has been developed under the guidance and standards of Section 85.170(B)(2). (need to cite 85.170(B)(2) and address here).

#### **55.130 GRADING PLAN**

*The grading and drainage plan shall be at a scale sufficient to evaluate all aspects of the proposal and shall include the following:*

- A. 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.
- B. A registered civil engineer shall prepare a plan and statement that shall be supported by factual data that clearly shows that there will be no adverse impacts from increased intensity of runoff off site, or the plan and statement shall identify all off-site impacts and measures to mitigate those impacts. The plan and statement shall, at a minimum, determine the off-site impacts from a 10-year storm.
- C. Storm detention and treatment plans may be required.
- D. Identification, information, including the name and address of the owner, developer, project designer, and the project engineer.

**Response:** A Preliminary Grading Plan is included in the plan set as Sheet P3.0. The plans were developed under the direction of Brad Swearingen, PE, and Gary Alfson, PE. A preliminary storm drainage report has been prepared to analyze the anticipated impacts of storm drainage from the proposed development. That report is included as Appendix C to this application narrative.

#### **55.140 ARCHITECTURAL DRAWINGS**

*This section does not apply to single-family residential subdivisions or partitions, or up to two duplexes or single-family attached dwellings.*

*Architectural drawings shall be submitted showing:*

- A. Building elevations and sections tied to curb elevation;*
- B. Building materials: color and type; and*
- C. The name of the architect or designer.*

**Response:** Architectural Plans including proposed building elevations, and accessory building plans are included as part of the plan set. The plans were developed under the direction of Architect Ron Dean, AIA. A materials and colors board has been submitted.

#### **55.150 LANDSCAPE PLAN**

*This section does not apply to detached single-family residential subdivisions or partitions, or up to two duplexes or single-family attached dwellings.*

*A. The landscape plan shall be prepared and shall show the following:*

- 1. Preliminary underground irrigation system, if proposed;*
- 2. The location and height of fences and other buffering of screening materials, if proposed;*
- 3. The location of terraces, decks, patios, shelters, and play areas, if proposed;*
- 4. The location, size, and species of the existing and proposed plant materials, if proposed; and*
- 5. Building and pavement outlines.*

*B. The landscape plan shall be accompanied by:*

- 1. The erosion controls that will be used, if necessary;*
- 2. Planting list; and*
- 3. Supplemental information as required by the Planning Director or City Arborist.*

**Response:** A Preliminary Landscaping Plan is included in the plan set as Sheet L1.0; Sheet L1.1 Typical Planting Plans; and Sheet L1.2 Planting Notes and Details. The plans were developed under the direction of David Haines, RLA

#### **55.170 EXCEPTIONS TO UNDERLYING ZONE, YARD, PARKING, SIGN PROVISIONS, AND LANDSCAPING PROVISIONS**

*A. The Planning Director may grant an exception to the dimensional building setback or yard requirements in the applicable zone based on findings that the approval will satisfy the following criteria:*

- 1. A minor exception that is not greater than 20 percent of the required setback.*
- 2. A more efficient use of the site.*
- 3. The preservation of natural features that have been incorporated into the overall design of the project.*
- 4. No adverse effect to adjoining properties in terms of light, air circulation, noise levels, privacy, and fire hazard.*
- 5. Safe vehicular and pedestrian access to the site and safe on-site vehicular and pedestrian circulation.*

*B. The Planning Director may grant an exception to the off-street parking dimensional and minimum number of space requirements in the applicable zone so long as the following criteria are met:*

- 1. The minor exception is not greater than 10 percent of the required parking;*

2. *The application is for a use designed for a specific purpose which is intended to be permanent in nature (for example, a nursing home) and which has a low demand for off-street parking; or*
3. *There is an opportunity for sharing parking and there is written evidence that the property owners are willing to enter into a legal agreement; or*
4. *Public transportation is available to the site reducing the standards and will not adversely affect adjoining uses, and there is a community interest in the preservation of particular natural feature(s) of the site which make it in the public interest to grant an exception to parking standards.*
- C. *The Planning Director may grant an exception to the sign dimensional requirements in the applicable zone when the following criteria are met:*
  1. *The minor exception is not greater than 10 percent of the required applicable dimensional standard for signs;*
  2. *The exception is necessary for adequate identification of the use on the property; and*
  3. *The sign will be compatible with the overall site plan, the structural improvements, and with the structures and uses on adjoining properties.*
- D. *The Planning Director may grant an exception to the landscaping requirements in the applicable zone based on findings that the following criteria will be met:*
  1. *A minor exception that is not greater than 10 percent of the required landscaped area.*
  2. *A more efficient use of the site.*
  3. *The preservation of natural features that have been incorporated into the overall design of the project.*
  4. *No adverse effect to adjoining property.*

**Response:** No exceptions to the standards of Chapter 55 or other related chapters are requested.

#### **55.180 MAINTENANCE**

*All on-site improvements shall be the ongoing responsibility of the property owner or occupant.*

**Response:** The applicants are aware that it will be the responsibility of the property owners to be responsible for ongoing maintenance of the project in compliance with the approved plans for the site and in compliance with the applicable standards of the West Linn Municipal Code.

#### **55.190 SHARED OPEN SPACE**

*Where the open space is designated on the plan as common open space, the following shall apply:*

- A. *The open space area shall be shown on the final plan and recorded with the Planning Director.*
- B. *The open space shall be conveyed in accordance with one of the following methods:*
  1. *By dedication to the City as publicly owned and maintained as open space. Open space proposed for dedication to the City must be acceptable to it with regard to the size, shape, location, improvement, and budgetary and maintenance limitations.*
  2. *By leasing or conveying title (including beneficial ownership) to a corporation, home association, or other legal entity with the City retaining the development rights to the property. The terms of such lease or other instrument of conveyance must include provisions suitable to the City Attorney for guaranteeing the following:*
    - a. *The continued use of such land for intended purposes.*
    - b. *Continuity of property maintenance.*
    - c. *When appropriate, the availability of funds required for such maintenance.*
    - d. *Adequate insurance protection.*
    - e. *Recovery for loss sustained by casualty and condemnation, or otherwise.*
  3. *By any method that achieves the objectives set forth in subsection (B)(2) of this section.*



**Response:** No open space is currently proposed to be dedicated to the public as open space or park area, or to be turned over to an owners association. The open space areas may remain in the same ownership as the proposed mixed-use development or may be dedicated to the City at a future time. Therefore, this section is not applicable.

## VI. COMPLIANCE WITH CHAPTER 34 - ACCESSORY STRUCTURES, ACCESSORY DWELLING UNITS, AND ACCESSORY USES

### ***34.020 ACCESSORY USES***

*Accessory uses are permitted uses which are customary and incidental to principal uses permitted in the zone and shall be permitted outright, or by prescribed conditions as identified below, and may be either attached or separated from the principal dwelling. Accessory uses on designated historic resources are subject to additional regulations in CDC 25.060(B).*

*A. A greenhouse may be a maintained accessory to a dwelling provided the activity does not exceed that which requires a license under Chapter 571 of the Oregon Revised Statutes, Nurseries.*

*B. A television disk or satellite dish larger than three feet in diameter, and any other non-commercial antennas over three feet in height (minor utility), may be a maintained accessory to a dwelling provided it is not located within the front yard or side yard abutting a street, it is mounted on the ground, is screened from view, as practical, with landscaping, and otherwise meets the requirements of CDC 34.060. The satellite dish shall not exceed a maximum height of 18 feet.*

*Where it can be demonstrated that these restrictions impose unreasonable limitations to the extent that the antenna/satellite dish's reception or transmitting capability is significantly reduced, then roof-mounted (provided it is powder-coated with mesh or perforated construction) or alternate locations for the antenna/satellite dish may be allowed.*

**Response:** The clubhouse and pool are uses which are incidental and subordinate to the principal uses of the project for various commercial uses and for multi-family residential use. However, because of their size (in excess of 1,500 square feet) these accessory uses and their structures are required to meet the minimum OBC district minimum or maximum setback standards and other development standards that apply to the principal uses, and are not subject to the reduced setback standards which apply to smaller accessory structures.

### ***34.030 ACCESSORY DWELLING UNITS (ADUs)***

*A. An accessory dwelling unit (ADU) may be allowed in conjunction with an existing primary single-family dwelling ....*

**Response:** No accessory dwelling units are proposed.

### ***34.040 SETBACK PROVISIONS FOR NOISE-PRODUCING ACCESSORY STRUCTURES AND USES***

*Noise-producing accessory uses and structures such as heat pumps, swimming pool motors or pumps shall meet the setback requirements of the zone.*

**Response:** The pool will be setback more than 50 feet from any property lines, therefore exceeding the applicable setback standards of the OBC zoning district. No other noise-producing accessory structures or accessory uses are proposed.

### **34.050 BOAT HOUSES AND DOCKS**

*Only side yard setback requirements apply to boat houses and docks.*

**Response:** No boat docks or boat houses are proposed.

### **34.060 SETBACK PROVISIONS FOR ACCESSORY STRUCTURES (NON-DWELLING)**

*A. Accessory structures shall comply with all requirements for the principal use except as provided in CDC 34.040 and where specifically modified by this code as follows.*

*B. A side yard or rear yard requirement may be reduced to three feet for an accessory structure except for a side or rear yard abutting a street, with the exception of alleys platted and dedicated prior to September 30, 1984, as defined in this code; provided, that:*

- 1. The structure is erected more than 60 feet from the front lot line;*
- 2. The structure does not exceed one story or 15 feet in height;*
- 3. The structure does not exceed an area of 500 square feet; and*
- 4. The structure does not violate any existing utility easements.*

**Response:** Accessory structures are defined in CDC Section 0.2030, Specific Words and Terms, as “a subordinate structure with a maximum area of 1,500 square feet...located on a lot or parcel with a principal use, the use of which is clearly incidental to and associated with the principal use.” The only accessory structures with areas of 1,500 square feet or less proposed are the eight separate garage buildings (maximum size of 1,000 square foot) and the two 580 square foot trash enclosures. Therefore, the accessory structure setback provisions of this chapter are applicable to these garages and trash enclosure structures. Because the proposed garage buildings of three or less garages are all less than 15-feet in height as shown on Sheet A3.0B (maximum height of 14-feet 4.75-inches); are located more than 60-feet or more from the project’s Tannler Drive front lot line; do not exceed 500 square feet in size; and do not violate any utility easements, it is requested that these structures be allowed to have minimum 3-foot rear yard setback along the western or rear lot line. The trash enclosures and the larger garages are larger than 500 square feet in size. Therefore, these accessory structures are located at least 7.5-feet from the southern and northern side lot lines, consistent with the ODC zone’s minimum side yard setback standard of Section 21.070.A.4.a.

*C. Attached accessory structures. When an accessory structure is attached to the main structure (wall to wall or by any permanent attachment), including via a covered walkway, such accessory structure shall be considered as part of the main structure.*

**Response:** No attached accessory structures are proposed.

## **VII. COMPLIANCE WITH CHAPTER 42 CLEAR VISION AREAS**

### **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.*

**Response:** See the response to Section 42.040 below.

#### ***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.*

**Response:** The subject site is not within the area in Willamette described above. Therefore, this exception is not applicable.

#### ***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....*

**Response:** The Preliminary Grading Plan illustrates the required vision clearance areas adjacent to the intersection of the proposed driveway to Tannler Drive. No visual obstructions such as landscaping, signs, or fences over 3 feet in height will be located within the required clear vision area at this intersection, consistent with the standards of CDC Sections 42.020 and 42.040.

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

**Response:** The proposed development project will not have any intersections of accessways of less than 24-feet in width with any public or private streets. Therefore, this section is not applicable.

### **VIII. COMPLIANCE WITH CHAPTER 44 –FENCES**

#### ***44.020 SIGHT-OBSCURING FENCE; SETBACK AND HEIGHT LIMITATIONS***

*A. A sight- or non-sight-obscuring fence may be located on the property line or in a yard setback area subject to the following:*

*1. The fence is located within:*

- a. A required front yard area, and it does not exceed three feet, except pillars and driveway entry features subject to the requirements of Chapter 42 CDC, Clear Vision Areas, and approval by the Planning Director;*
- b. A required side yard which abuts a street and it is within that portion of the side yard which is also part of the front yard setback area and it does not exceed three feet;*

- c. *A required side yard which abuts a street and it is within that portion of the side yard which is not also a portion of the front yard setback area and it does not exceed six feet provided the provisions of Chapter 42 CDC are met;*
- d. *A required rear yard which abuts a street and it does not exceed six feet; or*
- e. *A required side yard area which does not abut a street or a rear yard and it does not exceed six feet.*

**Response:** No fences will be located within a required front yard, side yard, or a rear yard which is adjacent to a street. Therefore, Subsections a. through d. are not applicable. Vinyl coated, colored fences will be located within several required side and rear yard areas on the up-side of retaining walls. All such fences will be less than 4-feet in height and will therefore be consistent with subsection e. Fences are shown on the preliminary Landscaping Plans.

- B. *Fence or wall on a retaining wall. When a fence is built on a retaining wall or an artificial berm, the following standards shall apply:*
- 1. *When the retaining wall or artificial berm is 30 inches or less in height from finished grade, the maximum fence or wall height on top of the retaining wall shall be six feet.*
  - 2. *When the retaining wall or earth berm is greater than 30 inches in height, the combined height of the retaining wall and fence or wall from finished grade shall not exceed eight and one-half feet.*
  - 3. *Fences or walls located on top of retaining walls or earth berms in excess of 30 inches above finished grade may exceed the total allowed combined height of eight and one-half feet; provided, that the fence or wall is located a minimum of two feet from the retaining wall and the fence or wall height shall not exceed six feet.*

**Response:** Vinyl coated, colored fences will be located on the up-side of retaining walls. All retaining walls will be greater than 30-inches in height. Fences on top of the walls will be 42-inches tall, and in most cases the fence and retaining walls will exceed eight and one-half feet in height. Such fences will be set back at least two-feet back from the top of the retaining wall.

## IX. COMPLIANCE WITH CHAPTER 46 - OFF-STREET PARKING, LOADING, AND RESERVOIR AREAS

### **46.030 SUBMITTAL REQUIREMENTS**

*For any application requiring design review approval, which includes parking areas, the applicant shall submit, within the design review package, a plan drawn to scale showing all the elements necessary to indicate that the requirements of Chapter 55 CDC are met and it shall include but not be limited to:*

- A. *The delineation of individual parking and loading spaces and their dimensions;*
- B. *The identification of compact parking spaces;*
- C. *The location of the circulation area necessary to serve spaces;*
- D. *The access point(s) to streets, alleys, and properties to be served;*
- E. *The location of curb cuts;*
- F. *The location and dimensions of all landscaping, including the type and size of plant material to be used, as well as any other landscape material incorporated into the overall plan;*
- G. *The proposed grading and drainage plans and the slope (percentage) of parking lot;*
- H. *Specifications as to signs and bumper guards;*
- I. *Identification of disabled parking spaces;*

- J. Location of pedestrian walkways and crossings; and  
K. Location of bicycle racks.

**Response:** The proposed plan set includes plans which show all of the information requested above, but not all on one plan. Most of the information is shown on the site plan and the landscaping plan.

#### **46.090 MINIMUM PARKING SPACE REQUIREMENTS**

##### *3. Multi-family residences:*

- a. 500 square feet or less. 1 off-street space for each unit.
- b. 1 bedroom apartment. 1.25 off-street spaces for each unit. Stacking one car behind the other is permitted only when the parking spaces are allocated to specific apartments.
- c. 2 bedroom apartments. 1.5 off-street spaces for each dwelling unit. Stacking one car behind the other is permitted only when the parking spaces are allocated to specific apartments.
- d. 3 (or more) bedroom apartment. 1.75 off-street spaces for each dwelling unit. Stacking one car behind the other is permitted only when the parking spaces are allocated to specific apartments.
- e. Visitor parking for multi-family residences. 1 off-street space for every 3 apartment units evenly distributed throughout the complex. These spaces shall be clearly identified and signed as visitor spaces only. This number may be reduced by 1 space for every 18 feet of project abutting public street frontage where on-street parking is allowed.

**Response:** Required parking for the 192 proposed multi-family units is as follows:

**On-Site Parking Spaces Required for Residential Units**

<b>Parking Spaces Required per MFR Unit</b>	<b>Number of Units Proposed</b>	<b>Auto Parking Spaces Required</b>
1.25 spaces/1-bedroom unit	66	83
1.5 spaces/2-bedroom unit	102	153
1.75 spaces/3-bedroom unit	24	42
<b>Subtotal</b>	192 units	278
1 visitor parking space per every 3 units	192 x 0.33	64
<b>Total MFR Units/ Parking Spaces Required</b>	<b>192 units</b>	<b>342 spaces</b>

Required parking for the 1,963 square feet of gross leasable area for various commercial uses is as follow. The assumption is made that the application should assume the highest parking space ratio of reasonably assumable commercial uses to occupy the commercial spaces, or one parking space per 200 square feet of gross leasable area – which is the standard which would apply if all of the commercial spaces were to be occupied by some sort of small take-out restaurant or coffee shop or some sort of service or repair use.

### On-Site Parking Spaces Required for Commercial Uses

Parking Spaces Required per Representative Commercial Use Type		Parking Spaces Required
Small take out restaurant, coffee shop	1 space per 200 sq. ft. GFA	
General retail store	1 space per 240 sq. ft. GFA	
Service and repair shops	1 space per 200 sq. ft. GFA	
Professional offices	1 space per 250 sq. ft. GFA	
Medical/dental/day surgery	1 space per 250 sq. ft. GFA	
Unlisted uses –	TBD by City according to Section 46.100.A	
<b>Total GLA of Commercial Space = 1,963 sq. ft.</b>	<b>At 1 space per 200 sq. ft. GFA</b>	<b>10 spaces</b>

Combined, the proposed commercial and multi-family uses proposed within the Tannler Drive Mixed- Use project is required to provide 352 parking spaces.

The proposed mixed-use development will be provided with a total of 337 on-site parking spaces as described below:

### On-Site Parking Spaces Provided

Type of Parking Space	Onsite Parking Spaces Provided
Surface parking – larger than standard-sized spaces	129
Surface visitor spaces	47
Surface parking – ADA spaces	13
Covered – larger than standard-sized spaces	174
Covered – ADA spaces	4
<b>Total On-site Parking Spaces Provided</b>	<b>337 On-site Parking Spaces</b>

In addition, an estimated 20 on-street parking spaces will be provided on the west side of Tannler Drive adjacent to tax lots 100 and 102. A 17 space reduction in the number of required visitor parking spaces is requested based upon this on-street parking adjacent to the site as allowed by CDC Section 46.090A.e. Together, the proposed on-site and on-street parking will satisfy the required parking requirements for the proposed uses within the mixed-use project.

### ***46.120 DRIVEWAYS REQUIRED ON SITE***

*Any school or other meeting place which is designed to accommodate more than 25 people at one time shall provide a 15-foot-wide driveway designed for continuous forward flow of passenger vehicles for the purpose of*

loading and unloading passengers. Depending on functional requirements, the width may be increased with Planning Director approval.

**Response:** The proposed mixed-use development will not include any schools or other meeting places designed to accommodate more than 25 people at one time. Therefore, this standard is not applicable to the current request.

#### **46.130 OFF-STREET LOADING SPACES**

*Buildings or structures to be built or substantially altered, which receive and distribute material or merchandise by truck, shall provide and maintain off-street loading and maneuvering space. The dimensional standard for loading spaces is a minimum of 14 feet wide by 20 feet long or proportionate to accommodate the size of delivery trucks that typically serve the proposed use as follows:*

<b><i>Land Use</i></b>	<b><u>Gross Floor Area</u></b>	
	<b><i>At Which First Berth Is Required</i></b>	<b><i>At Which Second Berth Is Required</i></b>
<b><u>Industrial:</u></b>		
<i>Manufacturing</i>	<i>5,000 sq. ft.</i>	<i>40,000 sq. ft.</i>
<i>Warehouse</i>	<i>5,000</i>	<i>40,000</i>
<i>Storage</i>	<i>10,000</i>	<i>100,000</i>
<b><u>Commercial:</u></b>		
<i>Wholesale</i>	<i>10,000</i>	<i>40,000</i>
<i>Retail</i>	<i>10,000</i>	<i>20,000</i>
<i>Service establishments</i>	<i>10,000</i>	<i>40,000</i>
<i>Comm. recreational (incl. bowling alley)</i>	<i>10,000</i>	<i>100,000</i>
<i>Restaurants</i>	<i>5,000</i>	<i>25,000</i>
<i>Laundry</i>	<i>10,000</i>	<i>25,000</i>
<i>Office building</i>	<i>10,000</i>	<i>100,000</i>
<i>Hotel</i>	<i>10,000</i>	<i>100,000</i>
<b><u>Institutional:</u></b>		
<i>Schools</i>	<i>10,000</i>	<i>100,000</i>
<i>Hospitals</i>	<i>10,000</i>	<i>100,000</i>
<i>Other care facilities</i>	<i>10,000</i>	<i>100,000</i>
<b><u>Public buildings:</u></b>		
<i>Terminals</i>	<i>5,000</i>	<i>40,000</i>
<i>Auditoriums</i>	<i>10,000</i>	<i>100,000</i>
<i>Arenas</i>	<i>10,000</i>	<i>100,000</i>
<i>Funeral homes</i>	<i>10,000</i>	<i>100,000</i>

**Response:** The proposed mixed-use development will not include any of the uses listed above in this table, except for the possibility of certain commercial uses – but not at the sizes which would trigger the need for a loading space. Therefore, the loading space standards of CDC Section 46.130 are not applicable to the current request.

#### ***46.140 EXEMPTIONS TO PARKING REQUIREMENTS***

*To facilitate the design requirements of Chapter 58 CDC, properties in the Willamette Falls Drive Commercial District/ Overlay Zone, located between 10th and 16th Streets, shall be exempt from the requirements for off-street parking as identified in this chapter. Any off-street parking spaces provided shall be designed and installed per the dimensional standards of this code*

**Response:** The proposed mixed-use development will not be located within the Willamette Falls Drive Commercial District. Therefore, this standard is not applicable.

#### ***46.150 DESIGN AND STANDARDS***

*The following standards apply to the design and improvement of areas used for vehicle parking, storage, loading, and circulation:*

##### ***A. Design standards.***

1. *“One standard parking space” means a minimum for a parking stall of eight feet in width and 16 feet in length. These stalls shall be identified as “compact.” To accommodate larger cars, 50 percent of the required parking spaces shall have a minimum dimension of nine feet in width and 18 feet in length (nine feet by 18 feet). When multi-family parking stalls back onto a main driveway, the stalls shall be nine feet by 20 feet. Parking for development in water resource areas may have 100 percent compact spaces.*

**Response:** 357 larger spaces of at least 9-feet by 18-feet will be provided – including all of the disabled accessible parking spaces except for disabled accessible spaces. No 8-foot by 16-foot spaces are proposed.

Parking spaces on the main driveway through the site are at least 9-feet by 20-feet, including disabled accessible spaces.

There is no parking related to the project which is also parking which is related to water resource areas. Therefore, this part of this standard is not applicable.

2. *Disabled parking and maneuvering spaces shall be consistent with current federal dimensional standards and subsection B of this section and placed nearest to accessible building entryways and ramps.*

**Response:** Seventeen parking spaces will be provided as disabled accessible spaces, including four covered parking spaces. Disabled accessible spaces will be located, sized, and signed consistent with federal standards. Thirteen disabled accessible spaces are provided as surface parking spaces which are located close to commercial space entrances, close to the clubhouse entrance, and conveniently located for access to the multi-family units. Four covered parking units are sized so that they can function as covered disabled accessible parking spaces.

Subsections 3 through 14 of the parking area improvement standards will be satisfied by the detailed final plans for the project.



15. *The maximum driveway grade for single-family housing shall be 15 percent. The 15 percent shall be measured along the centerline of the driveway only. Grades elsewhere along the driveway shall not apply. Variations require approval of a Class II variance by the Planning Commission pursuant to Chapter 75 CDC. Regardless, the last 18 feet in front of the garage must maintain a maximum grade of 12 percent as measured along the centerline of the driveway only. Grades elsewhere along the driveway shall not apply*

**Response:** Some portions of the primary driveway through the site will have grades of 15 percent between landings for the driveways off to the side. Grades in front of garage doors are all less than 5 percent.

16. *Visitor or guest parking must be identified by painted "GUEST" or "VISITOR."*

**Response:** Forty-seven designated visitor parking spaces will be provided on the site. These spaces are marked on the Architectural Site Plan, Sheet, A1.0. These designated guest parking spaces will be identified either by painting on the surface of the parking space or by signs. This detail will be determined and implemented prior to the request for occupancy permits.

17. *The parking area shall have less than a five percent grade. No drainage across adjacent sidewalks or walkways is allowed.*

**Response:** All parking areas are designed so as to have no more than a 5 percent grade within the areas where parking spaces are to be provided. The site has been designed so that stormwater drainage in the parking area will not cross adjacent sidewalks or walkways.

18. *Commercial, office, industrial, and public parking lots may not occupy more than 50 percent of the main lot frontage of a development site. The remaining frontage shall comprise buildings or landscaping. If over 50 percent of the lineal frontage comprises parking lot, the landscape strip between the right-of-way and parking lot shall be increased to 15 feet wide and shall include terrain variations (e.g., one-foot-high berm) plus landscaping. The defensible space of the parking lot should not be compromised.*

**Response:** Less than 10 percent of the mixed-use project site's Tannler Drive frontage internal to the site will be occupied by the entrance driveway or parking spaces. All parking areas are located behind or next to the adjacent buildings. The site's frontage will be occupied by landscaping and the ramped sidewalk adjacent to buildings 7 and 8.

19. *Areas of the parking lot improved with asphalt or concrete surfaces shall be designed into areas of 12 or less spaces through the use of defined landscaped area. Groups of 12 or less spaces are defined as:*
- a. Twelve spaces in a row, provided there are no abutting parking spaces, as in the case when the spaces are abutting the perimeter of the lot; or*
  - b. Twelve spaces in a group with six spaces abutting together; or*
  - c. Two groups of 12 spaces abutting each other, but separated by a 15-foot-wide landscape area including a six-foot-wide walkway.*

**Response:** The parking areas within the proposed Tannler Drive mixed-use development have been designed to provide no more than seven parking spaces in a

row without being broken up by a landscape island, thereby complying with subsection a. of this standard. There are no groups of parking spaces where fronts and rears of cars abut each other or any parking courts, as described in subsections b. and c. These last two subsections are therefore not applicable.

- d. *Parking areas improved with a permeable parking surface may be designed using the configurations shown in subsections (A)(19)(a), (b) and (c) of this section except that groups of up to 18 spaces are allowed.*

**Response:** The proposed parking areas will not include permeable pavement. Therefore, this subsection is not applicable.

- e. *The requirements of this chapter relating to total parking lot landscaping, landscaping buffers, perimeter landscaping, and landscaping the parking lot islands and interior may be waived or reduced pursuant to CDC 32.110(F) in a WRA application without a variance being required.*

**Response:** No exceptions to the parking lot landscaping standards of this chapter or related Code sections are being requested.

20. *Pedestrian walkways shall be provided in parking areas having 20 or more spaces. Walkways or sidewalks shall be constructed between major buildings/ activity areas (an example in multi-family housing: between recreation center, swimming pool, manager's office, park or open space areas, parking lots, etc.) within a development, between adjacent developments and the new development, as feasible, and between major buildings/ activity areas within the development and adjacent streets and all adjacent transit stops. Internal parking lot circulation and design should maintain ease of access for pedestrians from streets and transit stops. Walkways shall be constructed using a material that visually contrasts with the parking lot and driveway surface. Walkways shall be further identifiable to pedestrians and motorists by grade separation, walls, curbs, surface texture (surface texture shall not interfere with safe use of wheelchairs, baby carriages, shopping carts, etc.), and/or landscaping. Walkways shall be six feet wide. The arrangement and layout of the paths shall depend on functional requirements.*

**Response:** The proposed site plan provides for a convenient and safe layout of sidewalks through the site. Parking spaces will be available within 100 feet of any use on the site – either in covered garages or in surface parking spaces. All parking areas will be served by internal site sidewalks. A continuous pedestrian walkway link to the clubhouse and to the public sidewalk along Tannler Drive adjacent to the site and to the nearby public sidewalk and transit stop on Blankenship Road will be provided.

All internal sidewalks will be at least 6-feet in width, constructed of concrete, and will be grade separated from parking spaces and the drive aisles within the site. Drive aisles and parking areas will be constructed of asphalt, and thus will contrast with the concrete sidewalks.

21. *The parking and circulation patterns are easily comprehended and defined. The patterns shall be clear to minimize traffic hazards and congestion and to facilitate emergency vehicles.*

**Response:** The proposed drive aisle through the approximate center of the site with short dead-end driveways to access parking areas and uses. The parking area plan should be easily comprehended with a minimum of potential hazards and congestion. No long

dead end driveways are proposed. The proposed driveway system through the site was vetted with a representative of the Tualatin Valley Fire and Rescue District prior to application submittal.

22. *The parking spaces shall be close to the related use.*

**Response:** The proposed site plan provides for a convenient layout of sidewalks through the site. Parking spaces will be available within 100 feet of any use on the site – either in covered garages or in surface parking spaces.

23. *Permeable parking spaces shall be designed and built to City standards.*

**Response:** No permeable pavement is proposed to be used for parking spaces. This subsection is not applicable.

B. *Accessible parking standards for persons with disabilities.* *If any parking is provided for the public or visitors, or both, the needs of the people with disabilities shall be based upon the following standards or current applicable federal standards, whichever are more stringent:*

1. *Minimum number of accessible parking space requirements (see following table):*

**Response:** The table in the CDC says that a minimum of eight disabled accessible parking spaces must be provided for a development with a total number of parking spaces of between 300 and 400 parking spaces, as is proposed. The plans for the Tannler Drive mixed-use project provide 17 disabled accessible spaces, thereby satisfying this standard.

2. *Location of parking spaces.* *Parking spaces for the individual with a disability that serve a particular building shall be located on the shortest possible accessible circulation route to an accessible entrance to a building. In separate parking structures or lots that do not serve a particular building, parking spaces for the persons with disabilities shall be located on the shortest possible circulation route to an accessible pedestrian entrance of the parking facility.*

3. *Accessible parking space and aisle shall meet ADA vertical and horizontal slope standards.*

4. *Where any differences exist between this section and current federal standards, those standards shall prevail over this code section.*

5. *One in every eight accessible spaces, but not less than one, shall be served by an access aisle 96 inches wide.*

6. *Van-accessible parking spaces shall have an additional sign marked “Van Accessible” mounted below the accessible parking sign. A van-accessible parking space reserved for wheelchair users shall have a sign that includes the words “Wheelchair Use Only.” Van-accessible parking shall have an adjacent eight-foot-wide aisle. All other accessible stalls shall have a six-foot-wide aisle. Two vehicles may share the same aisle if it is between them. The vertical clearance of the van space shall be 96 inches.*

**Response:** Disabled accessible parking spaces are distributed around the site so that at least one disabled accessible space is provided close to each commercial space and close to primary building entrances. Several covered parking spaces are provided which are sized to meet the requirements for accessible spaces. Four accessible spaces will be

served by a 96-inch wide aisle. All disabled accessible spaces will be designed compliant with federal standards for signage, gradient, cross slopes, and dimensions.

C. Landscaping in parking areas. Reference Chapter 54 CDC, Landscaping.

**Response:** See the responses to the applicable standards of Chapter 54 below.

D. Bicycle facilities and parking.

1. *Provisions shall be made for pedestrian and bicycle ways if such facilities are shown on an adopted plan.*

**Response:** No adopted plans require provision of facilities for pedestrian or bicycle ways. Therefore, this standard is not applicable.

2. *Bicycle parking facilities shall either be lockable enclosures in which the bicycle is stored, or secure stationary racks which accommodate bicyclist's locks securing the frame and both wheels. The bicycle parking shall be no more than 50 feet from the entrance to the building, well-lit, observable, and properly signed.*

**Response:** Covered, lockable bicycle parking for over 208 bicycles will be provided within garages and in storage lockers on the ground levels of each of the mixed-use buildings. Additional covered bicycle parking will be available with the multi-family residential units or within the commercial spaces. In addition, 20 uncovered bicycle parking spaces will be available in racks located in various spots around the site.

3. *Bicycle parking must be provided in the following amounts:*  
\*\*\*

<i>Multi-family Residential</i>	<i>1 space per unit</i>	<i>50%</i>
<i>Financial Institutions</i>	<i>2, or 0.33 spaces per 1,000 gross sq. ft.</i>	<i>25%</i>
<i>Office</i>	<i>2, or 0.5 spaces per 1,000 gross sq. ft., whichever is greater</i>	<i>10%</i>
<i>Retail Sales</i>	<i>0.33 spaces per 1,000 gross sq. ft.</i>	<i>50%</i>

**Response:** Over 208 bicycle parking spaces will be provided, thereby providing more than the 192 bicycle spaces required for the proposed 192 multi-family units and an additional 14 bicycle spaces at a ratio of 2 bicycle parking spaces for each of the commercial spaces – none of which exceeds 300 square feet in gross leasable area. Bicycle parking spaces are assumed to be provided by at least one bicycle parking space for each of the 78 garages within the project; one bicycle parking space per each of the 130 ground level storage lockers; and 20 bicycle parking spaces within the ten uncovered bicycle racks distributed around the site.

- F. *Office or industrial developments shall be allowed a 10 percent reduction in the number of required parking spaces when the property owner agrees to a demand management program that includes three or more of the following measures:*

**Response:** No demand management program is proposed. No reduction in required parking spaces is proposed. This section is therefore not applicable.

## X. COMPLIANCE WITH THE APPLICABLE STANDARDS OF CHAPTER 48 ACCESS, EGRESS AND CIRCULATION

### ***48.020 APPLICABILITY AND GENERAL PROVISIONS***

*A. The provisions of this chapter do not apply where the provisions of the Transportation System Plan or land division chapter are applicable and set forth differing standards.*

**Response:** There are no known conflicts between this chapter and the Transportation System Plan. The proposed development does not include a land division request. Therefore, the land division chapter is not applicable to the current request.

*B. All lots shall have access from a public street or from a platted private street approved under the land division chapter.*

**Response:** Tax lot 102, the site of the proposed mixed-use development, is located on Tannler Drive. The proposed mixed-use development's driveway system will take access from that public street.

*C. No building or other permit shall be issued until scaled plans are presented to the City and approved by the City as provided by this chapter, and show how the access, egress, and circulation requirements are to be fulfilled. Access to State or County roads may require review, approval, and permits from the appropriate authority.*

**Response:** This application and the enclosed plan set provide scaled plans show how the access, egress, and circulation requirements are to be fulfilled for the proposed mixed-use development. No direct access to State or County roads is proposed. The Oregon Department of Transportation will be provided with a copy of the project's transportation impact study and will have an opportunity to review the anticipated effects of traffic related to the proposed development upon operations of the nearby I-205/10<sup>th</sup> Street interchange.

*D. Should the owner or occupant of a lot, parcel or building enlarge or change the use to which the lot, parcel or building is put, resulting in increasing any of the requirements of this chapter, it shall be unlawful and a violation of this code to begin or maintain such altered use until the provisions of this chapter have been met, and, if required, until the appropriate approval authority under Chapter 99 CDC has approved the change.*

**Response:** This application and the attached traffic impact study provide details regarding the proposed use of the site and its compliance with the standards of this chapter

*E. Owners of two or more uses, structures, lots, parcels, or units of land may agree to utilize jointly the same access and egress when the combined access and egress of both uses, structures, or parcels of land satisfies the requirements as designated in this code; provided, that satisfactory legal evidence is presented to the City Attorney in the form of deeds, easements, leases, or contracts to establish joint use. Copies of said instrument shall be placed on permanent file with the City Recorder.*

**Response:** The proposed mixed-use development proposes to utilize driveway and private sidewalk connections with the Willamette 205 office project to the west in order to access Blankenship Road. A reciprocal access easement agreement between the owner of the Willamette 205 project and the prospective purchasers/developers of the mixed-use project

site has been agreed upon. The applicant will provide the City of West Linn with a copy of the access easement agreement when it is executed.

*F. Property owners shall not be compelled to access their homes via platted stems of flag lots if other driveways and easements are available and approved by the City Engineer.*

**Response:** The site of the proposed development project is not a flag lot. Therefore, this section is not applicable.

#### **48.025 ACCESS CONTROL**

*A. Purpose. The following access control standards apply to public, industrial, commercial and residential developments including land divisions. Access shall be managed to maintain an adequate level of service and to maintain the functional classification of roadways as required by the West Linn Transportation System Plan. Major roadways, including arterials and collectors, serve as the primary system for moving people and goods within and through the City. Access management is a primary concern on these roads. Local streets and alleys provide access to individual properties. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function. The regulations in this section further the orderly layout and use of land, protect community character, and conserve natural resources by promoting well-designed road and access systems and discouraging the unplanned subdivision of land.*

*B. Access control standards.*

- 1. Traffic impact analysis requirements. The City or other agency with access jurisdiction may require a traffic study prepared by a qualified professional to determine access, circulation and other transportation requirements. (See also CDC 55.125, Traffic Impact Analysis.)*
- 2. The City or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. Access to and from off-street parking areas shall not permit backing onto a public street.*
- 3. Access options. When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods (planned access shall be consistent with adopted public works standards and TSP). These methods are “options” to the developer/subdivider.*
  - a) Option 1. Access is from an existing or proposed alley or mid-block lane. If a property has access to an alley or lane, direct access to a public street is not permitted.*
  - b) Option 2. Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., “shared driveway”). A public access easement covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.*
  - c) Option 3. Access is from a public street adjacent to the development lot or parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street accesses shall comply with the access spacing standards in subsection (B)(6) of this section.*

**Response:** A transportation study prepared by Mackenzie is attached as Appendix E. The study addresses access, circulation and other transportation requirements related to the proposed project. Access to the proposed development will be from Tannler Drive -

a public street, as well as to Blankenship Road via an easement over the driveways and sidewalks within the Willamette 205 office project to the west.

4. *Subdivisions fronting onto an arterial street. New residential land divisions fronting onto an arterial street shall be required to provide alleys or secondary (local or collector) streets for access to individual lots. When alleys or secondary streets cannot be constructed due to topographic or other physical constraints, access may be provided by consolidating driveways for clusters of two or more lots (e.g., includes flag lots and mid-block lanes).*

**Response:** The proposed development plan does not involve a land division. Therefore, this standard is not applicable.

5. *Double-frontage lots. When a lot or parcel has frontage onto two or more streets, access shall be provided first from the street with the lowest classification. For example, access shall be provided from a local street before a collector or arterial street. When a lot or parcel has frontage opposite that of the adjacent lots or parcels, access shall be provided from the street with the lowest classification.*

**Response:** The proposed development site is not a double-frontage lot. Therefore, this standard is not applicable.

6. *Access spacing.*
  - a. *The access spacing standards found in Chapter 8 of the adopted Transportation System Plan (TSP) shall be applicable to all newly established public street intersections and non-traversable medians.*

**Response:** The proposed development plan does not involve creation of a newly established public street intersection or a non-transversible median. Therefore, this standard is not applicable.

- b. *Private drives and other access ways are subject to the requirements of CDC 48.060.*

**Response:** See the response to Section 48.060.

7. *Number of access points. For single-family (detached and attached), two-family, and duplex housing types, one street access point is permitted per lot or parcel, when alley access cannot otherwise be provided; except that two access points may be permitted corner lots (i.e., no more than one access per street), subject to the access spacing standards in subsection (B)(6) of this section. The number of street access points for multiple family, commercial, industrial, and public/institutional developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s) for all users. Shared access may be required, in conformance with subsection (B)(8) of this section, in order to maintain the required access spacing, and minimize the number of access points.*

**Response:** Only a single access driveway to Tanner Drive is proposed.

8. *Shared driveways. The number of driveway and private street intersections with public streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The City shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:*
  - a. *Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway or street*



*temporarily ends at the property line, but may be extended in the future as the adjacent lot or parcel develops. "Developable" means that a lot or parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).*

- b. Access easements (i.e., for the benefit of affected properties) shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.*
- c. Exception. Shared driveways are not required when existing development patterns or physical constraints (e.g., topography, lot or parcel configuration, and similar conditions) prevent extending the street/driveway in the future.*

**Response:** As noted above, the proposed mixed-use development proposes to utilize driveway and private sidewalk connections with the Willamette 205 office project to the west in order to access Blankenship Road. A reciprocal access easement agreement between the owner of the Willamette 205 project and the prospective purchasers/developers of the mixed-use project site has been agreed upon. The applicant will provide the City of West Linn with a copy of the access easement agreement when it is executed.

- C. Street connectivity and formation of blocks required. In order to promote efficient vehicular and pedestrian circulation throughout the City, land divisions and large site developments shall produce complete blocks bounded by a connecting network of public and/or private streets, in accordance with the following standards:*
  - 1. Block length and perimeter. The maximum block length shall not exceed 800 feet or 1,800 feet along an arterial.*
  - 2. Street standards. Public and private streets shall also conform to Chapter 92 CDC, Required Improvements, and to any other applicable sections of the West Linn Community Development Code and approved TSP.*
  - 3. Exception. Exceptions to the above standards may be granted when blocks are divided by one or more pathway(s), in conformance with the provisions of CDC 85.200(C), Pedestrian and Bicycle Trails, or cases where extreme topographic (e.g., slope, creek, wetlands, etc.) conditions or compelling functional limitations preclude implementation, not just inconveniences or design challenges.*

**Response:** The proposed development plan does not involve a land division, but it does involve a relatively large development site. However, the steep topography of the site, the existence of fully developed office and residential uses to the west without any roads stubbed to the site, and the City of West Linn's desire to limit road connections to Tannler Drive provide the necessary justification for an exception to the block creation standards. Therefore, this standard is not applicable.

#### **48.030 MINIMUM VEHICULAR REQUIREMENTS FOR RESIDENTIAL USES**

- A. Direct individual access from single-family dwellings and duplex lots to an arterial street, as designated in the transportation element of the Comprehensive Plan, is prohibited for lots or parcels created after the effective date of this code ....*
- B. When any portion of any house is less than 150 feet from the adjacent right-of-way, access to the home is as follows...*
- C. When any portion of one or more homes is more than 150 feet from the adjacent right-of-way, the provisions of subsection B of this section shall apply in addition to the following provisions....*
- D. Access to five or more single-family homes shall be by a street built to full construction code standards. All streets shall be public. This full street provision may only be waived by variance.*



**Response:** The proposed development project does not include any single-family dwellings or duplexes. Therefore, the standards of subsections A. through D are not applicable to this review.

*E. Access and/or service drives for multi-family dwellings shall be fully improved with hard surface pavement:*

- 1. With a minimum of 24-foot width when accommodating two-way traffic; or*
- 2. With a minimum of 15-foot width when accommodating one-way traffic. Horizontal clearance shall be two and one-half feet wide on either side of the driveway.*
- 3. Minimum vertical clearance of 13 feet, six inches.*
- 4. Appropriate turnaround facilities per Fire Chief's standards for emergency vehicles when the drive is over 150 feet long. Fire Department turnaround areas shall not exceed seven percent grade unless waived by the Fire Chief.*
- 5. The grade shall not exceed 10 percent on average, with a maximum of 15 percent.*
- 6. A minimum centerline turning radius of 45 feet for the curve.*

**Response:** Internal driveways through the project site are designed with a minimum width of 24-feet; appropriate vertical clearance, and centerline turning radii. Grades average less than 10 percent, with some portions of the primary driveway between side driveways meeting the maximum 15 percent grade standard. Adequate turnaround areas are provided for cars and small trucks on the side driveways. Side driveways have been kept short so that emergency vehicles and trash collections will not need to use them, or can use them as one leg of a conforming hammerhead-style turnaround. Access plans for the project have been vetted with the Tualatin Valley Fire and Rescue District.

*F. Where on-site maneuvering and/or access drives are necessary to accommodate required parking, in no case shall said maneuvering and/or access drives be less than that required in Chapters 46 and 48 CDC.*

**Response:** The proposed development plan's driveways have been designed consistent with the applicable standards of Chapters 46 and 48.

*G. The number of driveways or curb cuts shall be minimized on arterials or collectors. Consolidation or joint use of existing driveways shall be required when feasible.*

**Response:** The proposed development plan utilizes a single driveway to Tannler Drive – a collector street, as well as a shared access with the Willamette 205 project through an existing driveway to Blankenship Road.

*H. In order to facilitate through traffic and improve neighborhood connections, it may be necessary to construct a public street through a multi-family site.*

**Response:** A public street through the site appears to not be needed because properties to the west are already developed; the property immediately to the south has frontage on both Tannler Drive and Blankenship Road; the property to the north is to be reserved as permanent open space; and the site is bounded by a public street – Tannler Drive- on the east.

*I. Gated accessways to residential development other than a single-family home are prohibited.*

**Response:** No gated accessways are proposed.

#### **48.040 MINIMUM VEHICLE REQUIREMENTS FOR NON-RESIDENTIAL USES**

*Access, egress, and circulation system for all non-residential uses shall not be less than the following:*

- A. Service drives for non-residential uses shall be fully improved with hard surface pavement:*
  - 1. With a minimum of 24-foot width when accommodating two-way traffic; or*
  - 2. With a minimum of 15-foot width when accommodating one-way traffic. Horizontal clearance shall be two and one-half feet wide on either side of the driveway.*
  - 3. Meet the requirements of CDC 48.030(E)(3) through (6).*
  - 4. Pickup window driveways may be 12 feet wide unless the Fire Chief determines additional width is required.*
- B. All non-residential uses shall be served by one or more service drives as determined necessary to provide convenient and safe access to the property and designed according to CDC 48.030(A). In no case shall the design of the service drive or drives require or facilitate the backward movement or other maneuvering of a vehicle within a street, other than an alley.*
- C. All on-site maneuvering and/or access drives shall be maintained pursuant to CDC 46.130.*
- D. Gated accessways to non-residential uses are prohibited unless required for public safety or security.*

**Response:** The proposed mixed-use development will include both residential and non-residential uses. Therefore, these standards are applicable. However, since the standards are largely the same as the standards for residential uses in CDC Section 48.030, please refer to the responses to that section above. The proposed mixed-use development will not include any pickup windows. Therefore, subsection A.4 is not applicable.

#### **48.050 ONE-WAY VEHICULAR ACCESS POINTS**

*Where a proposed parking facility plan indicates only one-way traffic flow on the site, it shall be accommodated by a specific driveway serving the facility, and the entrance drive shall be situated closest to oncoming traffic, and the exit drive shall be situated farthest from oncoming traffic.*

**Response:** The proposed development plan does not include any one-way access points or driveways. Therefore, this standard is not applicable.

#### **48.060 WIDTH AND LOCATION OF CURB CUTS AND ACCESS SEPARATION REQUIREMENTS**

- A. Minimum curb cut width shall be 16 feet.*
- B. Maximum curb cut width shall be 36 feet, except along Highway 43 in which case the maximum curb cut shall be 40 feet. For emergency service providers, including fire stations, the maximum shall be 50 feet.*

**Response:** The proposed development project will have a 26-foot wide curb cut along Tannler Drive, and thus is consistent with the standards of subsections A. and B.

- C. No curb cuts shall be allowed any closer to an intersecting street right-of-way line than the following:*
  - 1. On an arterial when intersected by another arterial, 150 feet.*
  - 2. On an arterial when intersected by a collector, 100 feet.*
  - 3. On an arterial when intersected by a local street, 100 feet.*
  - 4. On a collector when intersecting an arterial street, 100 feet.*
  - 5. On a collector when intersected by another collector or local street, 35 feet.*
  - 6. On a local street when intersecting any other street, 35 feet.*

D. *There shall be a minimum distance between any two adjacent curb cuts on the same side of a public street, except for one-way entrances and exits, as follows:*

1. *On an arterial street, 150 feet.*
2. *On a collector street, 75 feet.*
3. *Between any two curb cuts on the same lot or parcel on a local street, 30 feet.*

**Response:** The proposed development project will have a 26-foot wide curb cut along Tannler Drive separated from Tannler Drive's intersections with Blankenship Road and Greene Street by over 300 feet, and thus is consistent with the standards of subsections C. and D.

E. *A rolled curb may be installed in lieu of curb cuts and access separation requirements.*

**Response:** No rolled curbs are proposed.

F. *Curb cuts shall be kept to the minimum, particularly on Highway 43. Consolidation of driveways is preferred. The standard on Highway 43 is one curb cut per business if consolidation of driveways is not possible.*

G. *Adequate line of sight pursuant to engineering standards should be afforded at each driveway or accessway.*

**Response:** A single curb cut for a driveway to Tannler Drive is proposed, thereby minimizing the number of curb cuts. The driveway location has been selected to provide the optimum sight distance along the site's Tannler Drive frontage.

#### ***48.070 PLANNING DIRECTOR'S AUTHORITY TO RESTRICT ACCESS APPEAL PROVISIONS***

A. *In order to provide for increased traffic movement on congested streets and eliminate turning movement problems, the Planning Director and the City Engineer, or his designee, may restrict the location of driveways on said street and require the location of driveways on adjacent streets upon the finding that the proposed access would:*

1. *Provide inadequate access for emergency vehicles; or*
2. *Cause or increase hazardous conditions to exist which would constitute a clear and present danger to the public health safety and general welfare.*

B. *A decision by the Planning Director may be appealed to the Planning Commission as provided by CDC 99.240.B.*

**Response:** This section is not applicable at this time.

#### ***48.080 BICYCLE AND PEDESTRIAN CIRCULATION***

A. *Within all multi-family developments (except two-family/ duplex dwellings), each residential dwelling shall be connected to vehicular parking stalls, common open space, and recreation facilities by a pedestrian pathway system having a minimum width of six feet and constructed of an all-weather material. The pathway material shall be of a different color or composition from the driveway. (Bicycle routes adjacent to the travel lanes do not have to be of different color or composition.)*

**Response:** The proposed development plan provides for an interconnected network of minimum 6-foot wide private pedestrian sidewalks within the site, the public sidewalk along Tannler Drive, internal access driveways and parking stalls, and to the sidewalks and

driveways of the Willamette 205 project to the west. The sidewalks will be made out of concrete, whereas the parking areas and driveways will be asphalt.

B. *Bicycle and pedestrian ways within a subdivision shall be constructed according to the provisions in CDC 85.200(4)(3).*

**Response:** The proposed development application is not a subdivision. Therefore, this standard is not applicable.

C. *Bicycle and pedestrian ways at commercial or industrial sites shall be provided according to the provisions of Chapter 55 CDC, Design Review.*

**Response:** Please see the responses to the applicable pedestrian and bicycle access standard of Chapter 55 Design Review above.

## XI. COMPLIANCE WITH CHAPTER 52 SIGNS

No details on signage for the proposed mixed-use project are currently available. It is recognized that sign permits will need to be obtained from the City of West Linn prior to the installation of any signs visible from the adjacent public right-of-way. Approval of sign permits is to be done consistent with the standards of Chapter 52.

In general, one project identification sign will be provided for the mixed-use project along Tannler Drive. Section 52.300 allows two freestanding signs for multi-family developments and one freestanding sign for commercial projects. Therefore, it is concluded that one freestanding sign will be able to be permitted for the combined uses of the project. No details are available on what the size, height, materials, or location of the freestanding sign will be.

Section 52.109.B allows parking lot signs up to three square feet in size and a maximum height of five feet above grade and directed to the interior of a parking lot are permitted without permits. It is reasonable to assume that the future tenants of the commercial spaces within the multi-use project will desire to have parking area signs. Such signs will need to be provided consistent with the size and height standards of Section 52.109.B.

## XII. COMPLIANCE WITH 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.*

**Response:** In order to preserve and protect existing trees on the site as part of the development plan, the applicants have decided to set aside tax lot 100 –which contains the

most significant trees on the site – as a reserved open space area, and to concentrate development activities within the lower portion of the site within the area of the reconfigured tax lot 100.

- 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.*

**Response:** No exception to the parking space requirements based upon preservation of existing trees has been requested.

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

**Response:** Tree protection measures to be followed are included in the Arborist's Report in Appendix D.

- 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.*

**Response:** There are no designated Heritage trees on the subject site.

- 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.*

**Response:** 26 percent of the proposed mixed-use project site (tax lot 102 only) will be landscaped. This does not include the preserved open space area on tax lot 100.

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.*

**Response:** Proposed landscape areas will include well defined areas bordered by curbs, sidewalks and buildings. Landscaped areas will be well distributed throughout the

proposed development site. Parking area trees are provided in islands within the parking area so that no more than eight surface parking spaces are provided without being separated by a parking tree island.

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

**Response:** No landscape areas with widths of less than five feet are proposed.

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.*

**Response:** Soils will be amended prior to planting if found to be necessary. Planting details are included on Sheet L1.2.

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.*

**Response:** Proposed parking areas along the site's Tannler Drive frontage are set back at least 20 feet from the right-of-way line. These areas will include landscaping including trees and shrubs, retaining walls, and a ramped sidewalk connection from the Tannler Drive public sidewalk to the private sidewalks located between buildings 7 and 8. Street trees will be provided in the Tannler Drive right-of-way. Parking areas adjacent to other properties exist on the other three sides of the site. Landscaping will be provided between the parking area and the site boundaries on all three sides.

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.*

**Response:** The project site's Tannler Drive frontage will not be comprised of parking area. Therefore, this section is not applicable.

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.*

**Response:** See the response to subsection d. above.

#### ***54.030 PLANTING STRIPS FOR MODIFIED AND NEW STREETS***

*All proposed changes in width in a public street right-of-way or any proposed street improvement shall, where feasible, include allowances for planting strips. Plans and specifications for planting such areas shall be integrated into the general plan of street improvements. This chapter requires any multi-family, commercial, or public facility which causes change in public right-of-way or street improvement to comply with the street tree planting plan and standards.*

**Response:** The proposed development will not create any new streets. The slight increase in the width of Tannler Drive right-of-way will allow for a 13' travel lane, 9' parking, 6" curb, 8' wide curb tight sidewalk, and 6" clear behind sidewalk. No planting strip is proposed with this cross section to minimize the impact to existing adjacent slopes. Street trees will be provided in tree grates along the widened sidewalk, consistent with CDC Section 54.030. Additional right-of-way width may be dedicated at locations where LIDA facilities are required for stormwater management along Tannler Drive for new impervious area from the curb tight sidewalks. In these areas, 6' wide LIDA facilities will be located between the curb and sidewalk, creating a length of "planter strip" area.

#### ***54.040 INSTALLATION***

- A. All landscaping shall be installed according to accepted planting procedures.*
- B. The soil and plant materials shall be of good quality.*
- C. Landscaping shall be installed in accordance with the provisions of this code.*
- D. Certificates of occupancy shall not be issued unless the landscaping requirements have been met or other arrangements have been made and approved by the City such as the posting of a bond.*

**Response:** Sheet L1.2 includes Planting Details. All landscaping will be installed consistent with the standards above as detailed in the plans and notes included on Sheet L1.2.

### **XIII. PROPERTY LINE ADJUSTMENT APPROVAL APPLICATION**

A Property Line Adjustment approval is requested for the three involved lots. The common property line between tax lot 200 and tax lot 102 will be moved to the south to result in tax lot 200 being reduced to approximately 1.17-acres in size. The property line between tax lot 102 and tax lot 100 will be relocated to the north. This will result in tax lot 100 being decreased in size to approximately 3.18-acres in size. As a result of the adjustment of these two property boundaries, tax lot 102 will be increased to approximately 7.01-acres in size.

CDC Section 85.210 provides approval standards for a request to adjust property lines. Those standards are listed below in italics, with a response addressing that standard or standards:

- A. The Director shall approve or deny a request for a property line adjustment based on the criteria stated below:*
  - 1. An additional lot or parcel shall not be created by the line adjustment.*
  - 2. The existing property shall not be reduced in size by the adjustments below the minimum lot or parcel size established by the approved zoning for that district.*
  - 3. Reducing the lot or parcel size shall not violate the site development regulations for that district. For example, the property line adjustment shall not result in an overall loss of density below 70 percent except as allowed by CDC 85.200(f)(7).*

4. *The property line adjustment is as defined by ORS Chapter 92.*
5. *The lot line adjustment will not affect existing easements or existing utilities unless an easement vacation is obtained, replacement easements are dedicated or any required utility relocations are paid for by the applicant.*
6. *Any appeal must be filed in accordance with CDC 99.240.*

B. *The provisions of CDC 85.070 shall also apply to lot line adjustments.*

**Response to Section 85.210.A.(1) through (5):** The proposed property line adjustments of the boundaries of tax lot 102 with the adjacent tax lot 100 to the south and tax lot 200 to the north is consistent with these standards as follows:

1. The proposed adjustment will not result in the creation of any additional properties. The proposal will include three different properties. Only three parcels will exist after the survey effectuating the adjustments is recorded.
2. There is no minimum lot size in the OBC zoning district applied to all three parcels. Tax lots 100 and 200 will both be reduced in size as a result of the proposed property line adjustments. Both the adjusted tax lot 100 (approximately. 3.18-acres) and tax lot 200 (1.17-acres) will therefore be larger than any applicable parcel size standard. All three adjusted parcels will continue to exceed the minimum front lot line standard of 35 feet of the OBC zone and the minimum average lot width standard of 35 feet (Section 21.070 A.(1) and (2)) as illustrated on Sheet P1.2, the Property Line Adjustment Plan. All three parcels will have in excess of 200 feet of lot frontage on Tannler Drive and will have similar average lot widths.
3. All three parcels are currently undeveloped. Therefore, the proposed property line adjustments will not lead to any of the three affected properties being inconsistent with any development standards such as minimum building setbacks, minimum landscaping requirements, or maximum lot coverage standards.
4. ORS Chapter 92, subsection 92.010(12) defines a property line adjustment as: “*a relocation or elimination of all or a portion of the common property line between abutting properties that does not create an additional lot or parcel.*” As noted above, the proposed property line adjustment application would result in the relocation of two property lines for tax lot 102 with two adjacent properties. The proposed adjustments would affect three original parcels, and result in three parcels. No additional lots or parcels would be created.
5. There are no existing easements along the property boundaries to be relocated. There also are no public or private utility lines on any of the affected parcels. Therefore, no existing easements or utilities would be affected by the proposed property line adjustments.

**Response to Section 85.210.B:** Section 85.070 provides the following applicable application processing requirement:

#### ***85.070 ADMINISTRATION AND APPROVAL PROCESS***

*A. The application shall be filed by the record owner(s) of the property or by an authorized agent who has a letter of authorization from the property owners of record. The burden of proof will be upon the applicant to demonstrate the validity of the ownership, if challenged.*

**Response:** The property owners have signed the application form consenting to the submittal of this request.



## XIV. CONCLUSION

The request for a Class II Design review approval to develop a mixed-use commercial and residential project with seven commercial spaces and 192 multiple family dwelling units and a Property Line Adjustment are consistent with the applicable approval standards of the CDC Design Review approval standards as explained above, along with the subject specific reports which follow. ConAm Properties, LLC, therefore, respectfully requests approval of this application with reasonable and appropriate conditions of approval.

**City of West Linn**  
**PRE-APPLICATION CONFERENCE MEETING**  
**SUMMARY NOTES**  
**June 18, 2015**

SUBJECT: Development of a mixed use commercial/multi-family project on approximately 10.1 acres on the west side of Tannler Drive.

FILE: PA-15-23

ATTENDEES: Applicant/Consultants: Rob Morgan, Peter Miller, Michael Robinson, Brent Ahrend, Jaymie Johnson, Gary Alfron, Mandy Flett, Avi Tayar, Joshua Brooking, Janet Jones  
Staff: Peter Spir, Associate Planner, Khoi Le, Development Engineer  
ODOT: Pam Johnson, Doug Baumgartner; TVFR: Ty Darby  
Public attendees: Charles Mathews, Roberta Schwarz, Henry Achcar, Susanne Achcar

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*The following is a summary of the meeting discussion provided to you from staff meeting notes. Additional information may be provided to address any "follow-up" items identified during the meeting. These comments are PRELIMINARY in nature. Please contact the Planning Department with any questions regarding approval criteria, submittal requirements, or any other planning-related items. Please note disclaimer statement below.*

Site Information

Site Address: 2444, 2422 and 2410 Tannler Drive  
Site Area: 10.1 acres  
Neighborhood: Willamette (Savanna Oaks/within 500 feet)  
Comp. Plan: Commercial  
Zoning: OBC (Office Business Center)

Proposal: The applicant proposes to build seven multi-story blocks of mixed development comprising commercial on the first floor and multi-family residential above. Per CDC Chapter 21.050(2) the proposed uses are permitted under prescribed conditions:

2. *Multiple-family units, as a mixed use in conjunction with commercial development, only above the first floor of the structure.*

Class II Design Review is required per CDC Chapter 55.020(B). Compliance with the criteria of Chapter 55, other chapters referenced in Chapter 55 and the underlying OBC zone (CDC Chapter 21) is required.

Engineering Comments: contact Khoi Le at [Kle@westlinnoregon.gov](mailto:Kle@westlinnoregon.gov)

Building Department comments: for SDC's contact Jim Clark at [jclark@westlinnoregon.gov](mailto:jclark@westlinnoregon.gov)

Tualatin Valley Fire and Rescue contact: Ty Darby at [ty.darby@tvfr.com](mailto:ty.darby@tvfr.com)

## Process

For the Class II Design Review, address the submittal requirements and responses to the criteria of 55 and associated/referenced chapters and Chapter 21 standards. N/A is not an acceptable response to the approval criteria. The submittal requirements may be waived, but the applicant must first identify the specific submittal requirement and request, in letter form, that it be waived by the Planning Manager and must identify the specific grounds for that waiver.

A neighborhood meeting is required per 99.038. Follow the procedures explicitly. Please contact the Willamette Neighborhood Association president at [WillametteNA@westlinnoregon.gov](mailto:WillametteNA@westlinnoregon.gov) and the Savanna Oaks president at [SavannaOaksNA@westlinnoregon.gov](mailto:SavannaOaksNA@westlinnoregon.gov).

The deposit fee for both Design Reviews is \$4,000 plus 4% of the construction value to a maximum amount of \$20,000. The CDC is online at <http://westlinnoregon.gov/cdc>.

Once the application and deposit/fee are submitted, the City has 30 days to determine if the application is complete or not. If the application is not complete, the applicant has 180 days to make it complete or provide written notice to staff that no other information will be provided.

Once the submittal is declared complete, staff will schedule the Planning Commission hearing date and post notice. Following the Planning Commission hearing and decision there is a 14-day window to appeal the Planning Commission's decision to City Council. If no appeal has been received by the close of the appeal period, the Planning Commission's decision becomes final and the applicant may move forward with the development of their proposal.

Pre-application notes are void after 18 months. After 18 months with no application approved or in process, a new pre-application conference is required.

***Typical land use applications can take 6-10 months from beginning to end.***

**DISCLAIMER:** This summary discussion covers issues identified to date. It does not imply that these are the only issues. The burden of proof is on the applicant to demonstrate that all approval criteria have been met. These notes do not constitute an endorsement of the proposed application ***or provide any assurance of potential outcomes***. Staff responses are based on limited material presented at this pre-application meeting. New issues, requirements, etc. could emerge as the application is developed. ***A new pre-application conference would have to be scheduled one that period lapses and these notes would no longer be valid. Any changes to the CDC standards may require a different design or submittal.***

**AFFIDAVIT OF MAILING OF NOTICE OF NEIGHBORHOOD CONTACT LETTERS  
REQUIRED BY WEST LINN COMMUNITY DEVELOPMENT CODE 99.038(C)**

STATE OF OREGON            )  
                                      ) ss.  
County of Multnomah        )

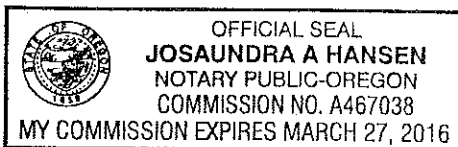
I, Michael C. Robinson, being duly sworn, state that on the 15th day of June, 2015, I caused to have mailed to each of the persons on the attached list, labeled as "**Exhibit A**", a notice of two (2) neighborhood association meetings to discuss a proposed development at the northwest corner of Blankenship Road and Tannler Drive. Copies of the notices so mailed are attached hereto as "**Exhibit B**".

I further state that said mailed notices were enclosed in envelopes plainly addressed to said persons and were deposited on the date indicated above in the United States Post Office with postage prepaid thereon.

Dated this 15th day of June, 2015

Michael Carlo Paley  
Signature

Subscribed and sworn to, or affirmed, before me this 15<sup>th</sup> day of June, 2015.



Josaundra A. Hansen  
Notary Public for the State of Oregon  
County of Multnomah  
My commission expires: 3-27-2016

## **Exhibit A**

### Willamette Neighborhood Association

Beth Smolens  
1852 Fourth Avenue  
West Linn, OR 97068

Elizabeth Rocchia  
957 Willamette Falls Drive  
West Linn, OR 97068

Julia Simpson  
1671 Killarney Drive  
West Linn, OR 97068

Michael Selvaggio  
1671 Killarney Drive  
West Linn, OR 97068

### Savanna Oaks Neighborhood Association

Ed Schwarz  
2206 Tannler Drive  
West Linn, OR 97068

Ken Pryor  
2119 Greene Street  
West Linn, OR 97068

Patrick McGuire  
1841 Barnes Circle  
West Linn, OR 97068

Michael C. Robinson  
MRobinson@perkinscoie.com  
D. (503) 727-2264  
F (503) 346-2264

June 15, 2015

**BY CERTIFIED MAIL;  
RETURN RECEIPT REQUESTED**

Mr. Ed Schwarz, President  
Savanna Oaks Neighborhood Association  
2206 Tannler Drive  
West Linn, OR 97068

**BY CERTIFIED MAIL;  
RETURN RECEIPT REQUESTED**

Mr. Ken Pryor, Vice President  
Savanna Oaks Neighborhood Association  
2119 Greene Street  
West Linn, OR 97068

**Re: Meeting to Discuss a Class II Design Review Application for about 10.1 Acres of the Site Located at the Northwest Corner of Tannler Drive and Blankenship Road in the OBC Zone**

Dear Mr. Schwarz and Mr. Pryor:

I am writing to you in your respective capacities as President and Vice President of the Savanna Oak Neighborhood Association and as the designee under CDC 99.038 on behalf of my client, ConAm Properties, LLC ("ConAm"). ConAm plans to submit a Class II Design Review application to the City of West Linn.

West Linn Community Development Code ("CDC") 99.038 requires that an applicant contact the Savanna Oaks Neighborhood Association regarding a mixed-use project for this property. The property contains approximately 10.1 acres and is located at the northwest corner of Tannler Drive and Blankenship Road. A map of the property is attached. The property is located in the Willamette Neighborhood Association area and is adjacent to the Savanna Oaks Neighborhood area.

The property is designated "Commercial" on the West Linn Comprehensive Plan map and is zoned Office Business Center ("OBC"). The OBC zone allows multiple-family dwellings above a building's first floor, where a commercial use is located on the first floor, as a use permitted under specified conditions. CDC 21.050.2. The application will propose approximately 195 multi-family units above the first floor of each building with a commercial use on each building's first floor.

ConAm invites the neighborhood association, its officers, its members, and any interested person to attend the Savanna Oaks Neighborhood Association's regularly scheduled monthly meeting beginning at 7:00 pm on Tuesday, July 7, 2015 at the Willamette Fire Station located at 1860

LEGAL126322577.2  
June 15, 2015

**EXHIBIT B**

Mr. Ed Schwarz, President  
Mr. Ken Pryor, Vice President  
June 15, 2015  
Page 2

Willamette Falls Drive in West Linn in order to discuss ConAm's proposal in more detail. Because ConAm's discussion of its proposal will be at the Neighborhood Association's regular monthly meeting, the proposal may not be the only topic discussed at the meeting.

Any person interested in ConAm's proposal should contact their neighborhood association president or designee with any questions they may want ConAm to answer at the meeting.

Very truly yours,

Michael C. Robinson

MCR:rsp  
Enclosure

cc: Mr. Rob Morgan (via email) (w/ encl.)  
Mr. Chris Kerr (via email) (w/ encl.)  
Mr. Patrick McGuire, Treasurer, Savanna Oaks Neighborhood Association (via certified mail; return receipt requested) (w/ encl.)

Mr. Ed Schwarz, President  
Mr. Ken Pryor, Vice President  
June 15, 2015  
Page 3

bcc: Mr. Mike Peebles (via email) (w/ encl.)



Michael C. Robinson  
MRobinson@perkinscoie.com  
D (503) 727-2264  
F (503) 346-2264

June 15, 2015

**BY CERTIFIED MAIL;  
RETURN RECEIPT REQUESTED**

Mr. Michael Selvaggio, President  
Willamette Neighborhood Association  
1671 Killarney Drive  
West Linn, OR 97068

**Re: Meeting to Discuss a Class II Design Review Application for about 10.1 Acres of the Site Located at the Northwest Corner of Tanner Drive and Blankenship Road in the OBC Zone**

Dear Mr. Selvaggio:

I am writing to you in your capacity as President of the Willamette Neighborhood Association on behalf of my client, ConAm Properties, LLC ("ConAm"). ConAm plans to submit a Class II Design Review application to the City of West Linn.

West Linn Community Development Code ("CDC") 99.038 requires that an applicant contact the Willamette Neighborhood Association regarding a mixed-use project for this property. The property contains approximately 10.1 acres and is located at the northwest corner of Tanner Drive and Blankenship Road. A map of the property is attached. The property is located in the Willamette Neighborhood Association area and is adjacent to the Savanna Oaks Neighborhood area.

The property is designated "Commercial" on the West Linn Comprehensive Plan map and is zoned Office Business Center ("OBC"). The OBC zone allows multiple-family dwellings above a building's first floor, where a commercial use is located on the first floor, as a use permitted under specified conditions. CDC 21.050.2. The application will propose approximately 195 multiple-family units above the first floor of each building with a commercial use on each building's first floor.

ConAm invites the neighborhood association, its officers, its members, and any interested person to attend the Willamette Neighborhood Association's regularly scheduled monthly meeting beginning at 7:00 pm on Wednesday, July 8, 2015 at Pacific West Bank, 2040 8th Avenue, West Linn, Oregon in order to discuss ConAm's proposal in more detail. Because ConAm's

Mr. Michael Selvaggio, President

June 15, 2015

Page 2

discussion of its proposal will be at the Neighborhood Association's regular monthly meeting, the proposal may not be the only topic discussed at the meeting.

Any person interested in ConAm's proposal should contact their neighborhood association president or designee with any questions they may want ConAm to answer at the meeting.

Very truly yours,

Michael C. Robinson

MCR:rsp

Enclosure

cc: Mr. Rob Morgan (via email) (w/ encl.)  
Mr. Chris Kerr (via email) (w/ encl.)  
Ms. Elizabeth Rocchia, Designee for the Willamette Neighborhood Association and Willamette Neighborhood Association Treasurer (via certified mail; return receipt requested) (w/ encl.)  
Ms. Julia Thompson, Willamette Neighborhood Association Vice-President (via certified mail; return receipt requested) (w/ encl.)  
Ms. Beth Smolens, Willamette Neighborhood Association Secretary (via certified mail; return receipt requested) (w/ encl.)

Mr. Michael Selvaggio, President  
June 15, 2015  
Page 3

bcc: Mr. Mike Peebles (via email) (w/ encl.)



Michael C. Robinson  
MRobinson@perkinscoie.com  
D. (503) 727-2264  
F. (503) 346-2264

May 20, 2015

**BY CERTIFIED MAIL;  
RETURN RECEIPT REQUESTED**

Mr. Ed Schwarz, President  
Savanna Oaks Neighborhood Association  
2206 Tannler Drive  
West Linn, OR 97068

**BY CERTIFIED MAIL;  
RETURN RECEIPT REQUESTED**

Mr. Ken Pryor, Vice President  
Savanna Oaks Neighborhood Association  
2119 Greene Street  
West Linn, OR 97068

**Re: Neighborhood Association Contact Request to Discuss a Class II Design Review  
Application for a Multiple Family Development in Conjunction with Commercial  
Development on the Approximately 10.1 Acre Property Located at the Northwest  
Corner of Tannler Drive and Blankenship Road**

Dear Mr. Schwarz and Mr. Pryor:

I am writing to you in your respective capacities as the President of the Savanna Oaks Neighborhood Association and as the association's designee for this request on behalf of my client ConAm Properties, LLC ("ConAm"). ConAm plans to make an application to the City of West Linn for a Class II Design Review application on the property described below.

West Linn Community Development Code ("CDC") 99.038.C. requires an applicant to request an opportunity to make a neighborhood contact with the Savanna Oaks Neighborhood Association within sixty (60) days of the date of mailing of this letter regarding the proposed Class II Design Review application for this property. I have attached two aerial photographs showing the property. The property contains approximately 10.1 acres and is located at the northwest corner of Tannler Drive and Blankenship Road. The approximately 1.2 acre along Blankenship Road is reserved for future development. The property is located in the Willamette Neighborhood Association area and is adjacent to the Savanna Oaks Neighborhood area.

The property is designated "Commercial" on the West Linn Comprehensive Plan map and is zoned Office Business Center ("OBC") on the West Linn zoning map. The proposed Design Review application will provide for about 210 multiple-family dwelling units above the first floor of the structures with commercial development located on the first floor of the structures, as provided for in CDC 21.050.2.

Mr. Ed Schwarz, President  
Mr. Ken Pryor, Vice President  
May 20, 2015  
Page 2

ConAm would like to make its presentation regarding the application during your neighborhood association's regular monthly meeting on July 7, 2015, at 7:00 p.m. at the Willamette Fire Station located at 1860 Willamette Falls Drive in West Linn. This letter requests the neighborhood contact be held at this meeting date, time and location. Please contact me at 503-727-2264, or at [mrobinson@perkinscoie.com](mailto:mrobinson@perkinscoie.com), if you have any questions.

Very truly yours,



Michael C. Robinson

MCR:rsp  
Enclosures

cc: Mr. Rob Morgan (via email) (w/ encls.)  
Mr. Chris Kerr (via email) (w/ encls.)





## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Ed Schwarz, President  
Savanna Oaks Neighborhood Association  
2206 Tannler Drive  
West Linn, OR 97068

2. Article Number  
(Transfer from service label)

7014 2120 0004 7518 7328

PS Form 3811, July 2013

Domestic Return Receipt

## COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Ed Schwarz*
☐ Agent  
☐ Addressee

B. Received by (Printed Name)

EDWARD SCHWARTZ

C. Date of Delivery

5-22-15

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail® ☐ Priority Mail Express™  
☐ Registered ☐ Return Receipt for Merchandise  
☐ Insured Mail ☐ Collect on Delivery
4. Restricted Delivery? (Extra Fee) ☐ Yes

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Ken Pryor, Vice President  
Savanna Oaks Neighborhood Association  
2119 Greene Street  
West Linn, OR 97068

2. Article Number  
(Transfer from service label)

7014 2120 0004 7518 7335

PS Form 3811, July 2013

Domestic Return Receipt

## COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Ken Pryor*
☐ Agent  
☐ Addressee

B. Received by (Printed Name)

KEN PRYOR

C. Date of Delivery

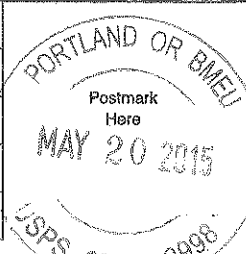
5-29-15

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail® ☐ Priority Mail Express™  
☐ Registered ☐ Return Receipt for Merchandise  
☐ Insured Mail ☐ Collect on Delivery
4. Restricted Delivery? (Extra Fee) ☐ Yes
**U.S. Postal Service™**  
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For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.**OFFICIAL USE**

Postage	\$ 1.19
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	0.00
Total Postage & Fees	\$ 7.19



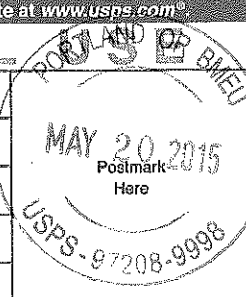
Sent To: Mr. Ken Pryor, Vice President  
Savanna Oaks Neighborhood Association  
2119 Greene Street  
West Linn, OR 97068

PS Form 3800, July 2014

See Reverse for Instructions

**U.S. Postal Service™**  
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For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.**OFFICIAL USE**

Postage	\$ 1.19
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	0.00
Total Postage & Fees	\$ 7.19



Sent To: Mr. Ed Schwarz, President  
Savanna Oaks Neighborhood Association  
2206 Tannler Drive  
West Linn, OR 97068

PS Form 3800, July 2014

See Reverse for Instructions

7014 2120 0004 7518 7335

7014 2120 0004 7518 7328



Michael C. Robinson  
MRobinson@perkinscoie.com  
D. (503) 727-2264  
F. (503) 346-2264

May 20, 2015

**BY CERTIFIED MAIL;  
RETURN RECEIPT REQUESTED**

Mr. Michael Selvaggio, President  
Willamette Neighborhood Association  
1671 Killarney Drive  
West Linn, OR 97068

**Re: Neighborhood Association Contact Request to Discuss a Class II Design Review  
Application for a Multiple Family Development in Conjunction with Commercial  
Development on the Approximately 10.1 Acre Property Located at the Northwest  
Corner of Tannler Drive and Blankenship Road**

Dear Mr. Selvaggio:

I am writing to you in your capacity as the President of the Willamette Neighborhood Association on behalf of my client ConAm Properties, LLC ("ConAm"). The City informed me that your association has not provided the name of an additional designee for this letter. ConAm plans to make an application to the City of West Linn for a Class II Design Review application on the property described below.

West Linn Community Development Code ("CDC") 99.038.C. requires an applicant to request an opportunity to make a neighborhood contact with the Willamette Neighborhood Association within sixty (60) days of the date of mailing of this letter regarding the proposed Class II Design Review application for this property. I have attached two aerial photographs showing the property. The property contains approximately 10.1 acres and is located at the northwest corner of Tannler Drive and Blankenship Road. The approximately 1.2 acre along Blankenship Road is reserved for future development. The property is located in the Willamette Neighborhood Association area and is adjacent to the Savanna Oaks Neighborhood area.

The property is designated "Commercial" on the West Linn Comprehensive Plan map and is zoned Office Business Center ("OBC") on the West Linn zoning map. The proposed Design Review application will provide for about 210 multiple-family dwelling units above the first floor of the structures with commercial development located on the first floor of the structures, as provided for in CDC 21.050.2.

Mr. Michael Selvaggio, President  
May 20, 2015  
Page 2

ConAm would like to make its presentation regarding the application during your neighborhood association's regular monthly meeting on July 8, 2015, at 7:00 p.m. at the Pacific West Bank, located at 2000 SW 8th Avenue in West Linn. This letter requests the neighborhood contact be held at this meeting date, time and location. Please contact me at 503-727-2264, or at [mrobinson@perkinscoie.com](mailto:mrobinson@perkinscoie.com), if you have any questions.

Very truly yours,



Michael C. Robinson

MCR:rsp  
Enclosures

cc: Mr. Rob Morgan (via email) (w/ encls.)  
Mr. Chris Kerr (via email) (w/ encls.)



SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature: <i>[Signature]</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>Article Addressed to:</p> <p>Mr. Michael Selvaggio, President Willamette Neighborhood Association 1671 Killarney Drive West Linn, OR 97068</p>		<p>B. Received by (Printed Name) <u>MICHAEL SELVAGGIO</u></p> <p>C. Date of Delivery <u>5-23-15</u></p>	
		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If YES, enter delivery address below:</p>	
		<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Priority Mail Express™</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> Collect on Delivery</p>	
		<p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label)</p>		<p>7014 2120 0004 7518 7342</p>	
PS Form 3811, July 2013		Domestic Return Receipt	

7014 2120 0004 7518 7342

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OFFICIAL USE	
Postage	\$ <i>3.30</i>
Certified Fee	<i>2.70</i>
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ <i>7.14</i>
<p>Sent To: Mr. Michael Selvaggio, President Willamette Neighborhood Association Street &amp; Apt. No., or PO Box No. 1671 Killarney Drive City, State, ZIP+4 West Linn, OR 97068</p>	
<p>PS Form 3800, July 2014 See Reverse for Instructions</p>	

PERKINScoie

1120 NW Couch Street  
10th Floor  
Portland, OR 97209-4128

① +1 503.727.2000  
② +1 503.727.2222  
perkinscoie.com

Michael C. Robinson  
MRobinson@perkinscoie.com  
D. (503) 727-2264  
F. (503) 346-2264

June 15, 2015

**BY CERTIFIED MAIL;  
RETURN RECEIPT REQUESTED**

Mr. Ed Schwarz, President  
Savanna Oaks Neighborhood Association  
2206 Tannler Drive  
West Linn, OR 97068

**BY CERTIFIED MAIL;  
RETURN RECEIPT REQUESTED**

Mr. Ken Pryor, Vice President  
Savanna Oaks Neighborhood Association  
2119 Greene Street  
West Linn, OR 97068

**Re: Meeting to Discuss a Class II Design Review Application for about 10.1 Acres of the Site Located at the Northwest Corner of Tannler Drive and Blankenship Road in the OBC Zone**

Dear Mr. Schwarz and Mr. Pryor:

I am writing to you in your respective capacities as President and Vice President of the Savanna Oak Neighborhood Association and as the designee under CDC 99.038 on behalf of my client, ConAm Properties, LLC ("ConAm"). ConAm plans to submit a Class II Design Review application to the City of West Linn.

West Linn Community Development Code ("CDC") 99.038 requires that an applicant contact the Savanna Oaks Neighborhood Association regarding a mixed-use project for this property. The property contains approximately 10.1 acres and is located at the northwest corner of Tannler Drive and Blankenship Road. A map of the property is attached. The property is located in the Willamette Neighborhood Association area and is adjacent to the Savanna Oaks Neighborhood area.

The property is designated "Commercial" on the West Linn Comprehensive Plan map and is zoned Office Business Center ("OBC"). The OBC zone allows multiple-family dwellings above a building's first floor, where a commercial use is located on the first floor, as a use permitted under specified conditions. CDC 21.050.2. The application will propose approximately 195 multi-family units above the first floor of each building with a commercial use on each building's first floor.

ConAm invites the neighborhood association, its officers, its members, and any interested person to attend the Savanna Oaks Neighborhood Association's regularly scheduled monthly meeting beginning at 7:00 pm on Tuesday, July 7, 2015 at the Willamette Fire Station located at 1860

LEGAL126322577.2  
Perkinscoie LLP

Mr. Ed Schwarz, President  
Mr. Ken Pryor, Vice President  
June 15, 2015  
Page 2

Willamette Falls Drive in West Linn in order to discuss ConAm's proposal in more detail. Because ConAm's discussion of its proposal will be at the Neighborhood Association's regular monthly meeting, the proposal may not be the only topic discussed at the meeting.

Any person interested in ConAm's proposal should contact their neighborhood association president or designee with any questions they may want ConAm to answer at the meeting.

Very truly yours,



Michael C. Robinson

MCR:rsp  
Enclosure

cc: Mr. Rob Morgan (via email) (w/ encl.)  
Mr. Chris Kerr (via email) (w/ encl.)  
Mr. Patrick McGuire, Treasurer, Savanna Oaks Neighborhood Association (via certified mail; return receipt requested) (w/ encl.)





7015 0640 0000 6532 1754

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PORTLAND OR BMEU  
JUN 25 2015  
Postmark Here  
USPS-9775432-18  
M. Robinson

Sent to: **Ed Schwarz**  
Street and Apt. No., or PO Box No.: **2206 Tannler Drive**  
City, State, ZIP+4®: **West Linn, OR 97068**

Certified Mail Fee: **1.20**  
Extra Services & Fees (check box, add fee as appropriate):  
☒ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
 Postage: **7.15**  
 Total Postage and Fees: **8.35**

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Ed Schwarz  
2206 Tannler Drive  
West Linn, OR 97068



9590 9403 0147 5086 3576 63

## 2. Article Number (Transfer from service label)

7015 0640 0000 6532 1754

PS Form 3811, April 2015 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

**X Robert Schwarz** ☐ Agent ☐ Addressee  
 B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
 If YES, enter delivery address below: ☐ No

## 3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over \$500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

7015 0640 0000 6532 1761

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**OFFICIAL USE**  
PORTLAND OR BMEU  
JUN 25 2015  
Postmark Here  
USPS-9775432-18  
M. Robinson

Sent to: **Ken Pryor**  
Street and Apt. No., or PO Box No.: **2119 Greene Street**  
City, State, ZIP+4®: **West Linn, OR 97068**

Certified Mail Fee: **1.20**  
Extra Services & Fees (check box, add fee as appropriate):  
☒ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
 Postage: **7.15**  
 Total Postage and Fees: **8.35**

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Ken Pryor  
2119 Greene Street  
West Linn, OR 97068



9590 9403 0147 5086 3576 49

## 2. Article Number (Transfer from service label)

7015 0640 0000 6532 1761

PS Form 3811, April 2015 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

**X Ken Pryor** ☐ Agent ☐ Addressee  
 B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
 If YES, enter delivery address below: ☐ No

## 3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over \$500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
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- ☐ Signature Confirmation Restricted Delivery

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JUN 25 2015  
Postmark Here  
USPS-9775432-18  
M. Robinson

Sent to: **Patrick McGuire**  
Street and Apt. No., or PO Box No.: **1841 Barnes Circle**  
City, State, ZIP+4®: **West Linn, OR 97068**

Certified Mail Fee: **1.20**  
Extra Services & Fees (check box, add fee as appropriate):  
☒ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
 Postage: **7.15**  
 Total Postage and Fees: **8.35**

## SENDER: COMPLETE THIS SECTION

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Patrick McGuire  
1841 Barnes Circle  
West Linn, OR 97068



9590 9403 0147 5086 3576 56

## 2. Article Number (Transfer from service label)

7015 0640 0000 6532 1785

PS Form 3811, April 2015 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

**X Patrick McGuire** ☐ Agent ☐ Addressee  
 B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
 If YES, enter delivery address below: ☐ No

## 3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over \$500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt



PERKINS COIE

1120 NW Couch Street  
10th Floor  
Portland, OR 97209-4128

☎ +1.503.727.2000  
☎ +1.503.727.2222  
perkinscoie.com

Michael C. Robinson  
MRobinson@perkinscoie.com  
D. (503) 727-2264  
F. (503) 346-2264

June 15, 2015

**BY CERTIFIED MAIL;  
RETURN RECEIPT REQUESTED**

Mr. Michael Selvaggio, President  
Willamette Neighborhood Association  
1671 Killarney Drive  
West Linn, OR 97068

**Re: Meeting to Discuss a Class II Design Review Application for about 10.1 Acres of the Site Located at the Northwest Corner of Tannler Drive and Blankenship Road in the OBC Zone**

Dear Mr. Selvaggio:

I am writing to you in your capacity as President of the Willamette Neighborhood Association on behalf of my client, ConAm Properties, LLC ("ConAm"). ConAm plans to submit a Class II Design Review application to the City of West Linn.

West Linn Community Development Code ("CDC") 99.038 requires that an applicant contact the Willamette Neighborhood Association regarding a mixed-use project for this property. The property contains approximately 10.1 acres and is located at the northwest corner of Tannler Drive and Blankenship Road. A map of the property is attached. The property is located in the Willamette Neighborhood Association area and is adjacent to the Savanna Oaks Neighborhood area.

The property is designated "Commercial" on the West Linn Comprehensive Plan map and is zoned Office Business Center ("OBC"). The OBC zone allows multiple-family dwellings above a building's first floor, where a commercial use is located on the first floor, as a use permitted under specified conditions. CDC 21.050.2. The application will propose approximately 195 multiple-family units above the first floor of each building with a commercial use on each building's first floor.

ConAm invites the neighborhood association, its officers, its members, and any interested person to attend the Willamette Neighborhood Association's regularly scheduled monthly meeting beginning at 7:00 pm on Wednesday, July 8, 2015 at Pacific West Bank, 2040 8th Avenue, West Linn, Oregon in order to discuss ConAm's proposal in more detail. Because ConAm's

Mr. Michael Selvaggio, President

June 15, 2015

Page 2

discussion of its proposal will be at the Neighborhood Association's regular monthly meeting, the proposal may not be the only topic discussed at the meeting.

Any person interested in ConAm's proposal should contact their neighborhood association president or designee with any questions they may want ConAm to answer at the meeting.

Very truly yours,



Michael C. Robinson

MCR:rsp

Enclosure

cc: Mr. Rob Morgan (via email) (w/ encl.)  
Mr. Chris Kerr (via email) (w/ encl.)  
Ms. Elizabeth Rocchia, Designee for the Willamette Neighborhood Association and Willamette Neighborhood Association Treasurer (via certified mail; return receipt requested) (w/ encl.)  
Ms. Julia Thompson, Willamette Neighborhood Association Vice-President (via certified mail; return receipt requested) (w/ encl.)  
Ms. Beth Smolens, Willamette Neighborhood Association Secretary (via certified mail; return receipt requested) (w/ encl.)



# PERKINScoie

Perkins Coie LLP | [PerkinsCoie.com](http://PerkinsCoie.com)

1120 NW Couch Street, 10th Floor  
Portland, OR 97209-4128

Julia Thompson  
1671 Killarney Drive  
West Linn, OR 97068

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p> <p>1. Article Addressed to:</p> <p>Julia Thompson 1671 Killarney Drive West Linn, OR 97068</p>		<p>A. Signature <span style="float: right;"><input type="checkbox"/> Agent <input type="checkbox"/> Addressee</span></p> <p><b>X</b></p> <p>B. Received by (Printed Name)</p> <p>C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>	
<p>2. Article Number (Transfer from service label)</p> <p>7015 0640 0000 6532 1747</p>		<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature <span style="float: right;"><input type="checkbox"/> Priority Mail Express®</span></p> <p><input type="checkbox"/> Adult Signature Restricted Delivery <span style="float: right;"><input type="checkbox"/> Registered Mail™</span></p> <p><input checked="" type="checkbox"/> Certified Mail® <span style="float: right;"><input type="checkbox"/> Registered Mail Restricted Delivery</span></p> <p><input type="checkbox"/> Certified Mail Restricted Delivery <span style="float: right;"><input type="checkbox"/> Return Receipt for Merchandise</span></p> <p><input type="checkbox"/> Collect on Delivery <span style="float: right;"><input type="checkbox"/> Signature Confirmation™</span></p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery <span style="float: right;"><input type="checkbox"/> Signature Confirmation Restricted Delivery</span></p> <p><input type="checkbox"/> Insured Mail</p> <p><input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)</p>	

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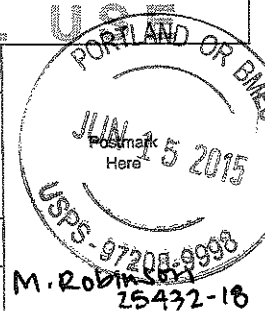


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7015 0640 0000 6532 1747

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<p>Certified Mail Fee \$</p> <p>Extra Services &amp; Fees (check box, add fee as appropriate)</p> <p><input type="checkbox"/> Return Receipt (hardcopy) \$</p> <p><input type="checkbox"/> Return Receipt (electronic) \$</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery \$</p> <p><input type="checkbox"/> Adult Signature Required \$</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery \$</p> <p>Postage \$</p> <p>Total Postage and Fees \$</p>	<p>Postmark Here</p> <p>M. Robinson 25432-18</p>
<p>Sent To Julia Thompson</p> <p>Street and Apt. No., or PO Box No. 1671 Killarney Drive</p> <p>City, State, ZIP+4® West Linn, OR 97068</p>	
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions	

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<p>Sent To Julia Thompson</p> <p>Street and Apt. No., or PO Box No. 1671 Killarney Drive</p> <p>City, State, ZIP+4® West Linn, OR 97068</p>	
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Attn: Mike C. Robinson  
1120 NW Couch St. 10th FL  
Portland, OR 97209

25432-  
0018

USPS TRACKING#



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  - A unique identifier for your mailpiece.
  - Electronic verification of delivery or attempted delivery.
  - A record of delivery (including the recipient's signature) that is retained by the Postal Service® for a specified period.
- Important Reminders:**
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  - Certified Mail service is not available for international mail.
  - Insurance coverage is not available for purchase with Certified Mail service. However, the purchase of Certified Mail service does not change the insurance coverage automatically included with certain Priority Mail items.
  - For an additional fee, and with a proper endorsement on the mailpiece, you may request the following services:
    - Return receipt service, which provides a record of delivery (including the recipient's signature). You can request a hardcopy return receipt or an electronic version. For a hardcopy return receipt, complete PS Form 3811, *Domestic Return Receipt*, attach PS Form 3811 to your mailpiece; for an electronic return receipt, see a retail associate for assistance. To receive a duplicate return receipt for no additional fee, present this USPS®-postmarked Certified Mail receipt to the retail associate.
    - Restricted delivery service, which provides delivery to the addressee specified by name, or to the addressee's authorized agent.
    - Adult signature service, which requires the signer to be at least 21 years of age (not available at retail).
    - Adult signature restricted delivery service, which requires the signer to be at least 21 years of age and provides delivery to the addressee specified by name, or to the addressee's authorized agent (not available at retail).
  - To ensure that your Certified Mail receipt is accepted as legal proof of mailing, it should bear a USPS postmark. If you would like a postmark on this Certified Mail receipt, please present your Certified Mail item at a Post Office™ for postmarking. If you don't need a postmark on this Certified Mail receipt, detach the barcoded portion of this label, affix it to the mailpiece, apply appropriate postage, and deposit the mailpiece.
- IMPORTANT: Save this receipt for your records.**

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Extra Services & Fees (check box, add fee as appropriate)  
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☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
 Postage \$  
 Total Postage and Fees \$

Sent To **Beth Smolens**  
 Street and Apt. No., or PO Box No. **PO Box 604**  
 City, State, ZIP+4® **West Linn, OR 97068**

Postmark **JUN 29 2015**  
**PORTLAND OR BMEU**  
**USPS-97208-9998**

**SENDER: COMPLETE THIS SECTION**

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 ■ Print your name and address on the reverse so that we can return the card to you.  
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1. Article Addressed to:  
**Beth Smolens**  
**PO Box 604**  
**West Linn, OR 97068**

2. Article Number (Transfer from service label)  
**7015 0640 0004 7296 5152**

**PS Form 3811, April 2015 PSN 7530-02-000-9053**

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature **X** *[Signature]* ☐ Agent ☐ Addressee

B. Received by (Printed Name) **Iron Helligus** C. Date of Delivery **JUN 29 2015**

D. Is delivery address different from item 1? ☐ Yes ☒ No  
 If YES, enter delivery address below:

3. Service Type  
☐ Adult Signature ☐ Priority Mail Express®  
☐ Adult Signature Restricted Delivery ☐ Registered Mail™  
☒ Certified Mail® ☐ Registered Mail Restricted Delivery  
☐ Certified Mail Restricted Delivery ☒ Return Receipt for Merchandise  
☐ Collect on Delivery ☐ Signature Confirmation™  
☐ Collect on Delivery Restricted Delivery ☐ Signature Confirmation Restricted Delivery  
☐ Insured Mail ☐ Signature Confirmation Restricted Delivery (over \$500)  
☐ Insured Mail Restricted Delivery (over \$500)

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Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
 Postage \$  
 Total Postage and Fees \$

Sent To **Elizabeth Rocchia**  
 Street and Apt. No., or PO Box No. **967 Willamette Falls Drive**  
 City, State, ZIP+4® **West Linn, OR 97068**

Postmark **JUN 29 2015**  
**PORTLAND OR BMEU**  
**USPS-97208-9998**

**SENDER: COMPLETE THIS SECTION**

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 ■ Print your name and address on the reverse so that we can return the card to you.  
 ■ Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:  
**Elizabeth Rocchia**  
**957 Willamette Falls Drive**  
**West Linn, OR 97068**

2. Article Number (Transfer from service label)  
**7015 0640 0000 6532 1723**

**PS Form 3811, April 2015 PSN 7530-02-000-9053**

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature **X** *[Signature]* ☐ Agent ☐ Addressee

B. Received by (Printed Name) **EROCCHIA** C. Date of Delivery **JUN 29 2015**

D. Is delivery address different from item 1? ☐ Yes ☒ No  
 If YES, enter delivery address below:

3. Service Type  
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☐ Adult Signature Restricted Delivery ☐ Registered Mail™  
☒ Certified Mail® ☐ Registered Mail Restricted Delivery  
☐ Certified Mail Restricted Delivery ☒ Return Receipt for Merchandise  
☐ Collect on Delivery ☐ Signature Confirmation™  
☐ Collect on Delivery Restricted Delivery ☐ Signature Confirmation Restricted Delivery  
☐ Insured Mail ☐ Signature Confirmation Restricted Delivery (over \$500)  
☐ Insured Mail Restricted Delivery (over \$500)

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☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
 Postage \$  
 Total Postage and Fees \$

Sent To **Michael Selvaggio**  
 Street and Apt. No., or PO Box No. **1671 Killarney Drive**  
 City, State, ZIP+4® **West Linn, OR 97068**

Postmark **JUN 18 2015**  
**PORTLAND OR BMEU**  
**USPS-97208-9998**

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

## SENDER: COMPLETE THIS SECTION

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Julia Thompson  
1671 Killarney Drive  
West Linn, OR 97068



9590 9403 0147 5086 3575 40

2. Article Number (Transfer from service label)

7015 0640 0000 6532 1747

PS Form 3811, April 2015 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

A. Signature

*Julia Simpson* ☐ Agent ☒ Addressee

B. Received by (Printed Name)

*Julia Simpson* 7-8-15

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

## 3. Service Type

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                               | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input checked="" type="checkbox"/> Certified Mail®                    | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery            | <input type="checkbox"/> Return Receipt for Merchandise             |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |   |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |   |

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## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Michael Selvaggio  
1671 Killarney Drive  
West Linn, OR 97068



9590 9403 0147 5086 3575 71

2. Article Number (Transfer from service label)

7015 0640 0000 6532 1716

PS Form 3811, April 2015 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

A. Signature

*Julia Simpson* ☐ Agent ☒ Addressee

B. Received by (Printed Name)

*Julia Simpson* 7-8-15

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

## 3. Service Type

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                               | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input checked="" type="checkbox"/> Certified Mail®                    | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery            | <input type="checkbox"/> Return Receipt for Merchandise             |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |   |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |   |

Domestic Return Receipt



**AFFIDAVIT OF POSTING OF ON-SITE NOTICE OF NEIGHBORHOOD CONTACT  
AS REQUIRED BY WEST LINN COMMUNITY DEVELOPMENT CODE 99.038(D)**

STATE OF OREGON                     )  
County of Clackamas            ) ss.

I, GARY ALFSON, being duly sworn, state that on the 16 day of JUNE,

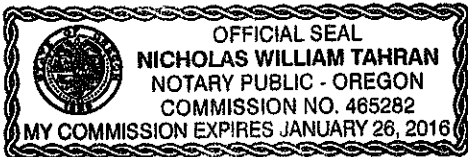
2015, I caused to have posted on the site the attached notices of two neighborhood association meetings on July 7, 2015 and July 8, 2015, with the notices labeled as "Exhibit A", and

"Exhibit B" and attached hereto, to discuss a proposed development at the northwest corner of Blankenship Road and Tannler Drive.

Dated this 16 day of JUNE, 2015

Gary Alfson  
Signature

Subscribed and sworn to, or affirmed, before me this 17 day of JUNE, 2015.



Nicholas Tahrán  
Notary Public for the State of Oregon  
County of MULTNOMAH  
My commission expires: 1/26/2016

**AFFIDAVIT OF MAILING OF NOTICE OF NEIGHBORHOOD CONTACT LETTERS  
REQUIRED BY WEST LINN COMMUNITY DEVELOPMENT CODE 99.038(C)**

STATE OF California )  
 ) ss.  
County of San Diego )

I, Amy Angarola, being duly sworn, state that on the 16<sup>th</sup> day of June, 2015, I caused to have mailed to each of the persons on the attached list, labeled as "**Exhibit A**", a notice of two (2) neighborhood association meetings to discuss a proposed development at the northwest corner of Blankenship Road and Tannler Drive. Copies of the notices so mailed are attached hereto as "**Exhibit B**" and made a part thereof.

I further state that said mailed notices were enclosed in envelopes plainly addressed to said persons and were deposited on the date indicated above in the United States Post Office with postage prepaid thereon.

Dated this 16<sup>th</sup> day of June, 2015

  
Signature

Subscribed and sworn to, or affirmed, before me this \_\_\_\_\_ day of \_\_\_\_\_, 2015.

*attached*

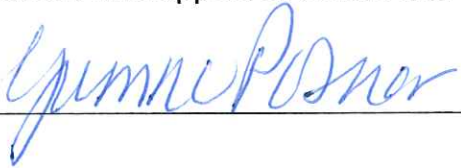
\_\_\_\_\_  
Notary Public for the State of \_\_\_\_\_  
County of \_\_\_\_\_  
My commission expires: \_\_\_\_\_

Attached to  
Affidavit of Mailing of Notice of Neighborhood Contact Letters

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)  
County of San Diego)

Subscribed and sworn to (or affirmed) before me on this 16<sup>th</sup> day of June, 2015  
by Amy Angarola, proved to me on the basis of satisfactory evidence to be the  
person who appeared before me.





## 1 Line Owner Report

PlottedEasements.com  
4144 Saddlewood Rd  
Elizabeth, CO 80107  
720-840-5659

Rec #	APN	First Owner Name	Mail Address	Mail City	State	Mail Zip
1	21E35BC80000	Madison Heights Llc	1965 Egan Way	Lake Oswego	OR	97034
2	21E35BC80001	Mickey A Carter	4830 Summerlinn Way	West Linn	OR	97068
3	21E35BC80002	Richard D Farra	4800 Summerlinn Way	West Linn	OR	97068
4	21E35BC80003	Lawrence Froland	4840 Summerlinn Way	West Linn	OR	97068
5	21E35BC80004	Leslie Pike	4850 Summerlinn Way	West Linn	OR	97068
6	21E35BC80005	Stan Sweet	5375 Summerlinn Way	West Linn	OR	97068
7	21E35BC80006	Linda J Dickson	4890 Summerlinn Way	West Linn	OR	97068
8	21E35BC80007	Jeffery Kalman	4705 Summerlinn Way	West Linn	OR	97068
9	21E35BC80008	Walter A Swanson	4701 Summerlinn Way	West Linn	OR	97068
10	21E35BC80009	Jerrilyn Henderson	4735 Summerlinn Way	West Linn	OR	97068
11	21E35BC80010	Mary E Taube	4755 Summerlinn Way	West Linn	OR	97068
12	21E35BC80011	Ronald C Dobroth	PO Box 1696	Kalama	WA	98625
13	21E35BC80012	Virginia Brookhouse	4795 Summerlinn Way	West Linn	OR	97068
14	21E35BC80013	Susan J Arkebauer	7119 Santa Barbara St	Carlsbad	CA	92011
15	21E35BC80014	Tracy A James	4901 Summerlinn Way # 14	West Linn	OR	97068
16	21E35BC80015	Robert Giles	4935 Summerlinn Way	West Linn	OR	97068
17	21E35BC80016	Ethel Linda Johnston	4955 Summerlinn Way	West Linn	OR	97068
18	21E35BC80017	Karen J Bettin	4975 Summerlinn Way	West Linn	OR	97068
19	21E35BC80018	John T Michels	4995 Summerlinn Way	West Linn	OR	97068
20	21E35BC80019	Gerald Darby	5105 Summerlinn Way	West Linn	OR	97068
21	21E35BC80020	Edward S Rathje	5101 Summerlinn Way	West Linn	OR	97068
22	21E35BC80021	Curtiss E West	18938 Cathy Adams Dr	Oregon City	OR	97045
23	21E35BC80022	Stephanie J Hilgendorf	5155 Summerlinn Way	West Linn	OR	97068
24	21E35BC80023	Mindy Jensen	5175 Summerlinn Way	West Linn	OR	97068
25	21E35BC80024	Susan M Calzaretta	PO Box 1389	Medford	OR	97501
26	21E35BC80025	Arthur Rasmussen	5305 Summerlinn Way	West Linn	OR	97068
27	21E35BC80026	Carol Schoepke	5301 Summerlinn Way	West Linn	OR	97068
28	21E35BC80027	James R Allison	10955 Se 28th Ave	Milwaukie	OR	97222
29	21E35BC80028	Barry Stachon	5355 Summerlinn Way	West Linn	OR	97068
30	21E35BC80029	Stan Sweet	5375 Summerlinn Way	West Linn	OR	97068
31	21E35BC80030	Leonard Grill	2915 Sand Trap Rd Se	Deming	NM	88030
32	21E35BC80031	Barbara Jo Brundage	1105 Kamookoa Pl	Honolulu	HI	96825
33	21E35BC80032	Mary Jo Witty	5501 Summerlinn Way	West Linn	OR	97068
34	21E35BC80033	Dan Allsup	35932 Ellington Dr	Springfield	OR	97478
35	21E35BC80034	Scott E Shangle	5555 Summerlinn Way	West Linn	OR	97068
36	21E35BC80035	Michelle K Curtis	5575 Summerlinn Way	West Linn	OR	97068
37	21E35BC80036	Toni Ewalt	5595 Summerlinn Way	West Linn	OR	97068
38	21E35BC80037	Gregg R Sturtevant	1430 Olga Way	Palm Springs	CA	92262
39	21E35BC80038	Deborah L Keller	5600 Summerlinn Way	West Linn	OR	97068
40	21E35BC80039	Robert Marks	5640 Summerlinn Way Unit 39	West Linn	OR	97068
41	21E35BC80040	Anne C Prettyman	1920 Arena Ct	West Linn	OR	97068

Rec #	APN	First Owner Name	Mail Address	Mail City	State	Mail Zip
42	21E35BC80041	Dorothy E Johnson	5660 Summerlinn Way	West Linn	OR	97068
43	21E35BC80042	John Daniel	22118 S Highway 213	Oregon City	OR	97045
44	21E35BC80043	John M Milliman	5830 Summerlinn Way	West Linn	OR	97068
45	21E35BC80044	Gerald Overen	5800 Summerlinn Way	West Linn	OR	97068
46	21E35BC80045	Linda J Fletcher	5840 Summerlinn Way	West Linn	OR	97068
47	21E35BC80046	Elizabeth B Moore	5850 Summerlinn Way	West Linn	OR	97068
48	21E35BC80047	Robert R Zimmerman	697 Oakmont Ave Unit 3312	Las Vegas	NV	89109
49	21E35BC80048	Lawrence P Walsh	5890 Summerlinn Way	West Linn	OR	97068
50	21E35BC80050	David J Hanna	3500 Riverknoll Way	West Linn	OR	97068
51	21E35BC80051	Lisa M Weaver	5195 Summerlinn Way	West Linn	OR	97068
52	21E35BC80052	Michelle V Swanson	6050 Summerlinn Way	West Linn	OR	97068
53	21E35BC80053	William Barger	6060 Summerlinn Way	West Linn	OR	97068
54	21E35BC80055	Kenneth R Krause	6230 Summerlinn Way	West Linn	OR	97068
55	21E35BC80056	Richard Marentette	6200 Summerlinn Way	West Linn	OR	97068
56	21E35BC80057	Paula M Cilia	111 Skyview Ter Apt 16	Friendswood	TX	77546
57	21E35BC80058	Debra L Gulde	10550 W Alexander Rd Unit 118	Las Vegas	NV	89129
58	21E35BC80059	Donald Hatch	6260 Summerlinn Way	West Linn	OR	97068
59	21E35BC80061	David Becker	PO Box 924	Manzanita	OR	97130
60	21E35BC80062	Angela M Zimmerman	6301 Summerlinn Way	West Linn	OR	97068
61	21E35BC80063	Anne McFarlane	6335 Summerlinn Way	West Linn	OR	97068
62	21E35BC80064	David Farmer	6355 Summerlinn Way	West Linn	OR	97068
63	21E35BC80065	Naomi Karen	6375 Summerlinn Way # 65	West Linn	OR	97068
64	21E35BC80066	Paul Illig	6395 Summerlinn Way	West Linn	OR	97068
65	21E35BC80067	Timothy J Mack	10749 Se Turnberry Loop	Happy Valley	OR	97086
66	21E35BC80068	Shelley M Buckingham	6400 Summerlinn Way Unit 68	West Linn	OR	97068
67	21E35BC80069	Deborah L Spellecy	6440 Summerlinn Way	West Linn	OR	97068
68	21E35BC80070	Michael J McGinnis	6450 Summerlinn Way	West Linn	OR	97068
69	21E35BC80071	Earl R Davis	6460 Summerlinn Way	West Linn	OR	97068
70	21E35BC80072	Carole M Lane	6490 Summerlinn Way	West Linn	OR	97068
71	21E35BC80073	Norman E Gould	6630 Summerlinn Way	West Linn	OR	97068
72	21E35BC80074	Lola M Evans	6600 Summerlinn Way	West Linn	OR	97068
73	21E35BC80075	Brian F Pojas	6640 Summerlinn Way	West Linn	OR	97068
74	21E35BC80076	Mary Ritzmann	6650 Summerlinn Way	West Linn	OR	97068
75	21E35BC80077	John S Martinson	6660 Summerlinn Way	West Linn	OR	97068
76	21E35BC80078	Angeline M Velander	6690 Summerlinn Way	West Linn	OR	97068
77	21E35BC80700	Madison Heights Llc	1965 Egan Way	Lake Oswego	OR	97034
78	21E35BC80800	Madison Heights Llc	1965 Egan Way	Lake Oswego	OR	97034
79	21E35BC80900	Madison Heights Llc	1965 Egan Way	Lake Oswego	OR	97034
80	21E35BC90000	Kg Investment Co Llc	1502 Sw Montgomery St	Portland	OR	97201
81	21E35BC94000	Brian L Maher	4000 Summerlinn Dr	West Linn	OR	97068
82	21E35BC94030	Sharlene Jo Mastrandrea	4030 Summerlinn Dr	West Linn	OR	97068
83	21E35BC94040	Charlotte L Heinrich	4040 Summerlinn Dr	West Linn	OR	97068
84	21E35BC94050	Linda Werthessen	4050 Summerlinn Dr	West Linn	OR	97068
85	21E35BC94060	Theodore J Weiss	4060 Summerlinn Dr	West Linn	OR	97068

Rec #	APN	First Owner Name	Mail Address	Mail City	State	Mail Zip
86	21E35BC94090	Phyllis Zea	4090 Summerlinn Dr	West Linn	OR	97068
87	21E35BC94101	Colleen Obrien	PO Box 242	West Linn	OR	97068
88	21E35BC94105	Dawn Marks	4105 Summerlinn Dr	West Linn	OR	97068
89	21E35BC94135	Donna M Caffee	4135 Summerlinn Dr	West Linn	OR	97068
90	21E35BC94145	William Ward Campbell	4145 Summerlinn Dr	West Linn	OR	97068
91	21E35BC94155	Dana J Thatcher	4155 Summerlinn Dr	West Linn	OR	97068
92	21E35BC94165	Julie D Chinn	4165 Summerlinn Dr	West Linn	OR	97068
93	21E35BC94175	Walter Chapman	4175 Summerlinn Dr	West Linn	OR	97068
94	21E35BC94195	Patricia J Percin	4195 Summerlinn Dr	West Linn	OR	97068
95	21E35BC94200	William H Gwin	4200 Summerlinn Way	West Linn	OR	97068
96	21E35BC94230	Kirstin Johnson	4230 Summerlinn Way	West Linn	OR	97068
97	21E35BC94240	John Rodiger	4240 Summerlinn Dr	West Linn	OR	97068
98	21E35BC94250	Katie E Woodhouse	9100 Sw Arapaho Rd	Tualatin	OR	97062
99	21E35BC94260	Matt Mercier	2322 Ne Davis St	Portland	OR	97232
100	21E35BC94290	Marianne L Sauer	4290 Summerlinn Way	West Linn	OR	97068
101	21E35BC94301	Regina Hook	4301 Summerlinn Dr	West Linn	OR	97068
102	21E35BC94305	Mollie R Nedelisky	4305 Summerlinn Dr	West Linn	OR	97068
103	21E35BC94335	Heather Lovell	4335 Summerlinn Dr	West Linn	OR	97068
104	21E35BC94345	Nour Eddine Mouktabis	PO Box 1975	Lake Oswego	OR	97035
105	21E35BC94355	Michael Marcoux	4355 Summerlinn Dr	West Linn	OR	97068
106	21E35BC94365	Shelly Potvin	577 Orange Ave	Los Altos	CA	94022
107	21E35BC94375	Rebecca A Morgan	4375 Summerlinn Dr	West Linn	OR	97068
108	21E35BC94395	Eileen A Caruso	PO Box 517	Santa Clara	CA	95052
109	21E35BC94501	Shelley McCleskey	4501 Summerlinn Way	West Linn	OR	97068
110	21E35BC94505	Byron Valentine	4505 Summerlinn Way	West Linn	OR	97068
111	21E35BC94535	David M Coterill	4535 Summerlinn Way	West Linn	OR	97068
112	21E35BC94555	Vaughn Austin	4555 Summerlinn Way	West Linn	OR	97068
113	21E35BC94575	Stanley J Smith	4575 Summerlinn Way	West Linn	OR	97068
114	21E35BC94595	William T Phelan	455 Australian Ave # 4E	Palm Beach	FL	33480
115	21E35BC94600	Elizabeth W Buss	4600 Summerlinn Way	West Linn	OR	97068
116	21E35BC94630	Robert Tross	4630 Summerlinn Way	West Linn	OR	97068
117	21E35BC94640	Sheila Cieslik	4640 Summerlinn Way	West Linn	OR	97068
118	21E35BC94650	Joyce Kendall	4650 Summerlinn Way	West Linn	OR	97068
119	21E35BC94660	Frank Kalinowski	4660 Summerlinn Way	West Linn	OR	97068
120	21E35BC94690	Michael Nick Gombos	4690 Summerlinn Way	West Linn	OR	97068
121	21E35BD00100	Marvin L Wyatt	2340 Tannler Dr	West Linn	OR	97068
122	21E35BD00300	Warren P Richardson	945 N Maple Grove Rd Apt 304	Boise	ID	83704
123	21E35BD00400	Robinson Foster	2375 Falcon Dr	West Linn	OR	97068
124	21E35BD00600	Matthew Gravett	2353 Falcon Dr	West Linn	OR	97068
125	21E35BD00700	George S Fidone	2333 Falcon Dr	West Linn	OR	97068
126	21E35BD00800	Monroe Cabine	2325 Falcon Dr	West Linn	OR	97068
127	21E35BD00900	Firas Khoury	2330 Falcon Dr	West Linn	OR	97068
128	21E35BD01000	David B Reed	2338 Falcon Dr	West Linn	OR	97068
129	21E35BD01100	Dennis D Buckman	2348 Falcon Dr	West Linn	OR	97068



Rec #	APN	First Owner Name	Mail Address	Mail City	State	Mail Zip
130	21E35BD01200	Paul Glaunert	2350 Falcon Dr	West Linn	OR	97068
131	21E35BD01300	John Lubisich	2360 Falcon Dr	West Linn	OR	97068
132	21E35BD01400	Sherif Riad	2366 Falcon Dr	West Linn	OR	97068
133	21E35BD01500	Phillips Family Trust	2372 Falcon Dr	West Linn	OR	97068
134	21E35BD01600	Rich Rodgers	2378 Falcon Dr	West Linn	OR	97068
135	21E35BD01700	Bradley R Thomas	2390 Falcon Dr	West Linn	OR	97068
136	21E35BD01800	Fidelity National Title Insurnce Co	2111 S 67th St Ste 210	Omaha	NE	68106
137	21E35BD03000	Arthur M Serote	2412 Los Olivos Ln	La Crescenta	CA	91214
138	21E35BD03100	James Foster	2405 Remington Dr	West Linn	OR	97068
139	21E35BD03200	Ryan W Gray	2413 Remington Dr	West Linn	OR	97068
140	21E35BD03300	Simon Dodd	2419 Remington Dr	West Linn	OR	97068
141	21E35BD03400	Marilyn Schultz	2423 Remington Dr	West Linn	OR	97068
142	21E35BD03500	Jennifer Rupert	2425 Remington Dr	West Linn	OR	97068
143	21E35BD03600	Roxana Cooley	2850 Sw Cedar Hills Blvd	Beaverton	OR	97005
144	21E35C 00100	Jeffrey Parker	1800 Blankenship Rd Ste 200	West Linn	OR	97068
145	21E35C 00102	Jeffrey Parker	1800 Blankenship Rd Ste 200	West Linn	OR	97068
146	21E35C 00200	Jeffrey Parker	1800 Blankenship Rd Ste 200	West Linn	OR	97068
147	21E35C 00801	Blackhawk Nevada Llc	1800 Blankenship Rd Ste 200	West Linn	OR	97068
148	21E35C 00802	So Linn Llc,	108 Kings Ct	San Carlos	CA	94070
149	21E35C 00803	Foodmakers Inc	9330 Balboa Ave	San Diego	CA	92123
150	21E35C 00804	West Linn Associates Llc	2625 Northrup Way	Bellevue	WA	98004
151	21E35C 00805	West Linn Associates Llc	2625 Northrup Way	Bellevue	WA	98004
152	21E35C 00805E	West Linn Associates Llc	2625 Northrup Way	Bellevue	WA	98004
153	21E35C 00806	West Linn Associates Llc	2625 Northrup Way	Bellevue	WA	98004
154	21E35C 01200	State Of Oregon	1220 S.W. 3rd Avenue	Portland	OR	97204
155	21E35D 00700	City Of West Linn	22500 Salamo Rd Ste 100	West Linn	OR	97068
156	21E35D 00703	Rkm Development Inc	15160 Nw Laidlaw Rd Ste 108	Portland	OR	97229
157	21E35D 00704	City Of West Linn	22500 Salamo Rd Ste 100	West Linn	OR	97068
158	21E35DB01400	Kenneth Pryor	2119 Greene St	West Linn	OR	97068
159	21E35DB01500	Donald Kemp	2117 Greene St	West Linn	OR	97068
160	21E35DB01600	Toby Kolstad	2115 Greene St	West Linn	OR	97068
161	21E35DB01700	Paul Andersen	2113 Greene St	West Linn	OR	97068
162	21E35DB01800	Lance Dyrdaahl	2111 Greene St	West Linn	OR	97068
163	21E35DB01900	James Bents	2109 Greene St	West Linn	OR	97068
164	21E35DB02000	Wade Vandenhaak	2103 Greene St	West Linn	OR	97068
165	21E35DB02100	Noah C Kamp	2101 Greene St	West Linn	OR	97068
166	21E35DB03700	William Sheridan	1816 Barnes Cir	West Linn	OR	97068
167	21E35DB03800	Dennis Odman	1818 Barnes Cir	West Linn	OR	97068
168	21E35DB03900	Innes Family Trust	1820 Barnes Cir	West Linn	OR	97068
169	21E35DB04000	Dean Wood	1750 19th St	West Linn	OR	97068
170	21E35DB04100	Michael S Kim	2102 Greene St	West Linn	OR	97068
171	21E35DB04200	Philippe Henriot	1826 Barnes Cir	West Linn	OR	97068
172	21E35DB04300	Donald Read	1828 Barnes Cir	West Linn	OR	97068

# 1 Line Resident Report

PlottedEasements.com  
4144 Saddlewood Rd  
Elizabeth, CO 80107  
720-840-5659

Rec#	APN	Site Address	City	State	Zip
1	21E35BC80005	4860 Summerlinn Way	West Linn	OR	97068
2	21E35BC80011	4775 Summerlinn Way	West Linn	OR	97068
3	21E35BC80013	4905 Summerlinn Way	West Linn	OR	97068
4	21E35BC80014	4901 Summerlinn Way	West Linn	OR	97068
5	21E35BC80021	5135 Summerlinn Way	West Linn	OR	97068
6	21E35BC80024	5195 Summerlinn Way	West Linn	OR	97068
7	21E35BC80027	5335 Summerlinn Way	West Linn	OR	97068
8	21E35BC80030	5395 Summerlinn Way	West Linn	OR	97068
9	21E35BC80031	5505 Summerlinn Way	West Linn	OR	97068
10	21E35BC80033	5535 Summerlinn Way	West Linn	OR	97068
11	21E35BC80037	5630 Summerlinn Way	West Linn	OR	97068
12	21E35BC80039	5640 Summerlinn Way	West Linn	OR	97068
13	21E35BC80040	5650 Summerlinn Way	West Linn	OR	97068
14	21E35BC80042	5690 Summerlinn Way	West Linn	OR	97068
15	21E35BC80047	5860 Summerlinn Way	West Linn	OR	97068
16	21E35BC80050	6000 Summerlinn Way	West Linn	OR	97068
17	21E35BC80051	6040 Summerlinn Way	West Linn	OR	97068
18	21E35BC80057	6240 Summerlinn Way	West Linn	OR	97068
19	21E35BC80058	6250 Summerlinn Way	West Linn	OR	97068
20	21E35BC80061	6305 Summerlinn Way	West Linn	OR	97068
21	21E35BC80062	6301 Summerlinn Way # 62	West Linn	OR	97068
22	21E35BC80067	6430 Summerlinn Way	West Linn	OR	97068
23	21E35BC80068	6400 Summerlinn Way	West Linn	OR	97068
24	21E35BC94101	4101 Summerlinn Dr	West Linn	OR	97068
25	21E35BC94200	4200 Summerlinn Dr	West Linn	OR	97068
26	21E35BC94230	4230 Summerlinn Dr	West Linn	OR	97068
27	21E35BC94250	4250 Summerlinn Dr	West Linn	OR	97068
28	21E35BC94260	4260 Summerlinn Dr	West Linn	OR	97068
29	21E35BC94290	4290 Summerlinn Dr	West Linn	OR	97068
30	21E35BC94345	4345 Summerlinn Dr	West Linn	OR	97068
31	21E35BC94365	4365 Summerlinn Dr	West Linn	OR	97068
32	21E35BC94395	4395 Summerlinn Dr	West Linn	OR	97068
33	21E35BC94595	4595 Summerlinn Way	West Linn	OR	97068
34	21E35BD00300	2389 Falcon Dr	West Linn	OR	97068
35	21E35BD01800	2384 Falcon Dr	West Linn	OR	97068
36	21E35BD03000	2328 Falcon Dr	West Linn	OR	97068
37	21E35BD03600	2429 Remington Dr	West Linn	OR	97068
38	21E35C 00801	1800 Blankenship Rd	West Linn	OR	97068
39	21E35C 00802	1855 Blankenship Rd	West Linn	OR	97068
40	21E35C 00803	1885 Blankenship Rd	West Linn	OR	97068
41	21E35C 00804	1885 Blankenship Rd	West Linn	OR	97068



Rec#	APN	Site Address	City	State	Zip
42	21E35C 00806	1875 Blankenship Rd	West Linn	OR	97068
43	21E35DB04000	1822 Barnes Cir	West Linn	OR	97068

Rec #: 1      APN : 21E35BC80000  
Madison Heights Llc  
1965 Egan Way  
Lake Oswego OR 97034-2727

Rec #: 2      APN : 21E35BC80001  
Mickey A Carter  
4830 Summerlinn Way  
West Linn OR 97068-5132

Rec #: 3      APN : 21E35BC80002  
Richard D Farra  
4800 Summerlinn Way  
West Linn OR 97068-5132

Rec #: 4      APN : 21E35BC80003  
Lawrence Froland  
4840 Summerlinn Way  
West Linn OR 97068-5132

Rec #: 5      APN : 21E35BC80004  
Leslie Pike  
4850 Summerlinn Way  
West Linn OR 97068-5132

Rec #: 6      APN : 21E35BC80005  
Stan Sweet  
5375 Summerlinn Way  
West Linn OR 97068-5135

Rec #: 7      APN : 21E35BC80006  
Linda J Dickson  
4890 Summerlinn Way  
West Linn OR 97068-5132

Rec #: 8      APN : 21E35BC80007  
Jeffery Kalman  
4705 Summerlinn Way  
West Linn OR 97068-5118

Rec #: 9      APN : 21E35BC80008  
Walter A Swanson  
4701 Summerlinn Way  
West Linn OR 97068-5118

Rec #: 10     APN : 21E35BC80009  
Jerrilyn Henderson  
4735 Summerlinn Way  
West Linn OR 97068-5118

Rec #: 11     APN : 21E35BC80010  
Mary E Taube  
4755 Summerlinn Way  
West Linn OR 97068-5118

Rec #: 12     APN : 21E35BC80011  
Ronald C Dobroth  
PO Box 1696  
Kalama WA 98625-1501

Rec #: 13     APN : 21E35BC80012  
Virginia Brookhouse  
4795 Summerlinn Way  
West Linn OR 97068-5118

Rec #: 14     APN : 21E35BC80013  
Susan J Arkebauer  
7119 Santa Barbara St  
Carlsbad CA 92011-4630

Rec #: 15     APN : 21E35BC80014  
Tracy A James  
4901 Summerlinn Way # 14  
West Linn OR 97068-5133

Rec #: 16     APN : 21E35BC80015  
Robert Giles  
4935 Summerlinn Way  
West Linn OR 97068-5133

Rec #: 17     APN : 21E35BC80016  
Ethel Linda Johnston  
4955 Summerlinn Way  
West Linn OR 97068-5133

Rec #: 18     APN : 21E35BC80017  
Karen J Bettin  
4975 Summerlinn Way  
West Linn OR 97068-5133

Rec #: 19     APN : 21E35BC80018  
John T Michels  
4995 Summerlinn Way  
West Linn OR 97068-5133

Rec #: 20     APN : 21E35BC80019  
Gerald Darby  
5105 Summerlinn Way  
West Linn OR 97068-5134

Rec #: 21     APN : 21E35BC80020  
Edward S Rathje  
5101 Summerlinn Way  
West Linn OR 97068-5134

Rec #: 22     APN : 21E35BC80021  
Curtiss E West  
18938 Cathy Adams Dr  
Oregon City OR 97045-6779

Rec #: 23     APN : 21E35BC80022  
Stephanie J Hilgendorf  
5155 Summerlinn Way  
West Linn OR 97068-5134

Rec #: 24     APN : 21E35BC80023  
Mindy Jensen  
5175 Summerlinn Way  
West Linn OR 97068-5134

Rec #: 25     APN : 21E35BC80024  
Susan M Calzaretta  
PO Box 1389  
Medford OR 97501-0103

Rec #: 26     APN : 21E35BC80025  
Arthur Rasmussen  
5305 Summerlinn Way  
West Linn OR 97068-5135

Rec #: 27     APN : 21E35BC80026  
Carol Schoepke  
5301 Summerlinn Way  
West Linn OR 97068-5135

Rec #: 28     APN : 21E35BC80027  
James R Allison  
10955 Se 28th Ave  
Milwaukie OR 97222-7620

Rec #: 29     APN : 21E35BC80028  
Barry Stachon  
5355 Summerlinn Way  
West Linn OR 97068-5135

Rec #: 30     APN : 21E35BC80029  
Stan Sweet  
5375 Summerlinn Way  
West Linn OR 97068-5135

Rec #: 31     APN : 21E35BC80030  
Leonard Grill  
2915 Sand Trap Rd Se  
Deming NM 88030-7387

Rec #: 32     APN : 21E35BC80031  
Barbara Jo Brundage  
1105 Kamookoa Pl  
Honolulu HI 96825-1367

Rec #: 33     APN : 21E35BC80032  
Mary Jo Witty  
5501 Summerlinn Way  
West Linn OR 97068-5136

Rec #: 34     APN : 21E35BC80033  
Dan Allsup  
35932 Ellington Dr  
Springfield OR 97478-8229

Rec #: 35     APN : 21E35BC80034  
Scott E Shangle  
5555 Summerlinn Way  
West Linn OR 97068-5136

Rec #: 36     APN : 21E35BC80035  
Michelle K Curtis  
5575 Summerlinn Way  
West Linn OR 97068-5136

Rec #: 37     APN : 21E35BC80036  
Toni Ewalt  
5595 Summerlinn Way  
West Linn OR 97068-5136

Rec #: 38     APN : 21E35BC80037  
Gregg R Sturtevant  
1430 Olga Way  
Palm Springs CA 92262-3404

Rec #: 39     APN : 21E35BC80038  
Deborah L Keller  
5600 Summerlinn Way  
West Linn OR 97068-5137

Rec #: 40     APN : 21E35BC80039  
Robert Marks  
5640 Summerlinn Way Unit 39  
West Linn OR 97068-5137

Rec #: 41     APN : 21E35BC80040  
Anne C Prettyman  
1920 Arena Ct  
West Linn OR 97068-4817

Rec #: 42     APN : 21E35BC80041  
Dorothy E Johnson  
5660 Summerlinn Way  
West Linn OR 97068-5137

Rec #: 43     APN : 21E35BC80042  
John Daniel  
22118 S Highway 213  
Oregon City OR 97045-9184

Rec #: 44     APN : 21E35BC80043  
John M Milliman  
5830 Summerlinn Way  
West Linn OR 97068-5138

Rec #: 45     APN : 21E35BC80044  
Gerald Overen  
5800 Summerlinn Way  
West Linn OR 97068-5138

Rec #: 46     APN : 21E35BC80045  
Linda J Fletcher  
5840 Summerlinn Way  
West Linn OR 97068-5138

Rec #: 47     APN : 21E35BC80046  
Elizabeth B Moore  
5850 Summerlinn Way  
West Linn OR 97068-5138

Rec #: 48     APN : 21E35BC80047  
Robert R Zimmerman  
697 Oakmont Ave Unit 3312  
Las Vegas NV 89109-0236

Rec #: 49     APN : 21E35BC80048  
Lawrence P Walsh  
5890 Summerlinn Way  
West Linn OR 97068-5138

Rec #: 50     APN : 21E35BC80050  
David J Hanna  
3500 Riverknoll Way  
West Linn OR 97068-3641

Rec #: 51     APN : 21E35BC80051  
Lisa M Weaver  
5195 Summerlinn Way  
West Linn OR 97068-5134

Rec #: 52     APN : 21E35BC80052  
Michelle V Swanson  
6050 Summerlinn Way  
West Linn OR 97068-5139

Rec #: 53     APN : 21E35BC80053  
William Barger  
6060 Summerlinn Way  
West Linn OR 97068-5139

Rec #: 54     APN : 21E35BC80055  
Kenneth R Krause  
6230 Summerlinn Way  
West Linn OR 97068-5140

Rec #: 55     APN : 21E35BC80056  
Richard Marentette  
6200 Summerlinn Way  
West Linn OR 97068-5140

Rec #: 56     APN : 21E35BC80057  
Paula M Cilia  
111 Skyview Ter Apt 16  
Friendswood TX 77546-3870

Rec #: 57     APN : 21E35BC80058  
Debra L Gulde  
10550 W Alexander Rd Unit 1189  
Las Vegas NV 89129-3508

Rec #: 58     APN : 21E35BC80059  
Donald Hatch  
6260 Summerlinn Way  
West Linn OR 97068-5140

Rec #: 59     APN : 21E35BC80061  
David Becker  
PO Box 924  
Manzanita OR 97130-0924

Rec #: 60     APN : 21E35BC80062  
Angela M Zimmerman  
6301 Summerlinn Way  
West Linn OR 97068-5141

Rec #: 61     APN : 21E35BC80063  
Anne McFarlane  
6335 Summerlinn Way  
West Linn OR 97068-5141

Rec #: 62     APN : 21E35BC80064  
David Farmer  
6355 Summerlinn Way  
West Linn OR 97068-5141

Rec #: 63     APN : 21E35BC80065  
Naomi Karen  
6375 Summerlinn Way # 65  
West Linn OR 97068-5141

Rec #: 64     APN : 21E35BC80066  
Paul Illig  
6395 Summerlinn Way  
West Linn OR 97068-5141

Rec #: 65     APN : 21E35BC80067  
Timothy J Mack  
10749 Se Turnberry Loop  
Happy Valley OR 97086-6990

Rec #: 66     APN : 21E35BC80068  
Shelley M Buckingham  
6400 Summerlinn Way Unit 68  
West Linn OR 97068-5142

Rec #: 67     APN : 21E35BC80069  
Deborah L Spellecy  
6440 Summerlinn Way  
West Linn OR 97068-5142

Rec #: 68     APN : 21E35BC80070  
Michael J McGinnis  
6450 Summerlinn Way  
West Linn OR 97068-5142

Rec #: 69     APN : 21E35BC80071  
Earl R Davis  
6460 Summerlinn Way  
West Linn OR 97068-5142

Rec #: 70     APN : 21E35BC80072  
Carole M Lane  
6490 Summerlinn Way  
West Linn OR 97068-5142

Rec #: 71     APN : 21E35BC80073  
Norman E Gould  
6630 Summerlinn Way  
West Linn OR 97068-5144

Rec #: 72     APN : 21E35BC80074  
Lola M Evans  
6600 Summerlinn Way  
West Linn OR 97068-5144

Rec #: 73     APN : 21E35BC80075  
Brian F Pojas  
6640 Summerlinn Way  
West Linn OR 97068-5144

Rec #: 74     APN : 21E35BC80076  
Mary Ritzmann  
6650 Summerlinn Way  
West Linn OR 97068-5144

Rec #: 75     APN : 21E35BC80077  
John S Martinson  
6660 Summerlinn Way  
West Linn OR 97068-5144

Rec #: 76     APN : 21E35BC80078  
Angeline M Velander  
6690 Summerlinn Way  
West Linn OR 97068-5144

Rec #: 77     APN : 21E35BC80700  
Madison Heights Llc  
1965 Egan Way  
Lake Oswego OR 97034-2727

Rec #: 78     APN : 21E35BC80800  
Madison Heights Llc  
1965 Egan Way  
Lake Oswego OR 97034-2727

Rec #: 79     APN : 21E35BC80900  
Madison Heights Llc  
1965 Egan Way  
Lake Oswego OR 97034-2727

Rec #: 80     APN : 21E35BC90000  
Kg Investment Co Llc  
1502 Sw Montgomery St  
Portland OR 97201-2559

Rec #: 81     APN : 21E35BC94000  
Brian L Maher  
4000 Summerlinn Dr  
West Linn OR 97068-5109

Rec #: 82     APN : 21E35BC94030  
Sharlene Jo Mastrandrea  
4030 Summerlinn Dr  
West Linn OR 97068-5109

Rec #: 83     APN : 21E35BC94040  
Charlotte L Heinrich  
4040 Summerlinn Dr  
West Linn OR 97068-5109

Rec #: 84     APN : 21E35BC94050  
Linda Werthessen  
4050 Summerlinn Dr  
West Linn OR 97068-5109

Rec #: 85     APN : 21E35BC94060  
Theodore J Weiss  
4060 Summerlinn Dr  
West Linn OR 97068-5109

Rec #: 86     APN : 21E35BC94090  
Phyllis Zea  
4090 Summerlinn Dr  
West Linn OR 97068-5109

Rec #: 87     APN : 21E35BC94101  
Colleen Obrien  
PO Box 242  
West Linn OR 97068-0242

Rec #: 88     APN : 21E35BC94105  
Dawn Marks  
4105 Summerlinn Dr  
West Linn OR 97068-5110

Rec #: 89     APN : 21E35BC94135  
Donna M Caffee  
4135 Summerlinn Dr  
West Linn OR 97068-5110

Rec #: 90     APN : 21E35BC94145  
William Ward Campbell  
4145 Summerlinn Dr  
West Linn OR 97068-5110

Rec #: 91     APN : 21E35BC94155  
Dana J Thatcher  
4155 Summerlinn Dr  
West Linn OR 97068-5110

Rec #: 92     APN : 21E35BC94165  
Julie D Chinn  
4165 Summerlinn Dr  
West Linn OR 97068-5110

Rec #: 93     APN : 21E35BC94175  
Walter Chapman  
4175 Summerlinn Dr  
West Linn OR 97068-5110

Rec #: 94     APN : 21E35BC94195  
Patricia J Percin  
4195 Summerlinn Dr  
West Linn OR 97068-5110

Rec #: 95     APN : 21E35BC94200  
William H Gwin  
4200 Summerlinn Way  
West Linn OR 97068

Rec #: 96     APN : 21E35BC94230  
Kirstin Johnson  
4230 Summerlinn Way  
West Linn OR 97068

Rec #: 97     APN : 21E35BC94240  
John Rodiger  
4240 Summerlinn Dr  
West Linn OR 97068-5111

Rec #: 98     APN : 21E35BC94250  
Katie E Woodhouse  
9100 Sw Arapaho Rd  
Tualatin OR 97062-6339

Rec #: 99     APN : 21E35BC94260  
Matt Mercier  
2322 Ne Davis St  
Portland OR 97232-3127

Rec #: 100    APN : 21E35BC94290  
Marianne L Sauer  
4290 Summerlinn Way  
West Linn OR 97068

Rec #: 101    APN : 21E35BC94301  
Regina Hook  
4301 Summerlinn Dr  
West Linn OR 97068-5108

Rec #: 102    APN : 21E35BC94305  
Mollie R Nedelisky  
4305 Summerlinn Dr  
West Linn OR 97068-5108

Rec #: 103    APN : 21E35BC94335  
Heather Lovell  
4335 Summerlinn Dr  
West Linn OR 97068-5108

Rec #: 104    APN : 21E35BC94345  
Nour Eddine Mouktabis  
PO Box 1975  
Lake Oswego OR 97035-0623

Rec #: 105    APN : 21E35BC94355  
Michael Marcoux  
4355 Summerlinn Dr  
West Linn OR 97068-5108

Rec #: 106    APN : 21E35BC94365  
Shelly Potvin  
577 Orange Ave  
Los Altos CA 94022-3529

Rec #: 107    APN : 21E35BC94375  
Rebecca A Morgan  
4375 Summerlinn Dr  
West Linn OR 97068-5108

Rec #: 108    APN : 21E35BC94395  
Eileen A Caruso  
PO Box 517  
Santa Clara CA 95052-0517

Rec #: 109    APN : 21E35BC94501  
Shelley McCleskey  
4501 Summerlinn Way  
West Linn OR 97068-5116

Rec #: 110    APN : 21E35BC94505  
Byron Valentine  
4505 Summerlinn Way  
West Linn OR 97068-5116

Rec #: 111    APN : 21E35BC94535  
David M Coterill  
4535 Summerlinn Way  
West Linn OR 97068-5116

Rec #: 112    APN : 21E35BC94555  
Vaughn Austin  
4555 Summerlinn Way  
West Linn OR 97068-5116

Rec #: 113    APN : 21E35BC94575  
Stanley J Smith  
4575 Summerlinn Way  
West Linn OR 97068-5116

Rec #: 114    APN : 21E35BC94595  
William T Phelan  
455 Australian Ave # 4E  
Palm Beach FL 33480-4526

Rec #: 115    APN : 21E35BC94600  
Elizabeth W Buss  
4600 Summerlinn Way  
West Linn OR 97068-5117

Rec #: 116    APN : 21E35BC94630  
Robert Tross  
4630 Summerlinn Way  
West Linn OR 97068-5117

Rec #: 117    APN : 21E35BC94640  
Sheila Cieslik  
4640 Summerlinn Way  
West Linn OR 97068-5117

Rec #: 118    APN : 21E35BC94650  
Joyce Kendall  
4650 Summerlinn Way  
West Linn OR 97068-5117

Rec #: 119    APN : 21E35BC94660  
Frank Kalinowski  
4660 Summerlinn Way  
West Linn OR 97068-5117

Rec #: 120    APN : 21E35BC94690  
Michael Nick Gombos  
4690 Summerlinn Way  
West Linn OR 97068-5117

Rec #: 121 APN : 21E35BD00100  
Marvin L Wyatt  
2340 Tannler Dr  
West Linn OR 97068-4234

Rec #: 122 APN : 21E35BD00300  
Warren P Richardson  
945 N Maple Grove Rd Apt 304  
Boise ID 83704-4294

Rec #: 123 APN : 21E35BD00400  
Robinson Foster  
2375 Falcon Dr  
West Linn OR 97068-4130

Rec #: 124 APN : 21E35BD00600  
Matthew Gravett  
2353 Falcon Dr  
West Linn OR 97068-4129

Rec #: 125 APN : 21E35BD00700  
George S Fidone  
2333 Falcon Dr  
West Linn OR 97068-4129

Rec #: 126 APN : 21E35BD00800  
Monroe Cabine  
2325 Falcon Dr  
West Linn OR 97068-4129

Rec #: 127 APN : 21E35BD00900  
Firas Khoury  
2330 Falcon Dr  
West Linn OR 97068-4154

Rec #: 128 APN : 21E35BD01000  
David B Reed  
2338 Falcon Dr  
West Linn OR 97068-4154

Rec #: 129 APN : 21E35BD01100  
Dennis D Buckman  
2348 Falcon Dr  
West Linn OR 97068-4154

Rec #: 130 APN : 21E35BD01200  
Paul Glaunert  
2350 Falcon Dr  
West Linn OR 97068-4142

Rec #: 131 APN : 21E35BD01300  
John Lubisich  
2360 Falcon Dr  
West Linn OR 97068-4142

Rec #: 132 APN : 21E35BD01400  
Sherif Riad  
2366 Falcon Dr  
West Linn OR 97068-4142

Rec #: 133 APN : 21E35BD01500  
Phillips Family Trust  
2372 Falcon Dr  
West Linn OR 97068-4142

Rec #: 134 APN : 21E35BD01600  
Rich Rodgers  
2378 Falcon Dr  
West Linn OR 97068-4143

Rec #: 135 APN : 21E35BD01700  
Bradley R Thomas  
2390 Falcon Dr  
West Linn OR 97068-4143

Rec #: 136 APN : 21E35BD01800  
Fidelity National Title Insurnce Company,  
2111 S 67th St Ste 210  
Omaha NE 68106-2287

Rec #: 137 APN : 21E35BD03000  
Arthur M Serote  
2412 Los Olivos Ln  
La Crescenta CA 91214-3130

Rec #: 138 APN : 21E35BD03100  
James Foster  
2405 Remington Dr  
West Linn OR 97068-4152

Rec #: 139 APN : 21E35BD03200  
Ryan W Gray  
2413 Remington Dr  
West Linn OR 97068-4152

Rec #: 140 APN : 21E35BD03300  
Simon Dodd  
2419 Remington Dr  
West Linn OR 97068-4152

Rec #: 141 APN : 21E35BD03400  
Marilyn Schultz  
2423 Remington Dr  
West Linn OR 97068-4153

Rec #: 142 APN : 21E35BD03500  
Jennifer Rupert  
2425 Remington Dr  
West Linn OR 97068-4153

Rec #: 143 APN : 21E35BD03600  
Roxana Cooley  
2850 Sw Cedar Hills Blvd  
Beaverton OR 97005-1354

Rec #: 144 APN : 21E35C 00100  
Jeffrey Parker  
1800 Blankenship Rd Ste 200  
West Linn OR 97068-4174

Rec #: 145 APN : 21E35C 00102  
Jeffrey Parker  
1800 Blankenship Rd Ste 200  
West Linn OR 97068-4174

Rec #: 146 APN : 21E35C 00200  
Jeffrey Parker  
1800 Blankenship Rd Ste 200  
West Linn OR 97068-4174

Rec #: 147 APN : 21E35C 00801  
Blackhawk Nevada Llc  
1800 Blankenship Rd Ste 200  
West Linn OR 97068-4174

Rec #: 148 APN : 21E35C 00802  
So Linn Llc,  
108 Kings Ct  
San Carlos CA 94070-5800

Rec #: 149 APN : 21E35C 00803  
Foodmakers Inc  
9330 Balboa Ave  
San Diego CA 92123-1516

Rec #: 150 APN : 21E35C 00804  
West Linn Associates Llc  
2625 Northrup Way  
Bellevue WA 98004

Rec #: 151 APN : 21E35C 00805  
West Linn Associates Llc  
2625 Northrup Way  
Bellevue WA 98004

Rec #: 152 APN : 21E35C 00805E1  
West Linn Associates Llc  
2625 Northrup Way  
Bellevue WA 98004

Rec #: 153 APN : 21E35C 00806  
West Linn Associates Llc  
2625 Northrup Way  
Bellevue WA 98004

Rec #: 154 APN : 21E35C 01200  
State Of Oregon  
1220 S.W. 3rd Avenue  
Portland OR 97204

Rec #: 155 APN : 21E35D 00700  
City Of West Linn  
22500 Salamo Rd Ste 100  
West Linn OR 97068-8301

Rec #: 156 APN : 21E35D 00703  
Rkm Development Inc  
15160 Nw Laidlaw Rd Ste 108  
Portland OR 97229-7708

Rec #: 157 APN : 21E35D 00704  
City Of West Linn  
22500 Salamo Rd Ste 100  
West Linn OR 97068-8301

Rec #: 158 APN : 21E35DB01400  
Kenneth Pryor  
2119 Greene St  
West Linn OR 97068-4107

Rec #: 159 APN : 21E35DB01500  
Donald Kemp  
2117 Greene St  
West Linn OR 97068-4107

Rec #: 160 APN : 21E35DB01600  
Toby Kolstad  
2115 Greene St  
West Linn OR 97068-4107

Rec #: 161 APN : 21E35DB01700  
Paul Andersen  
2113 Greene St  
West Linn OR 97068-4107

Rec #: 162 APN : 21E35DB01800  
Lance Dyrdaahl  
2111 Greene St  
West Linn OR 97068-4106

Rec #: 163 APN : 21E35DB01900  
James Bents  
2109 Greene St  
West Linn OR 97068-4106

Rec #: 164 APN : 21E35DB02000  
Wade Vandenhaak  
2103 Greene St  
West Linn OR 97068-4106

Rec #: 165 APN : 21E35DB02100  
Noah C Kamp  
2101 Greene St  
West Linn OR 97068-4106

Rec #: 166 APN : 21E35DB03700  
William Sheridan  
1816 Barnes Cir  
West Linn OR 97068-4114

Rec #: 167 APN : 21E35DB03800  
Dennis Odman  
1818 Barnes Cir  
West Linn OR 97068-4114

Rec #: 168 APN : 21E35DB03900  
Innes Family Trust  
1820 Barnes Cir  
West Linn OR 97068-4114

Rec #: 169 APN : 21E35DB04000  
Dean Wood  
1750 19th St  
West Linn OR 97068-4432

Rec #: 170 APN : 21E35DB04100  
Michael S Kim  
2102 Greene St  
West Linn OR 97068-4106

Rec #: 171 APN : 21E35DB04200  
Philippe Henriot  
1826 Barnes Cir  
West Linn OR 97068-4114

Rec #: 172 APN : 21E35DB04300  
Donald Read  
1828 Barnes Cir  
West Linn OR 97068-4114

Rec #: 1      APN : 21E35BC80005  
Resident  
4860 Summerlinn Way  
West Linn OR 97068-5132

Rec #: 2      APN : 21E35BC80011  
Resident  
4775 Summerlinn Way  
West Linn OR 97068-5118

Rec #: 3      APN : 21E35BC80013  
Resident  
4905 Summerlinn Way  
West Linn OR 97068-5133

Rec #: 4      APN : 21E35BC80014  
Resident  
4901 Summerlinn Way  
West Linn OR 97068-5133

Rec #: 5      APN : 21E35BC80021  
Resident  
5135 Summerlinn Way  
West Linn OR 97068-5134

Rec #: 6      APN : 21E35BC80024  
Resident  
5195 Summerlinn Way  
West Linn OR 97068-5134

Rec #: 7      APN : 21E35BC80027  
Resident  
5335 Summerlinn Way  
West Linn OR 97068-5135

Rec #: 8      APN : 21E35BC80030  
Resident  
5395 Summerlinn Way  
West Linn OR 97068-5135

Rec #: 9      APN : 21E35BC80031  
Resident  
5505 Summerlinn Way  
West Linn OR 97068-5136

Rec #: 10     APN : 21E35BC80033  
Resident  
5535 Summerlinn Way  
West Linn OR 97068-5136

Rec #: 11     APN : 21E35BC80037  
Resident  
5630 Summerlinn Way  
West Linn OR 97068-5137

Rec #: 12     APN : 21E35BC80039  
Resident  
5640 Summerlinn Way  
West Linn OR 97068-5137

Rec #: 13     APN : 21E35BC80040  
Resident  
5650 Summerlinn Way  
West Linn OR 97068-5137

Rec #: 14     APN : 21E35BC80042  
Resident  
5690 Summerlinn Way  
West Linn OR 97068-5137

Rec #: 15     APN : 21E35BC80047  
Resident  
5860 Summerlinn Way  
West Linn OR 97068-5138

Rec #: 16     APN : 21E35BC80050  
Resident  
6000 Summerlinn Way  
West Linn OR 97068-5139

Rec #: 17     APN : 21E35BC80051  
Resident  
6040 Summerlinn Way  
West Linn OR 97068-5139

Rec #: 18     APN : 21E35BC80057  
Resident  
6240 Summerlinn Way  
West Linn OR 97068-5140

Rec #: 19     APN : 21E35BC80058  
Resident  
6250 Summerlinn Way  
West Linn OR 97068-5140

Rec #: 20     APN : 21E35BC80061  
Resident  
6305 Summerlinn Way  
West Linn OR 97068-5141

Rec #: 21     APN : 21E35BC80062  
Resident  
6301 Summerlinn Way # 62  
West Linn OR 97068-5141

Rec #: 22     APN : 21E35BC80067  
Resident  
6430 Summerlinn Way  
West Linn OR 97068-5142

Rec #: 23     APN : 21E35BC80068  
Resident  
6400 Summerlinn Way  
West Linn OR 97068-5142

Rec #: 24     APN : 21E35BC94101  
Resident  
4101 Summerlinn Dr  
West Linn OR 97068-5110

Rec #: 25     APN : 21E35BC94200  
Resident  
4200 Summerlinn Dr  
West Linn OR 97068-5111

Rec #: 26     APN : 21E35BC94230  
Resident  
4230 Summerlinn Dr  
West Linn OR 97068-5111

Rec #: 27     APN : 21E35BC94250  
Resident  
4250 Summerlinn Dr  
West Linn OR 97068-5111

Rec #: 28     APN : 21E35BC94260  
Resident  
4260 Summerlinn Dr  
West Linn OR 97068-5111

Rec #: 29     APN : 21E35BC94290  
Resident  
4290 Summerlinn Dr  
West Linn OR 97068-5111

Rec #: 30     APN : 21E35BC94345  
Resident  
4345 Summerlinn Dr  
West Linn OR 97068-5108



Rec #: 31      APN : 21E35BC94365  
Resident  
4365 Summerlinn Dr  
West Linn OR 97068-5108

Rec #: 32      APN : 21E35BC94395  
Resident  
4395 Summerlinn Dr  
West Linn OR 97068-5108

Rec #: 33      APN : 21E35BC94595  
Resident  
4595 Summerlinn Way  
West Linn OR 97068-5116

Rec #: 34      APN : 21E35BD00300  
Resident  
2389 Falcon Dr  
West Linn OR 97068-4130

Rec #: 35      APN : 21E35BD01800  
Resident  
2384 Falcon Dr  
West Linn OR 97068-4143

Rec #: 36      APN : 21E35BD03000  
Resident  
2328 Falcon Dr  
West Linn OR 97068-4155

Rec #: 37      APN : 21E35BD03600  
Resident  
2429 Remington Dr  
West Linn OR 97068-4153

Rec #: 38      APN : 21E35C 00801  
Resident  
1800 Blankenship Rd  
West Linn OR 97068-4172

Rec #: 39      APN : 21E35C 00802  
Resident  
1855 Blankenship Rd  
West Linn OR 97068-4245

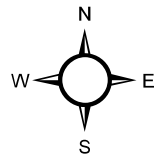
Rec #: 40      APN : 21E35C 00803  
Resident  
1885 Blankenship Rd  
West Linn OR 97068-4247

Rec #: 41      APN : 21E35C 00804  
Resident  
1885 Blankenship Rd  
West Linn OR 97068-4247

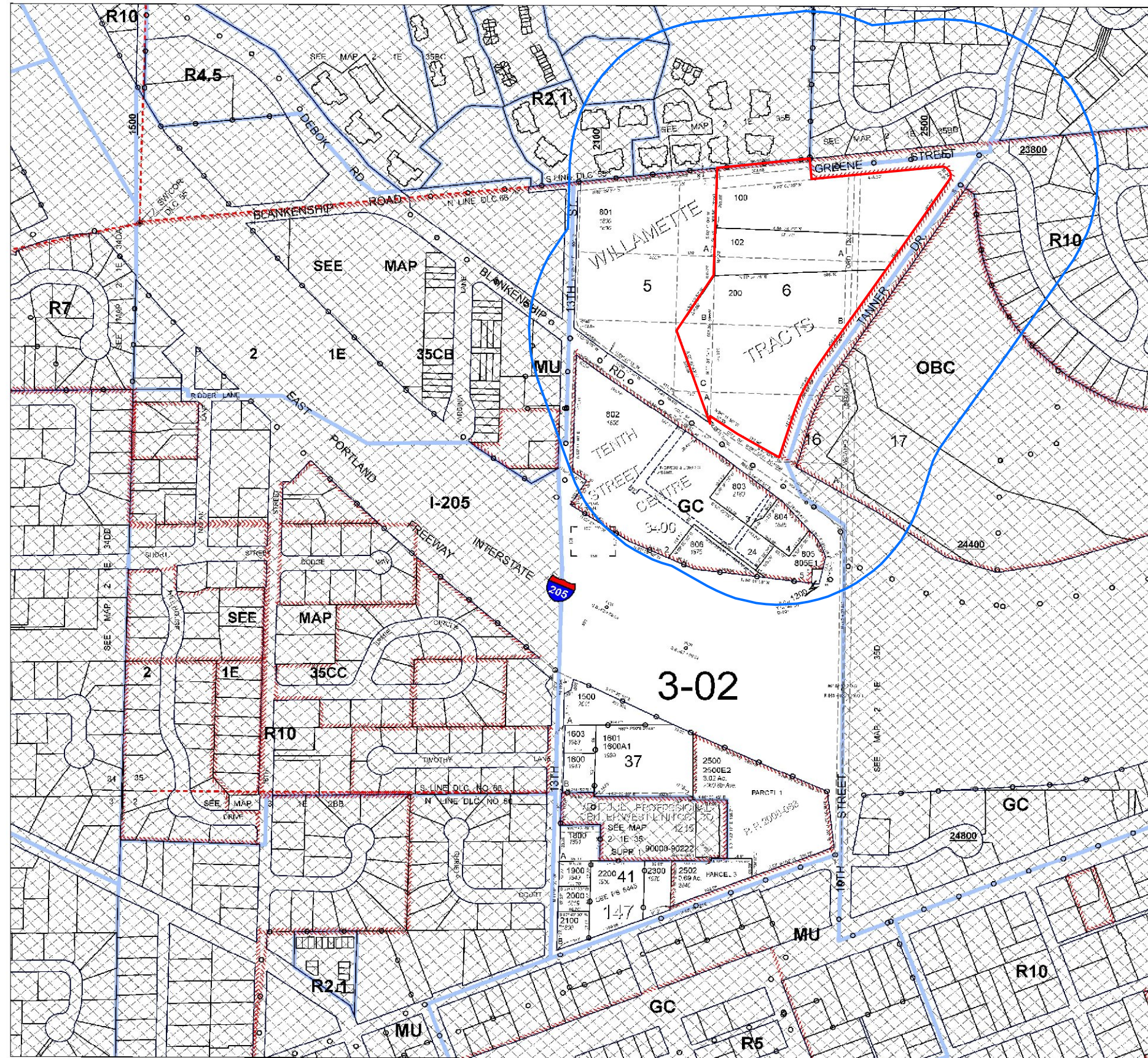
Rec #: 42      APN : 21E35C 00806  
Resident  
1875 Blankenship Rd  
West Linn OR 97068-4118

Rec #: 43      APN : 21E35DB04000  
Resident  
1822 Barnes Cir  
West Linn OR 97068-4114





1 inch = 400 feet



2 1 E 35C  
WEST LINN

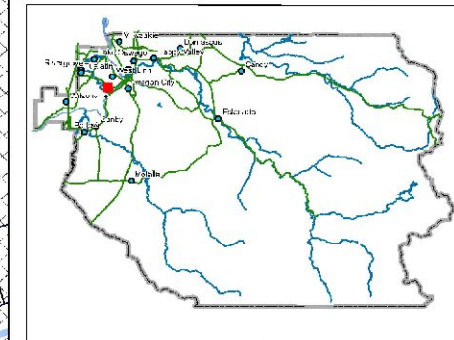
S.W.1/4 SEC.35 T.2S. R.1E. W.M.  
CLACKAMAS COUNTY  
1" = 200'

D. L. C.  
WILLIAM BLAND NO. 50  
M. K. PERRIN NO. 50 & 60  
JOESPH FIELDS NO. 67

Cancelled Taxlots

101  
103  
201  
100  
400  
600  
801  
600  
1000  
1100  
1300  
1400  
1500  
1502  
1520  
2400  
2500E1  
2501  
2530  
2700  
2800

- Parcel Boundary
- Private Road ROW
- Historical Boundary
- Railroad Centerline
- TaxCodeLines
- Map Index
- WaterLines
- Land Use Zoning
- Plats
- Water
- Corner
- Section Corner
- 1/16th Line
- Govt Lot Line
- DLC Line
- Meander Line
- PLSS Section Line
- Historic Corridor 40'
- Historic Corridor 20'



THIS MAP IS FOR ASSESSMENT  
PURPOSES ONLY

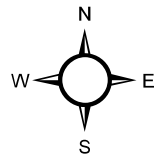
7/9/2013

2 1 E 35C  
WEST LINN

- PIQ
- 300' RADIUS

THIS MAP IS PROVIDED FOR INFORMATION  
PURPOSES ONLY; IT IS NOT A PLAT OR  
SURVEY OF THE LAND DEPICTED. THIS MAP  
IS FURNISHED AS A CONVENIENCE TO LOCATE  
THE LAND INDICATED HEREON WITH REFERENCE  
TO STREETS AND OTHER LAND. THE COMPANY  
ASSUMES NO LIABILITY FOR ANY LOSS  
OCCURRING BY REASON OF RELIANCE THEREON.





1 inch = 200 feet

This map was prepared for  
assessment purpose only.

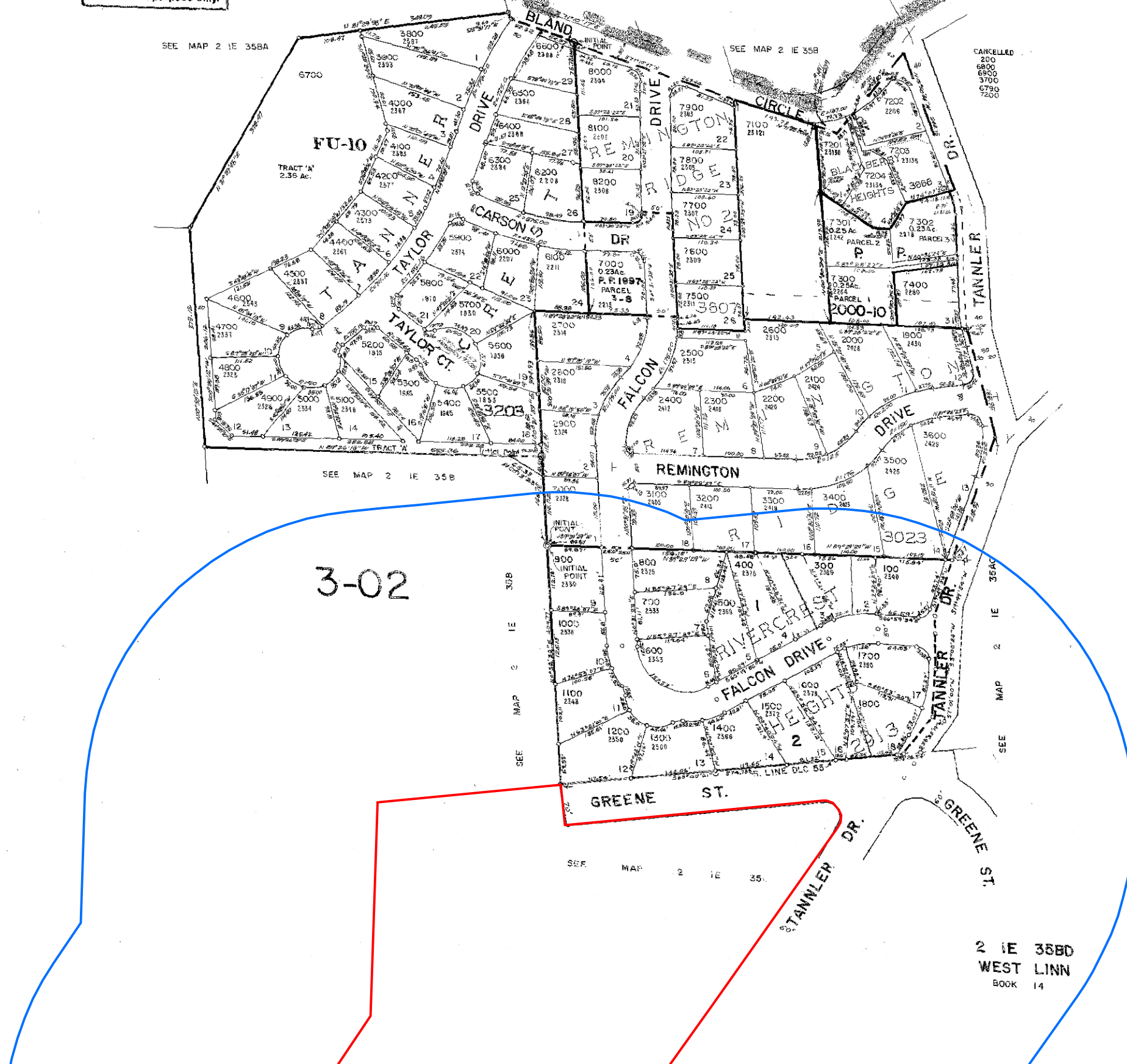
S.E.1/4 NW1/4 SEC. 35 T.2S. R.1E. W.M.  
CLACKAMAS COUNTY

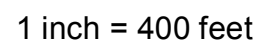
WILLIAM BLAND D.L.C.  
NO. 55

2 IE 35BD  
WEST LINN

PIQ  
300' RADIUS

THIS MAP IS PROVIDED FOR INFORMATION  
PURPOSES ONLY; IT IS NOT A PLAT OR  
SURVEY OF THE LAND DEPICTED. THIS MAP  
IS FURNISHED AS A CONVENIENCE TO LOCATE  
THE LAND INDICATED HEREON WITH REFERENCE  
TO STREETS AND OTHER LAND. THE COMPANY  
ASSUMES NO LIABILITY FOR ANY LOSS  
OCCURRING BY REASON OF RELIANCE THEREON.





$$|'' = 200'$$

SEE MAP 42 IE 35 AC

U. L. C.  
WILLIAM BLAND NO. 55  
M. K. PERRIN NO. 50866  
ROBERT MOORE NO. 71

2 IE 35D  
WEST LINN

PIQ

 300' RADIUS

Q. T. 's

800  
24401

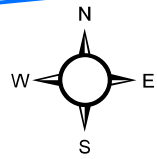
SEE MAP 2 IE 36CC

24 900

GREEN WAY  
SEE MAP 3-4

2 IE 35D  
WEST LINN  
BOOK 14

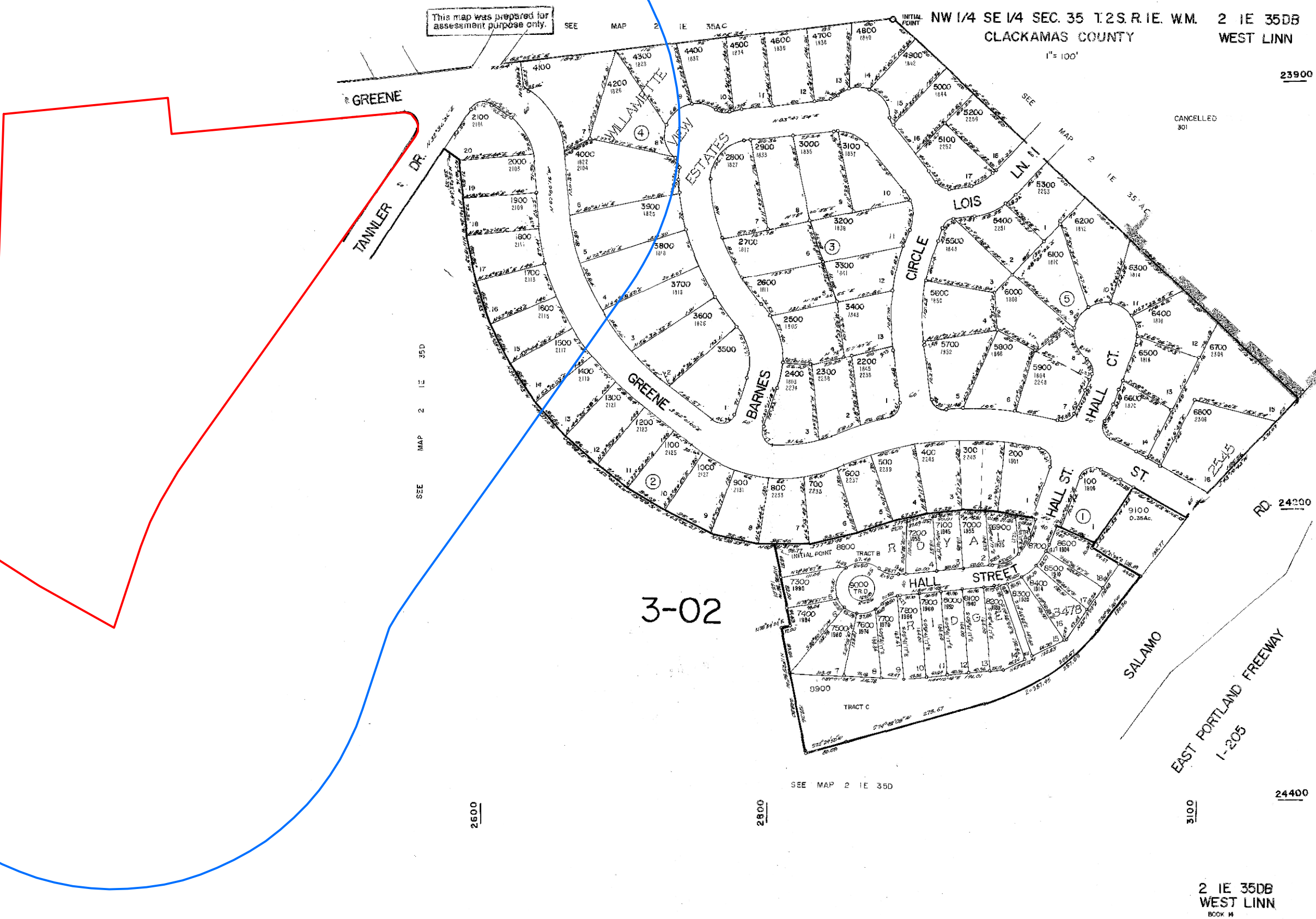




1 inch = 200 feet

- PIQ
- 300' RADIUS

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2 IE 35DB  
WEST LINN  
BOOK 14

## Exhibit B



www.conam.com

### The ConAm Group of Companies

3990 Ruffin Road • Suite 100  
San Diego, CA 92123-1826  
Telephone: (858) 614-7342  
Facsimile: (858) 614-7542

June 15, 2015

### VIA U.S. MAIL

**Re: Neighborhood Association Meetings to Discuss a Class II Design Review Application for the 10.1 Acre Property Located at the Northwest Corner of Tannler Drive and Blankenship Road**

Dear Neighbors:

I am writing on behalf of ConAm Properties, LLC to invite your comments on a proposed Class II Design Review application for the property located at the northwest corner of Tannler Drive and Blankenship Road in the Willamette Neighborhood Association. The approximately 10.1 acre property is zoned Office Business Center ("OBC") and is designated "Commercial" on the Comprehensive Plan map. An aerial photograph showing the location of the property is attached.

The Class II Design Review application will propose a mixed-use project consisting of about 195 multiple-family dwelling units above the first floor of each building with commercial uses on the ground floor of each building as allowed by West Linn Community Development Code 21.050.2.

Before submitting the Class II Design Review application, ConAm would like to receive comments from the Willamette and Savanna Oaks Neighborhood Associations and the property owners within 500 feet of the property. There will be two opportunities to discuss this proposal at the regularly scheduled Willamette Neighborhood Association and Savanna Oaks Neighborhood Association meetings. The presentation regarding this proposal may not be the only topic of discussion on the meetings' agendas.

Neighbors  
June 15, 2015  
Page 2

You are encouraged to contact your neighborhood association president with any questions you may have in advance of the meeting. The locations and meeting times, along with the contact information of your neighborhood association president, are shown below:

**Willamette Neighborhood Association**

*Date and Time:*

Wednesday, July 8, 2015, 7:00 p.m.

*Location:*

Pacific West Bank  
2000 SW 8th Avenue  
West Linn, OR 97068

*President:*

Mr. Michael Selvaggio  
[WillametteNA@westlinnoregon.gov](mailto:WillametteNA@westlinnoregon.gov)

**Savanna Oaks Neighborhood Association**

*Date and Time:*

Tuesday, July 7, 2015, 7:00 p.m.

*Location:*

Tualatin Valley Fire & Rescue District Fire  
Station  
1860 Willamette Falls Drive  
West Linn, OR 97068

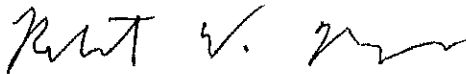
*President:*

Mr. Ed Schwarz  
[SavannaOaksNA@westlinnoregon.gov](mailto:SavannaOaksNA@westlinnoregon.gov)

The purpose of these meetings is to provide an opportunity for interested persons to review the proposed application and ask questions of our project team. These are informational meetings based upon preliminary plans, which may be modified prior to the application being formally submitted to the City.

We look forward to discussing our proposal with you. Please feel free to contact me at 858-614-7378, or at [RMorgan@ConAm.com](mailto:RMorgan@ConAm.com).

Very truly yours,



Rob Morgan  
Development Manager  
ConAm Properties, LLC

MCR:rsp





July 20, 2015

TO: Zach Pelz  
FROM: Michael C. Robinson  
RE: **City of West Linn File Nos. DR-15-11/LLA-15-01**

---

Dear Mr. Pelz,

This office represents the applicant. This memorandum addresses Item 1.a. of the July 16, 2015 determination of incompleteness. West Linn Community Development Code("CDC")55.070.C requires documentation of the neighborhood meeting requirements, including minutes from any neighborhood association meetings. The incompleteness determination notes that CDC 99.038.E.4. allows the Applicant to submit summaries of the neighborhood meetings if the neighborhood association doesn't produce the minutes. The Applicant contacted each of the two neighborhood associations following its respective meeting and asked for their meeting minutes.

The Willamette Neighborhood Association President said he would check with the Association's Secretary as to when the minutes would be available. His email response from July 10, 2015 is shown below:

*"I will check with our Secretary to see when the minutes will be drafted, and I will ask her to scan the sign-in-sheets for me.*

*-Mike Selvaggio  
Willamette Neighborhood Association"*

The Savanna Oaks Neighborhood Association President also responded on July 10, 2015 his response is shown below:

*"Mike,*

*The minutes won't be finalized until they are approved by the members at our next (August 4) meeting.*

*Regards,  
Ed Schwarz, President  
Savanna Oaks Neighborhood Association"*

The Applicant has prepared summaries of the Savanna Oaks Neighborhood Association meeting on July 7, 2015 and the Willamette Neighborhood Association Meeting on July 8, 2015. The Applicant will submit the meeting minutes prepared by the two (2) neighborhood associations when they are available.

The Planning Department can find that these summaries constitute a response under ORS 227.178(2)(a) and that Item 1.a. is addressed.

MCR:rsr

cc: Mike Mahoney  
Rob Morgan  
John Boyd  
Pete Miller

**SUMMARY OF JULY 7, 2015  
SAVANNA OAKS NEIGHBORHOOD ASSOCIATION MEETING**

**PRESENTATION BY CONAM PROPERTIES, LLC OF PROPOSED CLASS II DESIGN  
REVIEW APPLICATION**

- A.** Introduction by Ken Pryor, Savanna Neighborhood Association President.
- B.** Presentation by Rob Morgan and Mike Robinson. Rob Morgan presented three (3) exhibits: an aerial map showing the site, a site plan and an elevation of a typical building.
- C.** Introduction by Rob Morgan. Described ConAm, the subject site and oriented guests to the site. Said that ConAm is refining plans for development under the OBC zone. Pointed out the development site on the zoning map. He noted that there will be a commercial space in each of the seven (7) buildings. He noted that there will be 192 residential units. He noted that the site's slope is 15% to 20% across the site. He described a series of retaining walls terraced up the hillside. He noted that the first floor of each building will contain commercial space and garages with multiple family dwellings above the first floor.

**D. Questions from guests at the meeting.**

- 1. Question:** How many units with the bedroom counts?  
**Answer:** A mix but most units will be one and two bedrooms.
- 2. Question:** Will the residential units be apartments or condominiums?  
**Answer:** Apartments only.
- 3. Question:** What will face Blankenship Road?  
**Answer:** The development site does not face Blankenship Road; an approximately 1.2 acre parcel will remain in the current ownership.
- 4. Question:** Is your company involved with the 1.2 acres?  
**Answer:** No; the 1.2 acre site will remain in the current ownership.
- 5. Question:** Will commercial development be completed at the time of development?  
**Answer:** Yes, in order to obtain certificates of occupancy.
- 6. Question:** Will the first floor of each unit have commercial uses?  
**Answer:** Yes, one commercial space will be on the first floor in each of the seven buildings.
- 7. Question:** Have you built apartments with commercial uses like this before?  
**Answer:** Yes, ConAm has a variety of properties that have commercial and office spaces. ConAm thinks these spaces will be available for small commercial users.

8.     **Question:** Will there be commercial storefronts?  
      **Answer:** Yes, the commercial spaces will be visible along Tannler Drive and the internal north/south driveway.
9.     **Question:** How much parking will be provided?  
      **Answer:** The off-street parking will meet current City code requirements.
10.    **Question:** Will there be designated parking for commercial spaces?  
      **Answer:** Designated parking is not required by the zoning ordinance but ConAm will assign the commercial spaces.
11.    **Question:** Does the development portion of the site back up to the houses on Falcon Drive?  
      **Answer:** No, there will an open space area between the development site and the houses on Falcon Drive.
12.    **Question:** What is the height of the buildings? I don't want to look at the top of a roof.  
      **Answer:** Rob described the maximum height allowed in the OBC zoning district and noted that at Falcon, elevation is at about 382 feet or 383 feet, meaning that residents of those homes will look over the top of the development.
13.    **Question:** There is a big oak tree on the site. What are your plans for the oak tree?  
      **Answer:** We have retained an arborist to prepare a report; not sure which tree you are referring to. If the tree is in the development area, most trees in that area cannot be retained.
14.    **Question:** Do you have other projects in the Portland metropolitan area?  
      **Answer:** None in the Portland metropolitan area but ConAm owns existing properties in Oregon. ConAm did a project similar to the one proposed here in Oceanside, California.
15.    **Question:** How many driveways will you have and where will they be?  
      **Answer:** One shared driveway with I-205 Corporate Park on Blankenship Road, and one driveway on Tannler Drive.
16.    **Question:** There will not be a traffic signal at the intersection of Tannler and Blankenship?  
      **Answer:** That's correct but ConAm has hired a traffic engineer to prepare a traffic impact analysis to analyze traffic impacts at that intersection.
17.    **Question:** What will the rent be?  
      **Answer:** At the upper end of the rent range.
18.    **Question:** Will rents be similar to Beaverton, or downtown Portland?  
      **Answer:** Similar to Summerlin, in West Linn.

19. **Question:** We are concerned that traffic will be diverted to Greene Street to avoid the 10th Street intersection.  
**Answer:** The traffic impact analysis will look at trip distribution. The applicant prepares the traffic impact analysis and the city reviews it.
20. **Question:** What is the impact on public schools?  
**Answer:** The approval criteria do not make this a requirement to analyze.
21. **Question:** Our property values will be damaged; what is the justification for commercial?  
**Answer:** Commercial uses are required to meet the OBC zoning district's requirements.
22. **Question:** What is the amount of parking required/provided?  
**Answer:** About 354 off-street parking spaces.
23. **Question:** We are concerned about a left turn from Tannler to Blankenship being available.  
**Answer:** We do not know the solution yet for that intersection. The 2007 office approval had more vehicle trips than this application will have.
24. **Question:** If a traffic signal is not installed at the intersection of Tannler and Blankenship, more trips will go through neighborhood streets to the north.  
**Answer:** The traffic impact analysis will analyze this.
25. **Question:** Do you need the driveway on Tannler Drive?  
**Answer:** Yes.
26. **Question:** What about overflow parking?  
**Answer:** The code does not require overflow parking.
27. Series of statements, not questions follows; all stated by the same person.
- a. The offices can be vacant and the apartments occupied.
  - b. No chance that ConAm will continue to own the property.
  - c. Steepness of slope is huge issue; that's why it's not developed.
  - d. Tualatin Fire and Rescue District requires three entrances for over 200 dwelling units.
  - e. Appears to be on fast track before Transportation Safety [sic] Plan is completed in October 2015.
  - f. Remaining OBC parcel could become a "gentleman's club."

- g. Owner of remaining OBC parcel will not tell us what will happen with open space area.
  - h. Will upper 3.0 acre open space be given to the city?
  - i. 2007 application resulted in no left turns at Tannler.
  - j. Project is four stories high and does not meet Savanna Oaks Neighborhood Association Plan.
  - k. End run around zoning map amendment.
28. **Question:** What do you bring to the community?  
**Answer:** Addresses the existing need for more housing.
29. **Question:** Where will parking be?  
**Answer:** Pointed to it on the site plan exhibit.
30. **Question:** Will the project be five stories high?  
**Answer:** No, four stories high.
31. **Question:** What about stormwater runoff?  
**Answer:** A stormwater pond will be constructed on the site.
32. **Question:** Will the commercial uses be in a vacant garage?  
**Answer:** No.
33. **Question:** Why don't you create commercial spaces all in one area?  
**Answer:** Will consider it.
34. **Question:** Will there be play areas for children?  
**Answer:** Required to have open space areas. Looking at play area but haven't decided.
35. **Question:** Where will overflow parking go?  
**Answer:** Not required to provide overflow parking.

**SUMMARY OF JULY 8, 2015  
WILLAMETTE NEIGHBORHOOD ASSOCIATION MEETING**

**PRESENTATION BY CONAM PROPERTIES, LLC OF PROPOSED CLASS II DESIGN  
REVIEW APPLICATION**

- A.** Introduction by Michael Selvaggio, Willamette Neighborhood Association President.
- B.** Presentation by Rob Morgan and Mike Robinson. Rob Morgan presented three (3) exhibits: an aerial map showing the site, a site plan and an elevation of a typical building.
- C.** Introduction by Rob Morgan. Described ConAm, the subject site and oriented guests to the site. Said that ConAm is refining plans for development under the OBC zone. Pointed out the development site on the zoning map. He noted that there will be a commercial space in each of the seven (7) buildings. He noted that there will be 192 residential units. He noted that the site's slope is 15% to 20% across the site. He described a series of retaining walls terraced up the hillside. He noted that the first floor of each building will contain commercial space and garages with multiple family dwellings above the first floor.
- D. Questions from guests at the meeting.**
- 1. Question:** Will the open space area on the north be dedicated, will there be a trail, and will there be landscaping?  
**Answer:** The open space area will not be developed nor landscaped, and not sure if it will be dedicated to the city.
  - 2. Question:** Will you record a restrictive covenant prohibiting development?  
**Answer:** Will consider recording a restrictive covenant.
  - 3. Question:** How high will the building be?  
**Answer:** Rob read the CDC requirements for height.
  - 4. Question:** How many housing and commercial units and parking spaces will there be?  
**Answer:** 192 dwelling units, 7 commercial units and about 354 parking spaces.
  - 5. Question:** What will the density be, how many buildings will there be, and how many floors will there be?  
**Answer:** There will be 7 buildings and a clubhouse. Each building will have three floors on the upper side and four floors on the lower side.
  - 6. Question:** Size of commercial uses?  
**Answer:** Still working on that.
  - 7. Question:** Does the application meet the OBC zone purpose statement?  
**Answer:** OBC zone purpose statement is not applicable approval criterion.

8. **Question:** What about access?  
**Answer:** Access will be from two driveways, one on Blankenship and one on Tannler.
9. **Question:** Is a transportation impact analysis required?  
**Answer:** Yes.
10. **Question:** When will traffic mitigation be required?  
**Answer:** Mitigation will be provided either with building permit or prior to occupancy of units.
11. **Question:** Is the TPR applicable to this application, and is a transportation impact study required?  
**Answer:** The Transportation Planning Rule is not applicable but it is implemented through CDC 55.100. A transportation impact study is required by CDC 55.125.
12. **Question:** Mitigation of traffic impacts.  
**Answer:** Waiting for traffic impact to be concluded.
13. **Question:** 500 sq.ft. is not “commercial development”; don’t see anyone shopping here.  
**Answer:** OBC zone requires commercial space in each building.
14. **Question:** What about vacancies?  
**Answer:** Expect a low rate of vacancy in residential dwellings.
15. **Question:** Not doing this in good faith.  
**Answer:** Following OBC zoning district’s requirements.
16. **Question:** Concerned about parking and parking on Tannler Drive.  
**Answer:** Will meet CDC requirements for off-street parking.
17. **Question:** Commercial uses are spread out and not logical.  
**Answer:** Commercial uses will be located along the main driveway and along Tannler Drive.
18. **Question:** Example in Sherwood of commercial on bottom floor with two stories; concerned about parking overflowing onto residential streets and the condominiums.  
**Answer:** ConAm will look at access to the private street.
19. **Question:** Will you give a guarantee in writing that you won’t sell, and how long will you contractually agree to own the property?  
**Answer:** Cannot commit to that but ConAm takes the long term view of project development.



20. **Question:** Will all the residential units be rentals?  
**Answer:** Yes.
21. **Question:** Will there be additional travel lanes on Blankenship?  
**Answer:** The traffic impact analysis will look at this.
22. **Question:** Person interprets CDC 21.050.2 as a residential space above each commercial space.  
**Answer:** Will respond in separate submittal.
23. **Question:** Does the TIA look at vehicular transportation only?  
**Answer:** TIA looks at pedestrians and bicycles.
24. **Question:** Will be have speed bumps to prohibit cut-through traffic?  
**Answer:** Don't know.
25. **Question:** What is the expected percentage of vacancy?  
**Answer:** In the greater Portland metropolitan area, vacancy rate is between 4 and 5%.
26. **Question:** Thinks small businesses should be within walking distance.  
**Answer:** No response.
27. **Question:** What is size of commercial spaces?  
**Answer:** About 500 square feet but still working on that.
28. **Question:** Put shops on interior road?  
**Answer:** No response.
29. Repeat of same long list of statements by person at Savanna Oaks Neighborhood Association meeting.
30. **Question:** Underestimating number of parking spaces required.  
**Answer:** Will meet CDC requirements.
31. **Question:** Site has problem with flow of water, causing black mold.  
**Answer:** Will meet Public Works requirement.
32. **Question:** Should eliminate the building to the west of the clubhouse site.  
**Answer:** Unlikely to do so.
33. **Question:** Where will domestic water come from?  
**Answer:** From two water pressure zones.
34. **Question:** Where will residents go if there is a fire?  
**Answer:** Buildings will be constructed to meet uniform fire code standards, and units will be sprinklered.

- 35. Question:** Is open space required?  
**Answer:** Yes, open space required by CDC 55.100.
- 36. Question:** Will the project include interior sidewalks?  
**Answer:** Yes.
- 37. Question:** Will there be a sidewalk on Tannler Drive?  
**Answer:** Yes.

# **Tannler Drive Mixed-Use Development Preliminary Stormwater Management Plan**

July 10, 2015  
(Resubmitted July 20, 2015)

Submitted to:  
**ConAm Development**

Prepared by:  
**Otak, Inc.**

**Gary Alfson PE**  
Project Manager

**Ashley Cantlon, PE**  
Water Resources Engineer

**Jeremy Tamargo EI**  
Water Resources Engineer Designer



**Hanmi**Global Partner

Otak Project No. 17122

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## Attachments

- Attachment A: Figures
- Attachment B: NRCS Soils Report
- Attachment C: FEMA Floodplain Maps
- Attachment D: TR55 Table 2-2a CN
- Attachment E: Swale Calculations
- Attachment F: Detention Calculations

# Preliminary Stormwater Management Plan

## Introduction

The Tannler Drive Mixed-Use project, hereafter referred to as the Tannler Drive development, is a proposed mixed-use development in the City of West Linn, Oregon. The development consists of commercial and multi-family residential housing, sidewalks, roadways, utilities, and a stormwater management system. The stormwater management system will include a collection and conveyance system, a flow-through planter, a regional water quality swale, and a detention pond. This Stormwater Management Plan documents compliance of the Tannler Drive stormwater management system with the *West Linn Surface Water Management Plan* (City of West Linn, 2006), the *City of West Linn Public Works Design Standards* (City of West Linn, 2010), *City of Portland Stormwater Management Manual* (COP, 2014), and the *Stormwater Standards for Clackamas County Service District No. 1* (Clackamas County, 2013). Included are descriptions of the existing and proposed hydrologic conditions, as well as design details of the proposed onsite stormwater management facilities.

## Site Description

The Tannler Drive development project is located along the west side of Tannler Drive, north of its intersection with Blankenship Road. The project proposes to develop portions of 3 existing taxlots containing approximately 11 acres of mainly undeveloped land. Existing site conditions consist of undisturbed ground covered with native vegetation (grasses, bushes, and shrubs), and areas of oak and Douglas fir trees. Approximately 0.6 acres of the lot are currently developed, however for the purposes of this analysis the site is assumed to be fully undeveloped, allowing for a conservative preliminary design.

The project site is located on steep (9- to 24-percent slopes) terrain that slopes from north to south toward Blankenship Road. Underlying soils consist primarily of Witzel very stony silt loam, and are underlain by relatively shallow bedrock. This type of soil is classified as Hydrologic Soil Group D, which is characterized by very low infiltration rates and high runoff potential. Attachment B contains a soils map and information from the Natural Resources Conservation Service (NRCS).

Figure 1 is a vicinity map that shows the project site location.

# Preliminary Stormwater Management Plan

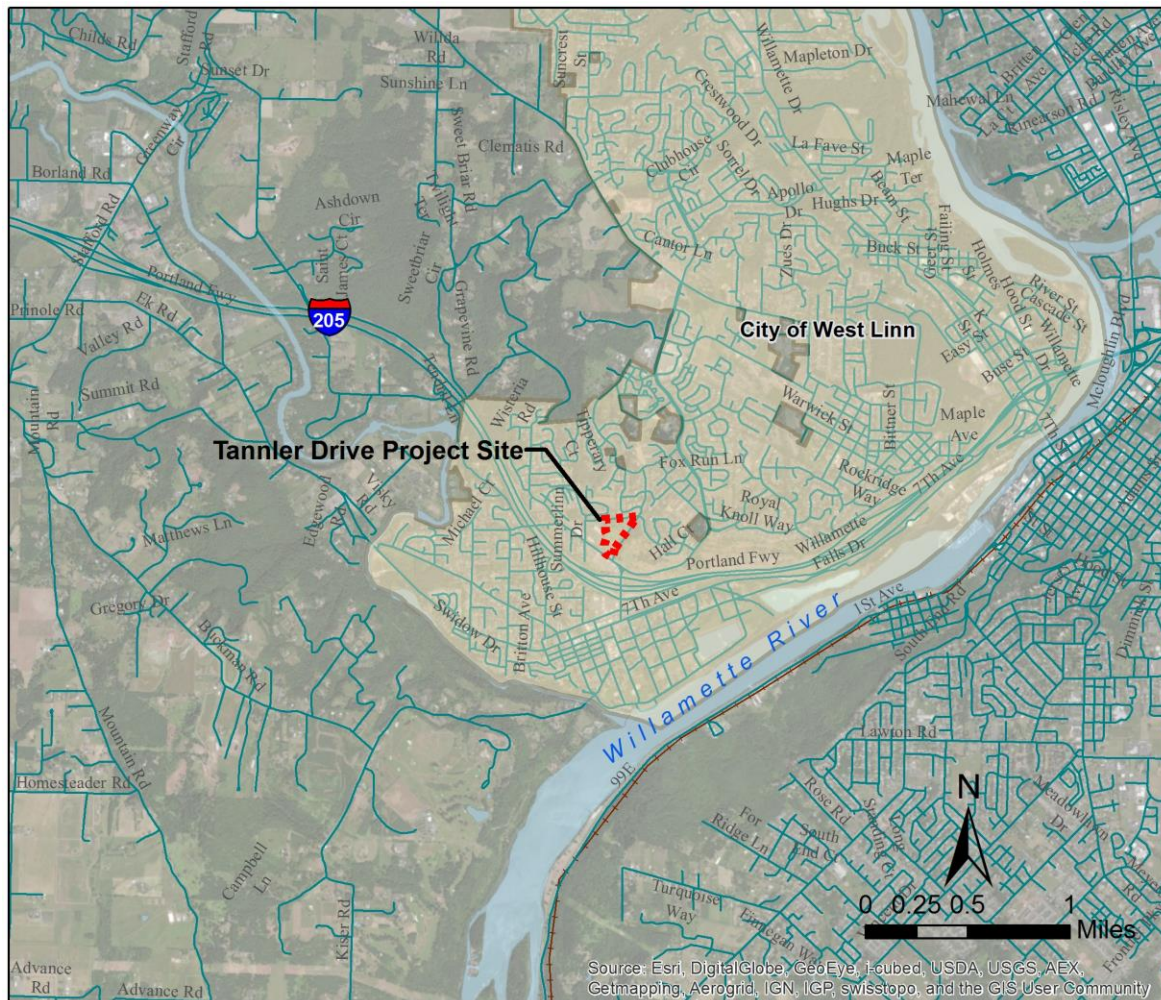


Figure 1: Vicinity Map

## Design Criteria

Development of the project area will follow three sets of design criteria for stormwater management:

- *West Linn Surface Water Management Plan* (City of West Linn, 2006)
- *City of West Linn Public Works Design Standards* (City of West Linn, 2010)
- *City of Portland Stormwater Management Manual* (COP, 2014)

## Design Approach

The Tannler Drive project site is under the jurisdiction of the City of West Linn. Proposed developments must meet the requirements set forth in the West Linn Surface Water Management Plan and Public Works Design Standards. These standards include requirements to provide adequate

# Preliminary Stormwater Management Plan

stormwater conveyance during design storm events, mitigate for increased stormwater runoff, and reduce runoff pollutants using design guidelines set forth in the City of Portland Stormwater Management Manual. The City of West Linn (hereafter referred to as the City) requires detention of stormwater runoff such that post-developed flows generated by the 2-year, 5-year, 10-year, and 25-year storm events shall not exceed corresponding discharge rates under pre-developed conditions.

The City of Portland Stormwater Management Manual was used for water quality facility design guidance along with Clackamas County's water quality flow rate, defined as the amount runoff generated by 1 inch of rainfall in 24-hours.

## Existing Drainage

The Tannler Drive project will be constructed on an undeveloped hillside with existing slopes ranging between 9 and 24 percent. Existing elevations throughout the property vary from approximately 390 feet along the north edge of the property, to 215 feet along the southern lot boundary. There is no existing drainage infrastructure on the property.

## Floodplain

FEMA Flood Insurance Rate Maps for Clackamas County identify floodplains for the Willamette River, but not within the project limits. The FEMA map included in Attachment C (Firmette ID 41005C0257D) show floodplain limits located approximately 1/5 mile downstream of the project site.

## Drainage Basins

The stormwater management system for the Tannler Drive development project will contain a regional treatment swale and detention pond. Stormwater runoff from the entire development (approximately 9.95 acres of pervious and impervious area) will be collected and conveyed to the swale for treatment of flows up to and including the water quality design storm. Larger flows will bypass around the swale to the regional detention pond, which will attenuate and discharge site flows into the existing public stormwater conveyance system located in Blankenship Road. Existing and project conditions maps are included in Attachment A.

## Existing Conditions

Drainage on the existing site flows overland from north to south across undeveloped ground with brushy vegetated cover. Runoff flows down the slope and is intercepted by vegetation, local depressions in the soil, and shallow ditches long the adjacent roads. Stormwater runoff that exceeds the capacity for the receiving ditches currently enters the existing 12-inch diameter drainage systems in Blankenship Road and Tanner Drive before entering a 30-inch diameter main conveyance system at the intersection of Blankenship Road and Tanner Drive. This main conveyance system extends approximately 1 mile to an outfall at the Willamette River.



# Preliminary Stormwater Management Plan

## Proposed Conditions

Of the 11 acres within the lot boundary, 9.95 acres will require stormwater management. 1.17 acres are not included in this analysis, as they are located downhill of the project site and stormwater management system, and will remain undeveloped. Post-development stormwater runoff flow patterns will generally follow those described for existing conditions, when viewed from a regional perspective: post-development stormwater runoff will continue to drain to the downstream roadway drainage system, which currently receives runoff from the project site area. It is assumed that the existing drainage system will contain capacity to accommodate detained flows from the proposed development. Drainage basins have been delineated for areas which will contribute runoff to the onsite pond and grassy swale upon project completion. A proposed drainage basin and site layout is shown on Figure 3 in Attachment A.

Table 1 presents the contributing areas from the proposed Tannler Drive development project limits. Pervious areas under developed conditions will be a combination of approximately 1.64 acres of lawn, which produces higher runoff rates, and 3.17 acres of undisturbed, highly vegetated area uphill from the development located along Falcon Drive, Summerhinn Way, and the Tannler Drive project site. For the purposes of providing a conservative preliminary analysis and stormwater management design, the full 4.81 acres of pervious area were modeled as developed lawn.

Table 1: Proposed Tannler Drive Project Areas	
Area Type	Area (acres)
New Impervious Area	5.14
Project Pervious Area (lawn)	1.64
Project Pervious Area (undisturbed)	3.17
Total Project Drainage Area	9.95

## Hydrology

Catchment areas for existing and proposed basins were modeled using HydroCAD® 10.0 software. Drainage basin areas described previously, as well as rainfall distributions, curve numbers, and times of concentration were entered into each catchment to create runoff hydrographs using the Santa Barbara Urban Hydrograph (SBUH) runoff method. Under existing conditions, the basin behaves like a more natural, contiguous watershed, and a single time of concentration was applied to the entire basin. In order to more accurately represent the post-development runoff hydrograph from a given basin, the impervious and pervious areas were input into separate catchments and flows were calculated separately to allow different times of concentration to be used for different land uses. Resulting hydrographs were then added together to produce a combined peak runoff flow rate. This calculation approach isolates the impervious surfaces from the pervious areas, and accounts for the rapid initial runoff from impervious surfaces followed by runoff from pervious surfaces within the

# Preliminary Stormwater Management Plan

basin.

## Rainfall Depth

Rainfall depths for the storm events of interest, obtained from NOAA Atlas maps were applied to the Natural Resource Conservation Service (NRCS) Type 1A rainfall distribution and routed through the pre- and post-developed watershed basins.

Table 2: Precipitation Depths	
Recurrence Interval	Precipitation Depth (in)
2-Year	2.50
5-year	3.00
10-Year	3.40
25-Year	3.90
100-Year	4.50

## Curve Number

Curve Numbers (CN), listed in Table 3 for impervious and pervious areas during existing and post-development conditions were selected using Table 2-2a – Runoff Curve Numbers for Urban Areas from Technical Release 55: Urban Hydrology for Small Watersheds (TR-55) (see Attachment D).

Table 3: Runoff Curve Numbers			
Category	Cover Type	Hydrologic Soil Group	Curve Number
Impervious Area	Pavement, roofs, sidewalks	D	98
Existing Pervious Area	Brush	D	77
Post-development Pervious Area	Open Space, Good Condition	D	80

## Time of Concentration

The time of concentration (ToC) represents the maximum time needed for all areas of the basin to be contributing to the outflow hydrograph. Time of concentration values for each contributing drainage basin during existing conditions were calculated using the method provided by the SCS Technical Release 55 (SCS 1986) in HydroCAD. The minimum allowable time of concentration for any drainage basin is five minutes.

## Existing Conditions

The pre-project area was modeled as one existing drainage basin and one time of concentration was calculated. Using the time of concentration calculation method programed into HydroCAD (similar

# Preliminary Stormwater Management Plan

to the TR55 method), it was assumed that existing runoff behavior consists of 50 feet of sheet flow, while the remaining 900 feet to the point of compliance was assumed to be shallow concentrated flow on steep slopes. A ToC of 6.4 minutes was calculated and applied to this analysis.

## Proposed Conditions

Times of concentration are much lower post-development due to the additional impervious area created in the basin, which consequently increases the overall curve number within the basin. The time of concentration for post-development conditions within each drainage basin was assumed to be five minutes; a conservative assumption for preliminary calculations based on the high impervious percentages resulting from development.

## Drainage Basin Runoff

Stormwater runoff rates for each basin, during existing and proposed conditions, were calculated using HydroCAD®, as described above. The total existing runoff rate generated by the existing areas within the project site was calculated to set targets for water quantity mitigation in the pond. The existing runoff rate for the project area was determined by computing a runoff hydrograph and routing it through a storage node with a flow control structure representing a detention pond. Table 4 lists the existing runoff rates calculated for the project site.

Table 4: Existing Conditions Runoff Rates	
Storm Event	Runoff Flow Rate (cfs)
2-year	1.25
5-year	2.08
10-year	2.82
25-year	3.80
100-year	5.06

Runoff rates for each drainage basin during post-developed conditions are included in the output report from HydroCAD (see Attachment F). Runoff from each of these basins was routed to the onsite pond via the proposed stormwater conveyance system described below.

## Water Quality

Runoff from the water quality storm event is generated by 1-inch of precipitation falling in a 24-hour period, as defined by Clackamas County Water Environment Services (WES). Approximately 5.14 acres of new impervious area will be created with the new development. Runoff from the developed area will be treated using a grassy swale as described below.

## Pretreatment

# Preliminary Stormwater Management Plan

A pollution control manhole will be located upstream of the regional grassy swale facility to remove floatable material and allow some solids to settle out before being discharged into the swale. A City of West Linn standard pollution/flow control manhole will be installed in the private roadway right-of-way at the downstream end of the main conveyance line following a flow split that will direct low flows through the pollution control manhole and swale, and high flows directly into the detention pond.

## Grassy Swale

The City of West Linn refers to the City of Portland Stormwater Management Manual for water quality facility design guidance. Parameters for this type of facility, as defined by the City of Portland, include:

- Minimum two foot bottom width
- Maximum 4H:1V side slopes
- Maximum design velocity of 0.9 ft/s
- Minimum hydraulic residence time of nine minutes
- Manning n value of 0.25
- One foot of freeboard between the water quality surface elevation
- Minimum length is 100 feet
- Flow spreaders shall be placed every 50 feet in swales with a bottom width greater than 6 feet.

A swale was preliminarily designed for the proposed project site using these parameters with the following dimensions:

- Bottom width = 7 feet
- Longitudinal slope = 0.6%
- Length = 133 feet
- Depth = 18 inches
- Side slopes = 4H:1V

Calculations for the proposed grassy swale are included in Attachment E.

## LIDA Planter

The frontage along Tannler Drive will have a new eight-foot wide sidewalk within the public right-of-way, set along the back of the existing street curb line. This new impervious area (approximately 5,200 square feet) will be treated using a Low Impact Development Approach (LIDA) flow-through planter within the proposed dedicated right-of-way on the back side of the sidewalk. The sidewalk sheds toward the street, combining with roadway runoff in the existing Tannler Drive curb and gutter system. Tannler Drive has a slope of approximately 13 percent with existing catch basins collecting gutter flows. Since the sidewalk runoff will be combined with the existing roadway runoff, the City is open to an approach which allows an equivalent area of roadway runoff to be treated in place of sidewalk runoff. The LIDA planter shown on Figure 2 will collect 5,200 sf of sidewalk and existing roadway for treatment. Table 5 summarizes the LIDA planter sizing.

# Preliminary Stormwater Management Plan

**Table 5: LIDA Planter Sizing Summary**

Contributing Impervious Area	5,200 square feet
LIDA Sizing Factor	6%
LIDA Treatment Area	312 square feet

## Water Quantity

The discharge rate from the proposed development into the Blankenship Road drainage system must be less than or equal to the peak flow rate from pre-developed 2-year, 5-year, 10-year, and 25-year recurrence interval storm events, per City of West Linn water quantity standards. Pre- and post-development flow rates from the pond are listed in Table 6.

## Detention Pond

Water quantity requirements will be met by routing proposed runoff into a single detention pond, located at the southwest corner of the development. Post development runoff rates were routed through this pond, which was sized to match release rates of existing conditions using storage and a flow control structure before directing stormwater into the existing downstream stormwater conveyance system.

## Flow Control Structure

Peak flow attenuation will be achieved using a standard City of West Linn flow control structure on the pond outlet pipes. The low-flow control orifice plate will include a low-flow control orifice to regulate the release of the 2-year storm event. A second orifice will be located higher to regulate the release of the 5- and 10-year flow events, and a notched weir will be incorporated into the riser structure to regulate the 25-year flow rate. The result will be slight over-detention of the 10-year and 25-year storm events. Table 6 summarizes the flow control structure for the proposed pond, and Attachment F includes additional orifice and weir data from the HydroCAD model.

**Table 6: Flow Control Structure Summary**

Flow Control Device	Dimension/Elevation
2-year Flow Control Orifice Diameter/Elevation	5.1"/270'
5/10-year Flow Control Orifice Diameter/Elevation	6.3"/273.3'
High-Flow Control Weir Length/Elevation	12"/274.4'

## Release Rates

The flow control structure was sized using an iterative process in the HydroCAD model, adjusting the storage volume and outflow structure until the pond outflow rates for the design storm events were less than or equal to the calculated existing basin runoff rates. The resultant project condition runoff rates and release rates from the pond are listed in Table 7, along with the existing basin runoff rates for comparison.

# Preliminary Stormwater Management Plan

**Table 7: Pre- and Post-development Release Rate Comparison**

Storm Event	Existing Runoff Rate (cfs)	Proposed Developed Undetained Rate (cfs)	Proposed Release Rate (cfs)
2-year	1.25	3.78	1.24
5-year	2.08	4.85	2.07
10-year	2.82	5.74	2.47
25-year	3.80	6.88	3.60

## Pond Capacity

The pond has capacity to contain the detained flow up to and including the 25-year storm event, with 1 foot of freeboard. Table 8 lists the pond water surface elevation and subsequent pond volume from the HydroCAD model during each of the design storm events.

**Table 8: Pond Volumes and Water Surface Elevations**

Storm Event	Water Surface Elevation (ft)	Volume (cf)
2-year	273.29	8,930
5-year	273.8	10,977
10-year	274.31	13,242
25-year	274.82	15,725
100-year*	275.23	17,119

\*Volume not contained within the pond, discharge through emergency overflow occurs.

## Pond Emergency Overflow

Either a separate riser pipe or an emergency overflow weir at the top of the pond embankment adjacent to the proposed development will be designed to convey the entirety of the 100-year storm event runoff rate should the primary flow control outfall be compromised, or its capacity exceeded. Attachment F includes emergency overflow weir sizing, which was calculated using Hydraflow Express software as well as sizing for an overflow riser as an alternative option if the weir is not able to be configured in a way that provides a safe overflow route. Should a storm event exceed the maximum capacity of the ponds, the excess stormwater in the pond will either spill through the emergency overflow weir, directing flows downhill across the preserved lot area and into the roadway conveyance system or into the overflow riser, which will convey flows into the main conveyance line downstream of the pond.

## Conveyance

A stormwater conveyance pipe network within the Tannler Drive development will be designed in accordance with City of West Linn standards for storm sewer pipe networks. The stormwater conveyance network will collect and convey runoff flows to the onsite stormwater pond. The conveyance system will be sized using the Rational Method to meet the following criteria:

## Preliminary Stormwater Management Plan

- Five minute minimum time of concentration
- Minimum pipe slope of 0.0055 ft/ft with minimum velocity of 2 ft/second
- Minimum pipe roughness coefficient of 0.013
- Design storm = 100-year event.

## Conclusions

The stormwater management approach for the Tannler Drive Mixed-Use development project is to provide onsite stormwater collection, conveyance, water quality treatment, and detention designed to meet City standards. The conveyance system will be sized to convey the 100-year storm event. Water quality requirements will be met using a regional grassy swale using a one-inch water quality design storm and City of Portland design standards. The onsite regional detention pond will be designed to release post-development runoff flows at a rate less than or equal to existing peak runoff rates for the 2-year, 5-year, 10-year, and 25-year storm events.

# Preliminary Stormwater Management Plan

## References

SCS, 1986. Technical Release 55: Urban Hydrology for Small Watersheds, United States Department of Agriculture Soil Conservation Service, June 1986.

City of West Linn, 2006. *West Linn Surface Water Management Plan*, West Linn Public Works Department/Pacific Water Resources, Inc./Fishman Environmental Services, LLC, December 2006.

City of West Linn, 2010. *City of West Linn Public Works Design Standards*, West Linn Public Works Department, 2010.

COP, 2014. *City of Portland Stormwater Management Manual*, City of Portland, January 2014.

Clackamas County, 2013. *Stormwater Standards for Clackamas County Service District No. 1*, Clackamas County, Water Environment Services, July 2013.



## Attachments

## Attachment A: Figures

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Resolved  
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016XTOPO  
016-WEST SITE  
17122X001

Plotted: Jul 10, 2015 - 11:55am  
L:\Project\17100\17122\Draw\17122\Figure 2 Existing Drainage.dwg  
Layout Name: Existing Conditions



ConAm Properties, LLC  
3990 RUFFIN ROAD, SUITE 100  
SAN DIEGO, CA 92123  
PHONE: (858) 614-7200  
FAX: (858) 614-1646

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

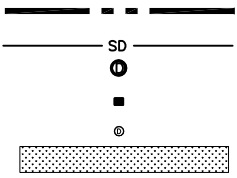
EXISTING DRAINAGE

**otak**  
HannuGlobal Partner  
808 SW 3rd Ave., Ste. 300  
Portland, OR 97204  
Phone: (503) 287-8825  
Fax: (503) 415-2304  
www.otak.com

17122  
Project No. Drawing No.  
**FIGURE 2**  
Sheet No.  
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LEGEND

- PROJECT BOUNDARY
- PUBLIC STORM LINE
- STORM MANHOLE
- STORM CATCH BASIN
- STORM CLEANOUT
- LIDA PLANTER



GREENE STREET

TL 100  
UNDISTURBED PROJECT AREA  
3.17 ACRES

TL 102  
DEVELOPED SITE  
7.01 ACRES

TANNER DRIVE

LIDA  
PLANTER

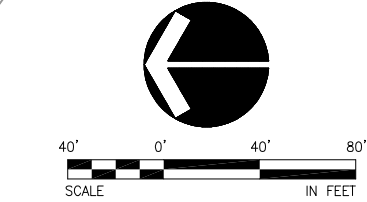
MATCHLINE SEE LEFT

TL 200  
RESERVED FOR  
FUTURE  
DEVELOPMENT  
1.17 ACRES

WATER QUALITY  
SWALE

DETENTION  
POND

EXISTING DRIVE



TANNER DRIVE MIXED-USE DEVELOPMENT  
WEST LINN, OREGON

ota  
HammiGlobal P  
808 SW 3rd Ave, S  
Portland, OR  
Phone: (503) 28  
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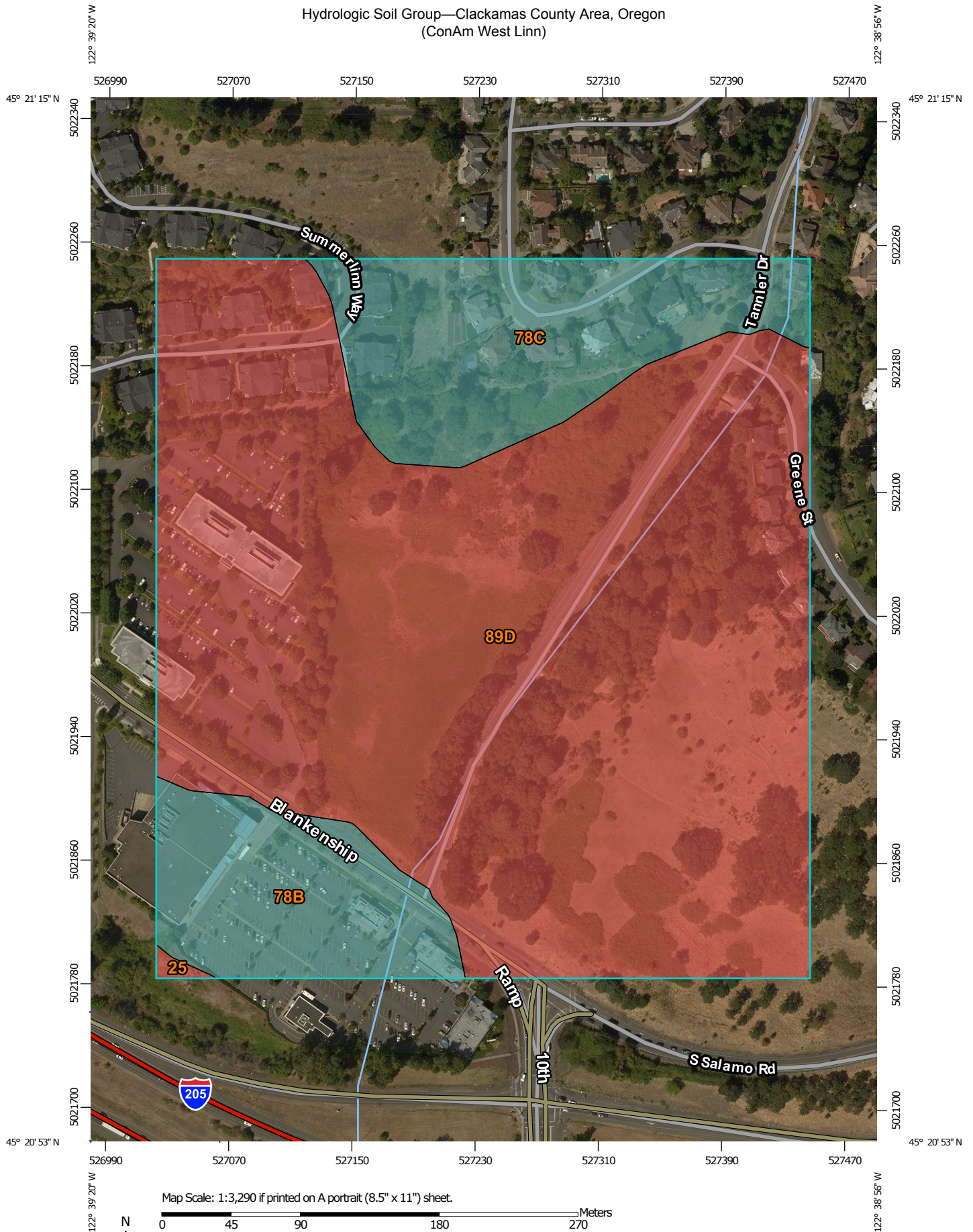
ConAm Propert  
3990 RUFFIN ROAD,  
SAN DIEGO,  
PHONE: (858)  
FAX: (858)

NO.	DATE	BY	REVISION	COMMENTS

## Attachment B: NRCS Soils Report



# Hydrologic Soil Group—Clackamas County Area, Oregon (ConAm West Linn)



## 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: <http://websoilsurvey.nrcs.usda.gov>  
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 9, Sep 19, 2014

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

Hydrologic Soil Group— Summary by Map Unit — Clackamas County Area, Oregon (OR610)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
25	Cove silty clay loam	D	0.1	0.2%
78B	Saum silt loam, 3 to 8 percent slopes	C	4.7	9.5%
78C	Saum silt loam, 8 to 15 percent slopes	C	7.1	14.4%
89D	Witzel very stony silt loam, 3 to 40 percent slopes	D	37.2	75.9%
<b>Totals for Area of Interest</b>			<b>49.1</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.



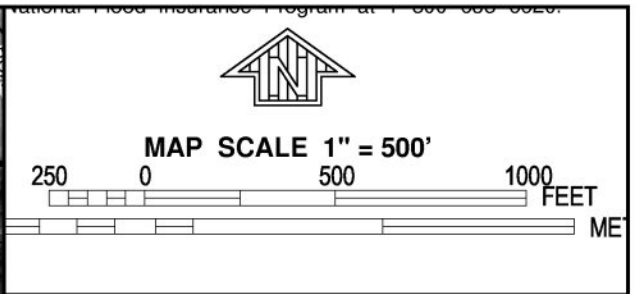
## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

## Attachment C: FEMA Floodplain Map



NFIP

PANEL 0257D

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**CLACKAMAS COUNTY,**  
**OREGON**  
**AND INCORPORATED AREAS**

**PANEL 257 OF 1175**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLACKAMAS COUNTY	415588	0257	D
OREGON CITY, CITY OF	410021	0257	D
WEST LINN, CITY OF	410024	0257	D

Notice to User: The **Map Number** shown below should be used when placing map orders, the **Community Number** shown above should be used on insurance applications for the subject community.



**MAP NUMBER**  
**41005C0257D**  
**EFFECTIVE DATE**  
**JUNE 17, 2008**

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

0"  
39'22.50"

Attachment D: TR 55 Table 2-2a Runoff Curve  
Numbers

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area <sup>1</sup>	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>2</sup> :					
Poor condition (grass cover < 50%) .....		68	79	86	89
Fair condition (grass cover 50% to 75%) .....		49	69	79	84
Good condition (grass cover > 75%) .....		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way) .....		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way) .....		98	98	98	98
Paved; open ditches (including right-of-way) .....		83	89	92	93
Gravel (including right-of-way) .....		76	85	89	91
Dirt (including right-of-way) .....		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) <sup>3</sup> .....		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders) .....		96	96	96	96
Urban districts:					
Commercial and business .....	85	89	92	94	95
Industrial .....	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses) .....	65	77	85	90	92
1/4 acre .....	38	61	75	83	87
1/3 acre .....	30	57	72	81	86
1/2 acre .....	25	54	70	80	85
1 acre .....	20	51	68	79	84
2 acres .....	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas					
(pervious areas only, no vegetation) <sup>4</sup> .....		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

<sup>1</sup> Average runoff condition, and  $I_a = 0.2S$ .

<sup>2</sup> The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

<sup>3</sup> CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

<sup>4</sup> Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

<sup>5</sup> Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. <sup>2</sup>	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. <sup>3</sup>	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 <sup>4</sup>	48	65	73
Woods—grass combination (orchard or tree farm). <sup>5</sup>	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. <sup>6</sup>	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 <sup>4</sup>	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

<sup>1</sup> Average runoff condition, and  $I_p = 0.28$ .

<sup>2</sup> *Poor*: <50% ground cover or heavily grazed with no mulch.

*Fair*: 50 to 75% ground cover and not heavily grazed.

*Good*: > 75% ground cover and lightly or only occasionally grazed.

<sup>3</sup> *Poor*: <50% ground cover.

*Fair*: 50 to 75% ground cover.

*Good*: >75% ground cover.

<sup>4</sup> Actual curve number is less than 30; use CN = 30 for runoff computations.

<sup>5</sup> CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

<sup>6</sup> *Poor*: Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.

*Fair*: Woods are grazed but not burned, and some forest litter covers the soil.

*Good*: Woods are protected from grazing, and litter and brush adequately cover the soil.

## Attachment E: Swale Sizing Summary

# Tannler Drive Development Project

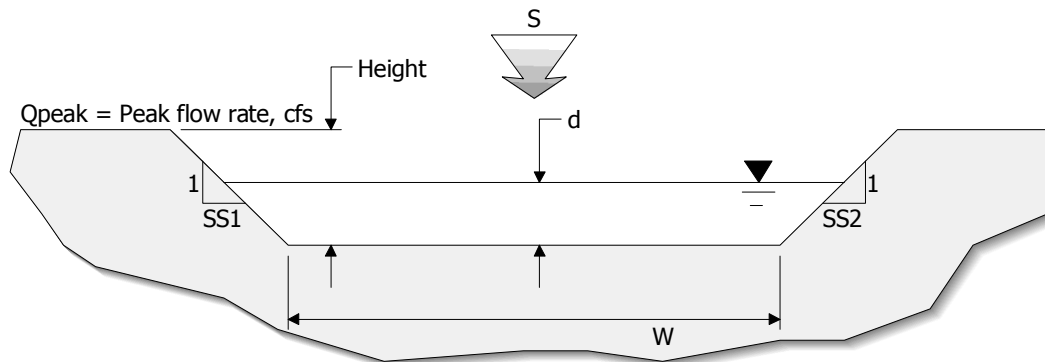


Diagram of Swale Variables Used in Spreadsheet

## User-Supplied Data

Variable	Name	Unit
Side Slope 1	SS1	4 SS1:1
Side Slope 2	SS2	4 SS2:1
Swale Width	W	7 feet
Lengthwise Slope	S	0.006 feet/foot
Peak Flow Rate	Qpeak	1.05 cfs
Swale Height	Height	1.5 feet
Manning Coefficient	n	0.25

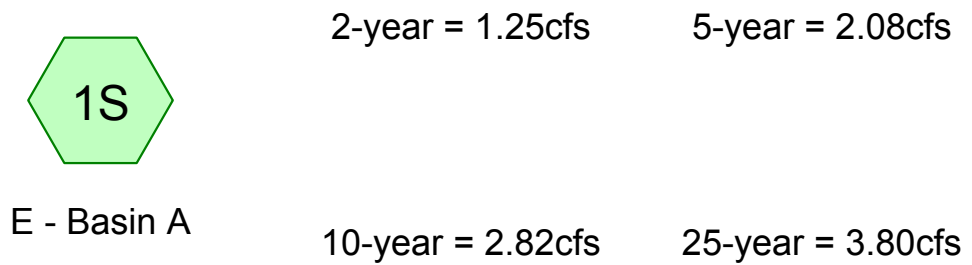
## Computed Data

Variable	Name	Unit
Depth	d	5.73 inches
Cross-sectional Area	A	4.26 sf
Wetted Perimeter	WP	10.94 feet
Hydraulic Radius	R	0.39 feet
Computed Peak Flow Rate	Qpkcalc	1.05 cfs
Computed Peak Velocity	Vpkcalc	0.25 ft/sec
<b>Computed Length</b>	<b>L</b>	<b>133 feet</b>

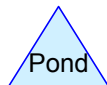
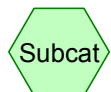
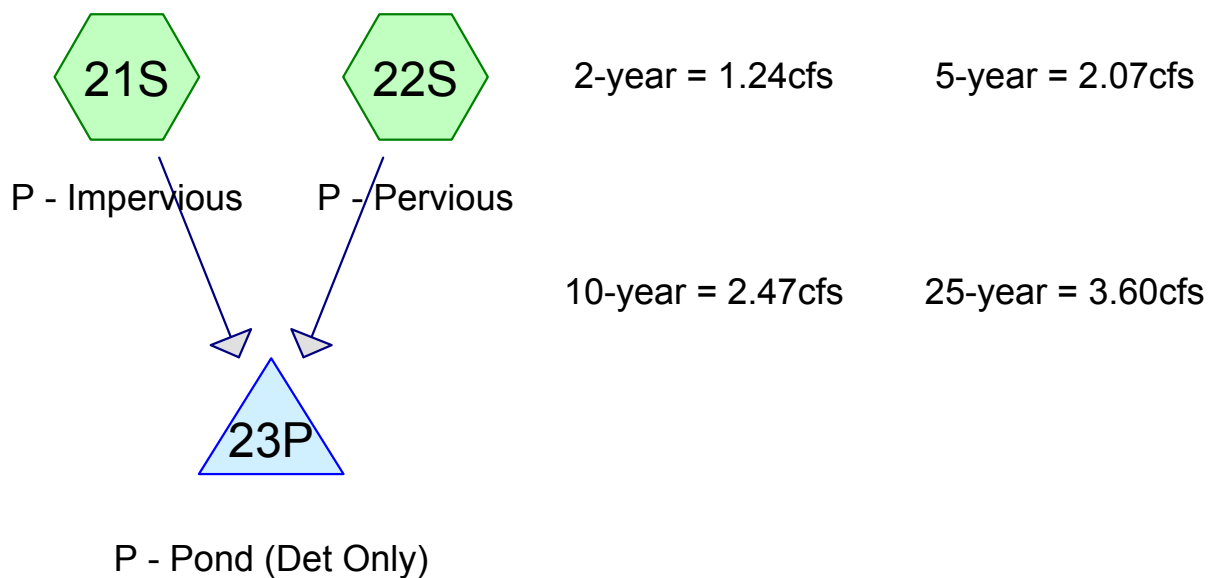


## Attachment F: Detention Pond Calculations

## Existing Conditions



## Proposed Conditions



Routing Diagram for WL\_ConAm-JCT

Prepared by Otak, Inc., Printed 7/9/2015

HydroCAD® 10.00 s/n 05469 © 2013 HydroCAD Software Solutions LLC

## WL\_ConAm-JCT

Prepared by Otak, Inc.

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Printed 7/9/2015

Page 2

### Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.810	80	>75% Grass cover, Good, HSG D (22S)
9.950	77	Brush, Fair, HSG D (1S)
5.140	98	Paved parking, HSG D (21S)
<b>19.900</b>	<b>83</b>	<b>TOTAL AREA</b>

**WL\_ConAm-JCT**

Prepared by Otak, Inc.

HydroCAD® 10.00 s/n 05469 © 2013 HydroCAD Software Solutions LLC

Type IA 24-hr 2-yr Rainfall=2.50"

Printed 7/9/2015

Page 3

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1S: E - Basin A**Runoff Area=9.950 ac 0.00% Impervious Runoff Depth=0.74"  
Flow Length=981' Tc=6.4 min CN=77/0 Runoff=1.25 cfs 0.614 af**Subcatchment21S: P - Impervious**Runoff Area=5.140 ac 100.00% Impervious Runoff Depth=2.27"  
Tc=5.0 min CN=0/98 Runoff=2.96 cfs 0.973 af**Subcatchment22S: P - Pervious**Runoff Area=4.810 ac 0.00% Impervious Runoff Depth=0.89"  
Tc=5.0 min CN=80/0 Runoff=0.85 cfs 0.356 af**Pond 23P: P - Pond (Det Only)**Peak Elev=273.29' Storage=0.205 af Inflow=3.78 cfs 1.329 af  
Outflow=1.24 cfs 1.329 af**Total Runoff Area = 19.900 ac Runoff Volume = 1.943 af Average Runoff Depth = 1.17"**  
**74.17% Pervious = 14.760 ac 25.83% Impervious = 5.140 ac**

**WL\_ConAm-JCT***Type IA 24-hr 5-yr Rainfall=3.00"*

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1S: E - Basin A**Runoff Area=9.950 ac 0.00% Impervious Runoff Depth=1.07"  
Flow Length=981' Tc=6.4 min CN=77/0 Runoff=2.08 cfs 0.888 af**Subcatchment21S: P - Impervious**Runoff Area=5.140 ac 100.00% Impervious Runoff Depth=2.77"  
Tc=5.0 min CN=0/98 Runoff=3.59 cfs 1.186 af**Subcatchment22S: P - Pervious**Runoff Area=4.810 ac 0.00% Impervious Runoff Depth=1.25"  
Tc=5.0 min CN=80/0 Runoff=1.31 cfs 0.501 af**Pond 23P: P - Pond (Det Only)**Peak Elev=273.80' Storage=0.252 af Inflow=4.85 cfs 1.687 af  
Outflow=2.07 cfs 1.687 af**Total Runoff Area = 19.900 ac Runoff Volume = 2.575 af Average Runoff Depth = 1.55"**  
**74.17% Pervious = 14.760 ac 25.83% Impervious = 5.140 ac**

**WL\_ConAm-JCT**

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Type IA 24-hr 10-yr Rainfall=3.40"

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1S: E - Basin A**Runoff Area=9.950 ac 0.00% Impervious Runoff Depth=1.36"  
Flow Length=981' Tc=6.4 min CN=77/0 Runoff=2.82 cfs 1.125 af**Subcatchment21S: P - Impervious**Runoff Area=5.140 ac 100.00% Impervious Runoff Depth=3.17"  
Tc=5.0 min CN=0/98 Runoff=4.09 cfs 1.356 af**Subcatchment22S: P - Pervious**Runoff Area=4.810 ac 0.00% Impervious Runoff Depth=1.56"  
Tc=5.0 min CN=80/0 Runoff=1.70 cfs 0.624 af**Pond 23P: P - Pond (Det Only)**Peak Elev=274.31' Storage=0.304 af Inflow=5.74 cfs 1.981 af  
Outflow=2.47 cfs 1.981 af**Total Runoff Area = 19.900 ac Runoff Volume = 3.106 af Average Runoff Depth = 1.87"**  
**74.17% Pervious = 14.760 ac 25.83% Impervious = 5.140 ac**

**WL\_ConAm-JCT**

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Type IA 24-hr 25-yr Rainfall=3.90"

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1S: E - Basin A**Runoff Area=9.950 ac 0.00% Impervious Runoff Depth=1.73"  
Flow Length=981' Tc=6.4 min CN=77/0 Runoff=3.80 cfs 1.438 af**Subcatchment21S: P - Impervious**Runoff Area=5.140 ac 100.00% Impervious Runoff Depth=3.67"  
Tc=5.0 min CN=0/98 Runoff=4.71 cfs 1.570 af**Subcatchment22S: P - Pervious**Runoff Area=4.810 ac 0.00% Impervious Runoff Depth=1.96"  
Tc=5.0 min CN=80/0 Runoff=2.22 cfs 0.785 af**Pond 23P: P - Pond (Det Only)**Peak Elev=274.82' Storage=0.361 af Inflow=6.88 cfs 2.355 af  
Outflow=3.60 cfs 2.355 af**Total Runoff Area = 19.900 ac Runoff Volume = 3.793 af Average Runoff Depth = 2.29"**  
**74.17% Pervious = 14.760 ac 25.83% Impervious = 5.140 ac**

**WL\_ConAm-JCT**

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Type IA 24-hr 100-yr Rainfall=4.50"

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1S: E - Basin A**Runoff Area=9.950 ac 0.00% Impervious Runoff Depth=2.21"  
Flow Length=981' Tc=6.4 min CN=77/0 Runoff=5.06 cfs 1.833 af**Subcatchment21S: P - Impervious**Runoff Area=5.140 ac 100.00% Impervious Runoff Depth=4.26"  
Tc=5.0 min CN=0/98 Runoff=5.45 cfs 1.826 af**Subcatchment22S: P - Pervious**Runoff Area=4.810 ac 0.00% Impervious Runoff Depth=2.46"  
Tc=5.0 min CN=80/0 Runoff=2.87 cfs 0.987 af**Pond 23P: P - Pond (Det Only)**Peak Elev=275.23' Storage=0.410 af Inflow=8.27 cfs 2.813 af  
Outflow=5.53 cfs 2.813 af**Total Runoff Area = 19.900 ac Runoff Volume = 4.646 af Average Runoff Depth = 2.80"**  
**74.17% Pervious = 14.760 ac 25.83% Impervious = 5.140 ac**



**WL\_ConAm-JCT**

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Type IA 24-hr WQ Rainfall=1.00"

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1S: E - Basin A**Runoff Area=9.950 ac 0.00% Impervious Runoff Depth=0.05"  
Flow Length=981' Tc=6.4 min CN=77/0 Runoff=0.05 cfs 0.040 af**Subcatchment21S: P - Impervious**Runoff Area=5.140 ac 100.00% Impervious Runoff Depth=0.79"  
Tc=5.0 min CN=0/98 Runoff=1.05 cfs 0.339 af**Subcatchment22S: P - Pervious**Runoff Area=4.810 ac 0.00% Impervious Runoff Depth=0.08"  
Tc=5.0 min CN=80/0 Runoff=0.03 cfs 0.033 af**Pond 23P: P - Pond (Det Only)**Peak Elev=270.75' Storage=0.034 af Inflow=1.05 cfs 0.372 af  
Outflow=0.59 cfs 0.372 af**Total Runoff Area = 19.900 ac Runoff Volume = 0.412 af Average Runoff Depth = 0.25"**  
**74.17% Pervious = 14.760 ac 25.83% Impervious = 5.140 ac**

**WL\_ConAm-JCT***Type IA 24-hr WQ-BES Rainfall=0.83"*

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1S: E - Basin A**Runoff Area=9.950 ac 0.00% Impervious Runoff Depth=0.02"  
Flow Length=981' Tc=6.4 min CN=77/0 Runoff=0.02 cfs 0.014 af**Subcatchment21S: P - Impervious**Runoff Area=5.140 ac 100.00% Impervious Runoff Depth=0.63"  
Tc=5.0 min CN=0/98 Runoff=0.83 cfs 0.269 af**Subcatchment22S: P - Pervious**Runoff Area=4.810 ac 0.00% Impervious Runoff Depth=0.04"  
Tc=5.0 min CN=80/0 Runoff=0.02 cfs 0.015 af**Pond 23P: P - Pond (Det Only)**Peak Elev=270.57' Storage=0.025 af Inflow=0.83 cfs 0.284 af  
Outflow=0.52 cfs 0.284 af**Total Runoff Area = 19.900 ac Runoff Volume = 0.298 af Average Runoff Depth = 0.18"**  
**74.17% Pervious = 14.760 ac 25.83% Impervious = 5.140 ac**

### Summary for Pond 23P: P - Pond (Det Only)

Inflow Area = 9.950 ac, 51.66% Impervious, Inflow Depth = 1.60" for 2-yr event  
 Inflow = 3.78 cfs @ 7.94 hrs, Volume= 1.329 af  
 Outflow = 1.24 cfs @ 9.08 hrs, Volume= 1.329 af, Atten= 67%, Lag= 68.3 min  
 Primary = 1.24 cfs @ 9.08 hrs, Volume= 1.329 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Peak Elev= 273.29' @ 9.08 hrs Surf.Area= 0.088 ac Storage= 0.205 af

Plug-Flow detention time= 70.0 min calculated for 1.328 af (100% of inflow)  
 Center-of-Mass det. time= 70.3 min ( 791.8 - 721.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	0.511 af	<b>35.00'W x 50.00'L x 6.00'H Prismaoid Z=3.0</b>

Device	Routing	Invert	Outlet Devices
#1	Primary	270.00'	<b>12.0" Round CMP_Round 12"</b> L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 270.00' / 269.50' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	270.00'	<b>5.1" Horiz. 2-yr OR</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	273.30'	<b>6.3" Horiz. 5/10-yr OR</b> C= 0.600 Limited to weir flow at low heads
#4	Primary	274.40'	<b>1.0' long x 0.5' breadth 25-yr BCR Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Primary	275.50'	<b>10.0' long x 0.5' breadth Emergency Overflow Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.24 cfs @ 9.08 hrs HW=273.29' (Free Discharge)

- 1=CMP\_Round 12" (Passes 1.24 cfs of 6.31 cfs potential flow)
- 2=2-yr OR (Orifice Controls 1.24 cfs @ 8.73 fps)
- 3=5/10-yr OR ( Controls 0.00 cfs)
- 4=25-yr BCR Weir ( Controls 0.00 cfs)
- 5=Emergency Overflow Weir ( Controls 0.00 cfs)

### Summary for Pond 23P: P - Pond (Det Only)

Inflow Area = 9.950 ac, 51.66% Impervious, Inflow Depth = 2.03" for 5-yr event  
 Inflow = 4.85 cfs @ 7.93 hrs, Volume= 1.687 af  
 Outflow = 2.07 cfs @ 8.46 hrs, Volume= 1.687 af, Atten= 57%, Lag= 31.7 min  
 Primary = 2.07 cfs @ 8.46 hrs, Volume= 1.687 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Peak Elev= 273.80' @ 8.46 hrs Surf.Area= 0.097 ac Storage= 0.252 af

Plug-Flow detention time= 79.1 min calculated for 1.687 af (100% of inflow)  
 Center-of-Mass det. time= 78.4 min ( 794.5 - 716.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	0.511 af	<b>35.00'W x 50.00'L x 6.00'H Prismaoid Z=3.0</b>

Device	Routing	Invert	Outlet Devices
#1	Primary	270.00'	<b>12.0" Round CMP_Round 12"</b> L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 270.00' / 269.50' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	270.00'	<b>5.1" Horiz. 2-yr OR</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	273.30'	<b>6.3" Horiz. 5/10-yr OR</b> C= 0.600 Limited to weir flow at low heads
#4	Primary	274.40'	<b>1.0' long x 0.5' breadth 25-yr BCR Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Primary	275.50'	<b>10.0' long x 0.5' breadth Emergency Overflow Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=2.07 cfs @ 8.46 hrs HW=273.80' (Free Discharge)

- 1=CMP\_Round 12" (Passes 2.07 cfs of 6.87 cfs potential flow)
- 2=2-yr OR (Orifice Controls 1.33 cfs @ 9.39 fps)
- 3=5/10-yr OR (Orifice Controls 0.74 cfs @ 3.41 fps)
- 4=25-yr BCR Weir ( Controls 0.00 cfs)
- 5=Emergency Overflow Weir ( Controls 0.00 cfs)

### Summary for Pond 23P: P - Pond (Det Only)

Inflow Area = 9.950 ac, 51.66% Impervious, Inflow Depth = 2.39" for 10-yr event  
 Inflow = 5.74 cfs @ 7.93 hrs, Volume= 1.981 af  
 Outflow = 2.47 cfs @ 8.45 hrs, Volume= 1.981 af, Atten= 57%, Lag= 31.2 min  
 Primary = 2.47 cfs @ 8.45 hrs, Volume= 1.981 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Peak Elev= 274.31' @ 8.45 hrs Surf.Area= 0.106 ac Storage= 0.304 af

Plug-Flow detention time= 83.7 min calculated for 1.979 af (100% of inflow)  
 Center-of-Mass det. time= 83.9 min ( 796.2 - 712.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	0.511 af	<b>35.00'W x 50.00'L x 6.00'H Prismatoid Z=3.0</b>

Device	Routing	Invert	Outlet Devices
#1	Primary	270.00'	<b>12.0" Round CMP_Round 12"</b> L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 270.00' / 269.50' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	270.00'	<b>5.1" Horiz. 2-yr OR</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	273.30'	<b>6.3" Horiz. 5/10-yr OR</b> C= 0.600 Limited to weir flow at low heads
#4	Primary	274.40'	<b>1.0' long x 0.5' breadth 25-yr BCR Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Primary	275.50'	<b>10.0' long x 0.5' breadth Emergency Overflow Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

**Primary OutFlow** Max=2.47 cfs @ 8.45 hrs HW=274.31' (Free Discharge)

- 1=CMP\_Round 12" (Passes 2.47 cfs of 7.39 cfs potential flow)
- 2=2-yr OR (Orifice Controls 1.42 cfs @ 10.00 fps)
- 3=5/10-yr OR (Orifice Controls 1.05 cfs @ 4.85 fps)
- 4=25-yr BCR Weir ( Controls 0.00 cfs)
- 5=Emergency Overflow Weir ( Controls 0.00 cfs)

### Summary for Pond 23P: P - Pond (Det Only)

Inflow Area = 9.950 ac, 51.66% Impervious, Inflow Depth = 2.84" for 25-yr event  
 Inflow = 6.88 cfs @ 7.93 hrs, Volume= 2.355 af  
 Outflow = 3.60 cfs @ 8.31 hrs, Volume= 2.355 af, Atten= 48%, Lag= 22.7 min  
 Primary = 3.60 cfs @ 8.31 hrs, Volume= 2.355 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Peak Elev= 274.82' @ 8.31 hrs Surf.Area= 0.116 ac Storage= 0.361 af

Plug-Flow detention time= 88.6 min calculated for 2.354 af (100% of inflow)  
 Center-of-Mass det. time= 88.8 min ( 796.8 - 707.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	0.511 af	<b>35.00'W x 50.00'L x 6.00'H Prismatoid Z=3.0</b>

Device	Routing	Invert	Outlet Devices
#1	Primary	270.00'	<b>12.0" Round CMP_Round 12"</b> L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 270.00' / 269.50' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	270.00'	<b>5.1" Horiz. 2-yr OR</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	273.30'	<b>6.3" Horiz. 5/10-yr OR</b> C= 0.600 Limited to weir flow at low heads
#4	Primary	274.40'	<b>1.0' long x 0.5' breadth 25-yr BCR Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Primary	275.50'	<b>10.0' long x 0.5' breadth Emergency Overflow Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

**Primary OutFlow** Max=3.59 cfs @ 8.31 hrs HW=274.82' (Free Discharge)

- 1=CMP\_Round 12" (Passes 2.79 cfs of 7.86 cfs potential flow)
- 2=2-yr OR (Orifice Controls 1.50 cfs @ 10.57 fps)
- 3=5/10-yr OR (Orifice Controls 1.29 cfs @ 5.94 fps)
- 4=25-yr BCR Weir (Weir Controls 0.81 cfs @ 1.91 fps)
- 5=Emergency Overflow Weir ( Controls 0.00 cfs)

**Summary for Pond 23P: P - Pond (Det Only)**

Inflow Area = 9.950 ac, 51.66% Impervious, Inflow Depth = 3.39" for 100-yr event  
 Inflow = 8.27 cfs @ 7.93 hrs, Volume= 2.813 af  
 Outflow = 5.53 cfs @ 8.17 hrs, Volume= 2.813 af, Atten= 33%, Lag= 14.5 min  
 Primary = 5.53 cfs @ 8.17 hrs, Volume= 2.813 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Peak Elev= 275.23' @ 8.17 hrs Surf.Area= 0.124 ac Storage= 0.410 af

Plug-Flow detention time= 90.2 min calculated for 2.813 af (100% of inflow)  
 Center-of-Mass det. time= 89.4 min ( 792.9 - 703.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	0.511 af	<b>35.00'W x 50.00'L x 6.00'H Prismatic Z=3.0</b>

Device	Routing	Invert	Outlet Devices
#1	Primary	270.00'	<b>12.0" Round CMP_Round 12"</b> L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 270.00' / 269.50' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	270.00'	<b>5.1" Horiz. 2-yr OR</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	273.30'	<b>6.3" Horiz. 5/10-yr OR</b> C= 0.600 Limited to weir flow at low heads
#4	Primary	274.40'	<b>1.0' long x 0.5' breadth 25-yr BCR Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Primary	275.50'	<b>10.0' long x 0.5' breadth Emergency Overflow Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

**Primary OutFlow** Max=5.52 cfs @ 8.17 hrs HW=275.23' (Free Discharge)

- 1=CMP\_Round 12" (Passes 3.01 cfs of 8.23 cfs potential flow)
- 2=2-yr OR (Orifice Controls 1.56 cfs @ 11.01 fps)
- 3=5/10-yr OR (Orifice Controls 1.45 cfs @ 6.69 fps)
- 4=25-yr BCR Weir (Weir Controls 2.51 cfs @ 3.01 fps)
- 5=Emergency Overflow Weir ( Controls 0.00 cfs)

### Summary for Pond 23P: P - Pond (Det Only)

Inflow Area = 9.950 ac, 51.66% Impervious, Inflow Depth = 0.34" for WQ-BES event  
Inflow = 0.83 cfs @ 7.93 hrs, Volume= 0.284 af  
Outflow = 0.52 cfs @ 8.20 hrs, Volume= 0.284 af, Atten= 38%, Lag= 16.6 min  
Primary = 0.52 cfs @ 8.20 hrs, Volume= 0.284 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
Peak Elev= 270.57' @ 8.20 hrs Surf.Area= 0.047 ac Storage= 0.025 af

Plug-Flow detention time= 38.2 min calculated for 0.284 af (100% of inflow)  
Center-of-Mass det. time= 39.0 min ( 784.9 - 746.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	0.511 af	<b>35.00'W x 50.00'L x 6.00'H Prismaoid Z=3.0</b>

Device	Routing	Invert	Outlet Devices
#1	Primary	270.00'	<b>12.0" Round CMP_Round 12"</b> L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 270.00' / 269.50' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	270.00'	<b>5.1" Horiz. 2-yr OR</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	273.30'	<b>6.3" Horiz. 5/10-yr OR</b> C= 0.600 Limited to weir flow at low heads
#4	Primary	274.40'	<b>1.0' long x 0.5' breadth 25-yr BCR Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Primary	275.50'	<b>10.0' long x 0.5' breadth Emergency Overflow Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

**Primary OutFlow** Max=0.52 cfs @ 8.20 hrs HW=270.57' (Free Discharge)

- 1=CMP\_Round 12" (Passes 0.52 cfs of 1.20 cfs potential flow)
- 2=2-yr OR (Orifice Controls 0.52 cfs @ 3.64 fps)
- 3=5/10-yr OR ( Controls 0.00 cfs)
- 4=25-yr BCR Weir ( Controls 0.00 cfs)
- 5=Emergency Overflow Weir ( Controls 0.00 cfs)



# Weir Report

## Tannler Drive Pond Overflow Weir

### Trapezoidal Weir

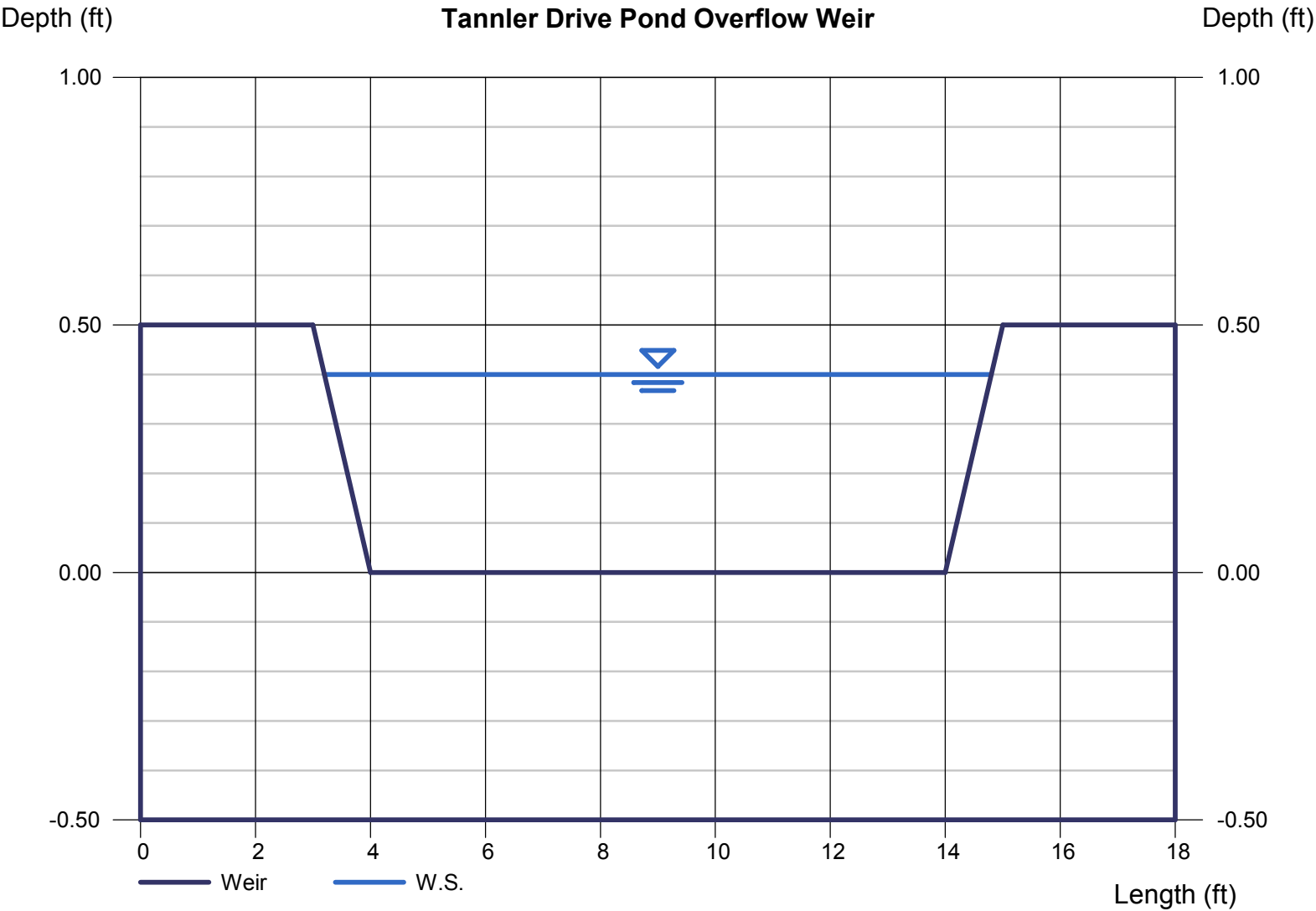
Crest = Sharp  
Bottom Length (ft) = 10.00  
Total Depth (ft) = 0.50  
Side Slope (z:1) = 2.00

### Highlighted

Depth (ft) = 0.40  
Q (cfs) = 8.270  
Area (sqft) = 4.32  
Velocity (ft/s) = 1.91  
Top Width (ft) = 11.60

### Calculations

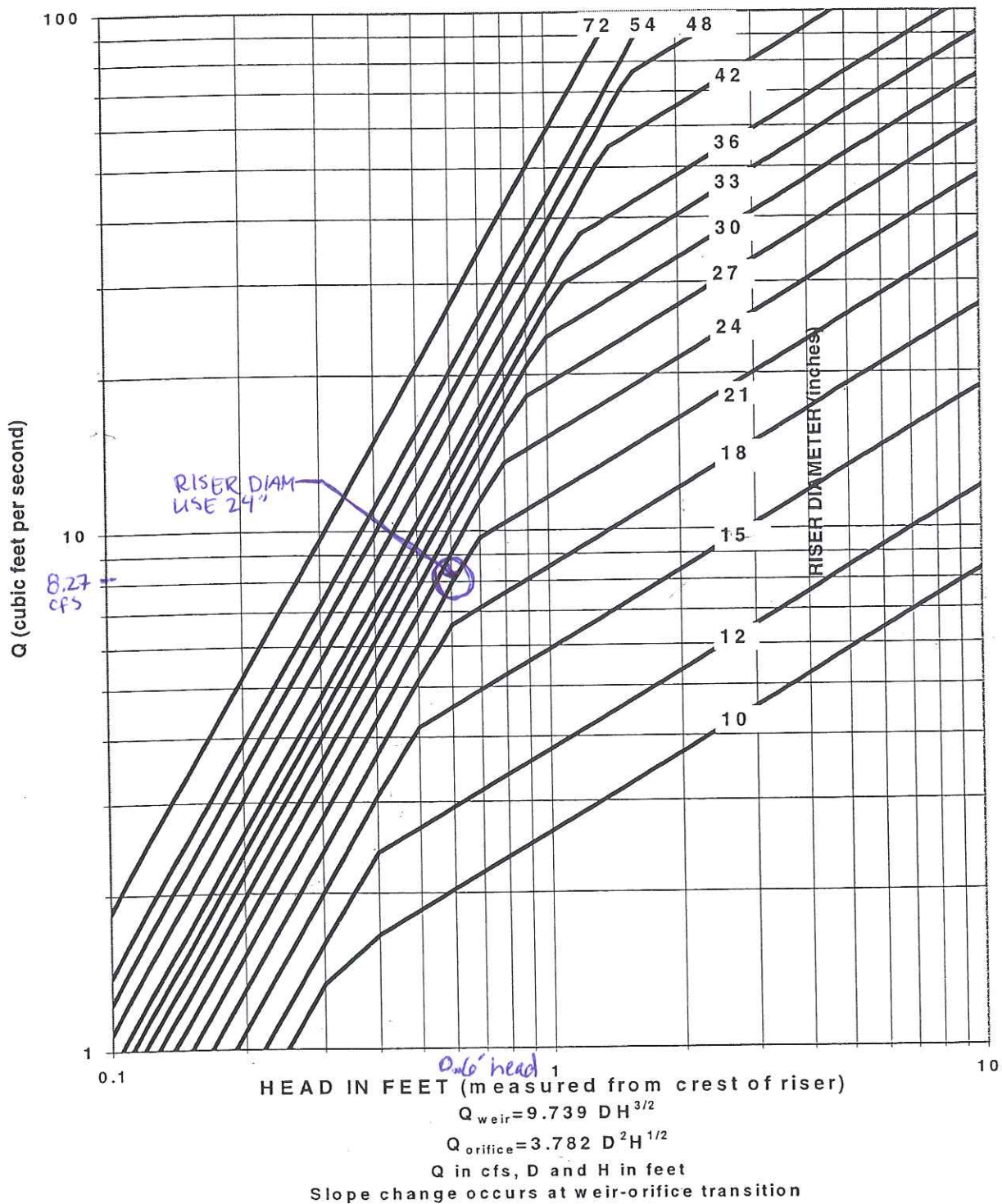
Weir Coeff. Cw = 3.10  
Compute by: Known Q  
Known Q (cfs) = 8.27



### Riser Overflow

The nomograph in Figure 5.3.4.H can be used to determine the head (in feet) above a riser of given diameter and for a given flow (usually the 100-year peak flow for developed conditions).

FIGURE 5.3.4.H RISER INFLOW CURVES



*Appendix F*  
**Geotechnical Report by GeoDesign Inc.**



**Hanmi**Global Partner

**REPORT OF GEOTECHNICAL ENGINEERING SERVICES**

NWC of Tannler & Blankenship  
Tannler Drive and Blankenship Road  
West Linn, Oregon

For  
ConAm Properties, LLC  
July 28, 2014

GeoDesign Project: ConAm-1-01

July 28, 2014

ConAm Properties, LLC  
3990 Ruffin Road, Suite 100  
San Diego, CA 92123

Attention: Mr. Rob Morgan

**Report of Geotechnical Engineering Services**

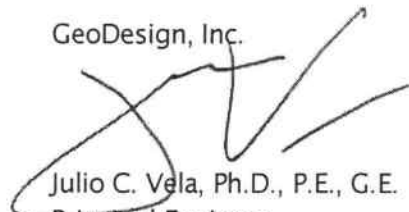
NWC of Tannler & Blankenship  
Tannler Drive and Blankenship Road  
West Linn, Oregon  
GeoDesign Project: ConAm-1-01

GeoDesign, Inc. is pleased to submit our report of geotechnical engineering services for the proposed apartment complex development to be located west of Tannler Drive and north of Blankenship Road in West Linn, Oregon. Our services for this project were conducted in accordance with our signed agreement with ConAm Properties, LLC dated February 11, 2014.

We appreciate the opportunity to be of continued service to you. Please call if you have questions regarding this report.

Sincerely,

GeoDesign, Inc.



Julio C. Vela, Ph.D., P.E., G.E.  
Principal Engineer

SPM:JCV:kt

Attachments

One copy submitted (via email only)

Document ID: ConAm-1-01-072814-geor.docx

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## **1.0 INTRODUCTION**

This report presents the results of GeoDesign's geotechnical engineering evaluation for the proposed apartment development project called NWC of Tannler & Blankenship in West Linn, Oregon. The site is located north of Blankenship Road and west of Tannler Drive. The site location relative to surrounding physical features is shown on Figure 1. The proposed site plan and geotechnical exploration locations are shown on Figure 2. A description of our subsurface exploration program is presented in Appendix A, along with exploration logs. Explorations conducted on site for a previously proposed project are presented in Appendix B. For your reference, definitions of acronyms used herein are defined at the end of this document.

### **1.1 PROJECT UNDERSTANDING**

ConAm Properties, LLC provided preliminary design information for the project, including a preliminary grading plan. We understand construction will include a clubhouse and nine new apartment buildings up to three stories tall with below-grade parking. We have assumed that the apartment buildings will be wood-framed structures. Structural loads had not been determined at the time of this report. Based on our experience with similar structures, we anticipate that maximum column, wall, and floor loads will likely be on the order of 40 to 100 kips, 4 kips per foot, and 150 psf, respectively.

Moderate slopes are present across the entire site. The preliminary grading plan indicates that a cut of 15 to 20 feet will be supported by a retaining wall near the northern site boundary. The ground will be sloped to a maximum of approximately 2H:1V above the wall. Fills on the order of 8 to 24 feet high will be supported by a retaining wall near the southern site boundary. Retaining walls along the eastern site boundary will support fills up to 17 feet. Other smaller walls will be constructed around the site to support cuts and fills, including buried building walls.

### **1.2 PROJECT BACKGROUND**

GeoDesign performed a geotechnical engineering study and provided a report for this site in 2006. We were informed by Mr. Rob Morgan that the owner of the 2006 report has released the information and data in the report for use by ConAm Properties. The findings in our current study are supplemented by exploration logs from the 2006 report presented in Appendix B. Subsurface explorations in 2006 consisted of test pits performed by a small Kamatsu PC-40 trackhoe.

## **2.0 SCOPE OF SERVICES**

The purpose of our work was to explore site subsurface conditions and provide geotechnical engineering recommendations for use in design and construction of the proposed development. Specifically, we have performed the following scope of services:

- Coordinated and managed the field investigation, including utility checks, site access authorizations, access preparation, and scheduling of subcontractors and GeoDesign field staff.
- Reviewed our previous geotechnical engineering report for this site.



- Explored subsurface conditions by excavating 17 test pits to depths of approximately 4 to 13.5 feet BGS. Subsurface data is supplemented by exploration logs from our 2006 report.
- Obtained soil samples for laboratory testing and maintained detailed a log of soil, rock, and groundwater conditions encountered in each exploration.
- Provided recommendations for site preparation, grading and drainage, compaction criteria for both on-site and imported material, fill type for imported material, procedures for use of on-site soil, and wet weather earthwork procedures.
- Provided recommendations for bedrock excavation.
- Evaluated groundwater conditions at the site and provided general recommendations for dewatering during construction and subsurface drainage.
- Provided recommendations for the use of on-site native and fill material for support of floor slabs and pavements.
- Provided recommendations for shallow foundations.
- Provided recommendations for concrete floor slabs, including subgrade reaction modulus and subgrade preparation along bedrock/soil interfaces.
- Provided recommendations for use in the design of conventional retaining walls up to 8 feet tall, including backfill and drainage requirements and lateral earth pressures.
- Provided recommendations for AC pavement design sections and pavement subgrade preparation.
- Provided a discussion of seismic activity near the site, liquefaction potential and anticipated deformations, and recommendations for seismic design factors in accordance with the procedures outlined in the 2012 IBC.
- Prepared this report of our explorations, findings, conclusions, and recommendations

### **3.0 SITE CONDITIONS**

#### **3.1 SURFACE CONDITIONS**

The site is currently vacant. The property was covered by grasses, brush, and occasional mature trees at the time of our exploration. The site slopes up toward the north at approximately 12 to 17 percent. The site is bound by Tannler Road to the east, Blankenship Road to the south, a commercial development to the west, and a residential development to the north.

#### **3.2 SUBSURFACE CONDITIONS**

We explored subsurface conditions in our recent investigation by completing 17 test pits (TP-1 through TP-17) to depths of approximately 4 to 13.5 feet BGS using a John Deere 120 trackhoe. Each test pit was advanced until refusal was encountered in basalt bedrock. The approximate locations of the explorations are shown on Figure 2. The subsurface exploration program is described in Appendix A. Our 2006 subsurface investigation included 16 test pits (TP-1 through TP-16) to depths of approximately 3 to 11 feet BGS across the property. The exploration logs for that study are included in Appendix B, along with a site plan showing their approximate location.

Our explorations indicate that subsurface conditions generally consist of silt overlying basalt bedrock. We encountered silty gravel and gravelly silt layers between the silt and bedrock units in some test pits, which is likely colluvium or decomposed bedrock. Test pit TP-11 in our 2006 exploration encountered approximately 4 feet of silt fill at the ground surface. The fill appears to be an isolated pocket and has similar characteristics as the native soil. The ground surface is



generally covered by an approximately 2- to 8-inch-thick root zone from surface vegetation. However, test pits TP-3 through TP-5 in our recent exploration encountered abundant shrub roots to depths of 12 to 18 inches. The following sections describe the individual soil units.

### **3.2.1 Silt**

Silt was encountered at the ground surface to varying depths in most of our explorations. The silt unit is generally soft to medium stiff in the upper 2 feet and medium stiff to stiff at depths greater than 2 feet. The silt contains trace amounts of clay and occasional gravel. Laboratory testing of selected samples of the silt unit from our 2006 exploration indicated moisture contents varying between 18 to 36 percent and a fines content of approximately 55 percent in a gravelly silt layer. Based on our experience in the site area, this unit likely has low to moderate compressibility characteristics.

### **3.2.2 Silt/Gravel**

Layers of gravelly silt and gravel with cobbles were encountered below the silt unit in some of our 2006 explorations and TP-6 of our recent exploration. Gravel layers were observed up to 8 feet thick. This unit represents the decomposed upper bedrock or colluvium. The silt and gravel constituents vary across the site based on the degree of decomposition. Our excavator was able to penetrate this unit without much difficulty. Laboratory testing of selected samples of the gravel unit from our 2006 exploration indicated moisture contents varying between 6 and 35 percent and a fines content between 18 and 24 percent.

### **3.2.3 Basalt**

We encountered intact basalt bedrock in most of our 2006 test pits and in all of our recent test pits. The upper portion of the bedrock is generally decomposed to weathered and fractured. Weathering appears to generally decrease with depth. The excavator was able to penetrate the weathered zones of bedrock but was not able to penetrate intact bedrock even with significant effort. Our scope of services did not include exploration of the intact bedrock using rock coring techniques. Therefore, we are unable to assess the degree of weathering and fracturing of intact bedrock. Based on observations of surrounding exposed basalt bedrock in the general site vicinity, we believe that the intact bedrock is likely fresh to slightly weathered and unfractured to slightly fractured. Figure 2 shows depths to weathered bedrock and intact bedrock for each test pit location. The bedrock unit has very low compressibility characteristics.

## **3.3 GROUNDWATER**

Our explorations did not encounter groundwater. The depth to groundwater is expected to fluctuate in response to seasonal changes, changes in surface topography, and other factors not observed in the site vicinity. During periods of persistent rainfall, groundwater will likely become perched on the bedrock and travel downslope, and it could manifest at the ground surface or in walls where the top of bedrock is exposed in excavations or below-grade structures.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

### 4.1 GENERAL

Based on the results of our subsurface explorations and analyses, it is our opinion that the proposed structures, with the anticipated design foundation loads, can be supported on shallow foundations. The following presents some key geotechnical concerns for site development.

- Basalt bedrock was encountered as shallow as the ground surface. The upper portion of the bedrock is weathered and was able to be dug with a John Deere 120 trackhoe. The underlying intact bedrock could not be excavated by the trackhoe. Some site cuts are planned to proceed below intact bedrock elevations, which will likely require special excavation equipment such as hydraulic breakers or specialized excavation methods (breaking or blasting).
- The contract bid documents should require that contractors list a unit cost for rock excavation using in-place (bank) volumes, which can be measured by surveying. The unit cost should not be provided in excavated (swelled) volumes, which are more difficult to accurately measure.
- Structures can be established on shallow foundations. Differential settlement may result in buildings founded partially on bedrock and partially on soil. Differential settlement can be minimized by use of compacted gravel pads for footings established over the native silty or silty gravel soil. Our foundation recommendations are provided in the "Foundation Support" section of this report.
- It appears that floor slabs for some of the structures may be founded partially on bedrock and transitioning to soil. There is a potential for differential settlement or reflection cracking of floor slabs along bedrock/soil interfaces. We recommend that the floor slab base section be increased to a minimum of 12 inches along such interfaces. More detailed recommendations are presented in the "Floor Slabs" section of this report.
- The on-site silty soil can be sensitive to small changes in moisture content and difficult, if not impossible, to adequately compact during wet weather. If construction is planned for the wet season, the project budget should reflect the recommendations for wet weather contained in this report. A more detailed discussion is presented in the "Wet Weather/Wet Soil Grading" and "Structural Fill" sections of this report.
- The on-site basalt can be used as structural fill provided it is adequately processed to smaller particles sizes and to a well-graded state (non-uniform).
- Significant retaining walls are planned for the site. We recommend that walls be designed on a case by case basis by a qualified geotechnical engineer.
- Groundwater may become perched on the shallow bedrock during periods of persistent rainfall and adversely affect the development. Adequate drainage will be essential behind the upslope retaining wall at the north end of the site to intercept perched groundwater flow and convey it away from the planned structures. Foundation perimeter drains will also be required where upslope footing excavations extend below the level of the basalt rock surface.

The following sections present specific geotechnical recommendations.

## **4.2 SITE PREPARATION**

### **4.2.1 Stripping and Grubbing**

The existing root zone should be stripped and removed from all proposed structural fill, pavement, and building areas and for a 5-foot margin around such areas. Based on our explorations, the depth of removal will generally range widely from 2 to 8 inches. We observed thick root masses in some isolated areas to depths of 12 to 18 inches. The actual stripping depth should be based on field observations at the time of construction. Stripped material should be transported off site for disposal or used in landscaped areas.

Existing trees or shrubs should be removed from pavement and building areas. In addition, root balls should be grubbed out to the depth of the roots. Depending on the methods used to remove the root balls, considerable disturbance and loosening of the subgrade could occur during site grubbing. We recommend that soil disturbed during grubbing operations be removed to expose firm, undisturbed subgrade. The resulting excavations should be backfilled with structural fill.

### **4.2.2 Subgrade Evaluation**

A member of our geotechnical staff should observe all exposed subgrades after stripping, site cutting, and fill removal have been completed to determine if there are additional areas of unsuitable or unstable soil, or excessive roots. Our representative should observe a proofroll with a fully loaded dump truck or similar heavy rubber-tire construction equipment to identify soft, loose, or unsuitable areas. Areas that appear to be too wet and soft to support proofrolling equipment should be evaluated by probing and prepared in accordance with the recommendations for wet weather construction presented in the following section of this report.

### **4.2.3 Wet Weather/Wet Soil Grading**

The silty soil at the site is easily disturbed during the wet season and when it is moist. If not carefully executed, site preparation, utility trench work, and roadway excavation can create extensive soft areas and significant subgrade repair costs can result. If construction is planned when the surficial soil is wet or may become wet, the construction methods and schedule should be carefully considered with respect to protecting the subgrade to reduce the need to over-excavate disturbed or softened soil. The project budget should reflect the recommendations below if construction is planned during wet weather or when the surficial soil is wet.

If construction occurs when silty, wet soil is present, site preparation activities may need to be accomplished using track-mounted excavating equipment that loads removed material into trucks supported on granular haul roads. The thickness of the granular material for haul roads and staging areas will depend on the amount and type of construction traffic. Generally, a 12- to 18-inch-thick mat of imported granular material is sufficient for light staging areas and the basic building pad but is generally not expected to be adequate to support heavy equipment or truck traffic. The granular mat for haul roads and areas with repeated heavy construction traffic typically needs to be increased to between 18 to 24 inches. The actual thickness of haul roads and staging areas should be based on the contractor's approach to site development and the amount and type of construction traffic. The imported granular material should be placed in one lift over the prepared, undisturbed subgrade and compacted using a smooth-drum, non-vibratory



roller. In addition, a geotextile fabric should be placed as a barrier between the subgrade and imported granular material in areas of repeated construction traffic.

The imported granular material and the geotextile fabric should meet the specifications in the "Structural Fill" section of this report.

#### **4.3 EXCAVATION AND SHORING**

##### **4.3.1 Basalt Bedrock**

The upper portions of the basalt bedrock are weathered and fractured and could generally be penetrated to varying degrees by the Kamatsu PC-40 trackhoe and John Deere 120 trackhoe used to excavate our test pits. While excavation of weathered bedrock is expected to be more difficult than the silt soil, we do not expect special excavation equipment to be necessary in the moderately weathered material. The test pit excavators could not penetrate the intact bedrock. Special excavation techniques (such as hydraulic breakers, rock trenchers, or blasting) will likely be required to excavate the intact basalt bedrock where our test pits encountered refusal. The depth to weathered and intact bedrock encountered in our 2014 test pits is presented Figure 2. Appendix B presents a site plan showing the 2006 test pits and the depth to intact bedrock at each location.

The contract bid documents should require that contractors list a unit cost for rock excavation using in-place (bank) volumes, which can be measured by surveying. The unit cost should not be provided in excavated (swelled) volumes, which are more difficult to accurately measure.

##### **4.3.2 Rockfall Hazards**

Grading and excavation should be conducted by the earthwork contractor in a sequence that will prevent overhanging rock material that might become dislodged. The contractor should also be responsible for providing protection for property and personnel. This might include sloping of cut areas, building protective berms, or providing catchment netting or equipment at the base of a slope excavation, depending on the final grading plan and construction sequence.

##### **4.3.3 Trench Cuts and Shoring**

Trench cuts in the silt and gravel soil should stand near vertical to a depth 4 feet, with moderate potential for raveling. Open excavation techniques may be used to excavate trenches with depths between 4 and 8 feet, provided the walls of the excavation are cut at a slope of 1H:1V, groundwater seepage is not present, and with the understanding that some raveling may occur. The trenches should be flattened to 1½H:1V if excessive raveling or caving occurs. Trenches in the bedrock should stand near vertical and should not require shoring. Some minor raveling should be expected in closely fractured zones of the basalt.

Use of a trench shield or other approved temporary shoring is recommended in the silt and gravel soil where sloping is not possible. If a conventional shield is used, the contractor should limit the length of open trench. If shoring is used, we recommend that the type and design of the shoring system be the responsibility of the contractor, who is in the best position to choose a system that fits the overall plan of operation. All excavations should be made in accordance with applicable OSHA and state regulations.

#### **4.3.4 Temporary Dewatering**

Perched groundwater will likely be encountered in excavations during and following periods of persistent rainfall. Groundwater flowing into open excavations should be removed by pumping from a sump. The pump should be capable of handling variable flow rates. Water should be routed to a suitable discharge point.

#### **4.3.5 Open Excavations**

Open excavations will be necessary for building cuts. Cuts in slightly weathered to intact bedrock will likely stand vertical and do not require shoring or sloping. We recommend that cuts in the overlying silt and gravel layers and highly weathered basalt be sloped in accordance with OSHA regulations. Temporary shoring may be possible to support cuts in soil, but may be difficult to install due to the underlying bedrock. If shoring is used, we recommend that the type and design of the shoring system be the responsibility of the contractor, who is in the best position to choose a system that fits the overall plan of operation.

### **4.4 STRUCTURAL FILL**

#### **4.4.1 General**

Fills should only be placed over a subgrade that has been prepared in conformance with the "Site Preparation" section of this report. All material used as structural fill should be free of organic matter or other unsuitable material. The material should meet the specifications provided in OSSC 00330, depending on the application. All structural fill should have a maximum particle size of 4 inches. A brief characterization of some of the acceptable materials and our recommendations for their use as structural fill is provided below.

#### **4.4.2 On-Site Soil**

The on-site native soil is generally suitable for use as structural fill provided it is free of debris, organic material, or other unsuitable material; has no particles larger than 6 inches in diameter; and meets the requirements set forth in OSSC 00330.12 (Borrow Material). Gravelly or chipped bedrock material may need to be processed to achieve smaller particle sizes before placing as fill.

Silty soils will be difficult, if not impossible, to adequately compact at all times of the year, except the dry summer months. We expect that moisture conditioning (drying) will be required to use on-site silty soil for structural fill. Accordingly, extended dry weather will be required to adequately condition the soil for use as structural fill.

The native gravel soil contains varying amounts of silt. As silt content increases, so does the sensitivity to moisture. It should not be assumed that the silty gravel layers will be able to be adequately compacted during wet weather.

The weathered and intact bedrock will have to be processed into a smaller, well-graded distribution prior to placement as structural fill. When placed as embankment fill, the material should have no particles greater than 6 inches in diameter. Occasional cobbles up to 10 inches may be acceptable in the on-site soil, provided that they are dispersed in the fill and do not create voids in the fill matrix and compaction can be achieved by sufficiently large equipment. Compaction equipment should impart enough energy to break cobbles. Fill containing oversized



material should be closely monitored by qualified geotechnical field staff. Fine grading of gravelly soil may result in segregating cobbles or coarse gravel from the sandy/fine gravel matrix, resulting in unsatisfactory (poorly graded or “boney”) fill. Fill material should be maintained as well graded with gravelly and sandy material for proper compaction during fill placement and mass grading.

If the native basalt soil will be processed and used as aggregate or trench backfill, it should meet the requirements listed further in this section.

#### **4.4.3 Imported Granular Material**

Imported granular material used for structural fill should be pit- or quarry-run rock, crushed rock, or crushed gravel and sand and should meet the requirements set forth in OSSC 00330.14 (Selected Granular Backfill) and OSSC 00330.15 (Selected Stone Backfill). Imported granular material should be fairly well graded between coarse and fine material, have less than 5 percent by dry weight passing the U.S. Standard No. 200 Sieve, and have a minimum of two mechanically fractured faces.

When used as structural fill, imported granular material should be placed in lifts with a maximum uncompacted thickness of 12 inches and be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D 1557.

#### **4.4.4 Aggregate Base Rock**

Imported granular material or processed bedrock used as base rock for building floor slabs and pavements should consist of  $\frac{3}{4}$ - or  $1\frac{1}{2}$ -inch-minus material meeting the requirements in OSSC 00641 (Aggregate Subbase, Base, and Shoulders), with the exception that the aggregate has less than 5 percent by dry weight passing a U.S. Standard No. 200 Sieve and has a minimum of two mechanically fractured faces.

The aggregate base rock material should be placed in lifts with a maximum uncompacted thickness of 12 inches and compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D 1557.

#### **4.4.5 Trench Backfill**

Trench backfill for the utility pipe base and pipe zone should consist of well-graded, granular material with a maximum particle size of 1 inch and less than 5 percent by dry weight passing the U.S. Standard No. 200 Sieve and should meet OSSC 00405.14 (Trench Backfill, Class B). The material should be free of roots, organic matter, and other unsuitable material.

Within building and pavement areas, trench backfill placed above the pipe zone should consist of imported granular material meeting requirements of OSSC 00405.14 (Trench Backfill, Class B). The backfill should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D 1557, at depths greater than 2 feet below the finished subgrade and 95 percent of the maximum dry density, as determined by ASTM D 1557, within 2 feet of finished subgrade. In all other areas, trench backfill above the pipe zone should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D 1557.

#### **4.4.6 Trench Stabilization Material**

Trench stabilization material should consist of pit- or quarry-run rock, crushed rock, or crushed gravel and sand and should meet the requirements set forth in OSSC 00330.14 (Selected Granular Backfill) and OSSC 00330.15 (Selected Stone Backfill), with a minimum particle size of 4 inches; have less than 5 percent by dry weight passing the U.S. Standard No. 4 Sieve; and have a minimum of two mechanically fractured faces. The material should be free of organic matter and other deleterious material. Trench stabilization material should be placed in one lift and compacted to a firm condition.

#### **4.4.7 Drain Rock**

Drain rock should consist of angular, granular material with a maximum particle size of 2 inches and should meet OSSC 00430.11 (Granular Drain Backfill Material). The material should be free of roots, organic matter, and other unsuitable material and have less than 2 percent by dry weight passing the U.S. Standard No. 200 Sieve (washed analysis). Drain rock should be compacted to a firm condition.

##### **4.4.7.1 Retaining Wall Select Backfill**

Backfill material placed behind retaining walls and extending a horizontal distance of  $\frac{1}{2}H$ , where  $H$  is the height of the retaining wall, should consist of select granular material that meets the specifications provided in OSSC 00510.12 (Granular Wall Backfill). We recommend the select granular wall backfill be separated from general fill, native soil, and/or topsoil using a geotextile fabric that meets the specifications provided below for drainage geotextiles.

The wall backfill should be compacted to a minimum of 95 percent of the maximum dry density, as determined by ASTM D 1557. However, backfill located within a horizontal distance of 3 feet from a retaining wall should only be compacted to approximately 90 percent of the maximum dry density, as determined by ASTM D 1557. Backfill placed within 3 feet of the wall should be compacted in lifts less than 6 inches thick using hand-operated tamping equipment (such as a jumping jack or vibratory plate compactor). If flatwork (sidewalks or pavements) will be placed atop the wall backfill, we recommend that the upper 2 feet of material be compacted to 95 percent of the maximum dry density, as determined by ASTM D 1557.

#### **4.4.8 Geotextile Fabric**

##### **4.4.8.1 Subgrade Geotextile**

Subgrade geotextile should conform to OSSC Table 02320-1 and OSSC 00350 (Geosynthetic Installation). The geotextile should have a Level "B" certification. A minimum initial aggregate base lift of 6 inches is required over geotextiles.

##### **4.4.8.2 Drainage Geotextile**

Drainage geotextile should conform to Type 2 material of OSSC Table 02320-1 and OSSC 00350 (Geosynthetic Installation). The geotextile should have a Level "B" certification. A minimum initial aggregate base lift of 6 inches is required over geotextiles.

#### **4.5 PERMANENT SLOPES**

Permanent cut and fill slopes in the on-site soil and decomposed bedrock may be built up to 15 feet tall to a gradient as steep as 2H:1V. However, cut slopes over 15 feet tall should be



limited to a gradient of 2½H:1V or should be partially retained by a retaining wall. Slopes in moderately weathered basalt bedrock may be built to 1H:4V, provided they are observed by a registered geologist or geotechnical engineer. Rock slopes should be evaluated to determine if bedding planes exist, which would require flatter cuts or permanent support. Slopes that will be maintained by mowing should not be constructed steeper than 3H:1V.

Newly constructed fill slopes should be over-built by at least 12 inches and then trimmed back to the required slope to maintain a firm face. Access roads and pavements should be located at least 5 feet from the top of cut and fill slopes. The setback should be increased to 10 feet for buildings, unless special foundation considerations are implemented. Soil slopes should be planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

#### **4.5.1 Slope Stability**

Our field explorations indicate that subsurface conditions consist of a relatively thin layer of soft to stiff silt overlying basalt bedrock. The natural slope of the ground surface is approximately 4H:1V or flatter. Published geologic hazard data indicate that the site is not mapped within an area of landslide topography, slump, debris flow, or other hazards (including faulting or seismic hazards [Schlicker et al., 1979]). The nearest ancient landslide feature is mapped more than ½ mile to the west of the site, which resulted from the excavation of the nearby interstate at the toe of the landslide.

Grading plans for the subject site indicate that on-site material will generally be cut from the top and fills placed at the bottom, likely improving slope stability. Based on the grading plan and the quality of the underlying bedrock, it is our opinion that there is a low risk of landsliding at the site.

#### **4.6 EROSION CONTROL**

The silty soil at this site is eroded easily by wind and water; therefore, erosion control measures should be planned carefully and in place before construction begins. Measures that can be employed to reduce erosion include the use of silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads. In general, erosion control measures must limit sediment transport to less than 1 ton per acre per year, as calculated by the Universal Soil Loss equation.

#### **4.7 FOUNDATION SUPPORT**

##### **4.7.1 General**

Based on the assumed foundation loads as previously stated, and provided the site is prepared as recommended in the preceding sections, it is our opinion the proposed structures can generally be supported on conventional shallow footings bearing on the native silt, gravel, bedrock (weathered or intact), or structural fill overlying undisturbed native material. For structures near slopes, we recommend foundations have sufficient embedment to provide a minimum 10-foot offset from the free face of slopes. For existing slopes steeper than 2H:1V, or foundations located behind retaining walls, we recommend that foundations or foundation supporting elements be embedded such that they are set back at least 5 feet from a 2H:1V grade



projected from the base of the slope or rockery (see Figure 3). The minimum footing offsets and embedments indicated above may be ignored for foundations bearing on basalt bedrock.

There is potential for differential settlement between adjacent columns where one is founded directly on bedrock and the other on native silty soil. Based on the expected column loads, our analyses indicate that columns founded directly on native silt or silty gravel could experience settlement magnitudes up to approximately  $\frac{3}{4}$  inch, while settlement of columns on bedrock will be negligible. Therefore, the total differential settlement will be up to  $\frac{3}{4}$  inch.

If this level of differential settlement is not acceptable, we recommend that all foundations be established on either bedrock or 1-foot-thick compacted gravel pads overlying native soil. We estimate that the total settlement for footings established on gravel pads will be less than 0.5 inch; differential settlement between adjacent columns on gravel pads and bedrock will also be less than 0.5 inch. Footing pads should extend at least 6 inches beyond the edges of the footing and consist of material as described in the "Aggregate Base Rock" section of this report, with a maximum particle size of 2 inches.

We recommend that a member of our geotechnical staff observe the prepared footing subgrade to verify that adequate bearing surfaces have been achieved.

#### **4.7.2 Dimensions and Capacities**

Continuous wall and isolated spread footings should be at least 16 and 20 inches wide, respectively. The bottom of exterior footings should be at least 18 inches below the lowest adjacent exterior grade. The bottom of interior footings should be established at least 12 inches below the base of the slab.

Footings bearing on native silt or silty gravel subgrade prepared as recommended above should be sized based on an allowable bearing pressure of 2,500 psf. The bearing pressure can be increased to 3,000 psf for footings established on gravel pads and 8,000 psf for footings on bedrock. This is a net bearing pressure; the weight of the footing and overlying backfill can be ignored in calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and may be increased by one-third for short-term loads (such as those resulting from wind or seismic forces).

#### **4.7.3 Resistance to Sliding**

Lateral loads on footings can be resisted by passive earth pressure on the sides of the structures and by friction on the base of the footings. Our analysis indicates that the available passive earth pressure for footings confined by on-site silt and gravel soil or structural fills is 350 pcf, modeled as an equivalent fluid pressure. Typically, the movement required to develop the available passive resistance may be relatively large; therefore, we recommend using a reduced passive pressure of 250 pcf equivalent fluid pressure. The recommended passive pressure can be increased to 500 pcf for footings confined entirely by basalt bedrock. Adjacent floor slabs, pavements, or the upper 12-inch depth of adjacent unpaved areas should not be considered when calculating passive resistance. In addition, in order to rely on passive resistance, a minimum of 10 feet of horizontal clearance must exist between the face of the footings and any adjacent down slopes.

For footings in contact with the on-site native silt, a coefficient of friction equal to 0.30 may be used when calculating resistance to sliding. This value should be increased to 0.40 for footings in contact with basalt bedrock, silty gravel, or compacted gravel pads.

#### **4.7.4 Construction Considerations**

All footing and floor subgrades should be evaluated by the project geotechnical engineer or their representative to confirm suitable bearing conditions. Observations should also confirm that all loose or soft material, organics, unsuitable fill, prior topsoil zones, and softened subgrades (if present) have been removed. Localized deepening of footing excavations may be required to penetrate any deleterious material.

If footing excavations are conducted during wet weather conditions, we recommend that a minimum of 3 inches of granular material be placed and compacted until well keyed at the base of the excavations. The granular material reduces water softening of subgrade soil, reduces subgrade disturbance during placement of forms and reinforcement, and provides clean conditions for the reinforcing steel.

Excavations that extend into the underlying basalt may require special excavation considerations as discussed in the "Excavation and Shoring" section of this report.

#### **4.8 FLOOR SLABS**

Satisfactory subgrade support for building floor slabs supporting up to 150 psf area loading can be obtained provided the building pad is prepared as described previously. To help reduce moisture transmission and slab shifting, we recommend a minimum 6-inch-thick layer of aggregate base be placed and compacted over the prepared subgrade. The aggregate base should meet the requirements in the "Structural Fill" section of this report and compacted to at least 95 percent of the maximum dry density, as determined by ASTM D 1557.

The grading plan indicates that floor slabs may be founded partially on bedrock and partially on soil. There is a potential for differential settlement or reflection cracking of floor slabs along bedrock/soil transitions. We recommend that the floor slab base section be increased to a minimum of 12 inches along such transitions to reduce the potential for excessive differential settlement. The thickened section should extend laterally at least 15 feet on either side of the interface. Since the exact location of the soil/rock interface is impossible to predict, sufficient field observation will be necessary during slab preparation to identify it.

The on-site soil will tend to maintain a moderate to high moisture content. The installation of a vapor barrier may be warranted in order to reduce the potential for moisture transmission through, and efflorescence growth on, the floor slabs. In addition, flooring manufacturers often require vapor barriers to protect flooring and flooring adhesives and will warrant their product only if a vapor barrier is installed according to their recommendations. Actual selection and design of an appropriate vapor barrier, if needed, should be based on discussions among members of the design team.

Slabs should be reinforced according to their proposed use and per the structural engineer's recommendations. Load-bearing concrete slabs may be designed assuming a modulus of subgrade reaction,  $k$ , of 150 pounds per square inch per inch.

#### **4.9 DRAINAGE**

##### **4.9.1 Temporary Drainage**

During mass grading at the site, the contractor should be made responsible for temporary drainage of surface water (as necessary) to prevent standing water and/or erosion at the working surface. During rough and finished grading of the building sites, the contractor should keep all footing excavations and building pads free of water.

##### **4.9.2 Surface**

The finished ground surface around structures should be sloped away from its foundations at a minimum 2 percent gradient for a distance of at least 5 feet. Downspouts or roof scuppers should discharge into a storm drain system that carries the collected water to an appropriate stormwater system. Trapped planter areas should not be created adjacent to the buildings without providing means for positive drainage (e.g., swales or catch basins).

##### **4.9.3 Curtain Drain and Foundation Drains**

It is likely that groundwater will become perched on the basalt bedrock layer during periods of persistent rainfall. Groundwater flow could impact downslope buried structures or could daylight in site cuts. Adequate drainage is essential behind the upslope (north end of site) retaining wall to serve as a curtain drain to intercept perched groundwater and convey it away from the planned structures. The drain should be sloped to a suitable discharge point. The following section provides recommendations for retaining wall drains.

If upslope footing excavations extend into the weathered and intact bedrock, a perimeter footing drain should be provided to convey the perched water away from the structure. The footing drain should be constructed at a minimum slope of approximately 0.5 percent and pumped or drained by gravity to a suitable discharge point. The drain should consist of 4-inch-diameter, perforated drainpipe embedded in a minimum 1-foot-wide zone of crushed drain rock that extends to near the ground surface and is wrapped in geotextile fabric. The invert elevation of the drainpipe should be installed at the base of the footing. The drain rock should meet the requirements specified in the "Drain Rock" section of this report, and the geotextile fabric should meet the requirements provided in OSSC 00350 (Geosynthetic Installation) and OSSC 02320 (Geosynthetics) for drainage geotextiles.

#### **4.10 RETAINING STRUCTURES**

##### **4.10.1 General**

Our retaining wall design recommendations are based on the following assumptions:

(1) the walls consist of conventional, cantilevered, gravity, or reinforced retaining walls, (2) the walls are less than 9 feet in height, (3) the backfill is drained, and (4) the backfill has a slope flatter than 4H:1V. We recommend that a qualified geotechnical engineer perform design calculations for the larger on-site walls once the wall type and geometry has been determined.



The following design parameters may be applicable to the larger walls. If design is performed by others, GeoDesign should review preliminary wall plans to determine if the design parameters are suitable and should review final wall calculations.

Retaining walls are not necessary where intact bedrock is encountered. It should be possible to construct walls directly on top of the intact bedrock. In this case, the project team should consider installing a fascia over the entire wall to create a uniform appearance.

#### **4.10.2 Wall Design Parameters**

Unrestrained site walls that retain native silt and gravel soil and the decomposed bedrock should be designed to resist active earth pressures of 35 to 55 pcf when supporting slopes between 4H:1V and 2H:1V, respectively. These values can be reduced to 25 to 31 pcf for wall supporting moderately weathered bedrock at the same slope angles. Where retained slopes are between inclinations of 4H:1V and 2H:1V, the designer may linearly interpolate between these active earth pressures. A superimposed seismic lateral force should be calculated based on a dynamic force of  $6H^2$  pounds per lineal foot of wall, where H is the height of the wall in feet, and applied at 0.6H from the base of the wall.

If retaining walls are restrained from rotation prior to being backfilled, the aforementioned active earth pressures shall be increased by 15 pcf. If other surcharges (e.g., slopes steeper than 2H:1V, foundations, vehicles, etc.) are located within a horizontal distance from the back of a wall equal to twice the height of the wall, then additional pressures may need to be accounted for in the wall design. Our office should be contacted for appropriate wall surcharges based on the actual magnitude and configuration of the applied loads.

The wall footings should be designed in accordance with the guidelines provided in the appropriate portion of the "Foundation Support" section of this report.

#### **4.10.3 Wall Drainage and Backfill**

The above design parameters have been provided assuming that back-of-wall drains will be installed to prevent buildup of hydrostatic pressures behind all walls. If a drainage system is not installed, then our office should be contacted for revised design forces.

The backfill material placed behind the walls and extending a horizontal distance of  $\frac{1}{2}H$ , where H is the height of the retaining wall, should consist of retaining wall select backfill placed and compacted in conformance with the "Structural Fill" section of this report.

A minimum 6-inch-diameter perforated collector pipe should be placed at the base of the walls. The pipe should be embedded in a minimum 2-foot-wide zone of angular drain rock that is wrapped in a drainage geotextile fabric and extends up the back of the wall to within 1 foot of the finished grade. The drain rock and drainage geotextile fabric should meet specifications provided in the "Structural Fill" section of this report. The perforated collector pipes should discharge at an appropriate location away from the base of the wall. The discharge pipe(s) should not be tied directly into stormwater drain systems, unless measures are taken to prevent backflow into the wall's drainage system.

Settlement of up to 1 percent of the wall height commonly occurs immediately adjacent to the wall as the wall rotates and develops active lateral earth pressures. Consequently, we recommend that construction of flatwork adjacent to retaining walls be postponed at least four weeks after backfilling of the wall, unless survey data indicates that settlement is complete prior to that time.

#### 4.11 PAVEMENTS

Pavements should be installed on compacted subgrade or new engineered fill prepared in conformance with the "Site Preparation" section of this report. Our pavement recommendations are based on the following assumptions:

- The top 12 inches of soil subgrade below the roadway alignment is compacted to at least 92 percent of its maximum density per ASTM D 1557 or observations indicate that it is in a firm and unyielding condition.
- A resilient modulus of 4,000 psi was estimated for the silty subgrade.
- A resilient modulus of 20,000 psi was estimated for base rock.
- Initial and terminal serviceability indices of 4.2 and 2.5, respectively.
- Reliability and standard deviations of 75 percent and 0.45, respectively.
- Structural coefficients of 0.42 and 0.10 for the asphalt and aggregate base rock, respectively.
- A 20-year design life with zero growth.
- Any truck traffic consists of two-axle trucks.

The design team provided a planned traffic loading for light pavement areas. The pavement sections provided in Table 1 are based on the previous assumptions and the provided traffic loading. The table provides a design scenario for light traffic areas with passenger vehicles only and heavy traffic areas, where delivery trucks and trash trucks may travel. If any of these assumptions vary from project design values, our office should be contacted with the appropriate information so that the pavement designs can be revised.

**Table 1. Minimum Pavement Thicknesses**

Traffic Levels		Pavement Thicknesses <sup>1</sup> (inches)	
Cars Per Day	Trucks Per Day	AC	Base Rock
<500	0	2.5	6.0
1,400	0	3.0	7.0
1,400	20	3.5	8.0
1,400	40	4.0	8.0

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

The AC should be a Level 3, ½-inch, dense HMAC according to OSSC 00745 (Hot Mixed Asphalt Concrete) and compacted to 91 percent of the maximum specific gravity of the mix, as determined by AASHTO T-209. The minimum and maximum lift thickness is 2.0 and 3.0 inches,



respectively, for ½-inch HMAC. Asphalt binder should be performance graded and conform to PG 64-22 or better. If a thin asphalt overlay is selected, the nominal aggregate size should be reduced to 3/8 inch.

Construction traffic should be limited to non-building, unpaved portions of the site or haul roads. Construction traffic should not be allowed on new pavements. If construction traffic is to be allowed on newly constructed road sections, an allowance for this additional traffic will need to be made in the design pavement section.

#### 4.12 SEISMIC CONSIDERATIONS

Based on our investigation, the following design parameters can be applied if the structures are designed using the applicable provisions of the 2012 IBC. The parameters in Table 2 should be used to compute seismic base shear forces. Based on the soil and rock conditions encountered, there is a very low risk of liquefaction during the design seismic event.

**Table 2. IBC Seismic Design Parameters**

Parameter	Short Period ( $T_s = 0.2$ second)	1 Second Period ( $T_1 = 1.0$ second)
MCE Spectral Acceleration, $S$	$S_s = 0.95$ g	$S_1 = 0.41$ g
Site Class	B	
Site Coefficient, $F$	$F_a = 0.80$	$F_v = 0.80$
Adjusted Spectral Acceleration, $S_M$	$S_{MS} = 0.76$ g	$S_{M1} = 0.33$ g
Design Spectral Response Acceleration Parameters, $S_D$	$S_{DS} = 0.51$ g	$S_{D1} = 0.22$ g
Design PGA, $S_{aPGA}$	0.20 g	

#### 5.0 OBSERVATION OF CONSTRUCTION

Satisfactory foundation and earthwork performance depends to a large degree on quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during the subsurface exploration. Recognition of changed conditions often requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect if subsurface conditions change significantly from those anticipated.

We recommend that GeoDesign be retained to observe earthwork activities, including stripping, proofrolling of the subgrade and repair of soft areas, footing subgrade preparation, performing laboratory compaction and field moisture-density tests, observing final proofrolling of the pavement subgrade and base rock, and asphalt placement and compaction.

## 6.0 LIMITATIONS

We have prepared this report for use by ConAm Properties LLC and the design and construction teams for the proposed project. The data and report can be used for bidding or estimating purposes, but our report, conclusions, and interpretations should not be construed as warranty of the subsurface conditions and are not applicable to other sites.

Exploration observations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect soil strata or water level variations that may exist between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, re-evaluation will be necessary.

The site development plans and design details were preliminary at the time this report was prepared. When the design has been finalized and if there are changes in the site grades or location, configuration, design loads, or type of construction for the buildings, the conclusions and recommendations presented may not be applicable. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time the report was prepared. No warranty, express or implied, should be understood.


♦ ♦ ♦

We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,

GeoDesign, Inc.

  
Scott P. McDevitt, P.E., G.E.  
Project Engineer

  
Julio C. Vela, Ph.D., P.E., G.E.  
Principal Engineer



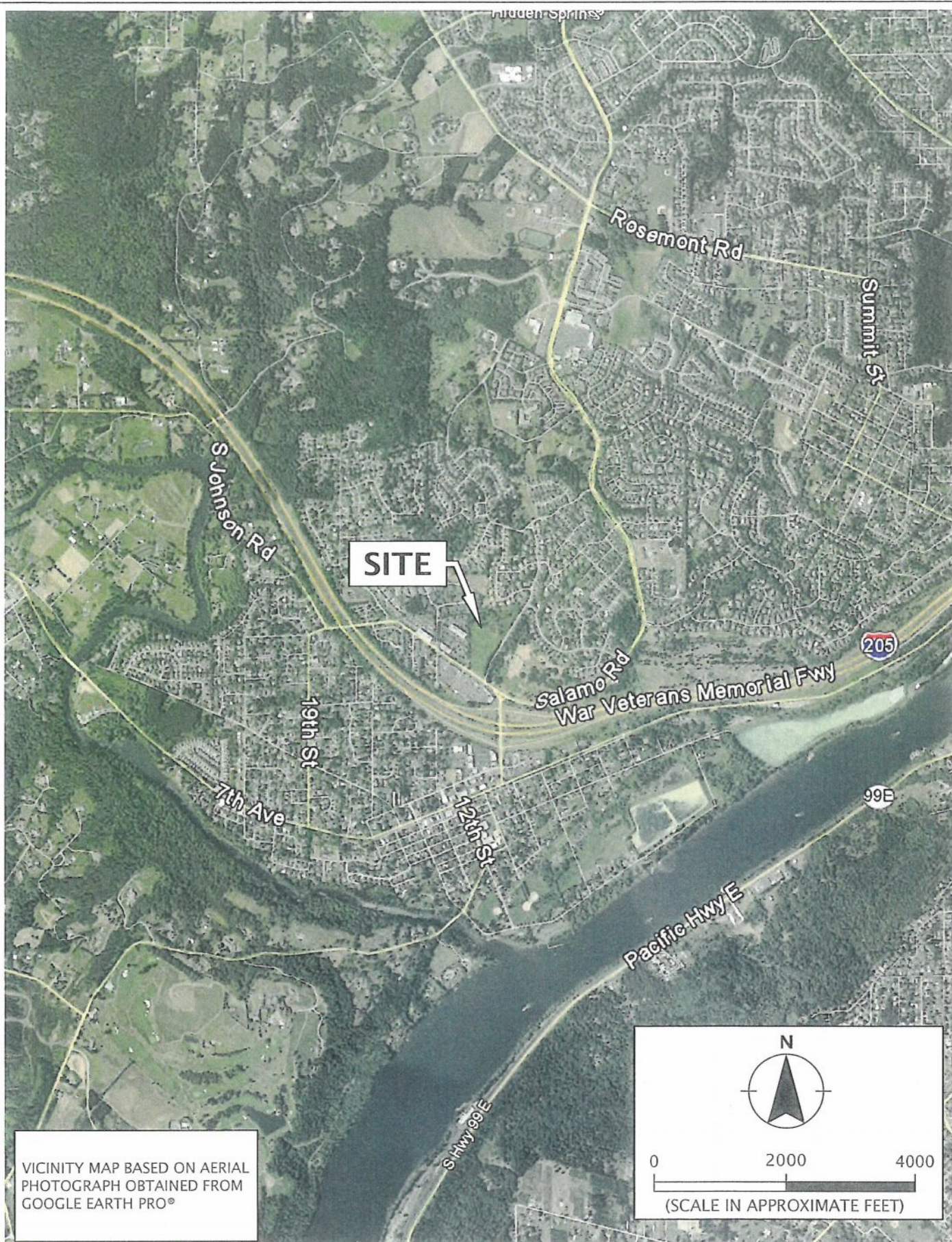
## REFERENCES

Schlicker, Herbert G., Finlayson, Christopher T., 1979, *Geology and Geologic Hazards of Northwest Clackamas County, Oregon*. Oregon Department of Geology and Mineral Industries, Bulletin 99.



## FIGURES





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CONAM-1-01

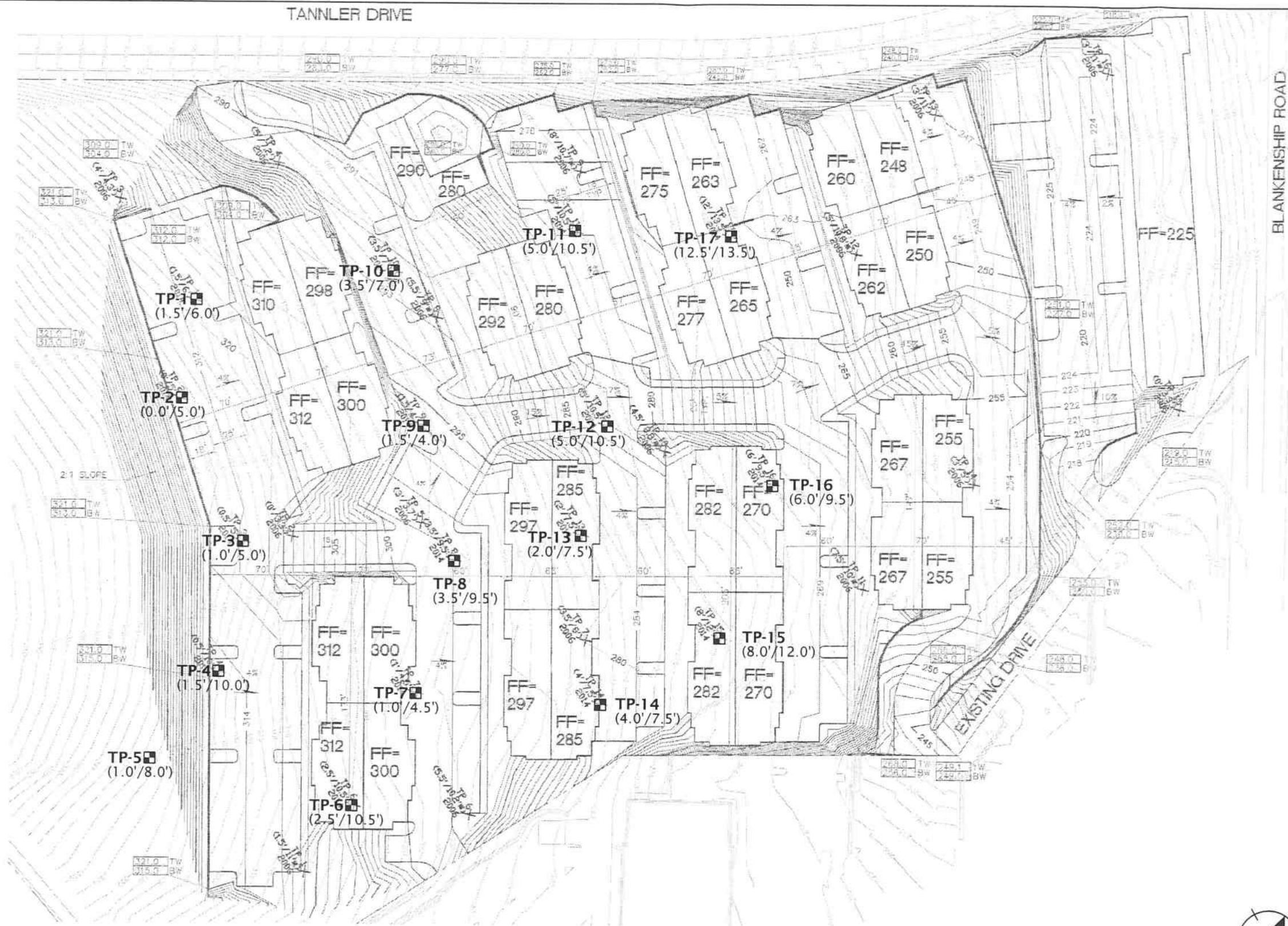
JULY 2014

VICINITY MAP

NWC OF TANNER & BLANKENSHIP  
 WEST LINN, OR

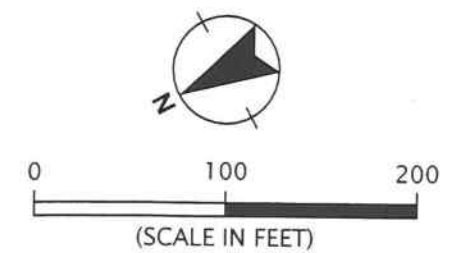
FIGURE 1



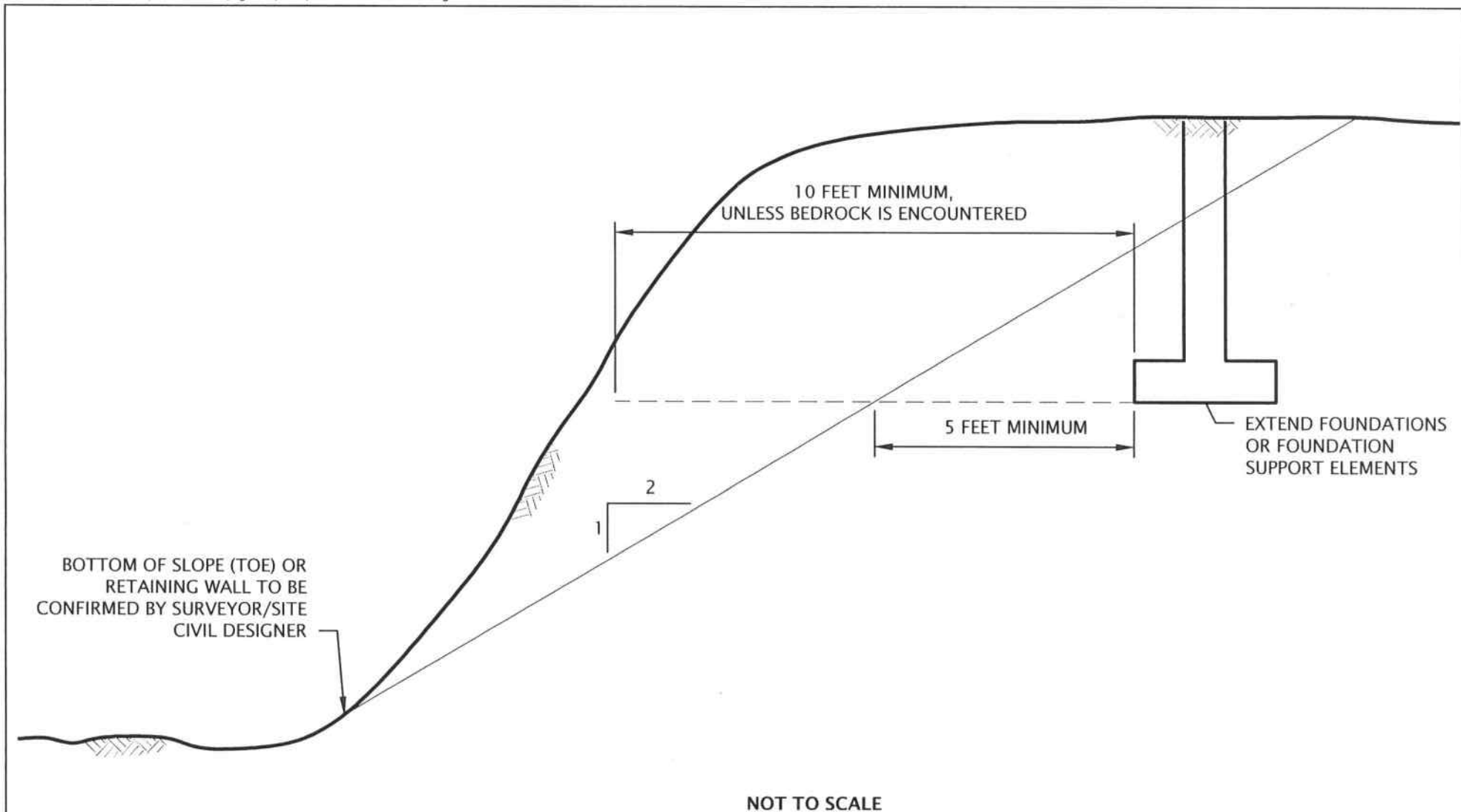


LEGEND:

- TP-1 (1.5'/11.0') TEST PIT  
DEPTH TO WEATHERED BASALT/DEPTH TO INTACT BASALT



SITE PLAN BASED ON IMAGE OBTAINED FROM  
CONAM PROPERTIES, JULY 23, 2014



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**FOUNDATION OFFSET SCHEMATIC**

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WEST LINN, OR

**FIGURE 3**

## APPENDIX A

## **APPENDIX A**

### **FIELD EXPLORATIONS**

#### ***GENERAL***

Subsurface conditions at the site were explored by excavating 17 test pits (TP-1 through TP-17) to depths of approximately 4 to 13.5 feet BGS. The test pits were excavated on February 20, 2014 by Dan J. Fischer Excavating, Inc. of Forest Grove, Oregon, using a John Deere 120 trackhoe. The approximate locations of the explorations are shown on Figure 2. Logs of the explorations are included in this appendix. The locations of the explorations were determined in the field by pacing from site features. This information should be considered accurate to the degree implied by the methods used. Our recent explorations were supplemented by explorations performed by GeoDesign in 2006. Exploration logs from that study are presented in Appendix B.

#### ***SOIL SAMPLING***

A member of our geotechnical staff observed the explorations. We obtained representative samples of the various soil encountered in the test pits for geotechnical laboratory testing. Samples were obtained from the trackhoe bucket and sealed in plastic bags. Soil classifications and sampling intervals are presented on the exploration logs included in this appendix.










#### ***SOIL CLASSIFICATION***

The soil samples were classified in accordance with the "Exploration Key" (Table A-1), "Soil Classification System" (Table A-2), and "Rock Classification System" (Table A-3), which are included in this appendix. The logs indicate the depths at which the soil/rock or their characteristics change, although the change actually could be gradual. Classifications and sampling intervals are presented on the exploration logs included in this appendix.

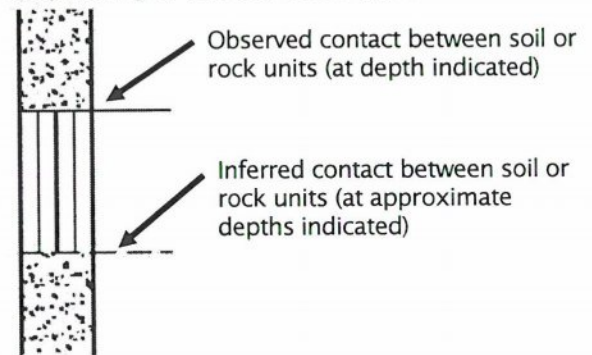
### **LABORATORY TESTING**

#### ***CLASSIFICATION***

The soil samples were classified in the laboratory to confirm field classifications. The laboratory classifications are presented on the exploration logs if those classifications differed from the field classifications.

SYMBOL	SAMPLING DESCRIPTION
	Location of sample obtained in general accordance with ASTM D 1586 Standard Penetration Test with recovery
	Location of sample obtained using thin-wall Shelby tube or Geoprobe® sampler in general accordance with ASTM D 1587 with recovery
	Location of sample obtained using Dames & Moore sampler and 300-pound hammer or pushed with recovery
	Location of sample obtained using Dames & Moore and 140-pound hammer or pushed with recovery
	Location of sample obtained using 3-inch-O.D. California split-spoon sampler and 140-pound hammer
	Location of grab sample
	Rock coring interval
	Water level during drilling
	Water level taken on date shown

Graphic Log of Soil and Rock Types



#### GEOTECHNICAL TESTING EXPLANATIONS

ATT	Atterberg Limits	PP	Pocket Penetrometer
CBR	California Bearing Ratio	P200	Percent Passing U.S. Standard No. 200 Sieve
CON	Consolidation	RES	Resilient Modulus
DD	Dry Density	SIEV	Sieve Gradation
DS	Direct Shear	TOR	Torvane
HYD	Hydrometer Gradation	UC	Unconfined Compressive Strength
MC	Moisture Content	VS	Vane Shear
MD	Moisture-Density Relationship	kPa	Kilopascal
OC	Organic Content		
P	Pushed Sample		

#### ENVIRONMENTAL TESTING EXPLANATIONS

CA	Sample Submitted for Chemical Analysis	ND	Not Detected
P	Pushed Sample	NS	No Visible Sheen
PID	Photoionization Detector Headspace Analysis	SS	Slight Sheen
ppm	Parts per Million	MS	Moderate Sheen
		HS	Heavy Sheen

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EXPLORATION KEY

TABLE A-1



# RELATIVE DENSITY - COARSE-GRAINED SOILS

Relative Density	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)
Very Loose	0 - 4	0 - 11	0 - 4
Loose	4 - 10	11 - 26	4 - 10
Medium Dense	10 - 30	26 - 74	10 - 30
Dense	30 - 50	74 - 120	30 - 47
Very Dense	More than 50	More than 120	More than 47

# CONSISTENCY - FINE-GRAINED SOILS

Consistency	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)
Very Soft	Less than 2	Less than 3	Less than 2	Less than 0.25
Soft	2 - 4	3 - 6	2 - 5	0.25 - 0.50
Medium Stiff	4 - 8	6 - 12	5 - 9	0.50 - 1.0
Stiff	8 - 15	12 - 25	9 - 19	1.0 - 2.0
Very Stiff	15 - 30	25 - 65	19 - 31	2.0 - 4.0
Hard	More than 30	More than 65	More than 31	More than 4.0

# PRIMARY SOIL DIVISIONS

# GROUP SYMBOL

# GROUP NAME

COARSE-GRAINED SOILS  (more than 50% retained on No. 200 sieve)	GRAVEL  (more than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVELS (< 5% fines)	GW or GP	GRAVEL
		GRAVEL WITH FINES (≥ 5% and ≤ 12% fines)	GW-GM or GP-GM	GRAVEL with silt
			GW-GC or GP-GC	GRAVEL with clay
		GRAVELS WITH FINES (> 12% fines)	GM	silty GRAVEL
			GC	clayey GRAVEL
	GC-GM		silty, clayey GRAVEL	
	SAND  (50% or more of coarse fraction passing No. 4 sieve)	CLEAN SANDS (<5% fines)	SW or SP	SAND
		SANDS WITH FINES (≥ 5% and ≤ 12% fines)	SW-SM or SP-SM	SAND with silt
			SW-SC or SP-SC	SAND with clay
		SANDS WITH FINES (> 12% fines)	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS  (50% or more passing No. 200 sieve)	SILT AND CLAY	Liquid limit less than 50	ML	SILT
			CL	CLAY
			CL-ML	silty CLAY
			OL	ORGANIC SILT or ORGANIC CLAY
		Liquid limit 50 or greater	MH	SILT
			CH	CLAY
			OH	ORGANIC SILT or ORGANIC CLAY
HIGHLY ORGANIC SOILS			PT	PEAT

# MOISTURE CLASSIFICATION

# ADDITIONAL CONSTITUENTS

Term	Field Test	Secondary granular components or other materials such as organics, man-made debris, etc.					
		Percent	Silt and Clay In:		Percent	Sand and Gravel In:	
			Fine-Grained Soils	Coarse-Grained Soils		Fine-Grained Soils	Coarse-Grained Soils
dry	very low moisture, dry to touch	< 5	trace	trace	< 5	trace	trace
moist	damp, without visible moisture	5 - 12	minor	with	5 - 15	minor	minor
wet	visible free water, usually saturated	> 12	some	silty/clayey	15 - 30	with	with
					> 30	sandy/gravelly	Indicate %

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# SOIL CLASSIFICATION SYSTEM

TABLE A-2

HARDNESS	DESCRIPTION
Extremely Soft (R0) Very Soft (R1) Soft (R2) Medium Hard (R3) Hard (R4) Very Hard (R5)	Indented by thumbnail Can be peeled by pocket knife or scratched with finger nail Can be peeled by a pocket knife with difficulty Can be scratched by knife or pick Can be scratched with knife or pick only with difficulty Cannot be scratched with knife or sharp pick
WEATHERING	DESCRIPTION
Decomposed Predominantly Decomposed Moderately Weathered Slightly Weathered Fresh	Rock mass is completely decomposed Rock mass is more than 50% decomposed Rock mass is decomposed locally Rock mass is generally fresh No discoloration in rock fabric
JOINT SPACING	DESCRIPTION
Very Close Close Moderate Close Wide Very Wide	Less than 2 inches 2 inches to 1 foot 1 foot to 3 feet 3 feet to 10 feet Greater than 10 feet
FRACTURING	FRACTURE SPACING
Very Intensely Fractured Intensely Fractured Moderately Fractured Slightly Fractured Very Slightly Fractured Unfractured	Chips and fragments with a few scattered short core lengths 0.1 foot to 0.3 foot with scattered fragments intervals 0.3 foot to 1 foot with most lengths 0.6 foot 1 foot to 3 feet Greater than 3 feet No fractures
HEALING	DESCRIPTION
Not Healed Partly Healed Moderately Healed Totally Healed	Discontinuity surface, fractured zone, sheared material or filling not re-cemented Less than 50% of fractured or sheared material Greater than 50% of fractured or sheared material All fragments bonded

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Medium stiff, brown SILT (ML), abundant shrub roots; moist (2-inch-thick root zone).				0 50 100	
2.5		Very soft to soft (R1-R2), gray-brown BASALT; decomposed to intensely weathered, moderately to intensely fractured.	1.5				
5.0		soft to medium hard (R2-R3), gray; moderately to intensely weathered, moderately fractured at 4.0 feet			⊗		
6.0		Exploration terminated at a depth of 6.0 feet due to refusal.	6.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
7.5							
10.0							
12.5							
15.0						0 50 100	
EXCAVATED BY: Dan J. Fischer Excavating, Inc.		LOGGED BY: NAK		COMPLETED: 02/20/14			
EXCAVATION METHOD: trackhoe (see report text)							
<b>GEODESIGN<sub>INC</sub></b> 15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 Off 503.968.8787 Fax 503.968.3068		CONAM-1-01	TEST PIT TP-1				
		JULY 2014	NWC OF TANNER & BLAKESHIP WEST LINN, OR				FIGURE A-1

TEST PIT LOG - 1 PER PAGE CONAM-1-01-TP1\_17.GPJ GEODESIGN.GDT PRINT DATE: 7/28/14:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Extremely soft to very soft (R0-R1), brown-gray BASALT; decomposed to moderately weathered, moderately to very intensely fractured, abundant shrub roots (2-inch-thick root zone).				0 50 100	
2.5		without shrub roots at 1.5 feet					
		grades to medium hard (R3); moderately to intensely weathered, moderately fractured at 3.0 feet					
5.0		soft to medium hard (R2-R3), gray; moderately to intensely weathered, moderately fractured at 4.0 feet					
		Exploration terminated at a depth of 5.0 feet due to refusal.	5.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
7.5							
10.0							
12.5							
15.0						0 50 100	

EXCAVATED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: NAK

COMPLETED: 02/20/14

EXCAVATION METHOD: trackhoe (see report text)

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CONAM-1-01

TEST PIT TP-2

JULY 2014

NWC OF TANNER & BLAKENSHIP  
WEST LINN, OR

FIGURE A-2



DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		TOPSOIL, abundant shrub roots (12-inch-thick root zone).				0 50 100	
1.0		Very soft to soft (R1-R2), brown-gray BASALT; decomposed to moderately weathered, moderately to very intensely fractured.	1.0				
2.5							
3.5		soft to medium hard (R2-R3); moderately to intensely weathered, slightly to moderately fractured at 3.5 feet					
5.0		Exploration terminated at a depth of 5.0 feet due to refusal.	5.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
7.5							
10.0							
12.5							
15.0						0 50 100	

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TEST PIT TP-3

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NWC OF TANNER & BLAKENSHIP  
 WEST LINN, OR

FIGURE A-3

TEST PIT LOG - 1 PER PAGE CONAM-1-01-TP1\_17.GPJ GEODESIGN.GDT PRINT DATE: 7/28/14.KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		TOPSOIL, abundant shrub roots (18-inch-thick root zone).				0 50 100	
2.5		Extremely soft to very soft (R0-R1), brown-gray BASALT; decomposed to intensely weathered, moderately to very intensely fractured.	1.5				
5.0		gray-brown; decomposed at 5.0 feet slightly to moderately fractured at 5.5 feet					
7.5							
10.0		soft to medium hard (R2-R3) at 9.5 feet					
10.0		Exploration terminated at a depth of 10.0 feet due to refusal.	10.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
12.5							
15.0						0 50 100	

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TEST PIT TP-4

NWC OF TANNLER & BLAKENSHIP  
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FIGURE A-4

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		TOPSOIL, abundant shrub roots (12-inch-thick root zone).				0 50 100	
1.0		Very soft to soft (R1-R2), brown BASALT; decomposed to intensely weathered, moderately to intensely fractured.	1.0				
2.5							
3.0		soft to medium hard (R2-R3) at 3.0 feet					
5.0		extremely soft to very soft (R0-R1), gray-yellow; decomposed at 5.0 feet					
7.5		soft to medium hard (R2-R3) at 7.5 feet					
8.0		Exploration terminated at a depth of 8.0 feet due to refusal.	8.0				
10.0							No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
12.5							Surface elevation was not measured at the time of exploration.
15.0						0 50 100	

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TEST PIT TP-5

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WEST LINN, OR

FIGURE A-5



TEST PIT LOG - 1 PER PAGE CONAM-1-01-TP1\_17.GPJ GEODESIGN.GDT PRINT DATE: 7/28/14:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Medium stiff, brown SILT with gravel (ML), trace organics (rootlets), shrub roots; moist (2-inch-thick root zone).				0 50 100	
		without shrub roots at 1.5 feet			⊗		
2.5		Medium dense, brown, silty GRAVEL (GM); moist, fine to coarse and angular (decomposed basalt) with cobbles at 3.0 feet	2.5		⊗		
5.0							
7.5		Extremely soft to very soft (R0-R1), brown-gray BASALT; decomposed to intensely weathered, intensely to very intensely fractured.	7.0				
10.0		very soft to medium hard (R1-R3); moderately to intensely weathered at 10.0 feet					
		Exploration terminated at a depth of 10.5 feet due to refusal.	10.5				
12.5							No groundwater seepage observed to the depth explored. No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
15.0						0 50 100	

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TEST PIT TP-6

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FIGURE A-6

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Medium stiff, brown SILT with gravel (ML), trace organics (rootlets), abundant shrub roots; moist (4-inch-thick root zone).				0 50 100	
1.0		Very soft to soft (R1-R2), brown-gray BASALT; decomposed to intensely weathered, moderately to very intensely fractured.	1.0				
2.5							
4.0		medium hard to hard (R3-R4); moderately to intensely weathered at 4.0 feet					
4.5		Exploration terminated at a depth of 4.5 feet due to refusal.	4.5				
5.0							Slow groundwater seepage observed at 4.0 feet.
7.5							No caving observed to the depth explored.
10.0							Surface elevation was not measured at the time of exploration.
12.5							
15.0						0 50 100	

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TEST PIT TP-7

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WEST LINN, OR

FIGURE A-7

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Soft to medium stiff, brown SILT (ML), some clay, trace organics (rootlets); moist (4-inch-thick root zone).				0 50 100	
2.5							Moderate caving observed at 1.5 feet.
3.5		Very soft to soft (R1-R2), brown and gray-yellow BASALT; decomposed to intensely weathered, intensely to very intensely fractured.	3.5				
5.0		soft to medium hard (R2-R3); moderately to very intensely fractured at 5.0 feet					
7.5		medium hard (R3) at 7.0 feet					
9.5		Exploration terminated at a depth of 9.5 feet due to refusal.	9.5				No groundwater seepage observed to the depth explored.  Surface elevation was not measured at the time of exploration.
10.0							
12.5							
15.0						0 50 100	

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TEST PIT TP-8

NWC OF TANNER & BLAKENSHIP  
 WEST LINN, OR

FIGURE A-8

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Soft to medium stiff, brown SILT with gravel (ML), trace organics (rootlets), abundant fine roots; moist (4-inch-thick root zone). without fine roots at 1.0 foot				0 50 100	
2.5		Very soft to soft (R1-R2), brown and gray-black BASALT; decomposed to intensely weathered, intensely to very intensely fractured.	1.5				
4.0		soft to medium hard (R2-R3); moderately to very intensely weathered, moderately to very intensely fractured at 3.5 feet Exploration terminated at a depth of 4.0 feet due to refusal.	4.0				
5.0							No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
7.5							Surface elevation was not measured at the time of exploration.
10.0							
12.5							
15.0						0 50 100	

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TEST PIT TP-9

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NWC OF TANNER & BLAKESHIP  
WEST LINN, OR

FIGURE A-9



TEST PIT LOG - 1 PER PAGE CONAM-1-01-TP1\_17.GPJ GEODESIGN.GDT PRINT DATE: 7/28/14:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Soft to medium stiff, brown SILT (ML), some clay, trace organics; moist (4-inch- thick root zone).				0 50 100	
2.5		wood/roots at 2.0 feet medium stiff at 2.5 feet					Minor caving observed at 1.0 foot.
3.5		Extremely soft to very soft (R0-R1), brown BASALT; decomposed to intensely weathered, intensely to very intensely fractured.	3.5				
5.0							
7.0		soft to medium hard (R2-R3); moderately to intensely weathered, moderately to intensely fractured at 6.5 feet Exploration terminated at a depth of 7.0 feet due to refusal.	7.0				No groundwater seepage observed to the depth explored.  Surface elevation was not measured at the time of exploration.
10.0							
12.5							
15.0						0 50 100	

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TEST PIT TP-10

NWC OF TANNER & BLAKENSHIP  
WEST LINN, OR

FIGURE A-10

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Blackberry cuttings (2.0 inches). Soft to medium stiff, dark brown SILT (ML), some clay, trace to some organics, abundant roots; moist. without abundant roots at 1.0 foot  medium stiff, brown, none to trace organics at 1.5 feet stiff at 2.0 feet	0.2			0 50 100	
2.5							
		brown-yellow at 4.0 feet					
5.0		Extremely soft to very soft (R0-R1), brown-gray BASALT; decomposed to intensely weathered, intensely to very intensely fractured.	5.0				
7.5							
		very soft to soft (R1-R2), gray; vuggy at 8.0 feet					
		moderately to intensely fractured at 9.0 feet					
10.0		soft to medium hard (R2-R3) at 10.0 feet					Slow to moderate groundwater seepage observed at 10.0 feet.
		Exploration terminated at a depth of 10.5 feet due to refusal.	10.5				No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
12.5							
15.0						0 50 100	

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TEST PIT TP-11

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FIGURE A-11

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DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Blackberry cuttings (2.0 inches).	0.2			0 50 100	
		Soft to medium stiff, dark brown SILT (ML), some clay, trace to some organics, abundant blackberry roots; moist. without abundant blackberry roots at 1.0 foot medium stiff, brown, trace organics at 1.5 feet					
2.5		stiff at 2.5 feet					
		brown-yellow at 4.5 feet					
5.0		Extremely soft to very soft (R0-R1), brown-gray BASALT; decomposed to intensely weathered, intensely to very intensely fractured.	5.0				
7.5		gray; slightly to moderately fractured, vuggy at 7.5 feet					
10.0		Exploration terminated at a depth of 10.5 feet due to refusal.	10.5				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
12.5							
15.0						0 50 100	

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TEST PIT TP-12




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WEST LINN, OR

FIGURE A-12



DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0					0	50	100
		Blackberry cuttings (2.0 inches). Soft to medium stiff, dark brown SILT (ML), some clay, trace to some organics, blackberry roots; moist. medium stiff, brown, trace organics, without blackberry roots at 1.0 foot	0.2				Minor caving observed at 1.0 foot.
2.5		Very soft to soft (R1-R2), gray-brown BASALT; decomposed to intensely weathered, moderately to very intensely fractured.	2.0				
5.0							
7.5		medium hard to hard (R3-R4); slightly to moderately weathered, moderately fractured at 7.0 feet Exploration terminated at a depth of 7.5 feet due to refusal.	7.5				No groundwater seepage observed to the depth explored.  Surface elevation was not measured at the time of exploration.
10.0							
12.5							
15.0					0	50	100
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EXCAVATION METHOD: trackhoe (see report text)							
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		JULY 2014	NWC OF TANNER & BLAKENSHIP WEST LINN, OR				FIGURE A-13

TEST PIT LOG - 1 PER PAGE CONAM-1-01-TP1\_17.GPJ GEODESIGN.GDT PRINT DATE: 7/28/14:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Blackberry cuttings (2.0 inches). Soft to medium stiff, dark brown SILT (ML), some clay, trace to some organics, blackberry roots; moist. medium stiff, brown, trace organics, without blackberry roots at 1.0 foot	0.2				
2.5							
4.0		Very soft to soft (R1-R2), brown-gray BASALT; decomposed to intensely weathered, intensely to very intensely fractured.	4.0				
5.0							
7.5		Exploration terminated at a depth of 7.5 feet due to refusal.	7.5				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
10.0							
12.5							
15.0							

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TEST PIT TP-14

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FIGURE A-14

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Blackberry cuttings (2.0 inches).				0 50 100	
		Soft to medium stiff, dark brown SILT (ML), some clay, trace to some organics, blackberry roots; moist - FILL.	0.2				
		without blackberry roots at 1.0 foot					
2.5		medium stiff, with cobbles, trace gravel at 2.0 feet					
		Medium stiff to stiff, brown SILT (MH), some clay, trace gravel; moist.	3.5				Bottle cap and wood debris at 3.0 feet.
5.0							
7.5							
		Extremely soft to very soft (R0-R1), brown-yellow and gray BASALT; decomposed to intensely weathered, intensely to very intensely fractured.	8.0				
10.0		very soft to soft (R1-R2); moderately to intensely weathered, moderately fractured at 10.5 feet					
		soft to medium hard (R3-R5) at 11.5 feet					
12.5		Exploration terminated at a depth of 12.0 feet due to refusal.	12.0				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.  Surface elevation was not measured at the time of exploration.
15.0						0 50 100	

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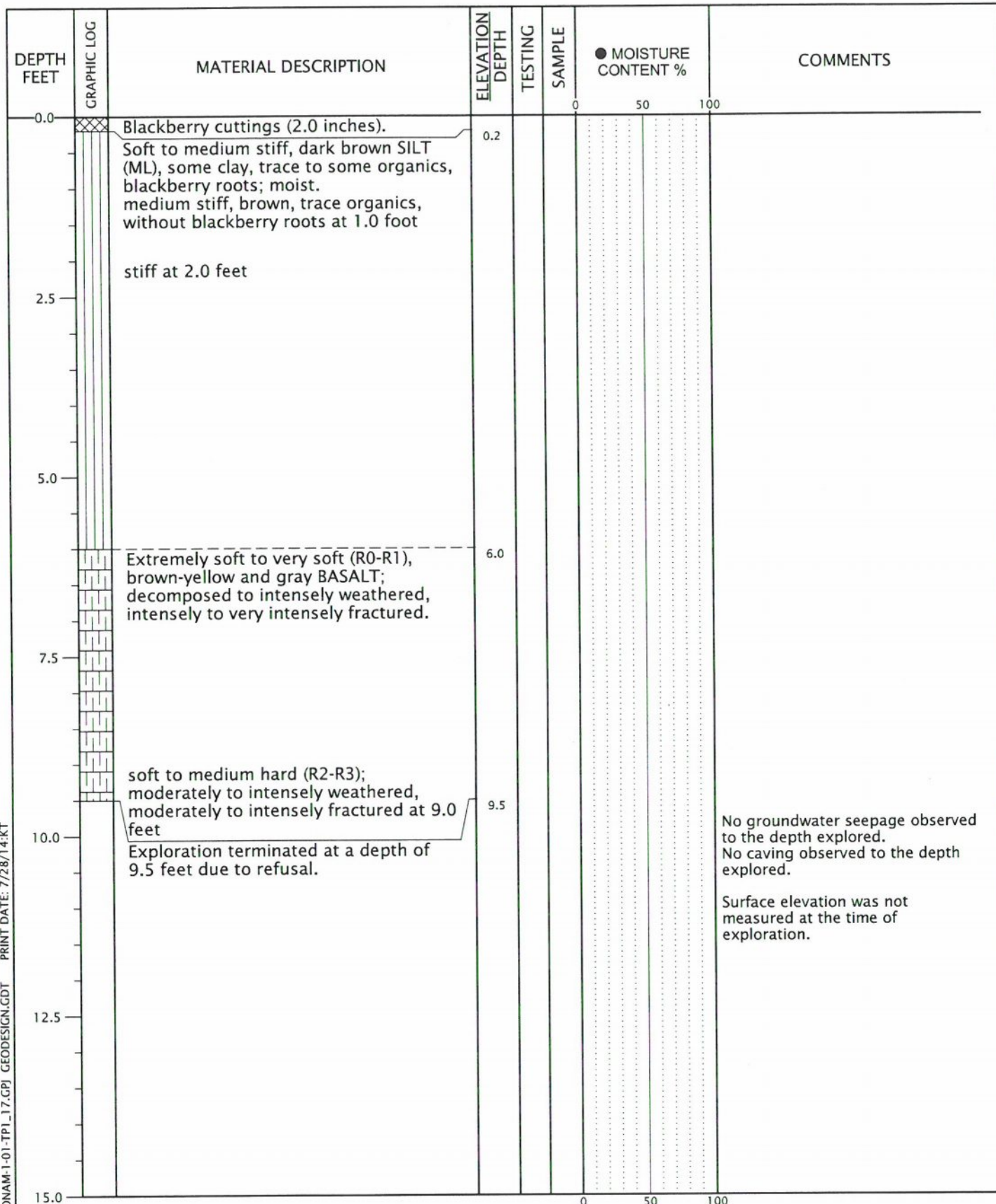
TEST PIT TP-15

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FIGURE A-15

TEST PIT LOG - 1 PER PAGE CONAM-1-01-TP1-17.GPJ GEODESIGN.GDT PRINT DATE: 7/28/14:KT



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TEST PIT TP-16

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WEST LINN, OR

FIGURE A-16



DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
0.0		Blackberry cuttings (2.0 inches).				0 50 100	
		Soft to medium stiff, dark brown SILT (ML), some clay, trace to some organics, blackberry roots; moist. without blackberry roots at 1.0 foot	0.2				
2.5		medium stiff, brown-yellow, none to trace organics at 2.0 feet stiff at 2.5 feet					
5.0		trace sand at 5.0 feet					
7.5		with sand at 7.0 feet					
10.0		soft to medium hard (R2-R3); moderately to intensely weathered, moderately to intensely fractured at 9.0 feet					
		with cobbles, trace gravel at 11.0 feet					
12.5		Very soft to soft (R1-R2), brown-yellow and gray BASALT; decomposed to moderately weathered, moderately to intensely fractured.	12.5				
		Exploration terminated at a depth of 13.5 feet due to refusal.	13.5				
15.0						0 50 100	

Slow groundwater seepage observed at 3.5 feet.

No caving observed to the depth explored.

Surface elevation was not measured at the time of exploration.

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TEST PIT TP-17

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WEST LINN, OR

FIGURE A-17

## APPENDIX B

## APPENDIX B









### 2006 FIELD EXPLORATIONS

Subsurface conditions at the site were explored by excavating 16 test pits (TP-1 through TP-16) to depths of approximately 3 to 11 feet BGS on February 23, 2006. The test pits were excavated by Western States Soil Conservation, Inc. of Aurora, Oregon, using a Kamatsu PC-40 trackhoe. The approximate locations of the explorations are shown on the attached site plan. Logs of the explorations are included in this appendix. The locations of the explorations were determined in the field by pacing from site features. This information should be considered accurate to the degree implied by the methods used.

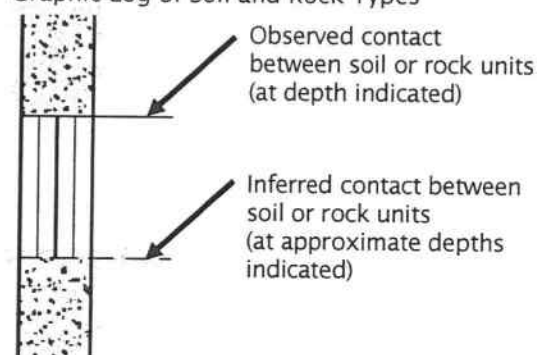




# KEY TO TEST PIT AND BORING LOG SYMBOLS

SYMBOL	SAMPLING DESCRIPTION
	Location of sample obtained in general accordance with ASTM D 1586 Standard Penetration Test with recovery
	Location of sample obtained using thin wall, shelby tube, or Geoprobe® sampler in general accordance with ASTM D 1587 with recovery
	Location of sample obtained using Dames & Moore sampler and 300-pound hammer or pushed with recovery
	Location of sample obtained using Dames & Moore sampler and 140-pound hammer or pushed with recovery
	Location of grab sample
	Rock coring interval
	Water level during drilling
	Water level taken on date shown

## Graphic Log of Soil and Rock Types



## GEOTECHNICAL TESTING EXPLANATIONS

PP	Pocket Penetrometer	DD	Dry Density
TOR	Torvane	ATT	Atterberg Limits
CON	Consolidation	CBR	California Bearing Ratio
DS	Direct Shear	OC	Organic Content
P200	Percent Passing U.S. Standard No. 200 Sieve	P	Pushed Sample
HYD	Hydrometer Gradation	RES	Resilient Modulus
UC	Unconfined Compressive Strength	VS	Vane Shear
SIEV	Sieve Gradation	kPa	kiloPascal

## ENVIRONMENTAL TESTING EXPLANATIONS

CA	Sample Submitted for Chemical Analysis	ND	Not Detected
PID	Photoionization Detector Headspace Analysis	NS	No Visible Sheen
ppm	Parts Per Million	SS	Slight Sheen
P	Pushed Sample	MS	Moderate Sheen
		HS	Heavy Sheen

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KEY TO TEST PIT AND BORING LOG SYMBOLS

TABLE A-1



## SOIL CLASSIFICATION SYSTEM

### CONSISTENCY - COARSE-GRAINED SOILS

Relative Density	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)
Very Loose	0 - 4	0 - 11	0 - 4
Loose	4 - 10	11 - 26	4 - 10
Medium Dense	10 - 30	26 - 74	10 - 30
Dense	30 - 50	74 - 120	30 - 47
Very Dense	More than 50	More than 120	More than 47

### CONSISTENCY - FINE-GRAINED SOILS

Consistency	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)
Very Soft	Less than 2	Less than 3	Less than 2	Less than 0.25
Soft	2 - 4	3 - 6	2 - 5	0.25 - 0.50
Medium Stiff	4 - 8	6 - 12	5 - 9	0.50 - 1.0
Stiff	8 - 15	12 - 25	9 - 19	1.0 - 2.0
Very Stiff	15 - 30	25 - 65	19 - 31	2.0 - 4.0
Hard	More than 30	More than 65	More than 31	More than 4.0

### SOIL CLASSIFICATION NAME

Name and Modifier Terms		Constituent Percentage
Coarse-grained	GRAVEL, SAND	>50%
	sandy, gravelly	30 - 50%
	silty, clayey	15 - 50%
	some (gravel, sand)	15 - 30%
	some (silt, clay)	5 - 15%
	trace (gravel, sand)	<5%
Fine-grained	CLAY, SILT	>50%
	silty, clayey	30 - 50%
	sandy, gravelly	15 - 30%
	some (sand, gravel)	5 - 15%
	some (silt, clay)	<5%
	trace (sand, gravel)	<5%
Organic	trace (silt, clay)	<5%
	PEAT	50 - 100%
	organic (soil name)	15 - 50%
	(soil name) with some organics	5 - 15%

### MOISTURE CLASSIFICATION


Term	Field Test
dry	very low moisture, dry to touch
moist	damp, without visible moisture
wet	visible free water, usually saturated

### GRAIN SIZE CLASSIFICATION

Description		Sieve*	Observed Size
boulders		-	>12"
cobbles		-	3" - 12"
gravel	coarse	0.75" - 3"	0.75" - 3"
	fine	#4 - 0.75"	0.19" - 0.75"
sand	coarse	#10 - #4	0.075" - 0.19"
	medium	#40 - #10	0.017" - 0.075"
	fine	#200 - #40	0.0029" - 0.017"
fines		<#200	<0.0029"

\* Use of #200 field sieve encouraged

# ROCK CLASSIFICATION GUIDELINES

HARDNESS	DESCRIPTION
Extremely Soft (R0) Very Soft (R1) Soft (R2) Medium Hard (R3) Hard (R4) Very Hard (R5)	Indented by thumbnail Can be peeled by pocket knife or scratched with finger nail Can be peeled by a pocket knife with difficulty Can be scratched by knife or pick Can be scratched with knife or pick only with difficulty Cannot be scratched with knife or sharp pick
WEATHERING	DESCRIPTION
Decomposed Predominantly Decomposed Moderately Weathered Slightly Weathered Fresh	Rock mass is completely decomposed Rock mass is more than 50% decomposed Rock mass is decomposed locally Rock mass is generally fresh No discoloration in rock fabric
JOINT SPACING	DESCRIPTION
Very Close Close Moderate Close Wide Very Wide	Less than 2 inches 2 inches to 1 foot 1 foot to 3 feet 3 feet to 10 feet Greater than 10 feet
FRACTURING	FRACTURE SPACING
Very Intensely Fractured Intensely Fractured Moderately Fractured Slightly Fractured Very Slightly Fractured Unfractured	Chips and fragments with a few scattered short core lengths 0.1 foot to 0.3 foot with scattered fragments intervals 0.3 foot to 1 foot with most lengths 0.6 foot 1 foot to 3 feet Greater than 3 feet No fractures
HEALING	DESCRIPTION
Not Healed Partly Healed Moderately Healed Totally Healed	Discontinuity surface, fractured zone, sheared material or filling not re-cemented Less than 50% of fractured or sheared material Greater than 50% of fractured or sheared material All fragments bonded
 15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 Off 503.968.8787 Fax 503.968.3068	ROCK CLASSIFICATION GUIDELINES
	TABLE A-3



DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
<b>TP-1</b>							
0.0		Stiff, brown SILT with trace to some gravel; dry to moist (3-inch-thick root zone). becomes gravelly at 1.5 feet					
2.5		Very dense, brown GRAVEL with trace to some silt and cobbles; dry to moist, angular. Stiff to very stiff, brown, gravelly SILT; moist.	2.5		P200	●	P200 = 55%
5.0		Very dense, brown, fine to coarse GRAVEL with some cobbles and trace silt; dry to moist, angular (moderately weathered basalt).	5.0				
7.5		Very stiff to hard, brown SILT with some clay and trace to no gravel; dry to moist.	7.8				
10.0			11.0			●	No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
12.5		Test pit completed at 11.0 feet.					
<b>TP-2</b>							
0.0		Medium stiff to stiff, dark brown SILT with some gravel; dry to moist.					
2.5		Soft (R2), black and brown BASALT; predominately decomposed, vesicular, closely fractured.	1.8			●	No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
		Test pit completed at 3.3 feet due to refusal on basalt.	3.3				
5.0							
7.5							
10.0							
12.5							
EXCAVATED BY: Western States Soil Conservation, Inc.      LOGGED BY: BBP      COMPLETED: 02/23/06 EXCAVATION METHOD: backhoe (see report text)							
<b>GEO DESIGN</b> 15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 Off 503.968.8787 Fax 503.968.3068		BLACKHAWK-1-01	TEST PIT				
		JULY 2006	WILLAMETTE 205 CORPORATE CENTER WEST LINN, OR		FIGURE A-1		

TEST PIT LOG - 2 PER PAGE BLACKHAWK-1-01-TP1-16.GPJ GEODESIGN.GDT PRINT DATE: 7/6/06-KT

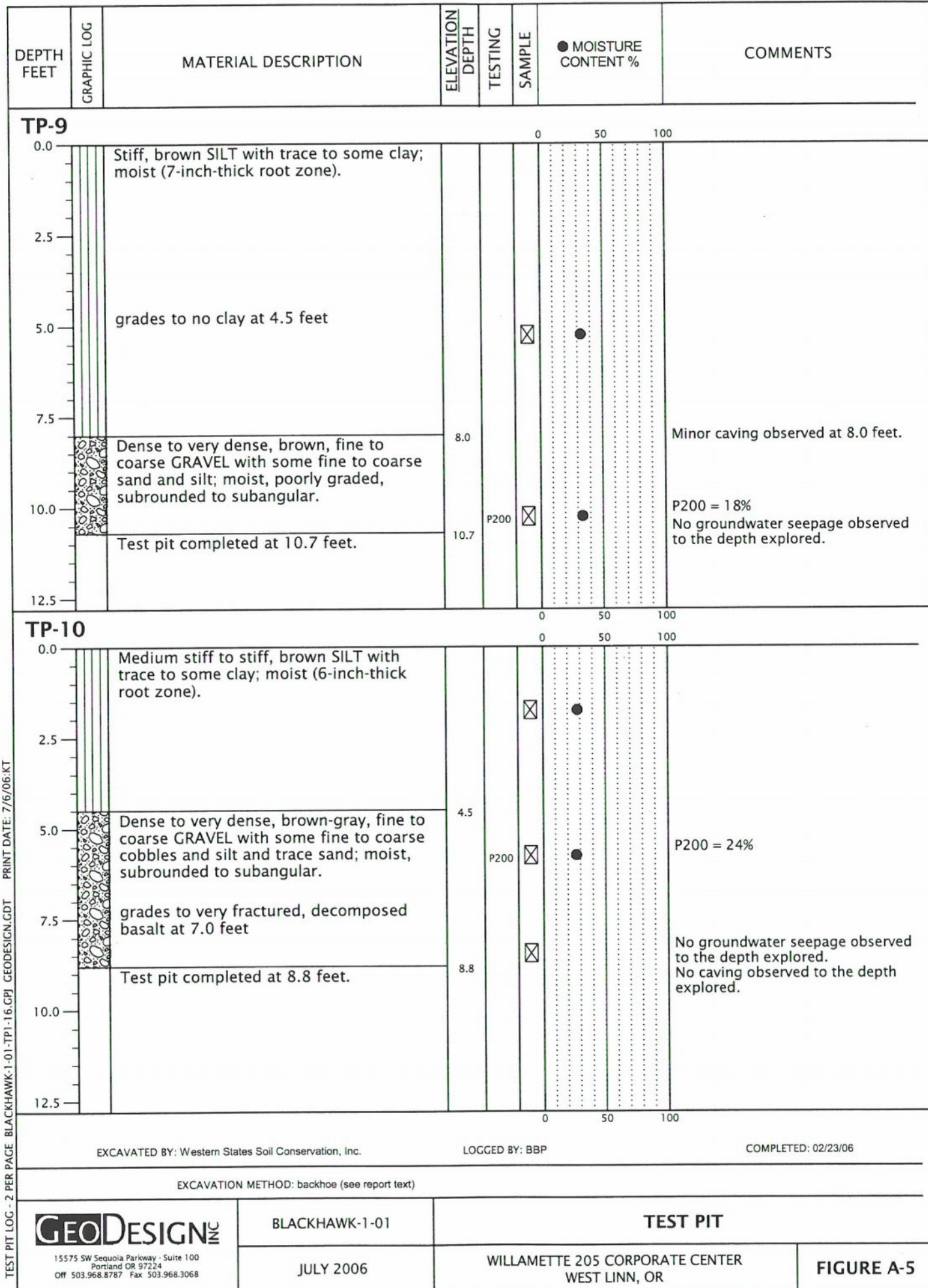
DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
<b>TP-3</b>							
0.0		Stiff, brown SILT with trace clay; dry to moist (6-inch-thick root zone).				0 50 100	
2.5							
5.0		grades with trace gravel and cobbles at 4.0 feet	4.1				
		Soft to medium hard (R2-R3), light gray-brown BASALT; moderately to slightly weathered, closely fractured.	4.3				
		Test pit completed at 4.3 feet due to refusal on basalt.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
7.5							
10.0							
12.5							
<b>TP-4</b>							
0.0		Stiff, brown SILT with trace to some clay; moist (5-inch-thick root zone).				0 50 100	
2.5							
5.0		grades to light brown and clayey with brown and black mottles at 3.0 feet					
		grades with trace gravel and angular cobbles (colluvium) at 5.0 feet					
		encountered single cobble (10-inch diameter) at 5.5 feet	6.0				
		Dense to very dense, yellow-gray GRAVEL with some cobbles and trace silt; dry to moist, angular (colluvium).	6.5				
		Dense to very dense, yellow-gray, fine to coarse SAND with some clay and trace fine gravel; moist, subrounded to angular.	7.2				
		Test pit completed at 7.2 feet due to refusal on basalt.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
7.5							
10.0							
12.5							
EXCAVATED BY: Western States Soil Conservation, Inc. LOGGED BY: BBP COMPLETED: 02/23/06							
EXCAVATION METHOD: backhoe (see report text)							
<b>GEO DESIGN INC</b>		BLACKHAWK-1-01	<b>TEST PIT</b>				
15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 OFF 503.968.8787 Fax 503.968.3068		JULY 2006	WILLAMETTE 205 CORPORATE CENTER WEST LINN, OR				<b>FIGURE A-2</b>

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
<b>TP-5</b>							
0.0		Stiff, brown SILT with trace clay; moist (3-inch-thick root zone).					No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
2.5							
3.0		Soft to medium hard (R2-R3), gray BASALT with brown staining; moderate to slightly weathered, slightly fractured (1- to 8-inch spacing).	3.0				
3.7		Test pit completed at 3.7 feet due to refusal on basalt.	3.7				
5.0							
7.5							
10.0							
12.5							
<b>TP-6</b>							
0.0		Stiff, brown SILT with trace to some gravel and cobbles and trace clay; dry to moist (8-inch-thick root zone).					No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
2.5							
3.0		Stiff, dark brown, gravelly SILT with some organics; dry to moist (colluvium).	3.0				
4.0		Stiff, dark brown SILT with trace to some gravel and some organics; dry to moist (colluvium).	4.0				
5.0		grades to no gravel at 5.5 feet					
7.5							
10.0		Test pit completed at 10.2 feet.	10.2				
12.5							
EXCAVATED BY: Western States Soil Conservation, Inc.      LOGGED BY: BBP      COMPLETED: 02/23/06 EXCAVATION METHOD: backhoe (see report text)							
		BLACKHAWK-1-01	TEST PIT				
15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 Off 503.968.8787 Fax 503.968.3068		JULY 2006	WILLAMETTE 205 CORPORATE CENTER WEST LINN, OR		FIGURE A-3		



TEST PIT LOG - 2 PER PAGE BLACKHAWK-1-01-TP1-16.GPJ GEODESIGN.GDT PRINT DATE: 7/6/06.KT



DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
<b>TP-7</b>							
0.0		Stiff, brown SILT with trace clay; dry to moist (4-inch-thick root zone).				0 50 100	
2.5							
3.0		encountered two boulders (14-inch diameter) at 3.0 feet					
3.5		grades with some gravel and cobbles at 3.5 feet	4.0				
5.0		Soft to medium hard (R2-R3), gray BASALT with brown staining; moderately weathered, closely fractured (1 to 6 inches), slightly fractured.					
7.0		grades to extremely soft to very soft (R0-R1) at approximately 7.0 feet					
7.5		grades to red-brown with yellow breccia at 7.5 feet	8.0		☒		No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
8.0		Test pit completed at 8.0 feet due to refusal on basalt.					
10.0							
12.5							
<b>TP-8</b>							
0.0		Medium stiff to stiff, brown SILT with trace clay; moist (2-inch-thick root zone).				0 50 100	
2.5						0 50 100	
3.5		grades to yellow-brown with some clay at 3.5 feet					
5.0							
5.5		Very dense, brown, silty GRAVEL; dry to moist, poorly graded, angular, few cobbles up to 8-inch diameter (colluvium).	5.5				
6.5			6.5				
7.0		Hard, brown, clayey SILT; dry.			☒		
7.5		Extremely soft (R0), dark gray BASALT with brown stains; decomposed to intensely weathered.	7.5			●	
8.0		Test pit completed at 9.0 feet.					
9.0			9.0		☒	●	No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
10.0							
12.5							
EXCAVATED BY: Western States Soil Conservation, Inc. LOGGED BY: BBP COMPLETED: 02/23/06							
EXCAVATION METHOD: backhoe (see report text)							
<b>GEODESIGN<sup>INC</sup></b>		BLACKHAWK-1-01	<b>TEST PIT</b>				
15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 Off 503.968.8787 Fax 503.968.3068		JULY 2006	WILLAMETTE 205 CORPORATE CENTER WEST LINN, OR				<b>FIGURE A-4</b>



TEST PIT LOG - 2 PER PAGE BLACKHAWK-1-01-TP1-16.GPJ GEODESIGN.GDT PRINT DATE: 7/6/06-KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
<b>TP-11</b>							
0.0		Medium stiff, dark brown SILT with trace to some gravel and trace clay; moist (fill).				0 50 100	No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
2.5							
4.0		Stiff, brown SILT with trace to some clay; dry to moist, few roots.					
6.0		Dense to very dense, brown-gray GRAVEL with some silt and cobbles; moist, angular (colluvium).					
9.0		Extremely soft to very soft (R0-R1), yellow-gray BASALT; decomposed, closely fractured (1 to 5 inches). Test pit completed at 10.0 feet.					
10.0							
12.5							
<b>TP-12</b>							
0.0		Medium stiff to stiff, brown SILT with some clay; moist (7-inch-thick root zone).				0 50 100	No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
2.5							
3.5		Stiff, gray-brown, clayey SILT with brown mottles; moist.					
5.0		Very dense, brown-gray GRAVEL with some cobbles and trace sand and silt; moist, subrounded to angular.					
10.0		grades to fine to coarse with some sand and silt at 8.5 feet becomes subrounded to subangular at 9.0 feet Test pit completed at 10.8 feet.					
10.8							
12.5							
EXCAVATED BY: Western States Soil Conservation, Inc. LOGGED BY: BBP COMPLETED: 02/23/06							
EXCAVATION METHOD: backhoe (see report text)							
<b>GEO</b> DESIGN <sup>INC</sup>		BLACKHAWK-1-01	TEST PIT				
15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 Off 503.968.8787 Fax 503.968.3068		JULY 2006	WILLAMETTE 205 CORPORATE CENTER WEST LINN, OR				FIGURE A-6



DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
<b>TP-13</b>							
0.0		Stiff, brown SILT with trace to some clay; moist (8-inch-thick root zone)					
2.5		becomes blocky with trace clay at 2.0 feet					
3.0		Dense to very dense, fine to coarse GRAVEL with trace to some silt, sand, and cobbles; dry to moist, subrounded to angular (colluvium).					
5.0							
7.5							
10.0							
11.0		Test pit completed at 11.0 feet.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
12.5							
<b>TP-14</b>							
0.0		Stiff, brown SILT with trace sand; moist (8-inch-thick root zone).					
2.5		grades to gravelly at 1.5 feet					
3.0		Extremely soft to soft (R0-R2), gray-brown BASALT; moderately weathered, closely fractured (2 to 6 inches).					
5.0		Test pit completed at 5.0 feet due to refusal on basalt.					No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
7.5							
10.0							
12.5							
<div>EXCAVATED BY: Western States Soil Conservation, Inc.</div> <div>LOGGED BY: BBP</div> <div>COMPLETED: 02/23/06</div>							
EXCAVATION METHOD: backhoe (see report text)							
		BLACKHAWK-1-01	TEST PIT				
15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 Off 503.968.8787 Fax 503.968.3068		JULY 2006	WILLAMETTE 205 CORPORATE CENTER WEST LINN, OR				FIGURE A-7

TEST PIT LOG - 2 PER PAGE BLACKHAWK-1-01-TP1-16.GPJ GEODESIGN.CDT PRINT DATE: 7/6/06:KT

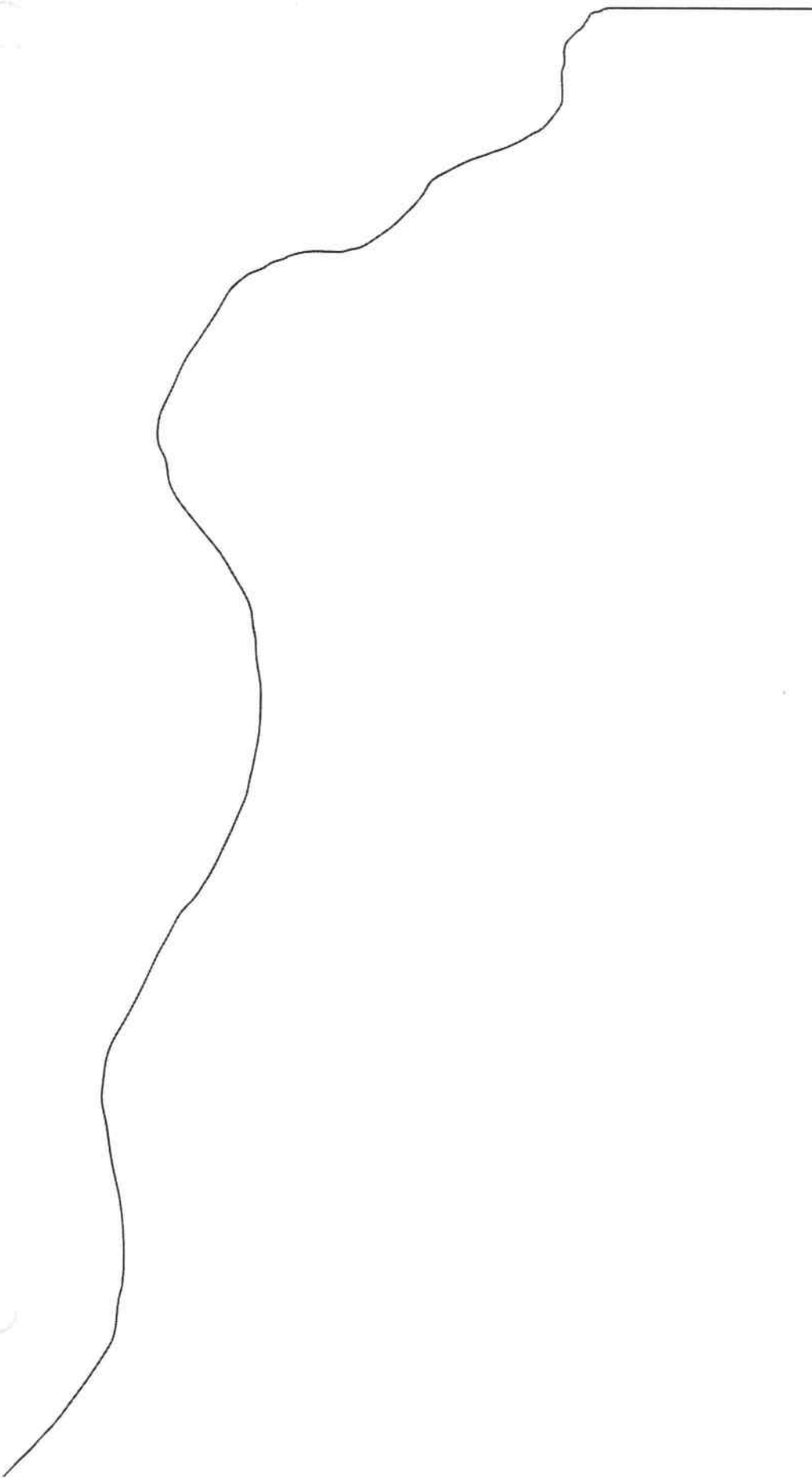
DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	● MOISTURE CONTENT %	COMMENTS
<b>TP-15</b>							
0.0		Dense, brown, silty GRAVEL; dry to moist, poorly graded, angular (fill).	0.7				No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
		Stiff, dark brown SILT with some organics; dry to moist.	2.0				
2.5		Very soft to soft (R1-R2), brown BASALT with black stains; moderately to slightly weathered, closely fractured (2 to 8 inches), blocky.	3.3		☒		
		Test pit completed at 3.3 feet due to refusal on basalt.					
5.0							
7.5							
10.0							
12.5							
<b>TP-16</b>							
0.0		Stiff, brown, gravelly SILT with trace sand; dry to moist; angular gravel (5-inch-thick root zone).					No groundwater seepage observed to the depth explored. No caving observed to the depth explored.
2.5							
		Dense to very dense, gray-brown GRAVEL with trace to some silt, sand, and cobbles; dry to moist, poorly graded, subrounded to subangular (colluvium).	3.0				
5.0							
7.5							
10.0							
		Test pit completed at 11.0 feet.	11.0		☒	●	
12.5							
<div>EXCAVATED BY: Western States Soil Conservation, Inc.</div> <div>LOGGED BY: BBP</div> <div>COMPLETED: 02/23/06</div>							
EXCAVATION METHOD: backhoe (see report text)							
<b>GEO DESIGN</b> <small>15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 Off 503.968.8787 Fax 503.968.3068</small>		BLACKHAWK-1-01	TEST PIT				
		JULY 2006	WILLAMETTE 205 CORPORATE CENTER WEST LINN, OR				FIGURE A-8

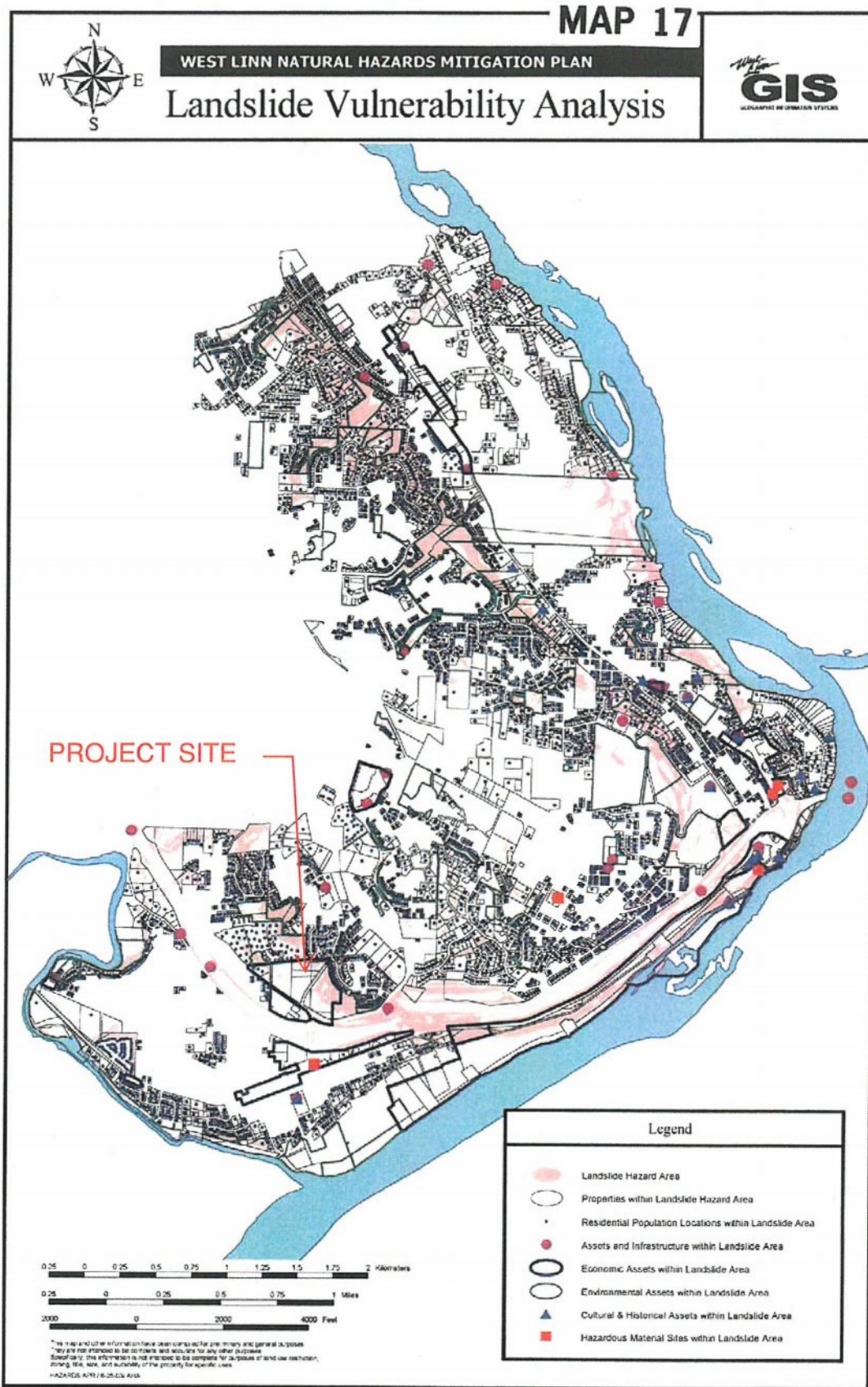
## ACRONYMS



## ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
AC	asphalt concrete
ASTM	American Society for Testing and Materials
BGS	below ground surface
g	acceleration due to gravity
H:V	horizontal to vertical
HMAC	hot mix asphalt concrete
IBC	International Building Code
MCE	maximum considered earthquake
OSHA	Occupational Safety and Health Administration
OSSC	Oregon Standard Specifications for Construction (2008)
pcf	pounds per cubic foot
PGA	peak ground acceleration
psf	pounds per square foot
psi	pounds per square inch







MAP 17

WEST LINN NATURAL HAZARDS MITIGATION PLAN

# Landslide Vulnerability Analysis



PROJECT SITE





Consulting Arborists and Urban Forest Management

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3 Monroe Parkway, Suite P 220  
Lake Oswego, Oregon 97035  
morgan.holen@comcast.net

July 9, 2015

Planning and Building  
City of West Linn  
22500 Salamo Road #1000  
West Linn, Oregon 97068

Re: Arborist Report and Tree Preservation Plan for Tannler Drive Mixed Use Development  
West Linn, Oregon  
Project No. MHA1472 Tannler Drive

Please find enclosed the Arborist Report and Tree Preservation Plan for the Tannler Drive Mixed Use Development project located along the west side of Tannler Drive just north of the intersection with Blankenship Road in West Linn, Oregon. Please contact us if you have questions or need any additional information.

Respectfully,  
Morgan Holen & Associates, LLC

Morgan E. Holen, Owner  
ISA Certified Arborist, PN-6145A  
ISA Tree Risk Assessment Qualified  
Forest Biologist

# Arborist Report and Tree Preservation Plan

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Tannler Drive Mixed Use Development  
West Linn, Oregon

July 9, 2015





Consulting Arborists and Urban Forest Management

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**Tannler Drive Mixed Use Development – West Linn, Oregon**  
**Arborist Report and Tree Preservation Plan**  
**July 9, 2015**

MHA1472

**Purpose**

This Arborist Report and Tree Preservation Plan for the Tannler Drive Mixed Use Development project in West Linn, Oregon, is provided pursuant to City of West Linn Community Development Code Chapter 55, Municipal Code Sections 8.500 and 8.600, and the West Linn Tree Technical Manual. This report describes the existing trees located on and directly adjacent to the project site, as well as recommendations for tree removal, retention and protection. This report is based on observations made by International Society of Arboriculture (ISA) Certified Arborist (PN-6145A) and Qualified Tree Risk Assessor Morgan Holen during site visits conducted on April 8, 2015 (which included a site meeting with the City Arborist Mike Perkins) and April 28, 2015, and site plan coordination with OTAK.

**Scope of Work and Limitations**

Morgan Holen & Associates, LLC was contracted by ConAm Properties, LLC to collect tree inventory data for individual trees measuring six inches and larger in diameter and to develop an arborist report and tree preservation plan for the project. Site plans were provided by OTAK illustrating the location of existing trees and potential construction impacts.

Visual Tree Assessment (VTA) was performed on individual trees located on and adjacent to the project site. VTA is the standard process whereby the inspector visually assesses the tree from a distance and up close, looking for defect symptoms and evaluating overall condition and vitality of individual trees. Trees were evaluated in terms of general condition and potential construction impacts. Following the inventory fieldwork, we coordinated with ConAm Properties and OTAK to discuss recommendations for tree protection.

The client may choose to accept or disregard the recommendations contained herein, or seek additional advice. Neither this author nor Morgan Holen & Associates, LLC, have assumed any responsibility for liability associated with the trees on or adjacent to this site.

**General Description**

The project site is an undeveloped open field with trees scattered along property boundaries and clustered in the northern portion of the site.

Along the eastern boundary, adjacent to Tannler Drive, there is a dense row of trees that appear to have naturally regenerated in the cut slope above the street. These trees include a mix of Douglas-fir (*Pseudotsuga menziesii*), bigleaf maple (*Acer macrophyllum*), black cottonwood (*Populus trichocarpa*), and an occasional madrone (*Arbutus menziesii*). The Douglas-firs are relatively small and some are suppressed by the bigleaf maples and black cottonwoods. The bigleaf maples and madrones generally have poor structure. The black cottonwoods have inherent limitations because the species is fast growing and relatively short-lived; these trees develop brittle wood and can be expected to become increasingly hazardous to the street as they mature.

Along the western boundary, the trees are relatively young and appear to have been planted for landscaping and screening adjacent to the neighboring commercial site.

The most prominent trees are located in the northern portion of the site and include groups of Oregon white oaks (*Quercus garryana*) and some Douglas-firs. These trees are generally in good condition and are most suitable for retention as intact, undisturbed groups.

### Tree Inventory

The enclosed tree data provides a complete description of the individual trees and site plan drawings illustrate the location of trees by corresponding point number. In all, 141 existing trees were inventoried, including 11 different tree species. Thirty-six of the inventoried trees are located off-site on neighboring properties. Table 1 provides a summary of the number of inventoried trees by species and location.

**Table 1. Number of Inventoried Trees by Species and Location.**

Common Name	Species Name	On-site	Off-site	Total	Percent
Austrian pine	<i>Pinus nigra</i>	7	0	7	5%
bingleaf maple	<i>Acer macrophyllum</i>	9	1	10	7%
black cottonwood	<i>Populus trichocarpa</i>	18	6	24	17%
Douglas-fir	<i>Pseudotsuga menziesii</i>	26	12	38	27%
green ash	<i>Fraxinus pennsylvanica</i>	2	0	2	1%
Leyland cypress	<i>Cupressus × leylandii</i>	0	2	2	1%
London planetree	<i>Platanus × acerifolia</i>	6	2	8	6%
Norway maple	<i>Acer platanoides</i>	0	1	1	1%
Oregon white oak	<i>Quercus garryana</i>	36	5	41	29%
pacific madrone	<i>Arbutus menziesii</i>	1	4	5	4%
scots pine	<i>Pinus sylvestris</i>	0	3	3	2%
<b>Total</b>		<b>105</b>	<b>36</b>	<b>141</b>	<b>100%</b>

Oregon white oak, Douglas-fir, and black cottonwood account for 73-percent of the inventoried trees. The Oregon white oaks are located in the northern portion of the site, except for two located off-site to the west. The Douglas-firs and black cottonwoods are primarily located along the eastern boundary, except for eight Douglas-firs located in the northern area. The planted landscape trees along the western boundary consist of Austrian pine (*Pinus nigra*), green ash (*Fraxinus pennsylvanica*), Leyland cypress (*Cupressus × leylandii*), London planetree (*Platanus × acerifolia*), and scots pine (*Pinus sylvestris*) accounting for 15-percent of the inventoried trees. Bingleaf maples and madrones located primarily along the eastern boundary account for 11-percent of the inventoried trees, and one Norway maple (*Acer platanoides*), an invasive species, accounting for the final 1-percent of the inventoried trees is located off-site in the right of way northeast of the project site.

Trees were classified based on general condition as either dead, poor, fair, or good. Of the 141 inventoried trees, one (1%) is dead, 14 (10%) are in poor condition, 62 (44%) are in fair condition, and 64 (45%) are in good condition.

Significant trees will be determined by the City Arborist. Based on our evaluation of the size, type, location, health, and long term survivability of the individual trees located on-site and coordination with the City's arborist during the April 8, 2015 site visit, 37 of the 105 on-site trees were identified as potentially significant.

### Tree Preservation Plan

We coordinated with the project team to discuss trees suitable for preservation in terms of potential construction impacts and site plan alternatives. Proposed tree removal is mainly for the purposes of construction, including grading and building, although several trees are recommended for removal because of poor or hazardous condition. Table 2 provides a summary of the number of inventoried trees by treatment recommendation and significance.

**Table 2. Number of Inventoried Trees by Treatment Recommendation and Significance.**

<b>Treatment</b>	<b>Remove</b>	<b>Retain</b>	<b>Protect</b>	<b>Total</b>
Potentially Significant Trees	11	26	-	<b>37</b>
Non-Significant Trees	67	1	-	<b>68</b>
Off-Site Trees	-	-	36	<b>36</b>
<b>Total</b>	<b>78</b>	<b>27</b>	<b>36</b>	<b>141</b>

The 36 inventoried trees located off-site on neighboring properties will be protected during construction. Tree protection measures should be installed at a minimum of 10-feet beyond the dripline for eight off-site trees located near the northern boundary of the project site. The two Oregon white oaks located off-site to the west are in close proximity to proposed development, including trees #53 and #53b; protection measures at the dripline of tree #53 will provide sufficient protection, and protection measures should be installed at the limits of disturbance at tree #53b and construction that is necessary beneath the dripline should be performed only under the guidance of a Qualified Arborist. Trees located on the off-site lot to the south are less suitable for long-term preservation, but will not be impacted by the proposed development and adequate protection is possible; this includes seven trees near the southwest corner that can be protected at the limits of disturbance for storm water swale and sidewalk construction and 19 trees on the eastern boundary that can be protected adjacent to tree #92 at the limits of disturbance for retaining wall construction. Additional tree protection recommendations are provided in the next section.

Of the 105 on-site trees, 78 are planned for removal, including 11 potentially significant trees that must be removed for grading, building, and parking lot, retaining wall, and storm water swale construction. The remaining 27 on-site trees are planned for retention in the northern portion of the site, of which 26 are classified as potentially significant (including 24 Oregon white oaks and three Douglas-firs). The one non-significant tree planned for preservation in the northern area is an 18-inch diameter Oregon white oak with twig dieback and poor vigor that is nevertheless suitable for preservation within the intact group of adjacent oaks (tree # 21). The 27 trees in the northern area are excellent candidates for preservation and adequate protection is possible at 10-feet beyond the dripline as required by Community Development Code Section 55.100.

### Tree Protection Standards

Trees to be protected will need special consideration to assure their protection during construction. It is the Client's responsibility to implement this plan and to monitor the construction process. The project arborist will be available during construction to help with tree related issues as needed. Tree protection measures include:

### **Before Construction**

1. **Preconstruction Conference.** The project arborist should be on site to discuss methods of tree removal and tree protection prior to any construction.
2. **Tree Protection Zone.** The project arborist should designate the Tree Protection Zone (TPZ) for each tree to be protected. Where feasible, the size of the TPZ should be established at the dripline of the tree plus 10-feet. Alternatively, the TPZ should be established at the dripline of protected trees. Where infrastructure must be installed closer to the tree(s), the TPZ may be established within the dripline area if the project arborist, in coordination with the City Arborist, determines that the tree(s) will not be unduly damaged. The location of TPZs should be shown on construction drawings.
3. **Protection Fencing.** Protection fencing should serve as the tree protection zone and should be erected before demolition, grubbing, grading, or construction begins. All trees to be retained should be protected by six-foot-high chain link fences installed at the edge of the TPZ. Protection fencing should be secured to two-inch diameter galvanized iron posts, driven to a depth of at least two feet, placed no further than 10-feet apart. If fencing is located on pavement, posts may be supported by an appropriate grade level concrete base. Protection fencing should remain in place until final inspection of the project permit, or in consultation with the project arborist.
4. **Signage.** An 8.5x11 –inch sign stating, “WARNING: Tree Protection Zone,” should be displayed on each protection fence at all times.
5. **Designation of Cut Trees.** Trees to be removed should be clearly marked with construction flagging, tree-marking paint, or other methods approved in advanced by the project arborist. Trees should be carefully removed so as to avoid either above or below ground damage to trees planned for preservation. Roots of stumps that are adjacent to retained trees should be carefully severed prior to stump extraction or stumps should remain in the ground.
6. **Verification of Tree Protection Measures.** Prior to commencement of construction, the project arborist should verify in writing to the City Arborist that tree protection fencing has been satisfactorily installed.

### **During Construction**

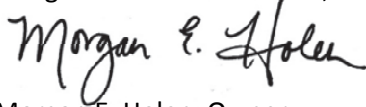
7. **Tree Protection Zone Maintenance.** The protection fencing should not be moved, removed, or entered by equipment except under direction of the project arborist, in coordination with the City Arborist.
8. **Storage of Material or Equipment.** The contractor should not store materials or equipment within the TPZ.
9. **Excavation within the TPZ.** Excavation within the TPZ should be avoided if alternatives are available. If excavation within the TPZ is unavoidable, the project arborist should evaluate the proposed excavation to determine methods to minimize impacts to trees. This can include tunneling, hand digging or other approaches. All construction within the TPZ should be under the on-site technical supervision of the project arborist, in coordination with the City Arborist.
10. **Quality Assurance.** The project arborist should supervise proper execution of this plan during construction activities that could encroach on retained trees. Tree protection site inspection monitoring reports should be provided to the Client and City on a regular basis throughout construction.

**Post Construction**

11. **Final Report.** After the project has been completed, the project arborist should provide a final report to the developer and the City. The final report should include concerns about any trees negatively impacted during construction, and describe the measures needed to maintain and protect the remaining trees for a minimum of two years after project completion.

Please contact us if you have questions or need any additional information. Thank you for choosing Morgan Holen & Associates, LLC, to provide consulting arborist services for the Tannler Drive Mixed Use Development project.

Thank you,  
Morgan Holen & Associates, LLC

A handwritten signature in black ink that reads "Morgan E. Holen". The signature is written in a cursive, flowing style.

Morgan E. Holen, Owner  
ISA Certified Arborist, PN-6145A  
ISA Tree Risk Assessment Qualified  
Forest Biologist

Enclosures: MHA1472 Tannler and Blankenship – Tree Data 4-28-15 Rev. 7-9-15



No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Defects and Comments	Sig?	Treatment
1	Norway maple	<i>Acer platanoides</i>	10	12	F	invasive species, some included bark, street tree	Off-site	protect
1b	bigleaf maple	<i>Acer macrophyllum</i>	2x8	12	F	moderate structure	Off-site	protect
2	pacific madrone	<i>Arbutus menziesii</i>	12	16	G	visual assessment inhibited by blackberries	Off-site	protect
2b	pacific madrone	<i>Arbutus menziesii</i>	8	10	G	visual assessment inhibited by blackberries	Off-site	protect
3	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	14	F	moderate structure	No	remove
4	black cottonwood	<i>Populus trichocarpa</i>	15	22	F	inherent species limitations, old broken top with new leader, increased risk potential	No	remove
4b	bigleaf maple	<i>Acer macrophyllum</i>	14	20	F	natural regen on slope above street	No	remove
5	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	14	G	visual assessment inhibited by blackberries	No	remove
6	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	16	G	visual assessment inhibited by blackberries	No	remove
7	black cottonwood	<i>Populus trichocarpa</i>	20	20	F	inherent species limitations, moderate structure, trunk decay	No	remove
8	Douglas-fir	<i>Pseudotsuga menziesii</i>	34	25	G	visual assessment inhibited by blackberries, few broken branches, long lateral limbs	Yes	retain
9	Oregon white oak	<i>Quercus garryana</i>	10	14	G	visual assessment inhibited by blackberries	Yes	retain
10	Oregon white oak	<i>Quercus garryana</i>	20	24	P	very poor structure, trunk decay	No	remove
11	Oregon white oak	<i>Quercus garryana</i>	50	40	G	codominant stems with included bark and a prominent seam, high risk	No	remove
12	pacific madrone	<i>Arbutus menziesii</i>	10	14	F	some branch dieback, moderate structure	No	remove
13	Oregon white oak	<i>Quercus garryana</i>	20	20	P	very poor structure, trunk decay	No	remove
14	Oregon white oak	<i>Quercus garryana</i>	22	24	G	no major defects, dead branches	Yes	retain
15	Oregon white oak	<i>Quercus garryana</i>	10	10	G	no major defects, retain with group	Yes	retain
15b	Oregon white oak	<i>Quercus garryana</i>	2x8	10	G	codominant stems, retain with group	Yes	retain
15c	Oregon white oak	<i>Quercus garryana</i>	10	10	G	no major defects, retain with group	Yes	retain
16	Oregon white oak	<i>Quercus garryana</i>	18	20	G	no major defects, moderate structure	Yes	retain
16b	Oregon white oak	<i>Quercus garryana</i>	2x10	10	G	no major defects, codominant stems at ground level	Yes	retain
17	Oregon white oak	<i>Quercus garryana</i>	6,8,3x12	16	F	moderate structure, retain with group	Yes	retain

No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Defects and Comments	Sig?	Treatment
18	Oregon white oak	<i>Quercus garryana</i>	2x8	10	G	no major defects, codominant stems just above ground level	Yes	retain
19	Oregon white oak	<i>Quercus garryana</i>	2x6,12	12	G	epicormic sprouts, codominant stems just above ground level	Yes	retain
20	Oregon white oak	<i>Quercus garryana</i>	12	12	G	no major defects, few dead and broken branches	Yes	retain
21	Oregon white oak	<i>Quercus garryana</i>	18	14	F	twig dieback, poor vigor, possible decline	No	retain
22	Oregon white oak	<i>Quercus garryana</i>	24	18	G	no major defects	Yes	retain
23	Oregon white oak	<i>Quercus garryana</i>	6,8	16	G	codominant stems at ground level	Yes	retain
24	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	16	G	visual assessment inhibited by blackberry, few broken branches	Off-site	protect
24b	Oregon white oak	<i>Quercus garryana</i>	10	14	G	visual assessment inhibited by blackberry	Off-site	protect
24c	Oregon white oak	<i>Quercus garryana</i>	14	14	G	visual assessment inhibited by blackberry	Off-site	protect
25	Oregon white oak	<i>Quercus garryana</i>	8,3x12	12	G	codominant stems at ground level, visual assessment limited to south side of tree	Off-site	protect
26	Douglas-fir	<i>Pseudotsuga menziesii</i>	38	20	G	visual assessment limited to south side of tree	Yes	retain
27	Oregon white oak	<i>Quercus garryana</i>	2x8	10	G	no major defects, codominant stems just above ground level	Yes	retain
28	Oregon white oak	<i>Quercus garryana</i>	26	24	G	basal trunk wound on north face	Yes	retain
29	Oregon white oak	<i>Quercus garryana</i>	2x8	10	F	codominant stems just above ground level, old trunk wounds on eastern stem	Yes	retain
30	Oregon white oak	<i>Quercus garryana</i>	4x10	16	G	codominant stems at ground level, moderate structure, retain with group	Yes	retain
31	Oregon white oak	<i>Quercus garryana</i>	10	12	G	few dead branches	Yes	retain
32	Oregon white oak	<i>Quercus garryana</i>	11	4	P	broken top, advanced trunk decay with hollow 0-10', suppressed beneath crown of tree 33, high risk	No	remove
33	Oregon white oak	<i>Quercus garryana</i>	24	26	G	no major defects	Yes	retain
34	Oregon white oak	<i>Quercus garryana</i>	14	12	G	one-sided crown, old trunk wound on east face	Yes	retain

No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Defects and Comments	Sig?	Treatment
35	Oregon white oak	<i>Quercus garryana</i>	10,14	14	G	codominant stems at ~2' above ground level, visual assessment limited to south side of tree	Yes	retain
36	bigleaf maple	<i>Acer macrophyllum</i>	7x12	20	F	poor structure, advanced basal decay with hollow, high risk	No	remove
37	Oregon white oak	<i>Quercus garryana</i>	30	18	F	advanced trunk decay with hollow, decay in plane of lean to south, dead and broken branches, crown decay, high risk	No	remove
38	Oregon white oak	<i>Quercus garryana</i>	24	16	F	extensive ivy up trunk into crown, advanced basal and trunk decay with hollow, high risk	No	remove
39	Oregon white oak	<i>Quercus garryana</i>	22	22	G	no major defects, barbed wire compartmentalized in trunk	Yes	remove
40	Oregon white oak	<i>Quercus garryana</i>	7x6	12	G	codominant stems at ground level, moderate structure, retain with group	Yes	remove
41	Oregon white oak	<i>Quercus garryana</i>	22	22	G	few dead branches, branch decay	Yes	remove
42	Oregon white oak	<i>Quercus garryana</i>	8,10	14	G	codominant stems ~1' above ground level	Yes	remove
43	Oregon white oak	<i>Quercus garryana</i>	26	20	G	no major defects, barbed wire compartmentalized in trunk	Yes	remove
44	Oregon white oak	<i>Quercus garryana</i>	2x16	18	F	codominant stems ~1' above ground level, dead branches, moderate vigor, old wounds on north side	Yes	retain
45	Oregon white oak	<i>Quercus garryana</i>	10	14	F	moderate structure, previous report notes roots cut 2' from trunk on north side and hazard potential	Yes	retain
46	Douglas-fir	<i>Pseudotsuga menziesii</i>	32	20	F	a few small <i>Phellinus pini</i> conks	Yes	retain
47	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	14	G	no major defects	Yes	remove
48	Oregon white oak	<i>Quercus garryana</i>	28	28	F	moderate vigor	Yes	remove
49	Douglas-fir	<i>Pseudotsuga menziesii</i>	34	20	G	codominant crown class, few dead branches, only suitable for retention in group with 49-52	Yes	remove

No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Defects and Comments	Sig?	Treatment
50	Douglas-fir	<i>Pseudotsuga menziesii</i>	36	20	G	codominant crown class, old basal wound on east face, only suitable for retention in group with 49-52	Yes	remove
51	Douglas-fir	<i>Pseudotsuga menziesii</i>	32	20	F	codominant crown class, old wound on west face, a few small <i>Phellinus pini</i> conks, dead and defective branches, only suitable for retention in group with 49-52	Yes	remove
52	Douglas-fir	<i>Pseudotsuga menziesii</i>	22,36	20	F	codominant crown class, codominant stems ~1' above ground level, moderate crown structure, dead and defective branches, only suitable for retention in group with 49-52	Yes	remove
53	Oregon white oak	<i>Quercus garryana</i>	2x18	16	F	codominant crown class, codominant stems at ~3' above ground level, some included bark with a small seam, trunk wound on west face, decay, retain with group	Off-site	protect
53b	Oregon white oak	<i>Quercus garryana</i>	32	26	F	trunk decay 0-10', barbed wire compartmentalized in trunk	Off-site	protect
53c	Austrian pine	<i>Pinus nigra</i>	12	9	P	dead top, suppressed beneath 53b	No	remove
54	Austrian pine	<i>Pinus nigra</i>	14	11	G	moderate structure, sweep in lower trunk, wound on east face at 10'	No	remove
54b	green ash	<i>Fraxinus pennsylvanica</i>	8	6	P	very poor crown structure, suppressed beneath 53b	No	remove
54c	Austrian pine	<i>Pinus nigra</i>	10	10	G	forked top	No	remove
55	London planetree	<i>Platanus × acerifolia</i>	12	14	G	no major defects	No	remove
56	Austrian pine	<i>Pinus nigra</i>	14	14	F	moderate structure, forked tops	No	remove
57	Austrian pine	<i>Pinus nigra</i>	8	12	F	moderate structure, forked tops	No	remove
58	Austrian pine	<i>Pinus nigra</i>	10	12	F	moderate structure, forked tops	No	remove
59	London planetree	<i>Platanus × acerifolia</i>	10	16	G	blackberry growing into lower crown	No	remove
60	green ash	<i>Fraxinus pennsylvanica</i>	10	12	F	codominant stem failure, wound on east face	No	remove

No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Defects and Comments	Sig?	Treatment
60b	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	10	F	crowded by adjacent trees	No	remove
60c	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	10	G	blackberry growing into lower crown	No	remove
61	London planetree	<i>Platanus × acerifolia</i>	14	16	G	no major defects	No	remove
61b	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	6	F	poor structure, overcrowded by 61	No	remove
62	London planetree	<i>Platanus × acerifolia</i>	12	14	G	some crown asymmetry	No	remove
63	Austrian pine	<i>Pinus nigra</i>	6	8	G	some crown asymmetry	No	remove
64	London planetree	<i>Platanus × acerifolia</i>	10	14	G	blackberry growing into lower crown	No	remove
65	London planetree	<i>Platanus × acerifolia</i>	14	16	G	no major defects	No	remove
66	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	8	F	poor crown structure, suppressed	No	remove
67	London planetree	<i>Platanus × acerifolia</i>	12	20	G	no major defects	Off-site	protect
68	scots pine	<i>Pinus sylvestica</i>	10	8	F	blackberry growing into lower crown, moderate structure	Off-site	protect
69	London planetree	<i>Platanus × acerifolia</i>	12	16	G	no major defects	Off-site	protect
70	scots pine	<i>Pinus sylvestica</i>	6	0	D	whole tree failure	Off-site	protect
71	scots pine	<i>Pinus sylvestica</i>	8	8	F	visual assessment inhibited by blackberry, moderate structure	Off-site	protect
72	Leyland cypress	<i>Cupressus × leylandii</i>	14	16	G	no major defects	Off-site	protect
73	Leyland cypress	<i>Cupressus × leylandii</i>	14	16	G	no major defects	Off-site	protect
74	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	14	G	no major defects, south edge of row on slope above street	Off-site	protect
75	black cottonwood	<i>Populus trichocarpa</i>	14	12	G	inherent species limitations	Off-site	protect
76	pacific madrone	<i>Arbutus menziesii</i>	10	8	F	phototropic lean to west	Off-site	protect
77	black cottonwood	<i>Populus trichocarpa</i>	12	8	F	inherent species limitations	Off-site	protect
78	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	6	F	crowded in dense row on steep slope above street	Off-site	protect
79	black cottonwood	<i>Populus trichocarpa</i>	16,22	18	F	inherent species limitations, codominant stems with included bark	Off-site	protect

No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Defects and Comments	Sig?	Treatment
80	black cottonwood	<i>Populus trichocarpa</i>	2x20	16	F	inherent species limitations, codominant stems with included bark, trunk decay	Off-site	protect
81	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	6	P	suppressed	Off-site	protect
82	Douglas-fir	<i>Pseudotsuga menziesii</i>	20	10	G	crowded in dense row on steep slope above street	Off-site	protect
83	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	8	F	crowded in dense row on steep slope above street	Off-site	protect
84	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	10	P	suppressed	Off-site	protect
85	black cottonwood	<i>Populus trichocarpa</i>	3x16	14	F	inherent species limitations, poor structure	Off-site	protect
86	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	8	F	crowded in dense row on steep slope above street	Off-site	protect
87	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	8	F	crowded in dense row on steep slope above street, crown asymmetry	Off-site	protect
88	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	8	P	suppressed	Off-site	protect
89	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	8	P	suppressed	Off-site	protect
90	pacific madrone	<i>Arbutus menziesii</i>	10,16	14	F	crowded in dense row on steep slope above street, crown asymmetry	Off-site	protect
91	black cottonwood	<i>Populus trichocarpa</i>	13	12	G	inherent species limitations	Off-site	protect
92	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	10	F	crowded in dense row on steep slope above street, crown asymmetry	Off-site	protect
93	black cottonwood	<i>Populus trichocarpa</i>	17	12	G	inherent species limitations	No	remove
94	black cottonwood	<i>Populus trichocarpa</i>	12	10	G	inherent species limitations	No	remove
95	black cottonwood	<i>Populus trichocarpa</i>	10	10	F	inherent species limitations, poor structure	No	remove
96	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	8	P	suppressed	No	remove
97	black cottonwood	<i>Populus trichocarpa</i>	14	12	F	inherent species limitations, high live crown	No	remove
98	bigleaf maple	<i>Acer macrophyllum</i>	12	10	F	crowded in dense row on steep slope above street, crown asymmetry	No	remove
99	bigleaf maple	<i>Acer macrophyllum</i>	10	10	F	crowded in dense row on steep slope above street, one-sided crown	No	remove
100	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	8	F	crowded in dense row on steep slope above street	No	remove



No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Defects and Comments	Sig?	Treatment
101	black cottonwood	<i>Populus trichocarpa</i>	24	14	G	inherent species limitations	No	remove
102	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	6	F	crowded in dense row on steep slope above street	No	remove
103	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	6	F	crowded in dense row on steep slope above street, crown asymmetry	No	remove
104	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	6	F	suppressed	No	remove
105	black cottonwood	<i>Populus trichocarpa</i>	12	10	F	inherent species limitations, poor structure, old broken top with new leader, trunk wound on east face	No	remove
106	black cottonwood	<i>Populus trichocarpa</i>	17	12	G	inherent species limitations, basal wound on east face	No	remove
107	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	6	P	suppressed	No	remove
108	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	6	P	suppressed	No	remove
109	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	8	G	crowded in dense row on steep slope above street, crown asymmetry	No	remove
110	black cottonwood	<i>Populus trichocarpa</i>	14	12	F	inherent species limitations	No	remove
111	black cottonwood	<i>Populus trichocarpa</i>	14	12	F	inherent species limitations	No	remove
112	black cottonwood	<i>Populus trichocarpa</i>	10	12	F	inherent species limitations	No	remove
113	bigleaf maple	<i>Acer macrophyllum</i>	10	12	F	inherent species limitations	No	remove
114	black cottonwood	<i>Populus trichocarpa</i>	2x16	16	F	inherent species limitations, moderate structure	No	remove
115	bigleaf maple	<i>Acer macrophyllum</i>	2x10	14	F	crowded in dense row on steep slope above street, moderate structure	No	remove
116	black cottonwood	<i>Populus trichocarpa</i>	16	16	F	inherent species limitations, moderate structure	No	remove
117	black cottonwood	<i>Populus trichocarpa</i>	16	14	F	inherent species limitations, moderate structure	No	remove
118	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	6	P	suppressed	No	remove
119	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	8	P	suppressed	No	remove
120	black cottonwood	<i>Populus trichocarpa</i>	2x14	14	F	inherent species limitations, poor structure	No	remove

No.	Common Name	Species Name	DBH*	C-Rad^	Cond <sup>#</sup>	Defects and Comments	Sig?	Treatment
120b	bignia maple	<i>Acer macrophyllum</i>	16	10	F	crowded in dense row on steep slope above street, poor structure	No	remove
121	black cottonwood	<i>Populus trichocarpa</i>	18	12	G	inherent species limitations	No	remove
121b	bignia maple	<i>Acer macrophyllum</i>	7	8	F	crowded in dense row on steep slope above street, poor structure	No	remove
121c	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	10	G	crowded in dense row on steep slope above street, moderate structure	No	remove
122	black cottonwood	<i>Populus trichocarpa</i>	17	12	G	inherent species limitations	No	remove
123	bignia maple	<i>Acer macrophyllum</i>	10	12	F	multiple attachments with included bark	No	remove

\***DBH** is tree diameter measured at breast height, 4.5-feet above the ground level (inches); codominant trunks splitting below DBH are measured individually and separated by a comma, except for codominant stems of equal size are noted as quantity x size.

^**C-Rad** is the average crown radius measured in feet.

<sup>#</sup>**Cond** is an arborist assigned rating to generally describe the condition of individual trees as follows- Dead; Poor; Fair; or Good Condition.

**Sig?** asks whether or not on-site trees are considered potentially significant, either Yes (likely significant) or No (not considered significant).

**MEC Engineering Inc.**  
520 SW 6<sup>th</sup> Ave. suite #640  
Portland, OR 97204

Phone: (503) 250-4863

**WEST LINN MIXED USE DEVELOPMENT**  
**TANNER ROAD**  
**WEST LINN, OREGON**

**LIGHTING REPORT**  
**For Otak, Inc.**

**Prepared by**  
**MEC Engineering, Inc.**

**Revised July 9, 2015**  
**Issued for Permit**

### **Scope of Work:**

The MEC scope of work for this multifamily development includes primarily site lighting, including parking lots, connecting roadways and pedestrian pathways.

### **Analysis Approach:**

#### **Illumination Modeling**

Lighting Analysts, Inc. AGI 32-14.4 software has been used to model the lighting levels for the complete project as noted in the above scope of work. Illumination photometric calculations are provided in this report for the Final design and engineering. Photometric plans produced in AGI 32 were exported to AutoCAD for clarity of presentation. The photometric plans show horizontal maintained illumination in footcandles at grade. Statistical areas are provided for review of illumination levels and uniformity ratios at automobile parking locations, roadway, intersections, pedestrian walkways and conflict areas.

MEC has selected LED luminaires with specific requirements and mounting criteria. Appropriate light loss factors for luminaire maintenance and dirt depreciation have been applied to the calculations per recommendations from IESNA standards. The IESNA method for calculating veiling luminance is not listed in the calculations, but is considered for visibility. Veiling luminance uses the same points as the pavement luminance yet considering the observer is 83 meters back from each computation point.

#### **Design Criteria**

For lighting design criteria we used IESNA RP-8-00 (R2005) American National Standard Practice for Roadway, Pedestrian and Bikeway lighting. We used the Illuminance design approach with the following recommendations from the Tables in RP-8-00:

1. Table 2 - Road and Pedestrian Conflict Area Illuminance in footcandles. This consists of Min Maintained Ave Illumination, Uniformity Ratio (Ave to Min and Max to Min).
2. Table 9 - Illuminance for Intersections in footcandles. This consists of Ave Maintained Illumination at Pavement by Pedestrian Area Classification, Uniformity Ratio (Ave to Min).

### **Local Code Application**

The City of West Linn required A light coverage plan with photometric data, including the location and type of outdoor lighting, with specific consideration given to compliance with the West Linn Community Development Code, CDC [55.100](#)(J) pertaining to crime prevention and, if applicable, CDC [46.150](#)(A)(13) pertaining to parking lot lighting.

### **Results**

Refer to photometric sheets EL1 through EL10 for horizontal maintained illumination, point by point calculations and statistical area calculations indicating average horizontal maintained illumination values. See the Luminaire Schedule on page 4 of this report.

The requirements of CDC 55.100.J. specific to lighting are completely met. However, for the purpose of enhanced crime prevention, we are taking exception to the use of low or high pressure sodium luminaires as is required in 55.100. J. 6. Low and high pressure sodium lighting is yellow and does not provide color rendering qualities that enhance visibility. LED lighting at 4000 Kelvin temperature is whiter light and provides a significant improvement in visibility. Also, LED provides significantly better energy savings and due to the exceeding long life of LED luminaires, maintenance will be minimized.

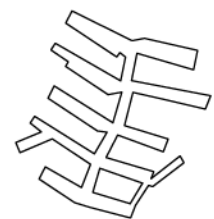
The requirements of CDC 46.150 are met regarding that which is applicable to lighting. One other advantage of using LED lighting is the ability to direct lighting where wanted and cut off lighting where it is not. In some cases “house side shields” are provided where it is helpful.

Veiling Luminance Ratio - Max to Ave is well below Table 2 values.

Luminaire Schedule					
TYPE	SYM.	DESCRIPTION	VOLTS	LAMP	MODEL NUMBER
A1		ROADWAY AND AREA LUMINAIRE.	120V	LED	LITHONIA D-SERIES SIZE 2: DSX2 LED 100C 700 40K T5M120
B1		PATHWAY LIGHTING	120V	LED	LITHONIA D-SERIES SIZE 1: DSX1 LED 30C 1000 40K T3M120
B2		PATHWAY LIGHTING	120V	LED	LITHONIA D-SERIES SIZE 1: DSX1 LED 30C 1000 40K T2S120
C1		WALL MOUNT SCONCE TYPE LUMINAIRE	120V	LED	LITHONIA D-SERIES SIZE 2: DSXW2 LED 20C 350 40K TFTM120
C2		WALL MOUNT SCONCE TYPE LUMINAIRE	120V	LED	LITHONIA D-SERIES SIZE 2: DSXW2 LED 20C 350 40K T4M 120



## KEY PLAN

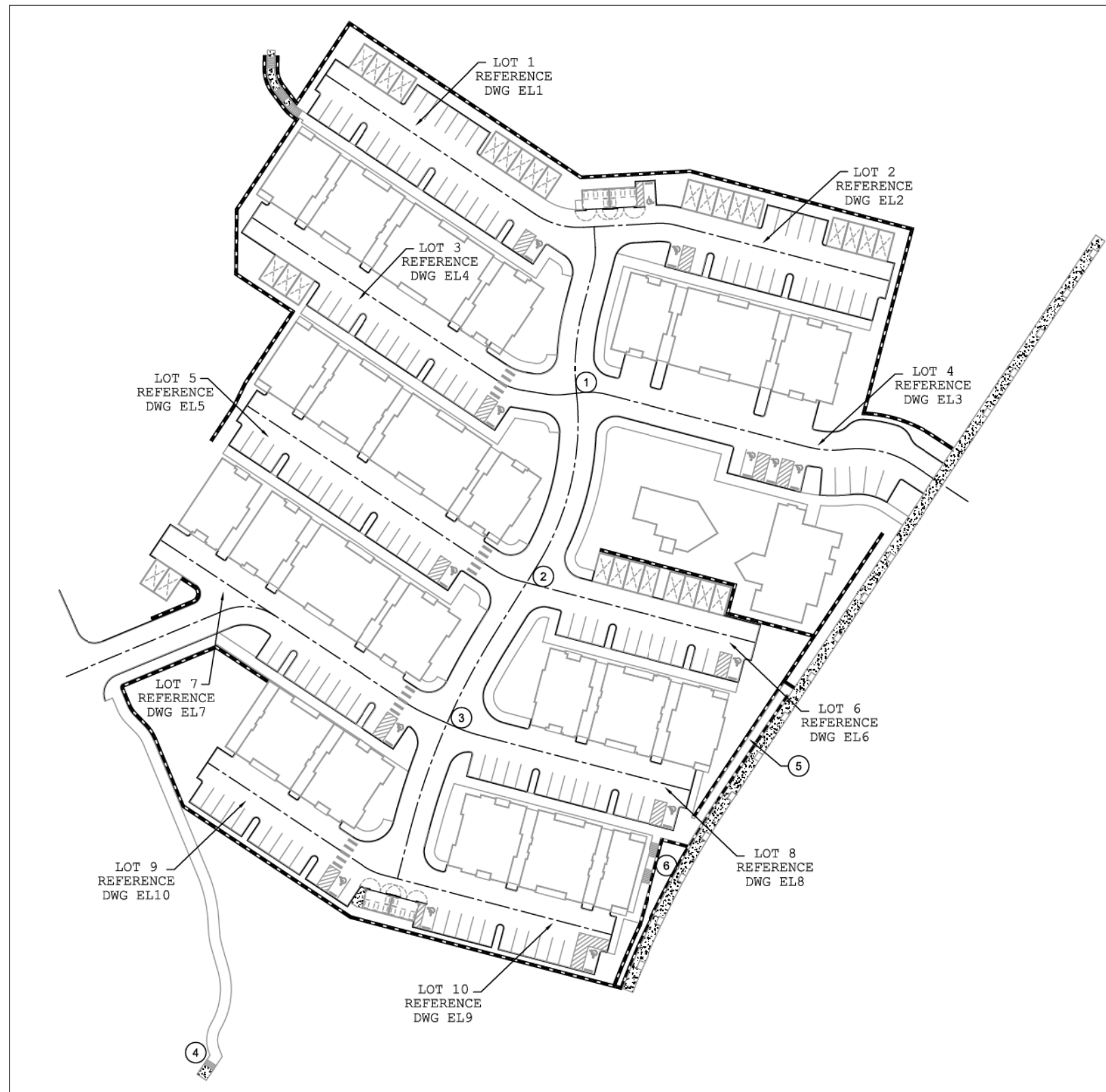


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KEYED NOTES:

- ① CENTER ROAD INTERSECTION 1  
REFERENCE DWG EL3
- ② CENTER ROAD INTERSECTION 2  
REFERENCE DWG EL5
- ③ SOUTH ROAD INTERSECTION  
REFERENCE DWG EL8
- ④ STAIR 2  
REFERENCE DWG EL10
- ⑤ WALKWAY TO STREET  
REFERENCE DWG EL8
- ⑥ SOUTHEAST STAIR  
REFERENCE DWG EL9



1 OVERALL SITE PLAN  
1/48" = 1'-0"

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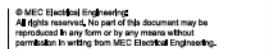
## Overall Site Plan

**ELO**

C. CALCULATIONS PERFORMED IN  
LIGHTING ANALYSTS, INC.  
AGI32, 14.4

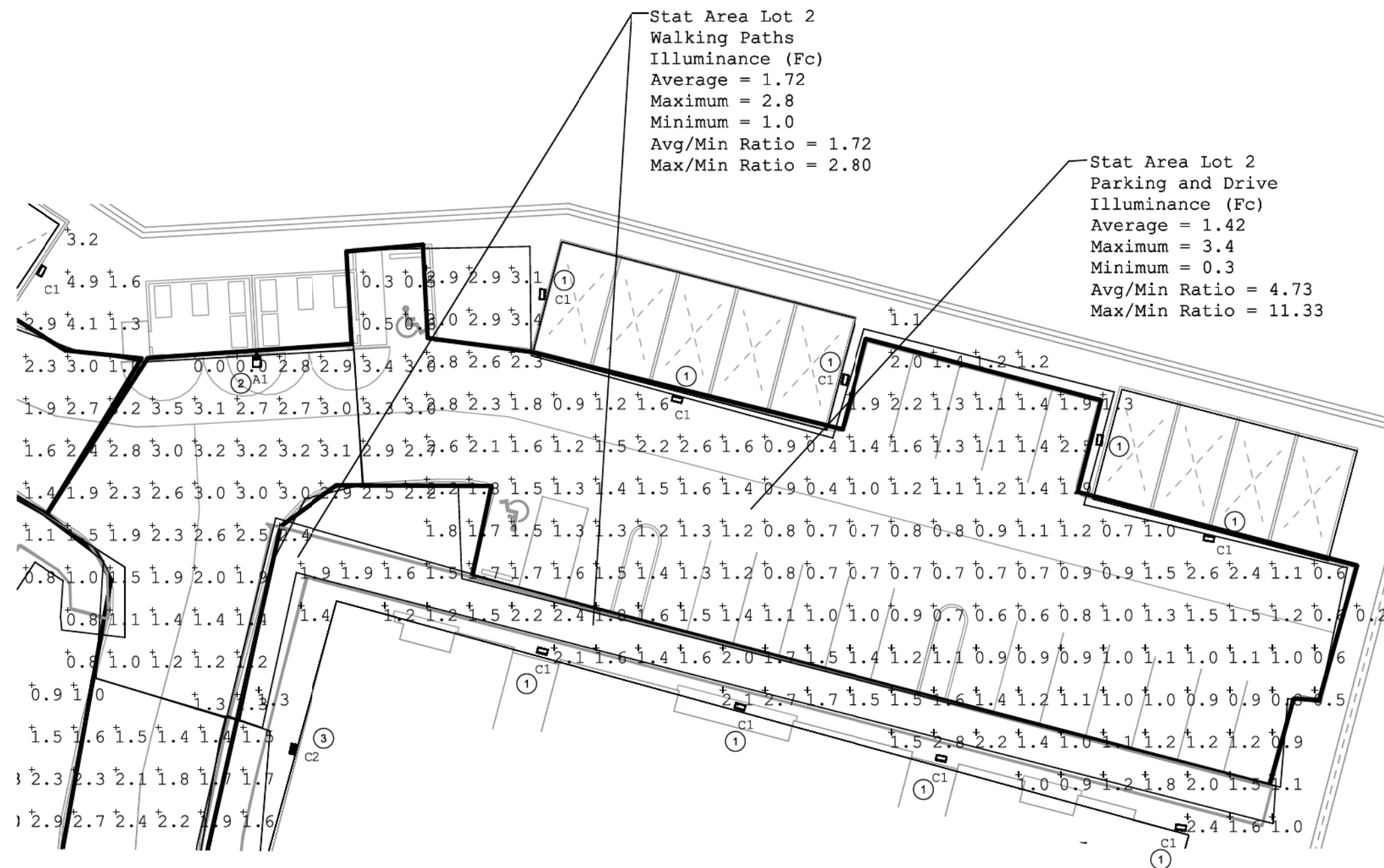
② MOUNTING HEIGHT = 14'-0"  
POLE MOUNTED

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EL1



GENERAL NOTES:

A. REFER TO LUMINAIRE SCHEDULE  
IN REPORT.

B. "Fc" = FOOTCANDLES

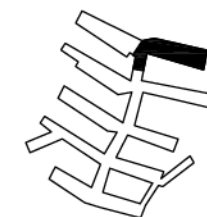
C. CALCULATIONS PERFORMED IN  
LIGHTING ANALYSTS, INC.  
AGI32, 14.4

KEYED NOTES:

- ① MOUNTING HEIGHT = 10'-0"
- ② MOUNTING HEIGHT = 20'-0"  
POLE MOUNTED
- ③ MOUNTING HEIGHT = 14'-0"

Tannler Road Apartments  
West Lynn, Oregon

### KEY PLAN



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## Lighting Site Plan

EL2

X:\PROJECTS\OTAK - TANNLER ROAD APTS\DRAWINGS - WORKING\AUTOCAD\EL3.DWG - 7/10/2015 11:22 AM - CHRIS HARRISON

GENERAL NOTES:

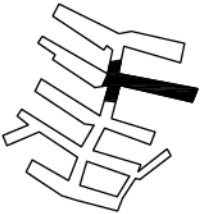
- A. REFER TO LUMINAIRE SCHEDULE IN REPORT.
- B. "Fc" = FOOTCANDLES
- C. CALCULATIONS PERFORMED IN LIGHTING ANALYSTS, INC. AGI32, 14.4

KEYED NOTES:

- ① MOUNTING HEIGHT = 10'-0"  
POLE MOUNTED
- ② MOUNTING HEIGHT = 20'-0"  
POLE MOUNTED
- ③ MOUNTING HEIGHT = 14'-0"  
POLE MOUNTED

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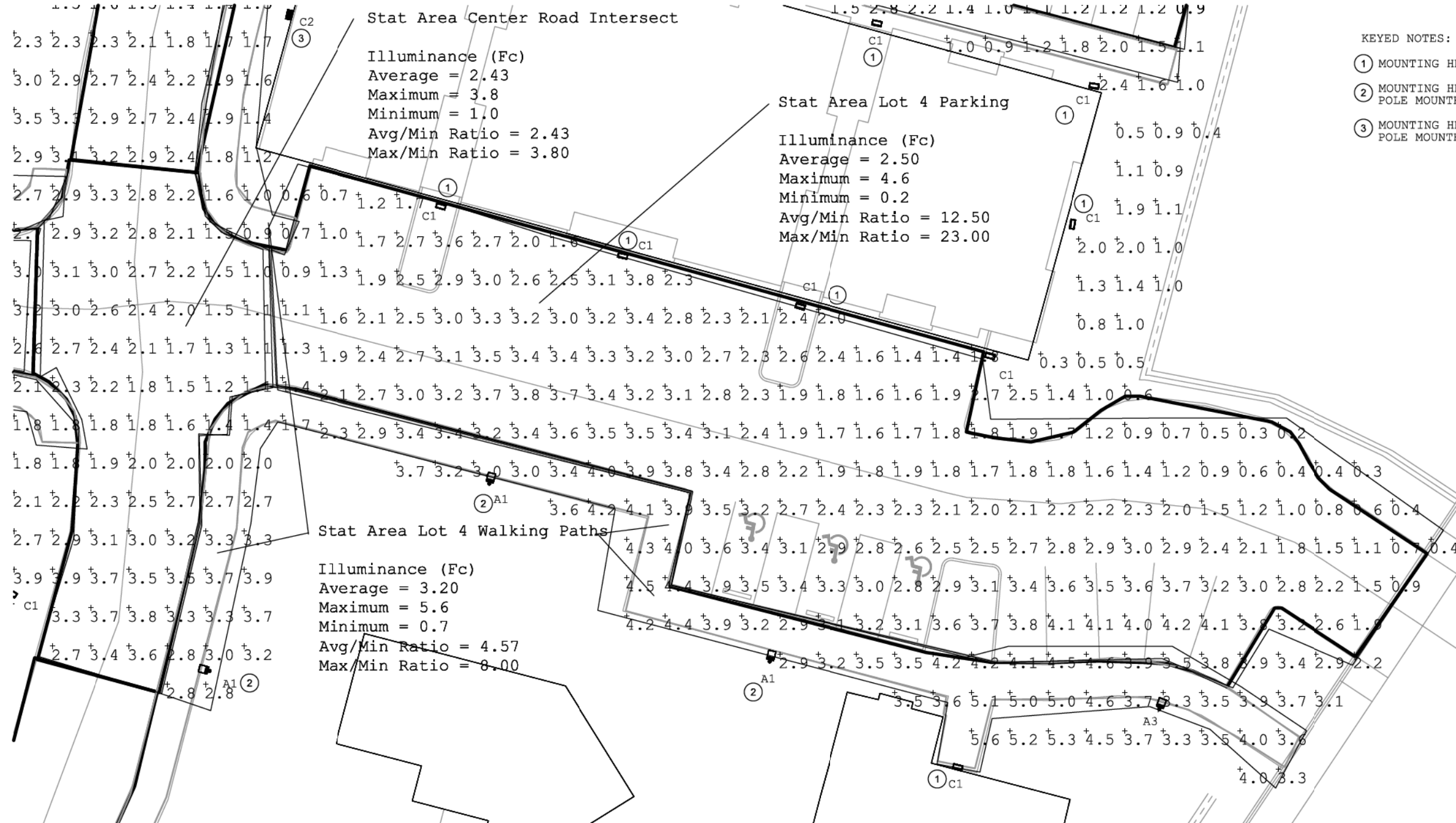
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Lighting Site Plan

EL3



C. CALCULATIONS PERFORMED IN  
LIGHTING ANALYSTS, INC.  
AGI32, 14.4

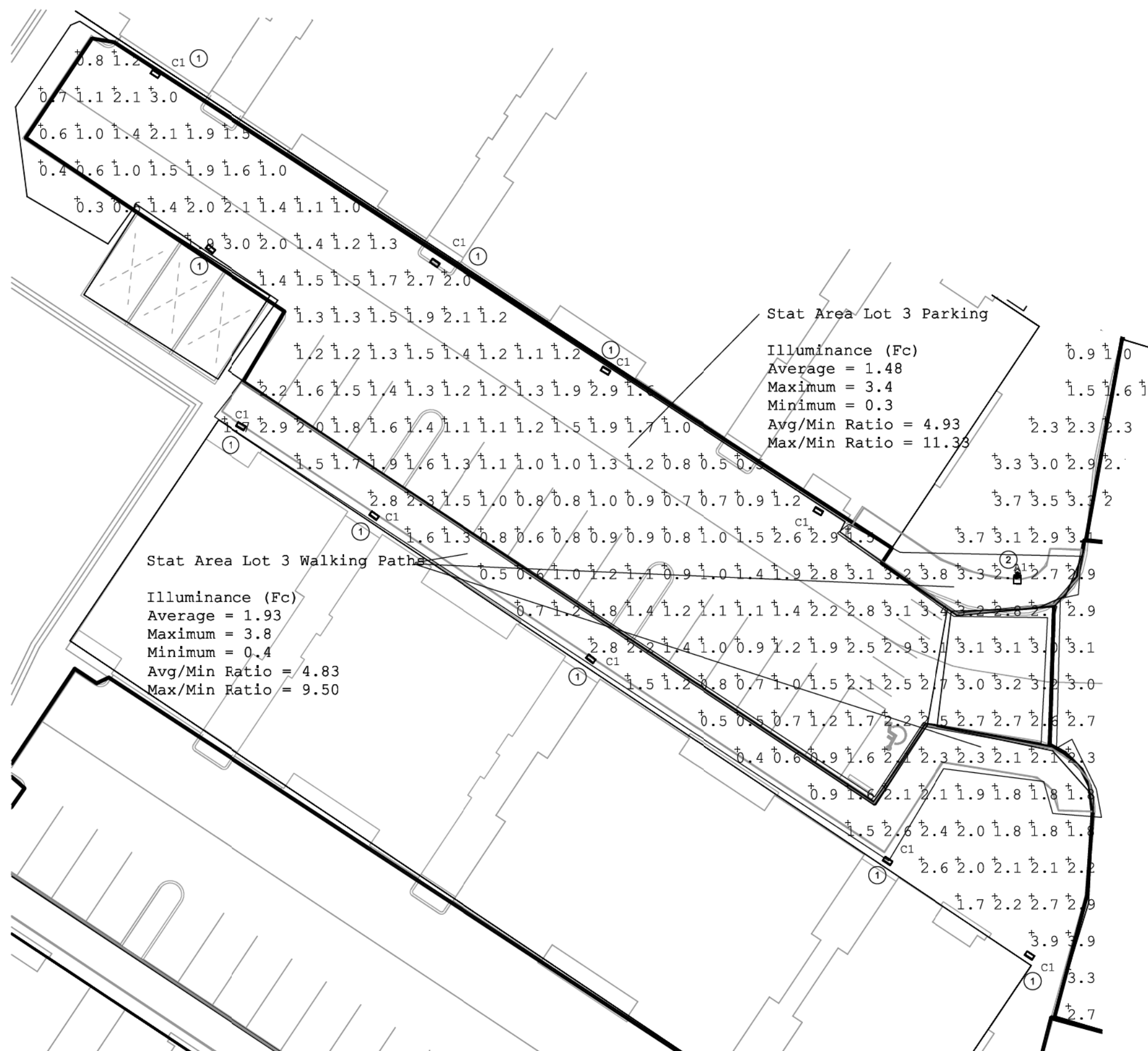
② MOUNTING HEIGHT = 20'-0"  
POLE MOUNTED

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Lighting Site Plan

EL4



① MOUNTING HEIGHT = 10'-0"

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Illuminance (Fc)  
Average = 1.73  
Maximum = 3.1  
Minimum = 0.6  
Avg/Min Ratio = 2.88  
Max/Min Ratio = 5.17

Illuminance (Fc)  
Average = 1.76  
Maximum = 2.9  
Minimum = 1.1  
Avg/Min Ratio = 1.60  
Max/Min Ratio = 2.64

Illuminance (Fc)  
Average = 1.17  
Maximum = 3.3  
Minimum = 0.2  
Avg/Min Ratio = 5.85  
Max/Min Ratio = 16.50

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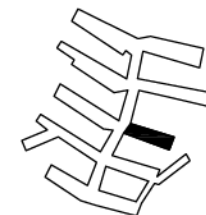
EL5



C. CALCULATIONS PERFORMED IN  
LIGHTING ANALYSTS, INC.  
AGI32, 14.4

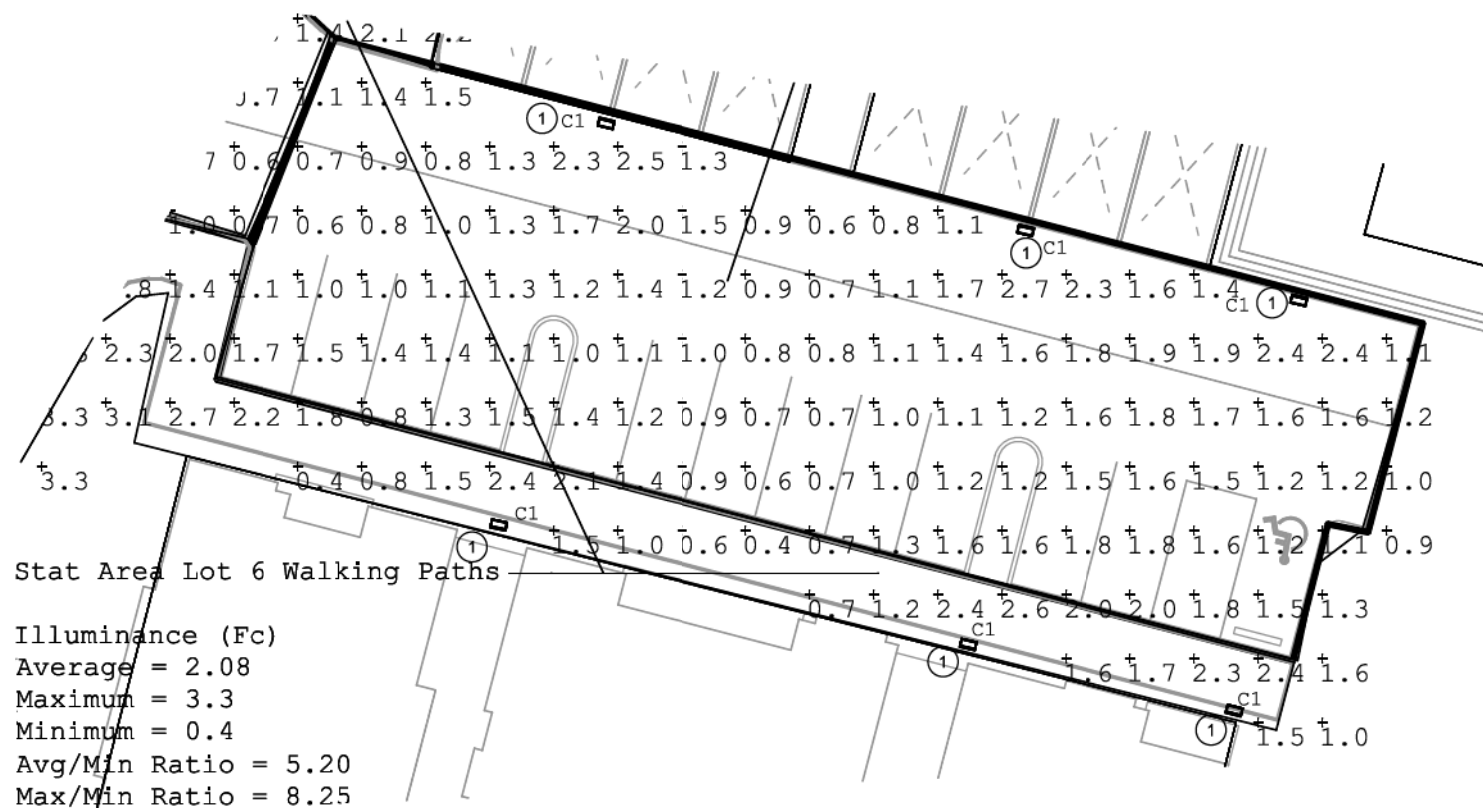
① MOUNTING HEIGHT = 10'-0"

KEY PLAN



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Stat Area Lot 6 Walking Paths

Illuminance (Fc)

Average = 2.08

Maximum = 3.3

Minimum = 0.4

Avg/Min Ratio = 5.20

Max/Min Ratio = 8.25

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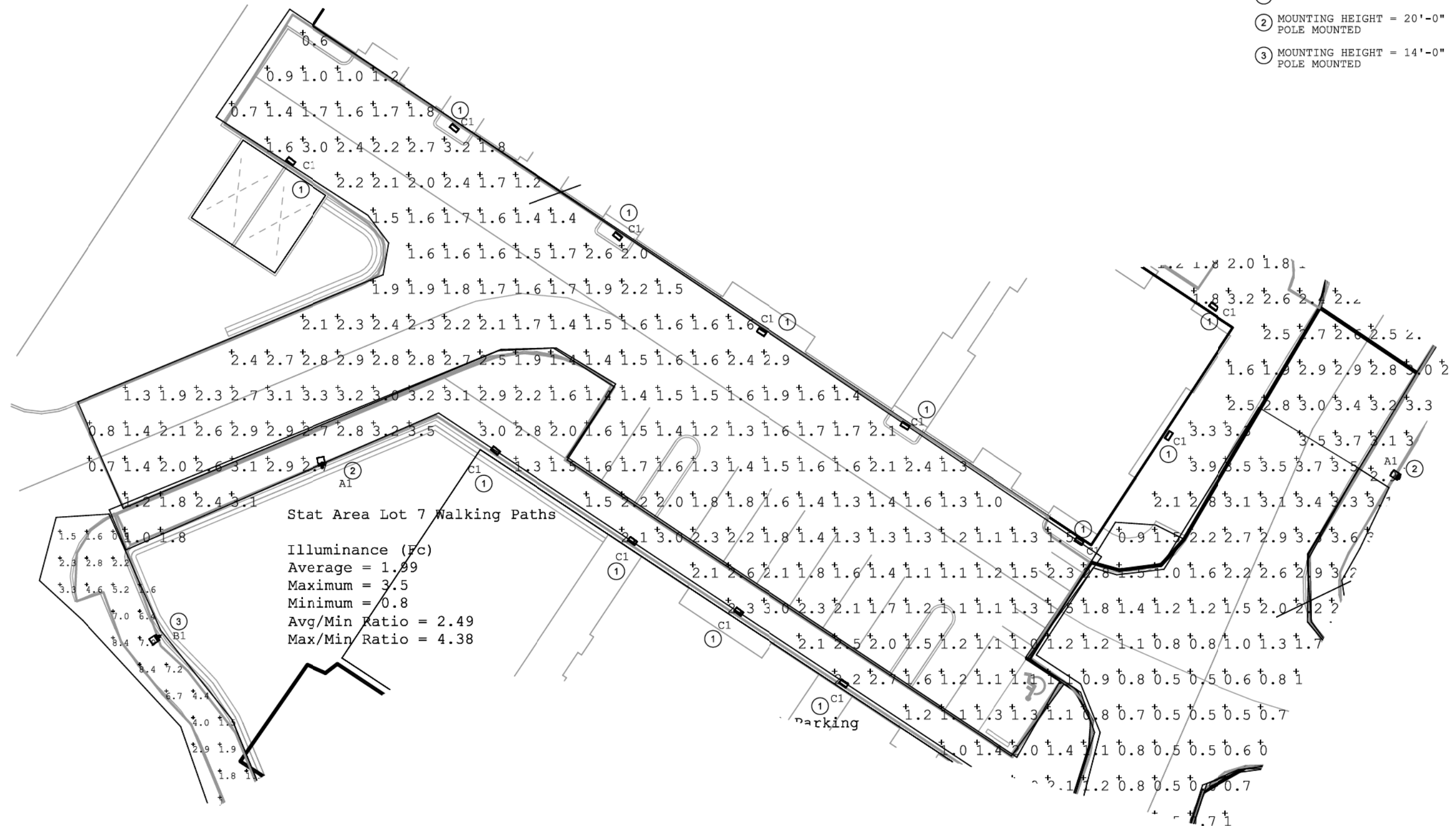
Lighting Site Plan

EL6

C. CALCULATIONS PERFORMED IN  
LIGHTING ANALYSTS, INC.  
AGI32, 14.4

③ MOUNTING HEIGHT = 14'-0"  
POLE MOUNTED

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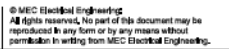
### Lighting Site Plan

EL7

C. CALCULATIONS PERFORMED IN  
LIGHTING ANALYSTS, INC.  
AGI32, 14.4

② MOUNTING HEIGHT = 14'-0"

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EL8







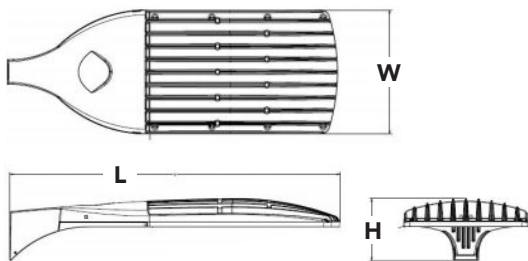
# D-Series Size 2 LED Area Luminaire

d<sup>series</sup>



## Specifications

<b>EPA:</b>	2.0 ft <sup>2</sup> (0.19 m <sup>2</sup> )
<b>Length:</b>	40" (101.6 cm)
<b>Width:</b>	15" (38.1 cm)
<b>Height:</b>	7-1/4" (18.4 cm)
<b>Weight (max):</b>	36 lbs (16.3 kg)



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. The Size 2 is ideal for replacing 400-1000W metal halide in area lighting applications with energy savings of up to 80% and expected service life of over 100,000 hours.

## Ordering Information

**EXAMPLE: DSX2 LED 80C 1000 40K T4M MVOLT SPA DDBXD**

DSX2 LED						
Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting
DSX2 LED	<b>Forward optics</b>	530 530 mA	30K 3000 K	T1S Type I Short	TFTM Forward Throw Medium	MVOLT <sup>2</sup>
	80C 80 LEDs (four engine)	700 700 mA	40K 4000 K	T2S Type II Short	T5VS Type V Very Short	120 <sup>2</sup>
		1000 1000 mA (1 A)	50K 5000 K	T2M Type II Medium	T5S Type V Short	208 <sup>2</sup>
	100C 100 LEDs (four engines)		AMBPC Amber phosphor converted	T3S Type III Short	T5M Type V Medium	240 <sup>2</sup>
	<b>Rotated optics <sup>1</sup></b>			T3M Type III Medium	T5W Type V Wide	277 <sup>2</sup>
	90C 90 LEDs			T4M Type IV Medium		347
						480
						<b>Shipped separately</b>
						KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) <sup>4</sup>

Control options	Other options	Finish (required)
<b>Shipped installed</b>	<b>Shipped installed</b>	DDBXD Dark bronze
PER NEMA twist-lock receptacle only (no controls) <sup>5</sup>	HS House-side shield <sup>13</sup>	DBLXD Black
PER5 Five-wire receptacle only (no controls) <sup>5,6</sup>	SF Single fuse (120, 277, 347V) <sup>2</sup>	DNAXD Natural aluminum
PER7 Seven-wire receptacle only (no controls) <sup>5,6</sup>	DF Double fuse (208, 240, 480V) <sup>2</sup>	DWHXD White
DMG 0-10V dimming driver (no controls) <sup>7</sup>	L90 Left rotated optics	DDBTXD Textured dark bronze
DCR Dimmable and controllable via ROAM® (no controls) <sup>8</sup>	R90 Right rotated optics	DBLBXD Textured black
DS Dual switching <sup>9,10</sup>		DNATXD Textured natural aluminum
PIRH Motion sensor, 15-30' mounting height <sup>11</sup>		DWHGXD Textured white
BL30 Bi-level switched dimming, 30% <sup>10,12</sup>		
BL50 Bi-level switched dimming, 50% <sup>10,12</sup>		
PNMTDD3 Part night, dim till dawn <sup>12</sup>		
PNMT5D3 Part night, dim 5 hrs <sup>12</sup>		
PNMT6D3 Part night, dim 6 hrs <sup>12</sup>		
PNMT7D3 Part night, dim 7 hrs <sup>12</sup>		

**Drilling**

Template #8 Top of Pole

DSX2 shares a unique drilling pattern with the AERIS™ family. Specify this drilling pattern when specifying poles, per the table below.

DM19AS Single unit	DM29AS 2 at 90° *
DM28AS 2 at 180°	DM39AS 3 at 90° *
DM49AS 4 at 90° *	DM32AS 3 at 120° **

**Example:** SSA 20 4C DM19AS DDBXD

Visit Lithonia Lighting's **POLES CENTRAL** to see our wide selection of poles, accessories and educational tools.  
\*Round pole top must be 3.25" O.D. minimum.  
\*\*For round pole mounting (RPA) only.

**Controls & Shields**

**Accessories**  
Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) <sup>14</sup>
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) <sup>14</sup>
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) <sup>14</sup>
SC U	Shorting cap <sup>14</sup>
DSX2HS 80C U	House-side shield for 80 LED unit
DSX2HS 90C U	House-side shield for 90 LED unit
DSX2HS 100C U	House-side shield for 100 LED unit
PUMBA DDBXD U*	Square and round pole universal mounting bracket (specify finish)
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) <sup>4</sup>

For more control options, visit **DTL** and **ROAM** online.

**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

## NOTES

- Rotated optics option (L90, R90) required for 90C.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- Available as a separate combination accessory: PUMBA (finish) U. Round pole must have 4" O.D. minimum; 1.5 G vibration load rating per ANCI C136.31.
- Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" O.D. mast arm (not included).
- Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Not available with DS option.
- If ROAM® node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Not available with DCR.
- 347 or 480 voltage option with DMG requires 1000 mA.
- Specifies a ROAM® enabled luminaire with 0-10V dimming capability; PER option required. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamcontrols.net. Not available with PIRH, DS, BL30, BL50, PER5, PER7, or part night options (PNMTxxx).
- Provides 50/50 luminaire operation via two independent drivers on two separate circuits. Not available with 80C 530, 90C 530, PER, PER5, PER7, DCR, BL30, BL50, or part night options (PNMTxxx).
- Requires an additional switched line.
- Specifies the **SensorSwitch SBGR-6-ODP** control; see **Motion Sensor Guide** for details. Dimming driver standard. Not available with BL30, BL50 or DCR.
- Dimming driver standard. Not available with 347V, 480V, DCR, DS, or PIRH.
- Also available as a separate accessory; see Accessories information.
- Requires luminaire to be specified with PER, PER5 or PER7 option. Ordered and shipped as a separate line item from Acuity Brands Controls.





## 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

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)					AMBPC (Amber Phosphor Converted)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
80C (80 LEDs)	530 mA	137 W	T1S	14,438	3	0	3	108	15,360	3	0	3	115	15,415	3	0	3	115	10,752	2	0	2	78
			T2S	14,172	3	0	3	106	15,077	3	0	3	113	15,131	3	0	3	113	10,554	2	0	2	77
			T2M	14,196	3	0	3	106	15,102	3	0	3	113	15,156	3	0	3	114	10,571	2	0	2	77
			T3S	14,165	3	0	3	106	15,069	3	0	3	113	15,123	3	0	3	113	10,548	2	0	2	77
			T3M	14,193	3	0	4	106	15,099	3	0	4	113	15,153	3	0	4	114	10,569	2	0	2	77
			T4M	13,736	3	0	4	103	15,067	3	0	4	113	15,121	3	0	4	113	10,547	2	0	2	77
			TFTM	14,424	3	0	4	108	15,345	3	0	4	115	15,400	3	0	4	115	10,741	1	0	2	78
			TSVS	14,980	5	0	1	112	15,936	5	0	1	119	15,993	5	0	1	120	11,155	3	0	0	81
			T5S	14,972	4	0	2	112	15,927	4	0	2	119	15,985	4	0	2	120	11,149	3	0	0	81
			T5M	14,900	5	0	3	112	15,851	5	0	3	119	15,908	5	0	3	119	11,096	3	0	2	81
			TSW	14,713	5	0	3	110	15,652	5	0	3	117	15,709	5	0	3	118	10,957	3	0	2	80
			T1S	17,944	3	0	3	98	19,089	3	0	3	104	19,158	3	0	3	105	13,362	2	0	2	71
	700 mA	188 W	T2S	17,613	3	0	3	96	18,738	3	0	3	102	18,805	3	0	3	103	13,116	2	0	2	70
			T2M	17,643	3	0	3	96	18,769	3	0	3	103	18,836	3	0	3	103	13,138	2	0	2	70
			T3S	17,604	3	0	3	96	18,728	3	0	3	102	18,795	3	0	3	103	13,110	2	0	2	70
			T3M	17,639	3	0	4	96	18,764	3	0	4	103	18,832	3	0	4	103	13,135	2	0	3	70
			T4M	17,071	3	0	4	93	18,725	3	0	4	102	18,792	3	0	4	103	13,108	2	0	2	70
			TFTM	17,926	3	0	4	98	19,071	3	0	4	104	19,139	3	0	4	105	13,349	2	0	2	71
			TSVS	18,617	5	0	1	102	19,805	5	0	1	108	19,876	5	0	1	109	13,864	3	0	1	74
			T5S	18,607	4	0	2	102	19,794	4	0	2	108	19,866	4	0	2	109	13,856	3	0	1	74
			T5M	18,518	5	0	3	101	19,700	5	0	3	108	19,771	5	0	3	108	13,790	3	0	2	73
			TSW	18,286	5	0	3	100	19,453	5	0	3	106	19,523	5	0	3	107	13,617	4	0	2	72
	1000 mA	282 W	T1S	24,339	3	0	3	85	25,892	3	0	3	91	25,985	3	0	3	91	18,125	2	0	2	64
			T2S	23,891	3	0	3	84	25,416	3	0	3	89	25,507	3	0	3	90	17,791	3	0	3	63
			T2M	23,931	3	0	3	84	25,458	3	0	4	89	25,550	3	0	4	90	17,821	3	0	3	63
			T3S	23,879	3	0	3	84	25,403	3	0	3	89	25,494	3	0	3	90	17,782	2	0	2	63
			T3M	23,925	3	0	4	84	25,452	3	0	4	89	25,544	3	0	4	90	17,817	3	0	3	63
			T4M	23,155	3	0	4	81	25,399	3	0	4	89	25,490	3	0	4	90	17,779	2	0	3	63
			TFTM	24,315	3	0	4	85	25,867	3	0	4	91	25,960	3	0	4	91	18,107	2	0	3	64
			TSVS	25,252	5	0	1	89	26,864	5	0	1	94	26,960	5	0	1	95	18,805	3	0	1	67
			T5S	25,238	5	0	2	89	26,849	5	0	2	94	26,946	5	0	2	95	18,794	3	0	1	67
			T5M	25,118	5	0	3	88	26,721	5	0	3	94	26,817	5	0	3	94	18,705	4	0	2	66
			TSW	24,803	5	0	4	87	26,386	5	0	4	93	26,481	5	0	4	93	18,470	4	0	2	65
100C (100 LEDs)	530 mA	175 W	T1S	17,592	3	0	3	103	18,715	3	0	3	110	18,782	3	0	3	110	13,100	2	0	2	75
			T2S	17,268	3	0	3	101	18,370	3	0	3	108	18,436	3	0	3	108	12,859	2	0	2	73
			T2M	17,297	3	0	3	102	18,401	3	0	3	108	18,467	3	0	3	108	12,881	2	0	2	74
			T3S	17,259	3	0	3	101	18,361	3	0	3	108	18,427	3	0	3	108	12,853	2	0	2	73
			T3M	17,293	3	0	4	101	18,397	3	0	4	108	18,463	3	0	4	108	12,878	2	0	3	74
			T4M	16,736	3	0	4	98	18,358	3	0	4	108	18,424	3	0	4	108	12,851	2	0	2	73
			TFTM	17,575	3	0	4	103	18,697	3	0	4	110	18,764	3	0	4	110	13,088	2	0	2	75
			TSVS	18,252	5	0	1	107	19,417	5	0	1	114	19,487	5	0	1	114	13,592	3	0	1	78
			T5S	18,242	4	0	2	107	19,406	4	0	2	114	19,476	4	0	2	114	13,584	3	0	1	78
			T5M	18,155	5	0	3	107	19,314	5	0	3	113	19,383	5	0	3	114	13,520	3	0	2	77
			TSW	17,927	5	0	3	105	19,071	5	0	3	112	19,140	5	0	3	112	13,350	4	0	2	76
	700 mA	232 W	T1S	22,078	3	0	3	97	23,487	3	0	3	103	23,571	3	0	3	104	16,441	2	0	2	71
			T2S	21,671	3	0	3	95	23,055	3	0	3	101	23,137	3	0	3	102	16,138	2	0	2	70
			T2M	21,707	3	0	3	96	23,093	3	0	3	102	23,176	3	0	3	102	16,165	2	0	3	70
			T3S	21,660	3	0	3	95	23,043	3	0	3	101	23,126	3	0	3	102	16,130	2	0	2	70
			T3M	21,702	3	0	4	95	23,088	3	0	4	102	23,171	3	0	4	102	16,161	2	0	3	70
			T4M	21,004	3	0	4	92	23,039	3	0	4	101	23,122	3	0	4	102	16,127	2	0	3	70
			TFTM	22,056	3	0	4	97	23,464	3	0	4	103	23,549	3	0	4	104	16,425	2	0	2	71
			TSVS	22,906	5	0	1	101	24,368	5	0	1	107	24,456	5	0	1	108	17,058	3	0	1	74
			T5S	22,894	4	0	2	101	24,355	4	0	2	107	24,442	4	0	2	108	17,048	3	0	1	73
			T5M	22,784	5	0	3	100	24,239	5	0	3	107	24,326	5	0	3	107	16,967	4	0	2	73
			TSW	22,498	5	0	3	99	23,935	5	0	3	105	24,021	5	0	3	106	16,754	4	0	2	72
	1000 mA	360 W	T1S	28,465	3	0	3	80	31,708	3	0	3	89	32,074	3	0	3	89	22,196	3	0	3	62
			T2S	29,257	3	0	3	82	31,125	3	0	3	88	31,237	3	0	3	87	21,787	3	0	3	61
			T2M	29,306	3	0	3	82	31,177	3	0	3	87	31,289	3	0	3	88	21,824	3	0	3	61
			T3S	29,243	3	0	3	82	31,109	3	0	3	88	31,221	3	0	3	87	21,776	3	0	3	60
			T3M	29,299	3	0	4	82	31,170	3	0	4	87	31,282	3	0	4	88	21,819	3	0	3	61
			T4M	28,356	3	0	4	79	31,104	3	0	4	86	31,216	3	0	4	87	21,773	3	0	3	60
			TFTM	29,777	3	0	4	83	31,678	3	0	4	88	31,792	3	0	4	89	22,175	3	0	3	62
			TSVS	30,924	5	0	1	87	32,898	5	0	1	93	33,017	5	0	1	9					

## Performance Data

### L90 and R90 Rotated Optics

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)					AMBPC (Amber Phosphor Converted)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
90C (90 LEDs)	530 mA	150 W	T1S	15,409	3	0	3	103	16,392	3	0	3	109	16,451	3	0	3	110	11,475	3	0	3	76
			T2S	15,373	3	0	3	102	16,354	3	0	3	109	16,413	3	0	3	109	11,448	3	0	3	76
			T2M	15,399	4	0	4	103	16,381	4	0	4	109	16,440	4	0	4	110	11,467	3	0	3	76
			T3S	15,365	4	0	4	102	16,346	4	0	4	109	16,405	4	0	4	109	11,442	3	0	3	76
			T3M	15,395	4	0	4	103	16,378	4	0	4	109	16,437	4	0	4	110	11,464	4	0	4	76
			T4M	15,363	4	0	4	102	16,343	4	0	4	109	16,402	4	0	4	109	11,440	4	0	4	76
			TFTM	15,646	4	0	4	104	16,645	4	0	4	111	16,705	4	0	4	111	11,651	4	0	4	78
			T5VS	16,502	4	0	1	110	17,555	4	0	1	117	17,618	4	0	1	117	12,289	3	0	1	82
			T5S	16,085	4	0	1	107	17,112	4	0	1	114	17,174	4	0	1	114	11,978	3	0	1	80
			T5M	16,519	4	0	2	110	17,573	4	0	2	117	17,636	4	0	2	118	12,301	4	0	2	82
			T5W	16,260	4	0	2	108	17,298	5	0	3	115	17,360	5	0	3	116	12,109	4	0	2	81
	700 mA	206 W	T1S	19,320	4	0	4	94	20,553	4	0	4	100	20,627	4	0	4	100	14,387	3	0	3	70
			T2S	19,275	4	0	4	94	20,506	4	0	4	100	20,579	4	0	4	100	14,354	3	0	3	70
			T2M	19,307	4	0	4	94	20,540	4	0	4	100	20,614	4	0	4	100	14,378	4	0	4	70
			T3S	19,265	4	0	4	94	20,495	4	0	4	99	20,569	4	0	4	100	14,347	4	0	4	70
			T3M	19,303	4	0	4	94	20,535	4	0	4	100	20,609	4	0	4	100	14,374	4	0	4	70
			T4M	19,262	4	0	4	94	20,492	5	0	5	99	20,566	5	0	5	100	14,344	4	0	4	70
			TFTM	19,618	4	0	4	95	20,870	4	0	4	101	20,945	4	0	4	102	14,609	4	0	4	71
			T5VS	20,691	4	0	1	100	22,011	4	0	1	107	22,090	4	0	1	107	15,408	4	0	1	75
			T5S	20,168	4	0	1	98	21,533	4	0	1	105	21,533	4	0	1	105	15,019	4	0	1	73
			T5M	20,712	4	0	2	101	22,034	5	0	3	107	22,113	5	0	3	107	15,424	4	0	2	75
			T5W	20,388	5	0	3	99	21,689	5	0	3	105	21,767	5	0	3	106	15,182	4	0	2	74
	1000 mA	320 W	T1S	25,901	4	0	4	81	27,554	4	0	4	86	27,653	4	0	4	86	19,288	4	0	4	60
			T2S	25,840	4	0	4	81	27,490	4	0	4	86	27,588	4	0	4	86	19,243	4	0	4	60
			T2M	25,883	4	0	4	81	27,536	5	0	5	86	27,635	5	0	5	86	19,275	4	0	4	60
			T3S	25,827	4	0	4	81	27,476	4	0	4	86	27,574	4	0	4	86	19,233	4	0	4	60
			T3M	25,877	5	0	5	81	27,529	5	0	5	86	27,628	5	0	5	86	19,270	4	0	4	60
			T4M	25,823	5	0	5	81	27,471	5	0	5	86	27,570	5	0	5	86	19,230	4	0	4	60
			TFTM	26,299	5	0	5	82	27,978	5	0	5	87	28,079	5	0	5	88	19,585	4	0	4	61
			T5VS	27,738	5	0	1	87	29,508	5	0	1	92	29,614	5	0	1	93	20,656	4	0	1	65
			T5S	27,038	5	0	2	84	28,764	5	0	2	90	28,867	5	0	2	90	20,135	4	0	1	63
			T5M	27,766	5	0	3	87	29,538	5	0	3	92	29,645	5	0	3	93	20,677	4	0	2	65
			T5W	27,332	5	0	4	85	29,076	5	0	4	91	29,181	5	0	4	91	20,354	5	0	3	64

### 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
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
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	0	25,000	50,000	100,000
Lumen Maintenance Factor	DSX2 LED 80C 1000			
	1.0	0.95	0.92	0.86
	DSX2 LED 100C 700			
	1.0	0.98	0.97	0.96
	DSX2 LED 100C 1000			
	1.0	0.94	0.90	0.84

### Electrical Load

LEDs	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
80	530	137W	1.15	0.66	0.53	0.51	0.39	0.28
	700	188W	1.58	0.92	0.81	0.73	0.55	0.41
	1000	282W	2.37	1.35	1.18	1.04	0.83	0.61
100	530	175W	1.47	0.86	0.76	0.68	0.51	0.38
	700	232W	1.95	1.13	0.99	0.88	0.67	0.49
	1000	360W	3.03	1.72	1.49	1.3	1.05	0.77

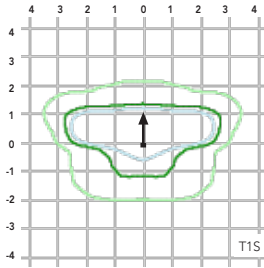
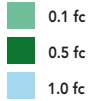


## Photometric Diagrams

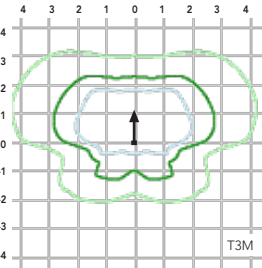
To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Area Size 2 homepage](#).

Isofootcandle plots for the DSX2 LED 80C 1000 40K. Distances are in units of mounting height (30').

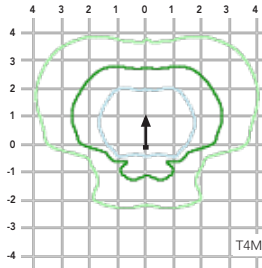
### LEGEND



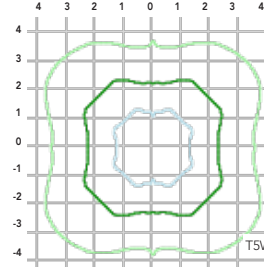
Test No. LTL22425P1 tested in accordance with IESNA LM-79-08.



Test No. LTL22434P1 tested in accordance with IESNA LM-79-08.



Test No. LTL22428P1 tested in accordance with IESNA LM-79-08.



Test No. LTL22430P1 tested in accordance with IESNA LM-79-08.

## FEATURES & SPECIFICATIONS

### INTENDED USE

The sleek design of the D-Series Area Size 2 reflects the embedded high performance LED technology. It is ideal for applications like car dealerships and large parking lots adjacent to malls, transit stations, grocery stores, home centers, and other big-box retailers.

### 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. The LED drivers are 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 (2.0 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 2 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 configurations consist of 80, 90 or 100 high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L96/100,000 hrs at 25°C). Class 1 electronic drivers have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily-serviceable surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

### 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 2 to withstand up to a 2.0 G vibration load rating per ANSI C136.31. The D-Series Size 2 utilizes the AERIS™ series pole drilling pattern (Template #8). NEMA photocontrol receptacle is 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. D670,857 S. International patent pending.

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

### WARRANTY

Five year limited warranty. Full warranty terms located at [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx).

**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.





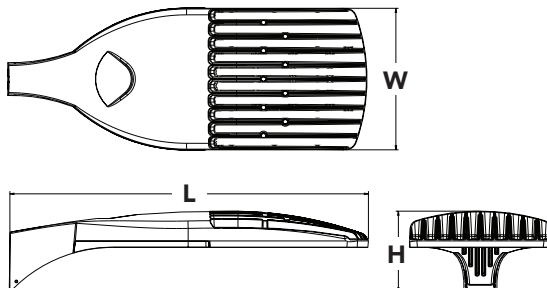
# D-Series Size 1 LED Area Luminaire

d<sup>series</sup>



## Specifications

<b>EPA:</b>	1.2 ft <sup>2</sup> (0.11 m <sup>2</sup> )
<b>Length:</b>	33" (83.8 cm)
<b>Width:</b>	13" (33.0 cm)
<b>Height:</b>	7-1/2" (19.0 cm)
<b>Weight (max):</b>	27 lbs (12.2 kg)



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 100 – 400W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

## Ordering Information

**EXAMPLE: DSX1 LED 60C 1000 40K T3M MVOLT SPA DDBXD**

DSX1LED						
Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting
DSX1 LED	<b>Forward optics</b> 30C 30 LEDs (one engine) 40C 40 LEDs (two engines) 60C 60 LEDs (two engines) <b>Rotated optics</b> <sup>1</sup> 60C 60 LEDs (two engines)	530 530 mA 700 700 mA 1000 1000 mA (1 A)	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted <sup>2</sup>	T1S Type I Short T2S Type II Short T2M Type II Medium T3S Type III Short T3M Type III Medium T4M Type IV Medium TFTM Forward Throw Medium T5VS Type V Very Short T5S Type V Short T5M Type V Medium T5W Type V Wide	MVOLT <sup>3</sup> 120 <sup>3</sup> 208 <sup>3</sup> 240 <sup>3</sup> 277 <sup>3</sup> 347 <sup>4</sup> 480 <sup>4</sup>	<b>Shipped included</b> SPA Square pole mounting RPA Round pole mounting WBA Wall bracket SPUMBA Square pole universal mounting adaptor <sup>5</sup> RPUMBA Round pole universal mounting adaptor <sup>5</sup> <b>Shipped separately</b> <sup>6</sup> KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) <sup>4</sup>

Control options	Other options	Finish (required)
<b>Shipped installed</b> PER NEMA twist-lock receptacle only (no controls) <sup>7</sup> PER5 Five-wire receptacle only (no controls) <sup>7,8</sup> PER7 Seven-wire receptacle only (no controls) <sup>7,8</sup> DMG 0-10V dimming driver (no controls) <sup>9</sup> DCR Dimmable and controllable via ROAM® (no controls) <sup>10</sup> DS Dual switching <sup>11,12</sup> PIR Motion sensor, 8-15' mounting height <sup>13</sup>	<b>Shipped installed</b> HS House-side shield <sup>15</sup> WTB Utility terminal block <sup>16</sup> SF Single fuse (120, 277, 347V) <sup>17</sup> DF Double fuse (208, 240, 480V) <sup>17</sup> L90 Left rotated optics <sup>18</sup> R90 Right rotated optics <sup>18</sup>	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

## Controls & Shields

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) <sup>19</sup>
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) <sup>19</sup>
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) <sup>19</sup>
SCU	Shorting cap <sup>19</sup>
DSX1HS 30C U	House-side shield for 30 LED unit
DSX1HS 40C U	House-side shield for 40 LED unit
DSX1HS 60C U	House-side shield for 60 LED unit
PUMBA DDBXD U*	Square and round pole universal mounting bracket (specify finish)
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) <sup>4</sup>

For more control options, visit [DTL](#) and [ROAM](#) online.

## NOTES

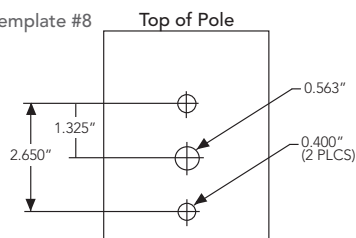
- 1 Rotated optics only available with 60C.
- 2 AMBPC only available with 530mA or 700mA.
- 3 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
- 4 Not available with single board, 530mA product (30C 530, or 60C 530 DS). Not available with DCR, BL30 or BL50.
- 5 Available as a separate combination accessory: PUMBA (finish) U; 1.5 G vibration load rating per ANCI C136.31.
- 6 Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" mast arm (not included).
- 7 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Not available with DS option.
- 8 If ROAM node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Not available with DCR.
- 9 DMG option for 347v or 480v requires 1000mA.
- 10 Specifies a ROAM® enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347 or 480V. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1-800-442-6745 or email: [sales@roamservices.net](mailto:sales@roamservices.net). N/A with BL30, BL50, DS, PIR or PIRH.

- 11 Requires 40C or 60C. Provides 50/50 luminaire operation via two independent drivers on two separate circuits. N/A with PER, DCR, WTB, PIR, or PIRH.
- 12 Requires an additional switched circuit.
- 13 PIR specifies the [SensorSwitch SBGR-10-ODP](#) control; PIRH specifies the [SensorSwitch SBGR-6-ODP](#) control; see [Motion Sensor Guide](#) for details. Dimming driver standard. Not available with DS or DCR.
- 14 Dimming driver standard. MVOLT only. Not available with 347, 480, DCR, DS or PIRH.
- 15 Also available as a separate accessory; see Accessories information.
- 16 WTB not available with DS.
- 17 Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- 18 Available with 60 LEDs (60C option) only.
- 19 Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Acuity Brands Control.



## Drilling

Template #8



DSX1 shares a unique drilling pattern with the AERIS™ family. Specify this drilling pattern when specifying poles, per the table below.

<b>DM19AS</b>	Single unit	<b>DM29AS</b>	2 at 90° *
<b>DM28AS</b>	2 at 180°	<b>DM39AS</b>	3 at 90° *
<b>DM49AS</b>	4 at 90° *	<b>DM32AS</b>	3 at 120° **

**Example:** SSA 20 4C DM19AS DDBXD

Visit Lithonia Lighting's [POLES CENTRAL](#) to see our wide selection of poles, accessories and educational tools.

\*Round pole top must be 3.25" O.D. minimum.

\*\*For round pole mounting (RPA) only.

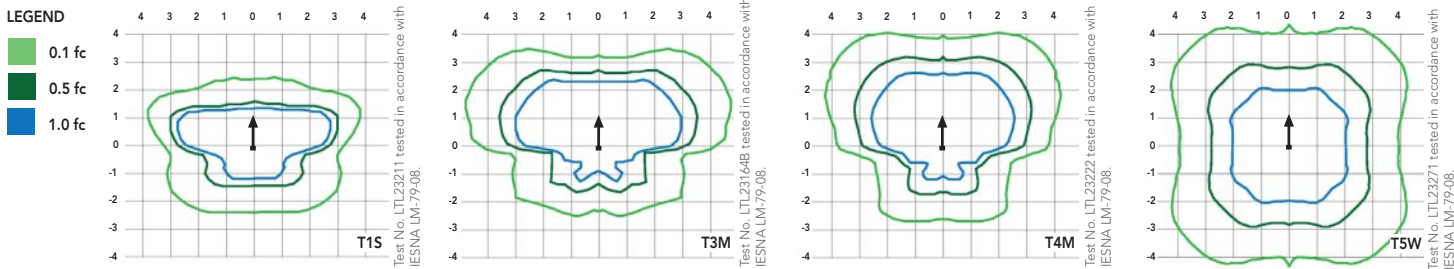
## Tenon Mounting Slipfitter \*\*

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

## Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Area Size 1 homepage](#).

Isofootcandle plots for the DSX1 LED 60C 1000 40K. Distances are in units of mounting height (20').



## 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	1.02
10°C 50°F	1.01
20°C 68°F	1.00
<b>25°C 77°F</b>	<b>1.00</b>
30°C 86°F	1.00
40°C 104°F	0.99

### Electrical Load

Number of LEDs	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
30	530	52	0.52	0.30	0.26	0.23	--	--
	700	68	0.68	0.39	0.34	0.30	0.24	0.17
	1000	105	1.03	0.59	0.51	0.45	0.36	0.26
40	530	68	0.67	0.39	0.34	0.29	0.23	0.17
	700	89	0.89	0.51	0.44	0.38	0.31	0.22
	1000	138	1.35	0.78	0.67	0.58	0.47	0.34
60	530	99	0.97	0.56	0.48	0.42	0.34	0.24
	700	131	1.29	0.74	0.65	0.56	0.45	0.32
	1000	209	1.98	1.14	0.99	0.86	0.69	0.50

### 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	0	25,000	50,000	100,000
Lumen Maintenance Factor	DSX1 LED 60C 1000			
	1.0	0.95	0.93	0.88
	DSX1 LED 60C 700			
	1.0	0.99	0.98	0.96



## 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.

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)					AMBPC (Amber Phosphor Converted)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
30C (30 LEDs)	700 mA	68 W	T1S	5,697	1	0	1	84	7,127	2	0	2	105	7,180	2	0	2	106	4,561	1	0	1	67
			T2S	5,967	2	0	2	88	7,465	2	0	2	110	7,521	2	0	2	111	4,777	1	0	1	70
			T2M	5,773	1	0	2	85	7,222	2	0	2	106	7,276	2	0	2	107	4,622	1	0	2	68
			T3S	5,901	1	0	2	87	7,382	2	0	2	109	7,437	2	0	2	109	4,724	1	0	1	69
			T3M	5,872	1	0	2	86	7,346	2	0	2	108	7,401	2	0	2	109	4,701	1	0	2	69
			T4M	5,882	1	0	2	87	7,359	2	0	2	108	7,414	2	0	2	109	4,709	1	0	2	69
			TFTM	5,793	1	0	2	85	7,247	1	0	2	107	7,301	1	0	2	107	4,638	1	0	2	68
			TSVS	6,148	2	0	0	90	7,691	3	0	1	113	7,749	3	0	1	114	4,922	2	0	0	72
			T5S	6,074	2	0	0	89	7,598	3	0	0	112	7,655	3	0	0	113	4,863	2	0	0	72
			T5M	6,150	3	0	1	90	7,694	3	0	2	113	7,752	3	0	2	114	4,924	3	0	1	72
	TSW	5,979	3	0	1	88	7,479	3	0	2	110	7,536	3	0	2	111	4,787	3	0	1	70		
	1000 mA	105 W	T1S	7,913	2	0	2	75	9,899	2	0	2	94	9,973	2	0	2	95					
			T2S	8,288	2	0	2	79	10,368	2	0	2	99	10,446	2	0	2	99					
			T2M	8,019	2	0	2	76	10,031	2	0	3	96	10,106	2	0	3	96					
			T3S	8,196	2	0	2	78	10,253	2	0	2	98	10,330	2	0	2	98					
			T3M	8,156	2	0	2	78	10,202	2	0	2	97	10,279	2	0	2	98					
			T4M	8,170	2	0	2	78	10,220	2	0	2	97	10,297	2	0	2	98					
			TFTM	8,046	2	0	2	77	10,065	2	0	3	96	10,141	2	0	3	97					
			TSVS	8,539	3	0	1	81	10,682	3	0	1	102	10,762	3	0	1	102					
			T5S	8,436	3	0	1	80	10,553	3	0	1	101	10,632	3	0	1	101					
			T5M	8,542	3	0	2	81	10,686	4	0	2	102	10,766	4	0	2	103					
			TSW	8,304	3	0	2	79	10,388	4	0	2	99	10,466	4	0	2	100					
40C (40 LEDs)			700 mA	89 W	T1S	7,511	2	0	2	84	9,396	2	0	2	106	9,467	2	0					
	T2S	7,868			2	0	2	88	9,842	2	0	2	111	9,916	2	0	2	94	6,299	2	0	2	71
	T2M	7,612			2	0	2	86	9,522	2	0	3	107	9,594	2	0	3	91	6,094	2	0	2	68
	T3S	7,780			2	0	2	87	9,733	2	0	2	109	9,806	2	0	2	93	6,229	1	0	2	70
	T3M	7,742			2	0	2	87	9,685	2	0	2	109	9,758	2	0	2	93	6,198	2	0	2	70
	T4M	7,756			2	0	2	87	9,702	2	0	2	109	9,775	2	0	2	93	6,209	1	0	2	70
	TFTM	7,638			2	0	2	86	9,555	2	0	2	107	9,627	2	0	2	92	6,115	1	0	2	69
	TSVS	8,106			3	0	1	91	10,140	3	0	1	114	10,216	3	0	1	97	6,490	2	0	0	73
	T5S	8,008			3	0	1	90	10,017	3	0	1	113	10,093	3	0	1	96	6,411	2	0	0	72
	T5M	8,109			3	0	2	91	10,144	4	0	2	114	10,220	4	0	2	97	6,492	3	0	1	73
	TSW	7,883	3	0	2	89	9,861	4	0	2	111	9,936	4	0	2	95	6,311	3	0	2	71		
	1000 mA	138 W	T1S	10,384	2	0	2	75	12,990	3	0	3	94	13,088	3	0	3	95					
			T2S	10,876	2	0	2	79	13,606	3	0	3	99	13,708	3	0	3	99					
			T2M	10,523	2	0	3	76	13,164	3	0	3	95	13,263	3	0	3	96					
			T3S	10,756	2	0	2	78	13,455	2	0	2	97	13,556	3	0	3	98					
			T3M	10,703	2	0	2	78	13,389	3	0	3	97	13,490	3	0	3	98					
			T4M	10,722	2	0	2	78	13,412	3	0	3	97	13,513	3	0	3	98					
			TFTM	10,559	2	0	3	77	13,209	2	0	3	96	13,308	2	0	3	96					
			TSVS	11,206	3	0	1	81	14,018	4	0	1	102	14,124	4	0	1	102					
			T5S	11,070	3	0	1	80	13,848	3	0	1	100	13,953	3	0	1	101					
			T5M	11,210	4	0	2	81	14,023	4	0	2	102	14,129	4	0	2	102					
			TSW	10,898	4	0	2	79	13,633	4	0	2	99	13,735	4	0	2	100					
60C (60 LEDs)			700 mA	131 W	T1S	11,182	2	0	2	81	13,988	3	0	3	101	14,093	3	0					
	T2S	11,712			3	0	3	85	14,651	3	0	3	106	14,761	3	0	3	107	9,377	2	0	2	72
	T2M	11,332			2	0	3	82	14,175	3	0	3	103	14,282	3	0	3	103	9,072	2	0	2	69
	T3S	11,582			2	0	2	84	14,489	3	0	3	105	14,598	3	0	3	106	9,273	2	0	2	71
	T3M	11,525			2	0	2	84	14,418	3	0	3	104	14,526	3	0	3	105	9,227	2	0	2	70
	T4M	11,546			2	0	2	84	14,443	3	0	3	105	14,552	3	0	3	105	9,243	2	0	2	71
	TFTM	11,370			2	0	3	82	14,224	2	0	3	103	14,331	2	0	3	104	9,103	2	0	2	69
	TSVS	12,067			3	0	1	87	15,095	4	0	1	109	15,209	4	0	1	110	9,661	3	0	1	74
	T5S	11,921			3	0	1	86	14,913	4	0	1	108	15,025	4	0	1	109	9,544	3	0	1	73
	T5M	12,071			4	0	2	87	15,101	4	0	2	109	15,214	4	0	2	110	9,665	3	0	2	74
	TSW	11,735	4	0	2	85	14,680	4	0	2	106	14,791	4	0	2	107	9,395	4	0	2	72		
	1000 mA	209 W	T1S	15,307	3	0	3	73	19,148	3	0	3	92	19,292	3	0	3	92					
			T2S	16,033	3	0	3	77	20,056	3	0	3	96	20,207	3	0	3	97					
			T2M	15,512	3	0	3	74	19,405	3	0	3	93	19,551	3	0	3	94					
			T3S	15,855	3	0	3	76	19,834	3	0	3	95	19,983	3	0	3	96					
			T3M	15,777	3	0	3	75	19,736	3	0	4	94	19,885	3	0	4	95					
			T4M	15,805	3	0	3	76	19,771	3	0	4	95	19,920	3	0	4	95					
			TFTM	15,565	3	0	3	74	19,471	3	0	4	93	19,617	3	0	4	94					
			TSVS	16,519	4	0	1	79	20,664	4	0	1	99	20,820	4	0	1	100					
			T5S	16,319	4	0	1	78	20,414	4	0	1	98	20,567	4	0	1	98					
			T5M	16,525	4	0	2	79	20,672	5	0	3	99	20,827	5	0	3	100					
			TSW	16,065	4	0	3	77	20,096	5	0	3	96	20,247	5	0	3	97					



## FEATURES & SPECIFICATIONS

### INTENDED USE

The sleek design of the D-Series Size 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

### 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 (1.2 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 standard 4000 K (70 minimum CRI) or optional 3000 K (80 minimum CRI) or 5000 K (70 CRI) configurations. The D-Series Size 1 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 configurations consist of 30, 40 or 60 high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L96/100,000 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 or 6kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

### 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 1 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 1 utilizes the AERIS™ series pole drilling pattern. Optional terminal block, tool-less entry, and NEMA photocontrol 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) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org](http://www.designlights.org) to confirm which versions are qualified.

### WARRANTY

Five-year limited warranty. Full warranty terms located at: [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx)

**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.





# D-Series Size 1 LED Area Luminaire

d<sup>series</sup>



Catalog  
Number

Notes

Type

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

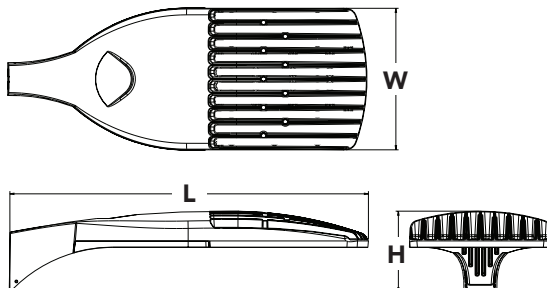
## Introduction

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 100 – 400W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

## Specifications

<b>EPA:</b>	1.2 ft <sup>2</sup> (0.11 m <sup>2</sup> )
<b>Length:</b>	33" (83.8 cm)
<b>Width:</b>	13" (33.0 cm)
<b>Height:</b>	7-1/2" (19.0 cm)
<b>Weight (max):</b>	27 lbs (12.2 kg)



## Ordering Information

**EXAMPLE: DSX1 LED 60C 1000 40K T3M MVOLT SPA DDBXD**

DSX1LED						
Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting
DSX1 LED	<b>Forward optics</b> 30C 30 LEDs (one engine) 40C 40 LEDs (two engines) 60C 60 LEDs (two engines) <b>Rotated optics</b> <sup>1</sup> 60C 60 LEDs (two engines)	530 530 mA 700 700 mA 1000 1000 mA (1 A)	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted <sup>2</sup>	T1S Type I Short T2S Type II Short T2M Type II Medium T3S Type III Short T3M Type III Medium T4M Type IV Medium TFTM Forward Throw Medium T5VS Type V Very Short T5S Type V Short T5M Type V Medium TSW Type V Wide	MVOLT <sup>3</sup> 120 <sup>3</sup> 208 <sup>3</sup> 240 <sup>3</sup> 277 <sup>3</sup> 347 <sup>4</sup> 480 <sup>4</sup>	<b>Shipped included</b> SPA Square pole mounting RPA Round pole mounting WBA Wall bracket SPUMBA Square pole universal mounting adaptor <sup>5</sup> RPUMBA Round pole universal mounting adaptor <sup>5</sup> <b>Shipped separately</b> <sup>6</sup> KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) <sup>4</sup>

Control options	Other options	Finish (required)
<b>Shipped installed</b> PER NEMA twist-lock receptacle only (no controls) <sup>7</sup> PER5 Five-wire receptacle only (no controls) <sup>7,8</sup> PER7 Seven-wire receptacle only (no controls) <sup>7,8</sup> DMG 0-10V dimming driver (no controls) <sup>9</sup> DCR Dimmable and controllable via ROAM® (no controls) <sup>10</sup> DS Dual switching <sup>11,12</sup> PIR Motion sensor, 8-15' mounting height <sup>13</sup>	<b>Shipped installed</b> HS House-side shield <sup>15</sup> WTB Utility terminal block <sup>16</sup> SF Single fuse (120, 277, 347V) <sup>17</sup> DF Double fuse (208, 240, 480V) <sup>17</sup> L90 Left rotated optics <sup>18</sup> R90 Right rotated optics <sup>18</sup>	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

## Controls & Shields

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) <sup>19</sup>
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) <sup>19</sup>
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) <sup>19</sup>
SCU	Shorting cap <sup>19</sup>
DSX1HS 30C U	House-side shield for 30 LED unit
DSX1HS 40C U	House-side shield for 40 LED unit
DSX1HS 60C U	House-side shield for 60 LED unit
PUMBA DDBXD U*	Square and round pole universal mounting bracket (specify finish)
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) <sup>4</sup>

### NOTES

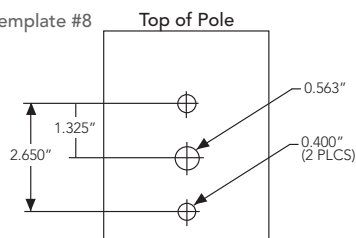
- 1 Rotated optics only available with 60C.
- 2 AMBPC only available with 530mA or 700mA.
- 3 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
- 4 Not available with single board, 530mA product (30C 530, or 60C 530 DS). Not available with DCR, BL30 or BL50.
- 5 Available as a separate combination accessory: PUMBA (finish) U; 1.5 G vibration load rating per ANCI C136.31.
- 6 Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" mast arm (not included).
- 7 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Not available with DS option.
- 8 If ROAM node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Not available with DCR.
- 9 DMG option for 347v or 480v requires 1000mA.
- 10 Specifies a ROAM® enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347 or 480V. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamservices.net. N/A with BL30, BL50, DS, PIR or PIRH.

- 11 Requires 40C or 60C. Provides 50/50 luminaire operation via two independent drivers on two separate circuits. N/A with PER, DCR, WTB, PIR, or PIRH.
- 12 Requires an additional switched circuit.
- 13 PIR specifies the [SensorSwitch SBGR-10-ODP](#) control; PIRH specifies the [SensorSwitch SBGR-6-ODP](#) control; see [Motion Sensor Guide](#) for details. Dimming driver standard. Not available with DS or DCR.
- 14 Dimming driver standard. MVOLT only. Not available with 347, 480, DCR, DS or PIRH.
- 15 Also available as a separate accessory; see Accessories information.
- 16 WTB not available with DS.
- 17 Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- 18 Available with 60 LEDs (60C option) only.
- 19 Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Acuity Brands Control.



## Drilling

Template #8



DSX1 shares a unique drilling pattern with the AERIS™ family. Specify this drilling pattern when specifying poles, per the table below.

<b>DM19AS</b>	Single unit	<b>DM29AS</b>	2 at 90° *
<b>DM28AS</b>	2 at 180°	<b>DM39AS</b>	3 at 90° *
<b>DM49AS</b>	4 at 90° *	<b>DM32AS</b>	3 at 120° **

**Example:** SSA 20 4C DM19AS DDBXD

Visit Lithonia Lighting's **POLES CENTRAL** to see our wide selection of poles, accessories and educational tools.

\*Round pole top must be 3.25" O.D. minimum.

\*\*For round pole mounting (RPA) only.

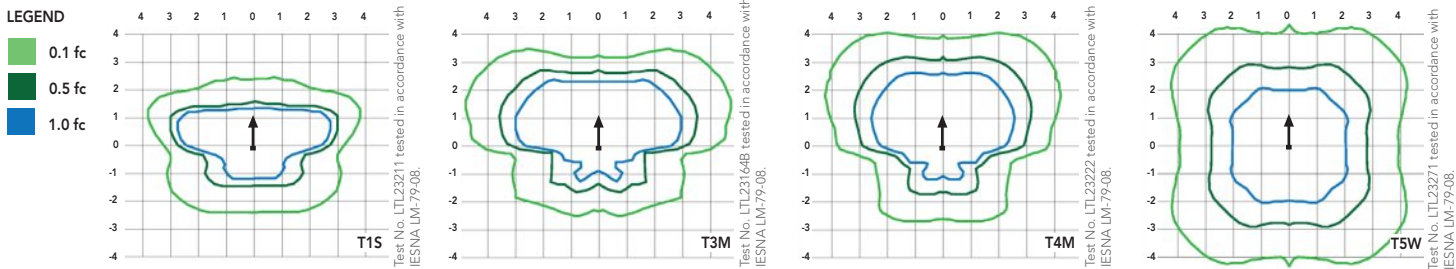
## Tenon Mounting Slipfitter \*\*

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

## Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Area Size 1 homepage](#).

Isofootcandle plots for the DSX1 LED 60C 1000 40K. Distances are in units of mounting height (20').



## 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	1.02
10°C 50°F	1.01
20°C 68°F	1.00
<b>25°C 77°F</b>	<b>1.00</b>
30°C 86°F	1.00
40°C 104°F	0.99

### Electrical Load

Number of LEDs	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
30	530	52	0.52	0.30	0.26	0.23	--	--
	700	68	0.68	0.39	0.34	0.30	0.24	0.17
	1000	105	1.03	0.59	0.51	0.45	0.36	0.26
40	530	68	0.67	0.39	0.34	0.29	0.23	0.17
	700	89	0.89	0.51	0.44	0.38	0.31	0.22
	1000	138	1.35	0.78	0.67	0.58	0.47	0.34
60	530	99	0.97	0.56	0.48	0.42	0.34	0.24
	700	131	1.29	0.74	0.65	0.56	0.45	0.32
	1000	209	1.98	1.14	0.99	0.86	0.69	0.50

### 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	0	25,000	50,000	100,000
Lumen Maintenance Factor	DSX1 LED 60C 1000			
	1.0	0.95	0.93	0.88
	DSX1 LED 60C 700			
	1.0	0.99	0.98	0.96



## 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.

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)					AMBPC (Amber Phosphor Converted)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
30C (30 LEDs)	700 mA	68 W	T1S	5,697	1	0	1	84	7,127	2	0	2	105	7,180	2	0	2	106	4,561	1	0	1	67
			T2S	5,967	2	0	2	88	7,465	2	0	2	110	7,521	2	0	2	111	4,777	1	0	1	70
			T2M	5,773	1	0	2	85	7,222	2	0	2	106	7,276	2	0	2	107	4,622	1	0	2	68
			T3S	5,901	1	0	2	87	7,382	2	0	2	109	7,437	2	0	2	109	4,724	1	0	1	69
			T3M	5,872	1	0	2	86	7,346	2	0	2	108	7,401	2	0	2	109	4,701	1	0	2	69
			T4M	5,882	1	0	2	87	7,359	2	0	2	108	7,414	2	0	2	109	4,709	1	0	2	69
			TFTM	5,793	1	0	2	85	7,247	1	0	2	107	7,301	1	0	2	107	4,638	1	0	2	68
			TSVS	6,148	2	0	0	90	7,691	3	0	1	113	7,749	3	0	1	114	4,922	2	0	0	72
			T5S	6,074	2	0	0	89	7,598	3	0	0	112	7,655	3	0	0	113	4,863	2	0	0	72
			T5M	6,150	3	0	1	90	7,694	3	0	2	113	7,752	3	0	2	114	4,924	3	0	1	72
			TSW	5,979	3	0	1	88	7,479	3	0	2	110	7,536	3	0	2	111	4,787	3	0	1	70
	1000 mA	105 W	T1S	7,913	2	0	2	75	9,899	2	0	2	94	9,973	2	0	2	95					
			T2S	8,288	2	0	2	79	10,368	2	0	2	99	10,446	2	0	2	99					
			T2M	8,019	2	0	2	76	10,031	2	0	3	96	10,106	2	0	3	96					
			T3S	8,196	2	0	2	78	10,253	2	0	2	98	10,330	2	0	2	98					
			T3M	8,156	2	0	2	78	10,202	2	0	2	97	10,279	2	0	2	98					
			T4M	8,170	2	0	2	78	10,220	2	0	2	97	10,297	2	0	2	98					
			TFTM	8,046	2	0	2	77	10,065	2	0	3	96	10,141	2	0	3	97					
			TSVS	8,539	3	0	1	81	10,682	3	0	1	102	10,762	3	0	1	102					
			T5S	8,436	3	0	1	80	10,553	3	0	1	101	10,632	3	0	1	101					
			T5M	8,542	3	0	2	81	10,686	4	0	2	102	10,766	4	0	2	103					
			TSW	8,304	3	0	2	79	10,388	4	0	2	99	10,466	4	0	2	100					
40C (40 LEDs)	700 mA	89 W	T1S	7,511	2	0	2	84	9,396	2	0	2	106	9,467	2	0	2	90	6,014	1	0	1	68
			T2S	7,868	2	0	2	88	9,842	2	0	2	111	9,916	2	0	2	94	6,299	2	0	2	71
			T2M	7,612	2	0	2	86	9,522	2	0	3	107	9,594	2	0	3	91	6,094	2	0	2	68
			T3S	7,780	2	0	2	87	9,733	2	0	2	109	9,806	2	0	2	93	6,229	1	0	2	70
			T3M	7,742	2	0	2	87	9,685	2	0	2	109	9,758	2	0	2	93	6,198	2	0	2	70
			T4M	7,756	2	0	2	87	9,702	2	0	2	109	9,775	2	0	2	93	6,209	1	0	2	70
			TFTM	7,638	2	0	2	86	9,555	2	0	2	107	9,627	2	0	2	92	6,115	1	0	2	69
			TSVS	8,106	3	0	1	91	10,140	3	0	1	114	10,216	3	0	1	97	6,490	2	0	0	73
			T5S	8,008	3	0	1	90	10,017	3	0	1	113	10,093	3	0	1	96	6,411	2	0	0	72
			T5M	8,109	3	0	2	91	10,144	4	0	2	114	10,220	4	0	2	97	6,492	3	0	1	73
			TSW	7,883	3	0	2	89	9,861	4	0	2	111	9,936	4	0	2	95	6,311	3	0	2	71
	1000 mA	138 W	T1S	10,384	2	0	2	75	12,990	3	0	3	94	13,088	3	0	3	95					
			T2S	10,876	2	0	2	79	13,606	3	0	3	99	13,708	3	0	3	99					
			T2M	10,523	2	0	3	76	13,164	3	0	3	95	13,263	3	0	3	96					
			T3S	10,756	2	0	2	78	13,455	2	0	2	97	13,556	3	0	3	98					
			T3M	10,703	2	0	2	78	13,389	3	0	3	97	13,490	3	0	3	98					
			T4M	10,722	2	0	2	78	13,412	3	0	3	97	13,513	3	0	3	98					
			TFTM	10,559	2	0	3	77	13,209	2	0	3	96	13,308	2	0	3	96					
			TSVS	11,206	3	0	1	81	14,018	4	0	1	102	14,124	4	0	1	102					
			T5S	11,070	3	0	1	80	13,848	3	0	1	100	13,953	3	0	1	101					
			T5M	11,210	4	0	2	81	14,023	4	0	2	102	14,129	4	0	2	102					
			TSW	10,898	4	0	2	79	13,633	4	0	2	99	13,735	4	0	2	100					
60C (60 LEDs)	700 mA	131 W	T1S	11,182	2	0	2	81	13,988	3	0	3	101	14,093	3	0	3	102	8,952	2	0	2	68
			T2S	11,712	3	0	3	85	14,651	3	0	3	106	14,761	3	0	3	107	9,377	2	0	2	72
			T2M	11,332	2	0	3	82	14,175	3	0	3	103	14,282	3	0	3	103	9,072	2	0	2	69
			T3S	11,582	2	0	2	84	14,489	3	0	3	105	14,598	3	0	3	106	9,273	2	0	2	71
			T3M	11,525	2	0	2	84	14,418	3	0	3	104	14,526	3	0	3	105	9,227	2	0	2	70
			T4M	11,546	2	0	2	84	14,443	3	0	3	105	14,552	3	0	3	105	9,243	2	0	2	71
			TFTM	11,370	2	0	3	82	14,224	2	0	3	103	14,331	2	0	3	104	9,103	2	0	2	69
			TSVS	12,067	3	0	1	87	15,095	4	0	1	109	15,209	4	0	1	110	9,661	3	0	1	74
			T5S	11,921	3	0	1	86	14,913	4	0	1	108	15,025	4	0	1	109	9,544	3	0	1	73
			T5M	12,071	4	0	2	87	15,101	4	0	2	109	15,214	4	0	2	110	9,665	3	0	2	74
			TSW	11,735	4	0	2	85	14,680	4	0	2	106	14,791	4	0	2	107	9,395	4	0	2	72
	1000 mA	209 W	T1S	15,307	3	0	3	73	19,148	3	0	3	92	19,292	3	0	3	92					
			T2S	16,033	3	0	3	77	20,056	3	0	3	96	20,207	3	0	3	97					
			T2M	15,512	3	0	3	74	19,405	3	0	3	93	19,551	3	0	3	94					
			T3S	15,855	3	0	3	76	19,834	3	0	3	95	19,983	3	0	3	96					
			T3M	15,777	3	0	3	75	19,736	3	0	4	94	19,885	3	0	4	95					
			T4M	15,805	3	0	3	76	19,771	3	0	4	95	19,920	3	0	4	95					
			TFTM	15,565	3	0	3	74	19,471	3	0	4	93	19,617	3	0	4	94					
			TSVS	16,519	4	0	1	79	20,664	4	0	1	99	20,820	4	0	1	100					
			T5S	16,319	4	0	1	78	20,414	4	0	1	98	20,567	4	0	1	98					
			T5M	16,525	4	0	2	79	20,672	5	0	3	99	20,827	5	0	3	100					
			TSW	16,065	4	0	3	77	20,096	5	0	3	96	20,247	5	0	3	97					

## FEATURES & SPECIFICATIONS

### INTENDED USE

The sleek design of the D-Series Size 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

### 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 (1.2 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 standard 4000 K (70 minimum CRI) or optional 3000 K (80 minimum CRI) or 5000 K (70 CRI) configurations. The D-Series Size 1 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 configurations consist of 30, 40 or 60 high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L96/100,000 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 or 6kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

### 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 1 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 1 utilizes the AERIS™ series pole drilling pattern. Optional terminal block, tool-less entry, and NEMA photocontrol 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) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org](http://www.designlights.org) to confirm which versions are qualified.

### WARRANTY

Five-year limited warranty. Full warranty terms located at:  
[www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx)

**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.





# D-Series Size 2 LED Wall Luminaire



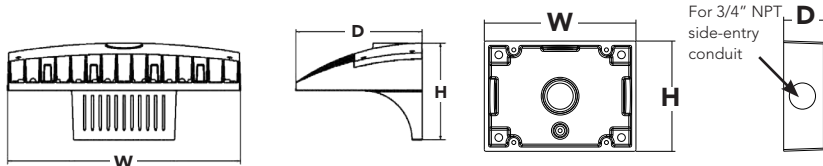
d<sup>series</sup>

## Specifications Luminaire

<b>Width:</b>	18-1/2" (47.0 cm)	<b>Weight:</b>	21 lbs (9.5 kg)
<b>Depth:</b>	10" (25.4 cm)		
<b>Height:</b>	7-5/8" (19.4 cm)		

## Back Box (BBW)

<b>Width:</b>	5-1/2" (14.0 cm)	<b>BBW Weight:</b>	1 lbs (0.5 kg)
<b>Depth:</b>	1-1/2" (3.8 cm)		
<b>Height:</b>	4" (10.2 cm)		



Catalog  
Number

Notes

Type

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

## Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 76% in energy savings over comparable 400W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

## Ordering Information

**EXAMPLE:** DSXW2 LED 30C 700 40K T3M MVOLT DDBTXD

DSXW2 LED																
Series	LEDs		Drive Current		Color temperature		Distribution		Voltage	Mounting	Control Options		Other Options		Finish <i>(required)</i>	
DSXW2 LED	20C	20 LEDs (two engines)	350	350 mA	30K	3000 K	T2S	Type II Short	MVOLT <sup>1</sup>	Shipped included  (blank) Surface mounting bracket   						

## NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options), or photocontrol (PE option).
- Available with 30 LED/700mA options only (DSXW2 LED 30C 700). DMG option not available.
- Also available as a separate accessory; see Accessories information.
- Photocontrol (PE) requires 120, 208, 240 or 277 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
- Specifies a ROAM<sup>®</sup> enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347V, 480V or PIRH. Additional hardware and services required for ROAM<sup>®</sup> deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamservices.net.
- Specifies the Sensor Switch SBGR-6-ODP control; see Motion Sensor Guide for details. Includes ambient light sensor. Not available with "PE" option (button type photocell) or DCR. Dimming driver standard.
- Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- See the electrical section on page 2 for more details.
- Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.

## Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) <sup>9</sup>
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) <sup>9</sup>
DL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) <sup>9</sup>
SCU	Shorting cap <sup>3</sup>
DSXWHS U	House-side shield (one per light engine)
DSXWBSW U	Bird-deterrent spikes
DSXW2WG U	Wire guard accessory
DSXW2VG U	Vandal guard accessory
DSXW2BBW	Back box accessory
DDBXD U	(specify finish)





## 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.

LEDs	Drive Current (mA)	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
20C (20 LEDs)	530	36 W	T2S	3,649	1	0	1	101	3,876	1	0	1	108	3,429	1	0	1	95
			T2M	3,478	1	0	1	97	3,694	1	0	1	103	3,267	1	0	1	91
			T3S	3,609	1	0	1	100	3,833	1	0	1	106	3,390	1	0	1	94
			T3M	3,572	1	0	1	99	3,794	1	0	1	105	3,356	1	0	1	93
			T4M	3,500	1	0	2	97	3,717	1	0	2	103	3,288	1	0	1	91
			TFTM	3,638	1	0	1	101	3,864	1	0	1	107	3,418	1	0	1	95
			ASYDF	3,252	1	0	2	90	3,454	1	0	2	96	3,056	1	0	2	85
	700	47 W	T2S	4,502	1	0	1	96	4,776	1	0	1	102	4,794	1	0	1	102
			T2M	4,290	1	0	1	91	4,552	1	0	1	97	4,569	1	0	1	97
			T3S	4,452	1	0	1	95	4,723	1	0	2	100	4,741	1	0	2	101
			T3M	4,407	1	0	2	94	4,675	1	0	2	99	4,693	1	0	2	100
			T4M	4,318	1	0	2	92	4,581	1	0	2	97	4,598	1	0	2	98
			TFTM	4,488	1	0	2	95	4,761	1	0	2	101	4,779	1	0	2	102
			ASYDF	4,012	1	0	2	85	4,257	1	0	2	91	4,273	1	0	2	91
	1000	74 W	T2S	5,963	2	0	2	81	6,327	1	0	1	84	6,351	1	0	1	85
			T2M	5,683	2	0	2	77	6,029	1	0	2	80	6,052	1	0	2	81
			T3S	5,896	1	0	2	80	6,256	1	0	2	83	6,280	1	0	2	84
			T3M	5,837	2	0	3	79	6,193	1	0	2	83	6,216	1	0	2	83
			T4M	5,719	1	0	2	77	6,067	1	0	2	81	6,090	1	0	2	81
			TFTM	5,944	1	0	2	80	6,307	1	0	2	84	6,330	1	0	2	84
			ASYDF	5,314	1	0	2	72	5,638	2	0	2	75	5,660	2	0	2	75
30C (30 LEDs)	530	54 W	T2S	4,333	1	0	1	80	5,280	1	0	1	98	5,769	1	0	1	107
			T2M	4,216	1	0	1	78	5,137	1	0	2	95	5,613	1	0	2	104
			T3S	4,279	1	0	1	79	5,214	1	0	1	97	5,696	1	0	1	105
			T3M	4,349	1	0	2	81	5,298	1	0	2	98	5,789	1	0	2	107
			T4M	4,291	1	0	1	79	5,228	1	0	2	97	5,712	1	0	2	106
			TFTM	4,287	1	0	1	79	5,223	1	0	2	97	5,707	1	0	2	106
			T2S	5,346	1	0	1	75	6,513	1	0	1	92	7,118	2	0	2	100
	700	71 W	T2M	5,201	1	0	2	73	6,337	2	0	2	89	6,925	2	0	2	98
			T3S	5,279	1	0	1	74	6,431	1	0	2	91	7,028	1	0	2	99
			T3M	5,365	1	0	2	76	6,536	1	0	2	92	7,143	2	0	3	101
			T4M	5,293	1	0	2	75	6,449	1	0	2	91	7,047	1	0	2	99
			TFTM	5,289	1	0	2	74	6,444	1	0	2	91	7,042	1	0	2	99
			T2S	7,137	2	0	2	65	8,697	2	0	2	80	9,501	2	0	2	87
			T2M	6,944	2	0	2	64	8,462	2	0	2	78	9,244	2	0	2	85
	1000	109 W	T3S	7,047	1	0	2	65	8,588	1	0	2	79	9,381	2	0	2	86
			T3M	7,162	2	0	3	66	8,728	2	0	3	80	9,534	2	0	3	87
			T4M	7,066	1	0	2	65	8,611	1	0	2	79	9,407	2	0	2	86
			TFTM	7,060	1	0	2	65	8,604	2	0	2	79	9,399	2	0	2	86

#### Note:

Available with phosphor-converted amber LED's (nomenclature AMBPC). These LED's produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000 K lumen values and photometric files.

## 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	1.02
10°C	50°F	1.01
20°C	68°F	1.00
<b>25°C</b>	<b>77°F</b>	<b>1.00</b>
30°C	86°F	1.00
40°C	104°F	0.98

### Electrical Load

LEDs	Drive Current (mA)	System Watts	Current (A)					
			120V	208V	240V	277V	347V	480V
20C	350	25 W	0.23	0.13	0.12	0.10	-	-
	530	36 W	0.33	0.19	0.17	0.14	-	-
	700	47 W	0.44	0.25	0.22	0.19	-	-
	1000	73 W	0.68	0.39	0.34	0.29	-	-
30C	350	36 W	0.33	0.19	0.17	0.14	-	-
	530	54 W	0.50	0.29	0.25	0.22	-	-
	700	71 W	0.66	0.38	0.33	0.28	0.23	0.16
	1000	109 W	1.01	0.58	0.50	0.44	-	-

### Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXW2 LED 30C 1000** platform 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).

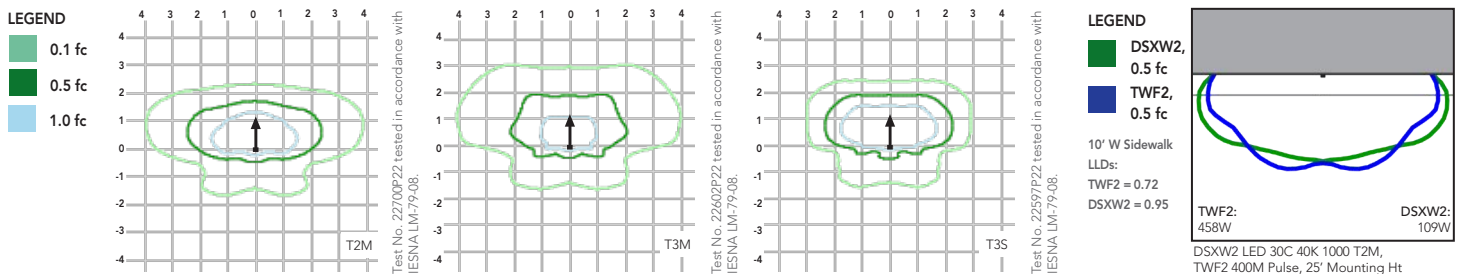
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.92	0.87

## Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Wall Size 2 homepage.

Isofootcandle plots for the DSXW2 LED 30C 1000 40K. Distances are in units of mounting height (25').



## FEATURES & SPECIFICATIONS

### INTENDED USE

The energy savings, long life and easy-to-install design of the D-Series Wall Size 2 make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

### CONSTRUCTION

Two-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. The LED driver is mounted to the door to thermally isolate it from the light engines for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65).

### 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 textured and non-textured finishes.

### OPTICS

Precision-molded proprietary acrylic lenses provide multiple photometric distributions tailored specifically to building mounted applications. Light engines are available in 3000 K (80 min. CRI), 4000 K (70 min. CRI) or 5000 K (70 CRI) configurations.

### ELECTRICAL

Light engine(s) consist of 10 high-efficacy LEDs mounted to a metal-core circuit board to maximize heat dissipation and promote long life (L87/100,000 hrs at 25°C). Class 1 electronic drivers have a power factor >90%, THD <20%, and a minimum 2.5KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

### INSTALLATION

Included universal mounting bracket attaches securely to any 4" round or square outlet box for quick and easy installation. Luminaire has a slotted gasket wireway and attaches to the mounting bracket via corrosion-resistant screws.

### LISTINGS

CSA certified to U.S. and Canadian standards. Rated for -40°C minimum ambient.

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

### WARRANTY

Five year limited warranty. Full warranty terms located at [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx).

**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.





# D-Series Size 2 LED Wall Luminaire



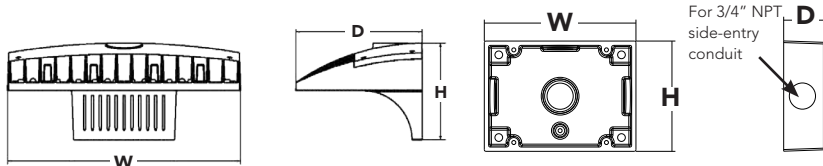
d<sup>series</sup>

## Specifications Luminaire

<b>Width:</b>	18-1/2" (47.0 cm)	<b>Weight:</b>	21 lbs (9.5 kg)
<b>Depth:</b>	10" (25.4 cm)		
<b>Height:</b>	7-5/8" (19.4 cm)		

## Back Box (BBW)

<b>Width:</b>	5-1/2" (14.0 cm)	<b>BBW Weight:</b>	1 lbs (0.5 kg)
<b>Depth:</b>	1-1/2" (3.8 cm)		
<b>Height:</b>	4" (10.2 cm)		



Catalog  
Number

Notes

Type

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

## Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 76% in energy savings over comparable 400W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

## Ordering Information

**EXAMPLE:** DSXW2 LED 30C 700 40K T3M MVOLT DDBTXD

DSXW2 LED											
Series	LEDs	Drive Current		Color temperature		Distribution		Voltage	Mounting	Control Options	Other Options
DSXW2 LED	20C	20 LEDs (two engines)	350 350 mA	30K 3000 K	T2S Type II	MVOLT <sup>1</sup>	Shipped included (blank) Surface mounting bracket	120 <sup>1</sup> 208 <sup>1</sup> 240 <sup>1</sup> 277 <sup>1</sup> 347 <sup>2</sup> 480 <sup>2</sup>	Shipped installed PE Photoelectric cell, button type <sup>4</sup> PER NEMA twist-lock receptacle only (no controls) DMG 0-10V dimming driver (no controls) DCR Dimmable and controllable via ROAM <sup>®</sup> (no controls) <sup>5</sup> PIRH 180° motion/ambient light sensor, 15-30' mtg ht <sup>6</sup>	Shipped installed SF Single fuse (120, 277, 347V) <sup>7</sup> DF Double fuse (208, 240, 480V) <sup>7</sup> HS House-side shield <sup>3</sup> SPD Separate surge protection <sup>8</sup>	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone
	30C	30 LEDs (three engines)	530 530 mA	40K 4000 K	T2M Type II						
			700 700 mA	50K 5000 K	T3S Type III						
			1000 1000 mA (1 A)	AMBPC Amber phosphor converted	T3M Type III						
					T4M Type IV						
					TFTM Forward Throw						
					ASYDF Asym-metric diffuse						

## NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options), or photocontrol (PE option).
- Available with 30 LED/700mA options only (DSXW2 LED 30C 700). DMG option not available.
- Also available as a separate accessory; see Accessories information.
- Photocontrol (PE) requires 120, 208, 240 or 277 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
- Specifies a ROAM<sup>®</sup> enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347V, 480V or PIRH. Additional hardware and services required for ROAM<sup>®</sup> deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamservices.net.
- Specifies the Sensor Switch SBGR-6-ODP control; see Motion Sensor Guide for details. Includes ambient light sensor. Not available with "PE" option (button type photocell) or DCR. Dimming driver standard.
- Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- See the electrical section on page 2 for more details.
- Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.

## Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) <sup>9</sup>
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) <sup>9</sup>
DL1480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) <sup>9</sup>
SCU	Shorting cap <sup>3</sup>
DSXWHS U	House-side shield (one per light engine)
DSXWBSW U	Bird-deterrent spikes
DSXW2WG U	Wire guard accessory
DSXW2VG U	Vandal guard accessory
DSXW2BBW DDBXD U	Back box accessory (specify finish)



## 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.

LEDs	Drive Current (mA)	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
20C (20 LEDs)	530	36 W	T2S	3,649	1	0	1	101	3,876	1	0	1	108	3,429	1	0	1	95
			T2M	3,478	1	0	1	97	3,694	1	0	1	103	3,267	1	0	1	91
			T3S	3,609	1	0	1	100	3,833	1	0	1	106	3,390	1	0	1	94
			T3M	3,572	1	0	1	99	3,794	1	0	1	105	3,356	1	0	1	93
			T4M	3,500	1	0	2	97	3,717	1	0	2	103	3,288	1	0	1	91
			TFTM	3,638	1	0	1	101	3,864	1	0	1	107	3,418	1	0	1	95
			ASYDF	3,252	1	0	2	90	3,454	1	0	2	96	3,056	1	0	2	85
	700	47 W	T2S	4,502	1	0	1	96	4,776	1	0	1	102	4,794	1	0	1	102
			T2M	4,290	1	0	1	91	4,552	1	0	1	97	4,569	1	0	1	97
			T3S	4,452	1	0	1	95	4,723	1	0	2	100	4,741	1	0	2	101
			T3M	4,407	1	0	2	94	4,675	1	0	2	99	4,693	1	0	2	100
			T4M	4,318	1	0	2	92	4,581	1	0	2	97	4,598	1	0	2	98
			TFTM	4,488	1	0	2	95	4,761	1	0	2	101	4,779	1	0	2	102
			ASYDF	4,012	1	0	2	85	4,257	1	0	2	91	4,273	1	0	2	91
	1000	74 W	T2S	5,963	2	0	2	81	6,327	1	0	1	84	6,351	1	0	1	85
			T2M	5,683	2	0	2	77	6,029	1	0	2	80	6,052	1	0	2	81
			T3S	5,896	1	0	2	80	6,256	1	0	2	83	6,280	1	0	2	84
			T3M	5,837	2	0	3	79	6,193	1	0	2	83	6,216	1	0	2	83
			T4M	5,719	1	0	2	77	6,067	1	0	2	81	6,090	1	0	2	81
			TFTM	5,944	1	0	2	80	6,307	1	0	2	84	6,330	1	0	2	84
			ASYDF	5,314	1	0	2	72	5,638	2	0	2	75	5,660	2	0	2	75
30C (30 LEDs)	530	54 W	T2S	4,333	1	0	1	80	5,280	1	0	1	98	5,769	1	0	1	107
			T2M	4,216	1	0	1	78	5,137	1	0	2	95	5,613	1	0	2	104
			T3S	4,279	1	0	1	79	5,214	1	0	1	97	5,696	1	0	1	105
			T3M	4,349	1	0	2	81	5,298	1	0	2	98	5,789	1	0	2	107
			T4M	4,291	1	0	1	79	5,228	1	0	2	97	5,712	1	0	2	106
			TFTM	4,287	1	0	1	79	5,223	1	0	2	97	5,707	1	0	2	106
			T2S	5,346	1	0	1	75	6,513	1	0	1	92	7,118	2	0	2	100
	700	71 W	T2M	5,201	1	0	2	73	6,337	2	0	2	89	6,925	2	0	2	98
			T3S	5,279	1	0	1	74	6,431	1	0	2	91	7,028	1	0	2	99
			T3M	5,365	1	0	2	76	6,536	1	0	2	92	7,143	2	0	3	101
			T4M	5,293	1	0	2	75	6,449	1	0	2	91	7,047	1	0	2	99
			TFTM	5,289	1	0	2	74	6,444	1	0	2	91	7,042	1	0	2	99
	1000	109 W	T2S	7,137	2	0	2	65	8,697	2	0	2	80	9,501	2	0	2	87
			T2M	6,944	2	0	2	64	8,462	2	0	2	78	9,244	2	0	2	85
			T3S	7,047	1	0	2	65	8,588	1	0	2	79	9,381	2	0	2	86
			T3M	7,162	2	0	3	66	8,728	2	0	3	80	9,534	2	0	3	87
			T4M	7,066	1	0	2	65	8,611	1	0	2	79	9,407	2	0	2	86
			TFTM	7,060	1	0	2	65	8,604	2	0	2	79	9,399	2	0	2	86

#### Note:

Available with phosphor-converted amber LED's (nomenclature AMBPC). These LED's produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000 K lumen values and photometric files.

## 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	1.02
10°C	50°F	1.01
20°C	68°F	1.00
<b>25°C</b>	<b>77°F</b>	<b>1.00</b>
30°C	86°F	1.00
40°C	104°F	0.98

### Electrical Load

LEDs	Drive Current (mA)	System Watts	Current (A)					
			120V	208V	240V	277V	347V	480V
20C	350	25 W	0.23	0.13	0.12	0.10	-	-
	530	36 W	0.33	0.19	0.17	0.14	-	-
	700	47 W	0.44	0.25	0.22	0.19	-	-
	1000	73 W	0.68	0.39	0.34	0.29	-	-
30C	350	36 W	0.33	0.19	0.17	0.14	-	-
	530	54 W	0.50	0.29	0.25	0.22	-	-
	700	71 W	0.66	0.38	0.33	0.28	0.23	0.16
	1000	109 W	1.01	0.58	0.50	0.44	-	-

### Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXW2 LED 30C 1000** platform 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).

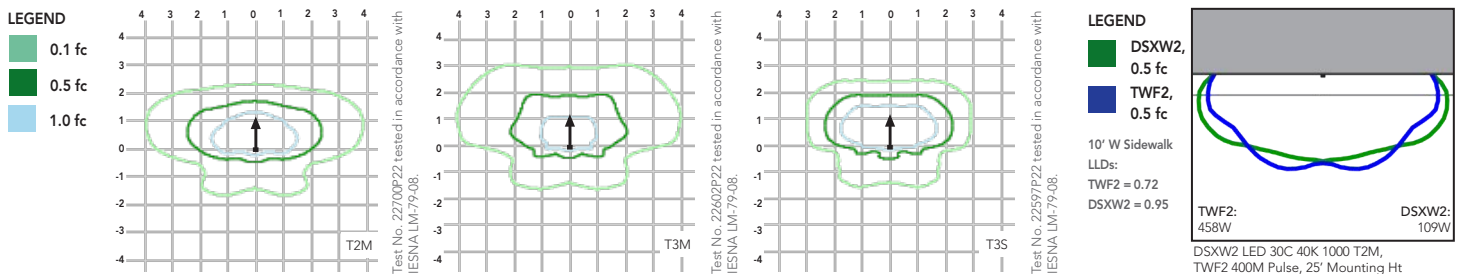
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.92	0.87

## Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Wall Size 2 homepage.

Isofootcandle plots for the DSXW2 LED 30C 1000 40K. Distances are in units of mounting height (25').



## FEATURES & SPECIFICATIONS

### INTENDED USE

The energy savings, long life and easy-to-install design of the D-Series Wall Size 2 make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

### CONSTRUCTION

Two-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. The LED driver is mounted to the door to thermally isolate it from the light engines for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65).

### 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 textured and non-textured finishes.

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# Memorandum



808 SW 3<sup>rd</sup> Avenue  
Suite 300  
Portland, OR 97204  
Phone (503) 287-6825  
Fax (503) 415-2304

**To:** Zach Pelz, AICP City of West Linn Associate Planner  
**From:** Gary Alfson, PE  
Mike Peebles, PE  
**Copies:** Pete Miller, Otak, Inc.  
Mike Robinson, Perkins Coie  
Mike Mahoney, ConAm  
**Date:** July 20, 2015  
**Subject:** West Linn Completeness Letter dated July 16, 2015,  
Planning File No. DR-15-11/LLA-15-01  
**Project No.:** 17122

RE: Application for proposed mixed-use development at the northwest corner of Tannler Drive and Blankenship Road.

The following are responses to completeness items provided by the City of West Linn in the July 16, 2015 completeness determination letter: (*City comments in italics*, Otak responses follow)

1. 55.070(C)
  - a. 99.038(E)(4) - *A copy of the minutes of the meetings, produced by the neighborhood association, or the applicant if the NA did not produce minutes.*

**Response:** Meeting minutes have been added to Appendix B (Neighborhood Meeting Documents) of the application.

2. 55.070(D)(2)(a-i)
  - a. Site Analysis per CDC 55.110
    - i. 55.110(B)(6)(d) - *Site analysis must include areas shown on Map 17 as areas vulnerable to landslide.*

**Response:** Map 17 area shown on Sheet P1.3 in NE corner of the site. A reference to Map 17 and the project area has been added to Appendix F (Geotechnical Report) of the application.

- b. Site Plan per CDC 55.120
  - ii. 55.120(E) - *site plan must show easements on site and on adjacent properties.*
  - iii. 55.120(F)(2) - *the site plan must show the location, dimensions and setback distances of all existing structures and driveways on adjoining properties.*

**Response:** Information added on sheets P1.2 and P2.1



e. *Landscape Plan per CDC 55.150*

i. *55.150(B)(1) - the landscape plan does not detail the proposed erosion control measures.*

**Response:** A new sheet EC1.0 (Preliminary Erosion Control) has been added to the plan set.

f. *Please include a graphic or drawing to depict the various luminaires proposed throughout the site.*

**Response:** Luminaire cut sheets have been added to Appendix G (Lighting Report) of the application.

3. *46.030(H) - requires that the plan show specifications for parking area signage and bumper guards.*

**Response:** Information added on sheet P2.1

4. *Traffic Impact Analysis -*

a. *Proposed mitigations for Blankenship Rd/ Tannler Dr do not adequately address the project traffic impacts shown. Applicant should further evaluate potential mitigation strategies (right-in, right out, signalization, realignment, etc.) for this intersection and include strategies to maintain pre-development operating conditions (or better).*

b. *Compatibility with long-range transportation system plan improvements for Tannler Drive needs to be addressed. This development would preclude the preferred Tannler Drive realignment alternative from the 2008 City of West Linn Transportation System Plan.*

c. *Additional traffic from the proposed project does indeed contribute to the operational issues at 10" Street/g" Avenue, including increased vehicle queuing. Update discussion of this in the TIA and provide ideas for how this project could mitigate its impacts to this intersection.*

**Response:** An updated Traffic Impact Analysis has been included as Appendix E (Traffic Impact Report)

5. *Other Engineering-related details required*

a. *Please show the access to the stormwater detention pond.*

**Response:** Added to sheets P3.0 and P4.0.

b. *Please show the proposed street lighting on the site plan.*

**Response:** Added Tannler Drive street light symbols to sheet P2.0.

c. *Please show the proposed stormwater treatment/ detention facility that will capture runoff from a new sidewalk along the west side of Tannler Dr.*

**Response:** Added proposed LIDA facility along Tannler Drive to sheet P2.0, P2.1, and P3.0.

d. *Please correct conflicting information regarding right-of-way dedication along Tannler Dr.: two-feet is proposed on page 29 of the submittal but a 1-foot dedication is shown on the site plan (P2.1).*

**Response:** Updated narrative to reference 1-foot dedication to match site plan (P2.1).

*e. Please show an 8-foot public utility easement along Tannler Drive.*

**Response:** Added to sheet P1.2.

*f. Please correct conflicting information regarding the width of parking and travel lanes along Tannler Dr.: page 29 of the submittal mentions an 11-foot parking lane and 13-foot travel lane; however, an 8-foot parking lane and 14-foot travel lane are shown on the site plan (page P1.1) and a 9-foot parking lane and 13-foot travel lane are shown on page P2.1.*

**Response:** Updated narrative to reference parking (8') and travel lane (13') widths on Tannler Drive to match site plan (P2.1).

*g. The 26-foot wide proposed driveway approach on Tannler Dr (including the standard 6-foot) wings will exceed the maximum approach width of 36-feet.*

**Response:** Driveway approach revised to 24' throat with 6' wings (total width 36') as shown on sheet P2.1.

*h. Please show the water meter in a public easement or in the public right-of-way.*

**Response:** Added to sheet P4.0.

*i. Please show a manhole at the connection of the sanitary sewer.*

**Response:** Added to sheet P4.0.

*j. Please show the proposed pavement improvements along Tannler Dr.*

**Response:** No additional pavement widening is proposed on Tannler Drive. Limits of Tannler Drive frontage improvements are hatched on sheet P2.0

*k. Please correct the striping plan on Tannler Dr. to terminate the on-street parking at an appropriate distance from the proposed left turn lane.*

**Response:** Updated striping and labeling for on-street parking on Tannler Drive on sheet P2.1.

*l. Please show the mitigation plan at 10th and Blankenship (Figure 10, page 42 of the Traffic Impact Analysis) on the site plan set.*

**Response:** Added new sheet P2.2. to the plan set.

July 20, 2015

Michael C. Robinson  
MRobinson@perkinscoie.com  
D. +1.503.727.2264  
F. +1.503.346.2264

**VIA MESSENGER**

Mr. Zach Pelz  
City of West Linn Planning and Building Department  
22500 Salamo Road, Suite 1000  
West Linn, OR 97068

**Re: City of West Linn Planning File Numbers DR-15-11/LLA-15-01;  
Applicant's Response to July 16, 2015 Incompleteness Determination**

Dear Mr. Pelz:

This office represents the applicant, ConAm Properties, LLC in the above-referenced applications. This letter responds to the incompleteness determination pursuant to ORS 227.178(3) by the City of West Linn (the "City") dated July 16, 2015.

ConAm Properties, LLC has submitted all of the missing information listed in Items 1-5 of the July 16, 2015 letter pursuant to ORS 227.178(2)(a). The application is deemed complete for purposes of ORS 227.178(1) upon receipt today, July 20, 2015, by the City of all of the missing materials.

Please let me know if you have any questions.

Very truly yours,



Michael C. Robinson

MCR:sv

Enclosures

cc: Mr. Mike Mahoney (via email) (w/o encls.)  
Mr. Rob Morgan (via email) (w/o encls.)  
Mr. Pete Miller (via email) (w/o encls.)  
Mr. Gary Alfson (via email) (w/o encls.)  
Mr. John Boyd (via email) (w/o encls.)

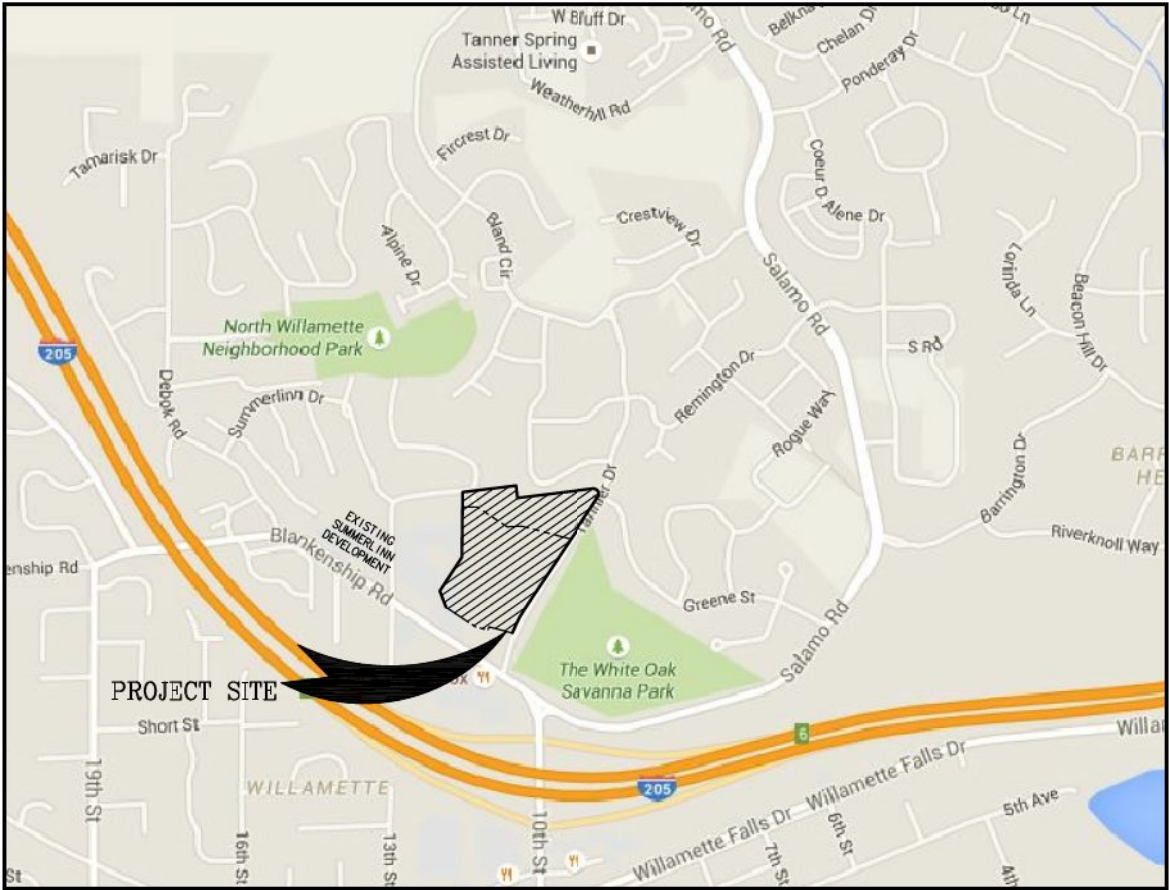


# TANNER DRIVE MIXED-USE DEVELOPMENT

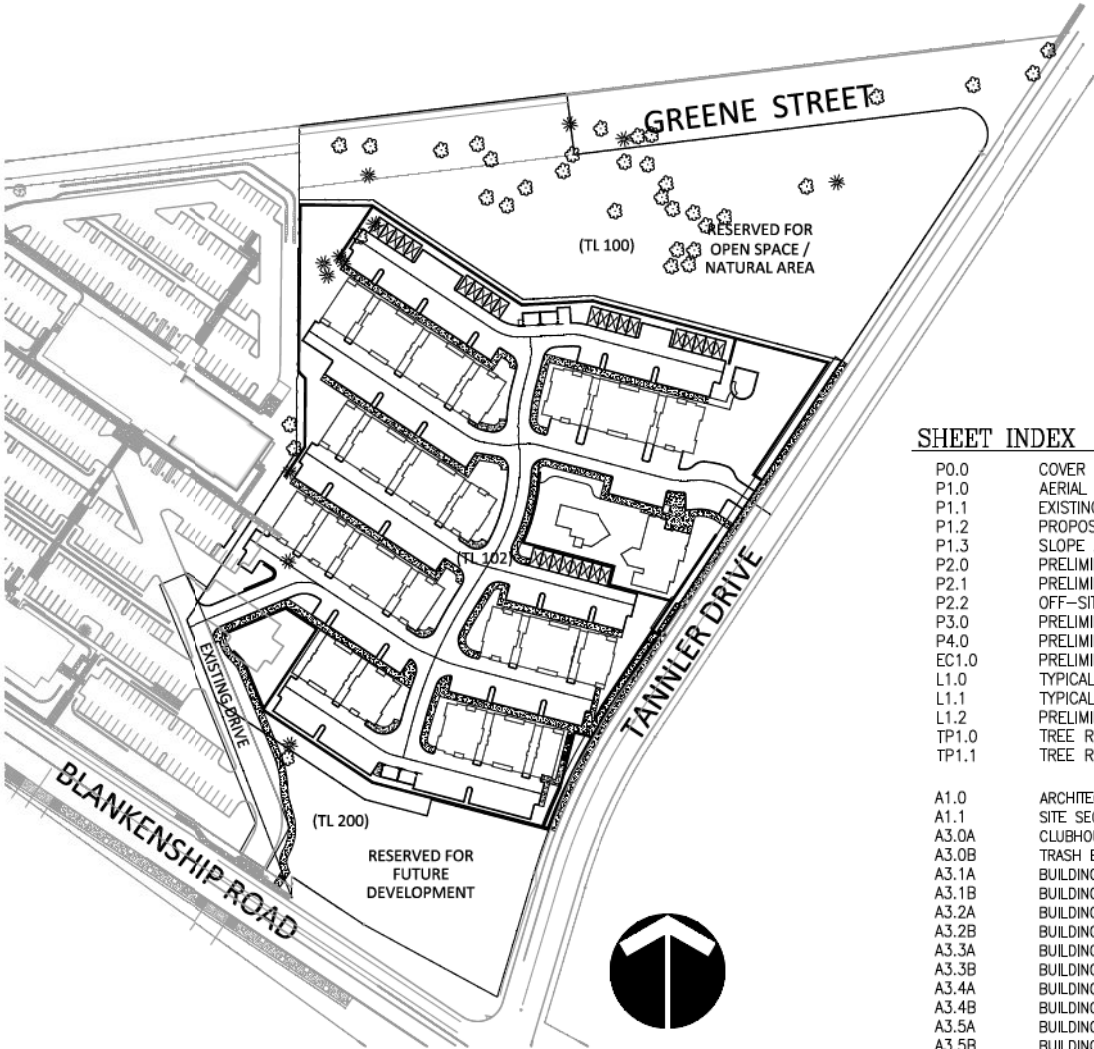
## CLASS II DESIGN REVIEW REQUEST & PROPERTY LINE ADJUSTMENT

### CITY OF WEST LINN, OREGON

XREF LIST  
Ltscale: 1  
Resolved  
016--WEST SITE  
P17122X230  
P17122X001A  
016XTOPO  
---Images---  
Wlmap2



VICINITY MAP  
N.T.S.



PROJECT MAP  
N.T.S.

#### SHEET INDEX

P0.0	COVER SHEET
P1.0	AERIAL PHOTO/SITE ANALYSIS PLAN
P1.1	EXISTING CONDITIONS PLAN
P1.2	PROPOSED PROPERTY LINE ADJUSTMENT PLAN
P1.3	SLOPE ANALYSIS PLAN
P2.0	PRELIMINARY SITE PLAN
P2.1	PRELIMINARY SITE DIMENSION PLAN
P2.2	OFF-SITE INTERSECTION MITIGATION
P3.0	PRELIMINARY GRADING PLAN
P4.0	PRELIMINARY COMPOSITE UTILITY PLAN
EC1.0	PRELIMINARY EROSION CONTROL PLAN
L1.0	TYPICAL PLANTING PLANS
L1.1	TYPICAL PLANTING NOTES AND DETAILS
L1.2	PRELIMINARY LANDSCAPE PLAN
TP1.0	TREE REMOVAL AND PRESERVATION PLAN
TP1.1	TREE REMOVAL AND PRESERVATION DATA
A1.0	ARCHITECTURAL SITE PLAN
A1.1	SITE SECTIONS
A3.0A	CLUBHOUSE ELEVATIONS
A3.0B	TRASH ENCLOSURES AND GARAGES
A3.1A	BUILDING TYPE 1 ELEVATIONS
A3.1B	BUILDING TYPE 1 ELEVATIONS
A3.2A	BUILDING TYPE 2 ELEVATIONS
A3.2B	BUILDING TYPE 2 ELEVATIONS
A3.3A	BUILDING TYPE 3 ELEVATIONS
A3.3B	BUILDING TYPE 3 ELEVATIONS
A3.4A	BUILDING TYPE 4 ELEVATIONS
A3.4B	BUILDING TYPE 4 ELEVATIONS
A3.5A	BUILDING TYPE 5 ELEVATIONS
A3.5B	BUILDING TYPE 5 ELEVATIONS
A3.6A	BUILDING TYPE 6 ELEVATIONS
A3.6B	BUILDING TYPE 6 ELEVATIONS
A3.7A	BUILDING TYPE 7 ELEVATIONS
A3.7B	BUILDING TYPE 7 ELEVATIONS
A4.0	SITE INFORMATION SIGN
A4.1	BUILDING SIGNAGE

#### OWNERS

NAME: JEFFREY I. PARKER AND WILLIAM S. WILT  
ADDRESS: 1800 BLANKENSHIP ROAD, SUITE 200  
WEST LINN, OR 97068

#### APPLICANT/DEVELOPER

NAME: CONAM PROPERTIES, LLC  
CONTACT: ROB MORGAN  
ADDRESS: 3990 RUFFIN ROAD, SUITE 100  
SAN DIEGO, CA 92123  
PHONE: (658) 614-7378

#### ARCHITECT/CIVIL ENGINEER

NAME: OTAK INCORPORATED  
ENGINEER: GARY ALFSON, P.E.  
ARCHITECT: RON DEAN, AIA  
ADDRESS: 808 SW THIRD AVENUE, SUITE 300  
PORTLAND, OR 97204  
PHONE: (503) 287-6825  
FAX: (503) 415-2304

#### ARBORIST CONSULTANT

NAME: MORGAN HOLEN & ASSOCIATES  
CONTACT: MORGAN HOLEN  
ADDRESS: 3 MONROE PARKWAY, SUITE P 220  
LAKE OSWEGO, OR 97035  
PHONE: (503) 971-409-9354  
FAX:

#### TRAFFIC ENGINEER

NAME: MACKENZIE  
CONTACT: BRENT AHREND  
ADDRESS: PO BOX 14310  
PORTLAND, OR 97293  
PHONE: (503) 224-9560  
FAX: (503) 228-1285

#### GEOTECHNICAL ENGINEER

NAME: GEODESIGN, INC.  
CONTACT: GEORGE SAUNDERS, P.E.  
ADDRESS: 15575 SW SEQUOIA PKWY, SUITE 100  
PORTLAND, OR 97224  
PHONE: (503) 968-8787

#### SITE INFORMATION

TAX LOTS 100 AND 102 OF CCTM 2S 1E 35C  
SITE DESIGN REVIEW APPLICATION SITE INCLUDES ADJUSTED  
TAX LOTS 100 AND 102. THIS AREA EQUALS 10.19 ACRES  
TAX LOT 200 IS INCLUDED FOR PURPOSES OF PROPERTY LINE  
ADJUSTMENT APPLICATION TO INCREASE THE SIZE OF TAX LOT  
102 PRIOR TO DEVELOPMENT.

#### LAND USE PLANNER/ATTORNEY

NAME: MICHAEL ROBINSON  
CONTACT: PERKINS COIE LLP  
ADDRESS: 1120 NW COUCH STREET, TENTH FLOOR  
PORTLAND, OR 97209-4128  
PHONE: (503) 727-2000

#### LIGHTING DESIGNER

NAME: RICK HARRISON, PE  
CONTACT: MEC ENGINEERING, INC  
ADDRESS: 520 SW 6TH AVE, SUITE 640  
PORTLAND, OR 97204  
PHONE: (503) 250-4863

LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

COVER SHEET

PRELIMINARY

ConAm Properties, LLC  
3990 RUFFIN ROAD, SUITE 100  
SAN DIEGO, CA 92123  
PHONE: (658) 614-7200  
FAX: (658) 614-1646

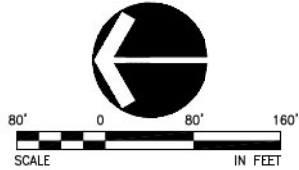
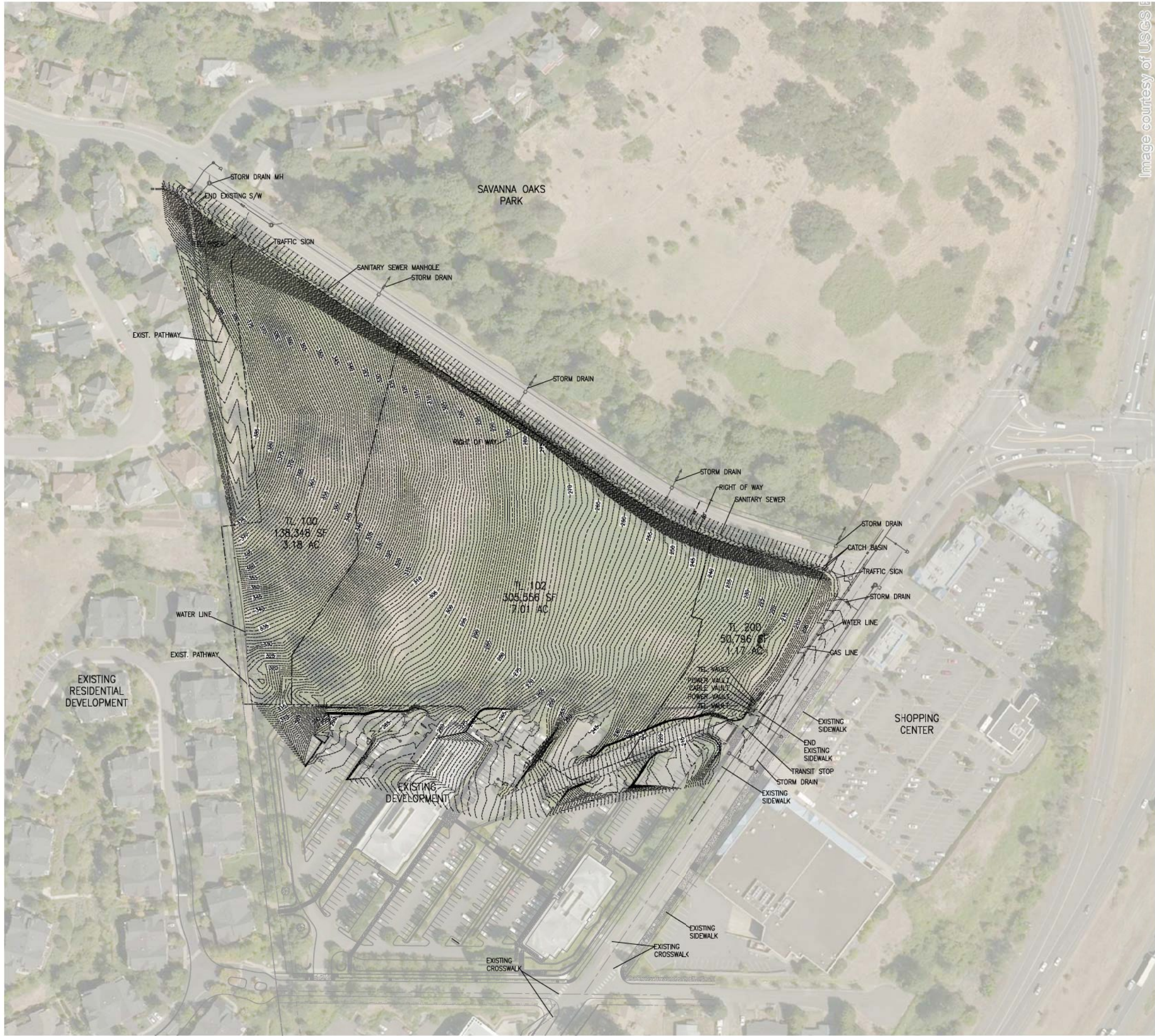
otak  
HammiGlobal Partner  
808 SW 3rd Ave., Ste. 300  
Portland, OR 97204  
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17122 P17122P00  
Project No. Drawing No.  
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XREF LIST  
Ltscale: 50  
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P17122X230  
016XTOPO  
016-WEST SITE  
17122X001

EXISTING



LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

AERIAL PHOTO/SITE ANALYSIS PLAN

PRELIMINARY

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SAN DIEGO, CA 92123  
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FAX: (658) 614-1646

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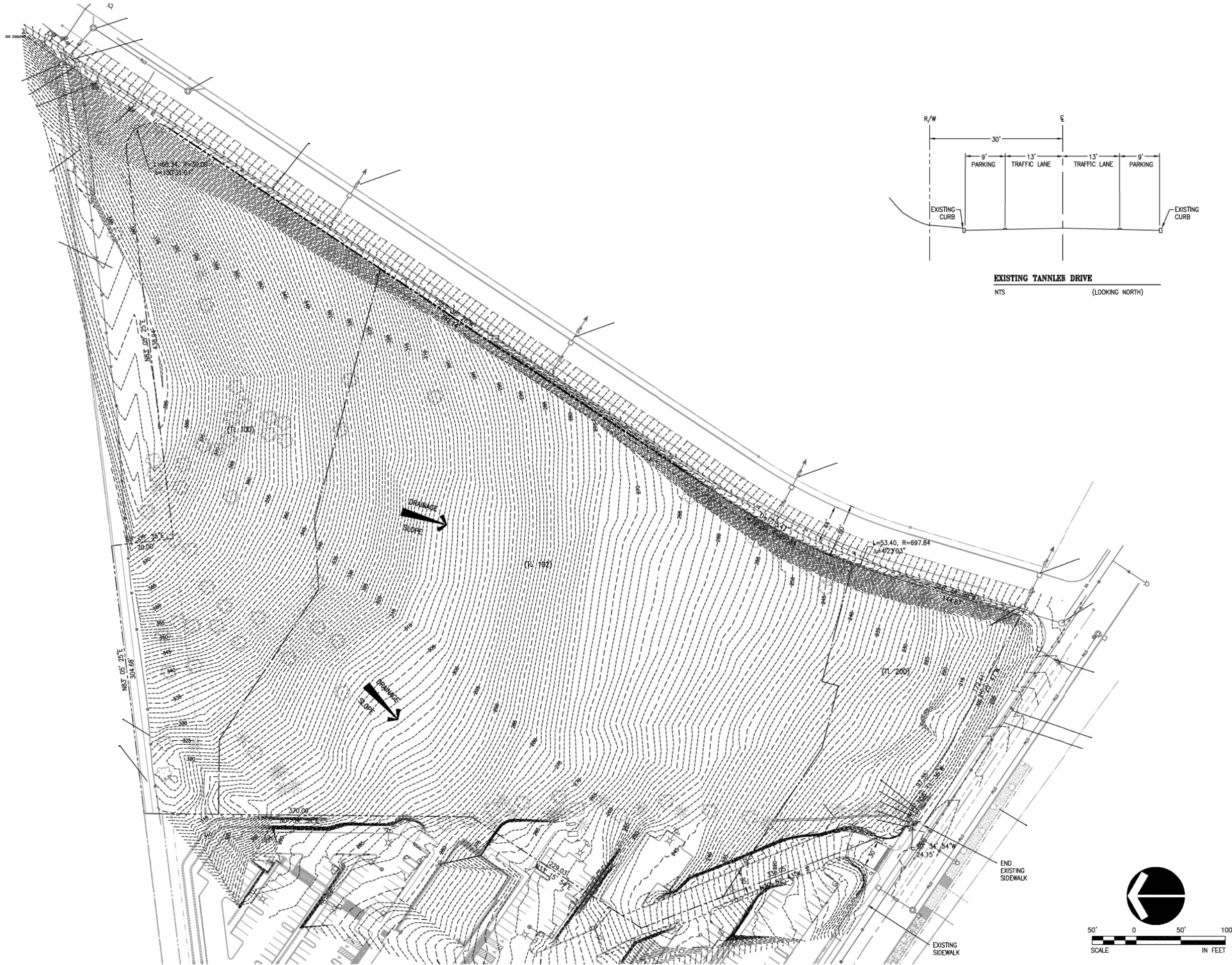
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LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

EXISTING CONDITIONS PLAN



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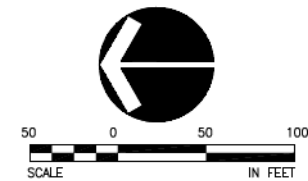
PRELIMINARY

ConAm Properties, LLC  
3990 RUFFIN ROAD, SUITE 100  
SAN DIEGO, CA 92123  
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NO.	DATE	BY	REVISION COMMENTS
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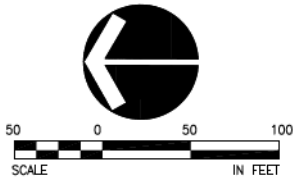
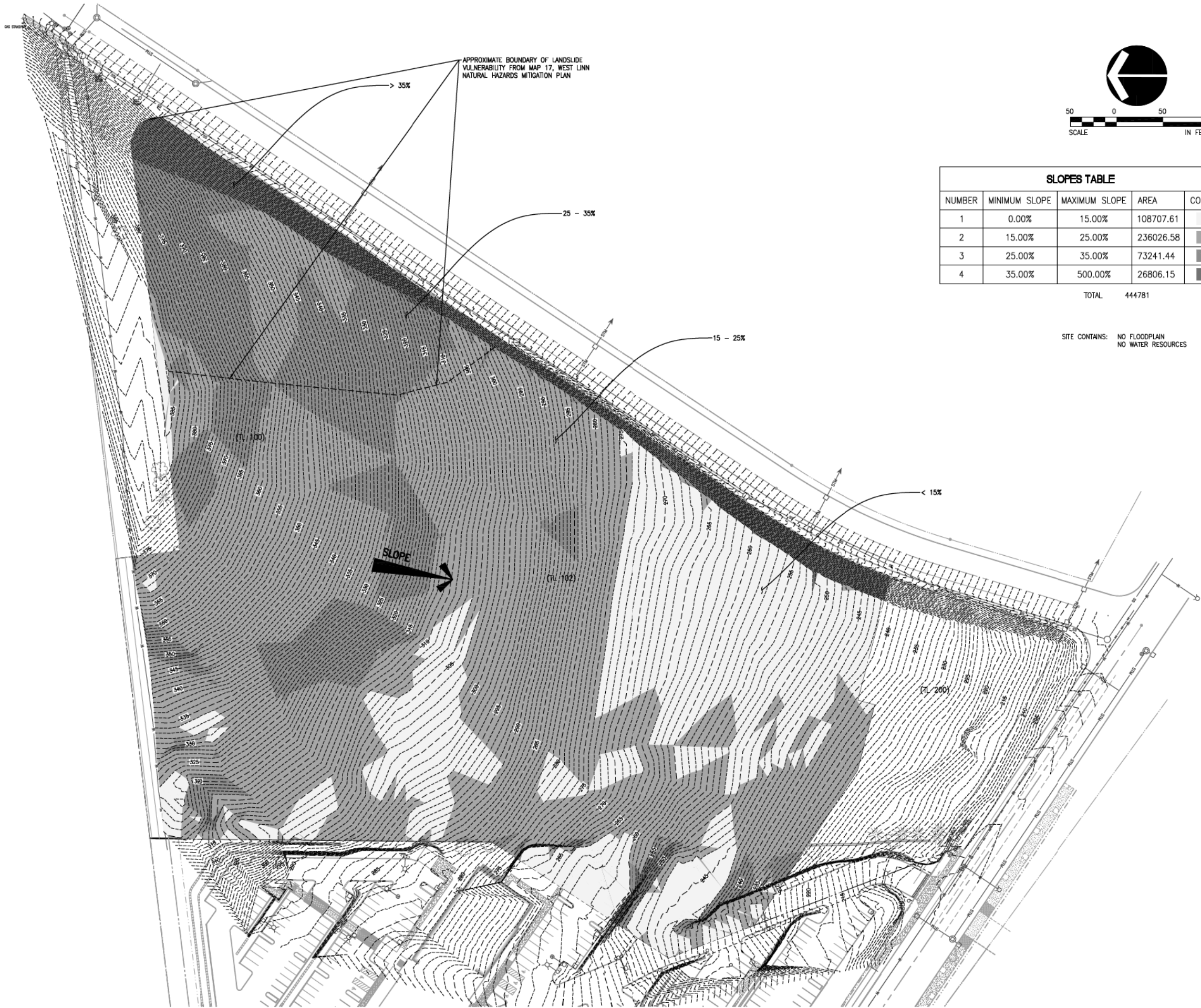
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XREF LIST  
Ltscale: 50  
Resolved  
P17122X230  
016XTOPO  
016-WEST SITE  
17122X001

EXISTING



SLOPES TABLE					
NUMBER	MINIMUM SLOPE	MAXIMUM SLOPE	AREA	COLOR	% OF TOTAL
1	0.00%	15.00%	108707.61		24.4
2	15.00%	25.00%	236026.58		53.1
3	25.00%	35.00%	73241.44		16.5
4	35.00%	500.00%	26806.15		6.0

TOTAL 444781

SITE CONTAINS: NO FLOODPLAIN  
NO WATER RESOURCES

PRELIMINARY

ConAm Properties, LLC  
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SAN DIEGO, CA 92123  
PHONE: (858) 614-7200  
FAX: (858) 614-1646

LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

SLOPE ANALYSIS PLAN



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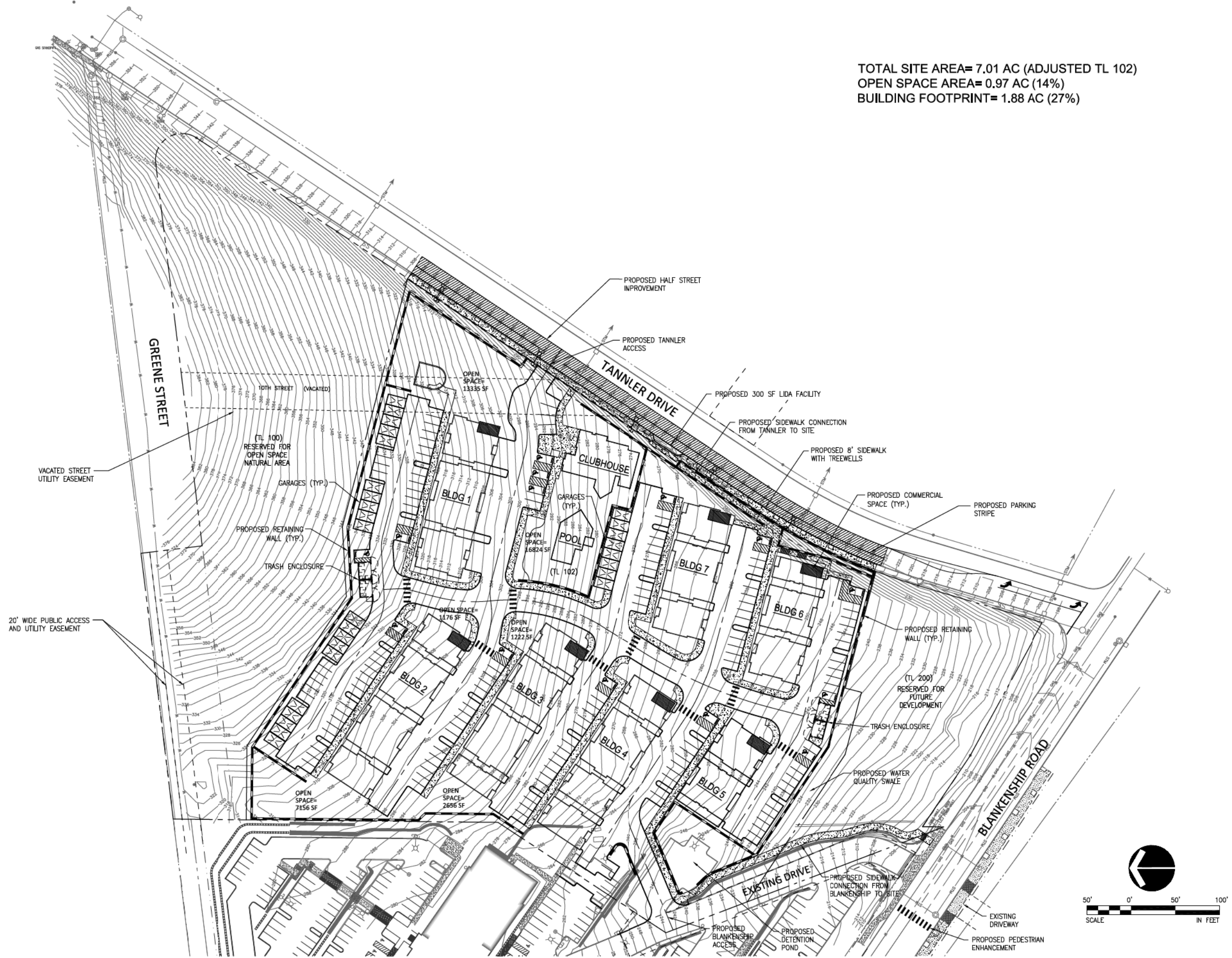
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P1.3

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TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

PRELIMINARY SITE PLAN

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Project No. Drawing No.  
**P2.0**  
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Design	Drawn	Checked	Date	Initial	Issue Date:
MAP	SLR	BS	05/02		

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ConAm Properties, LLC  
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SAN DIEGO, CA 92123  
PHONE: (858) 614-7200  
FAX: (858) 614-1646

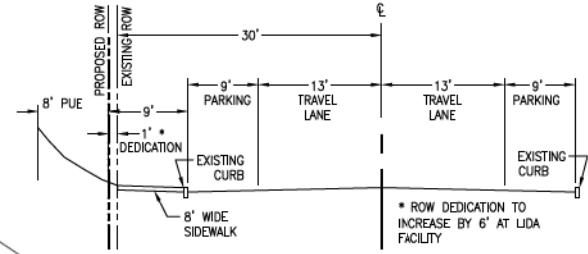


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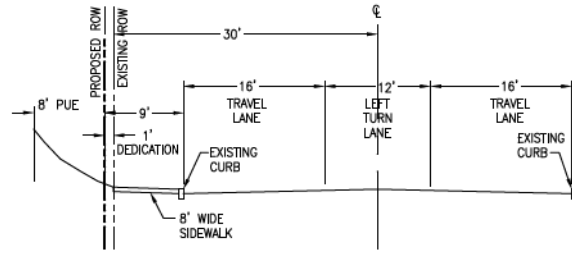
**PARKING NOTES / DIMENSIONS**

- 1 ADA ACCESSIBLE PARKING SPACE: 9'X18', 9'X20' ALONG MAIN ACCESS
- 2 TYPICAL PARKING SPACE: 9'X18', 9'X20' ALONG MAIN ACCESS
- 3 COVERED UNDER BUILDING PARKING
- 4 GARAGE PARKING
- 5 ON-STREET PARALLEL PARKING, 7'X23'

**TANNER DRIVE SECTION A-A**



**TANNER DRIVE SECTION B-B**



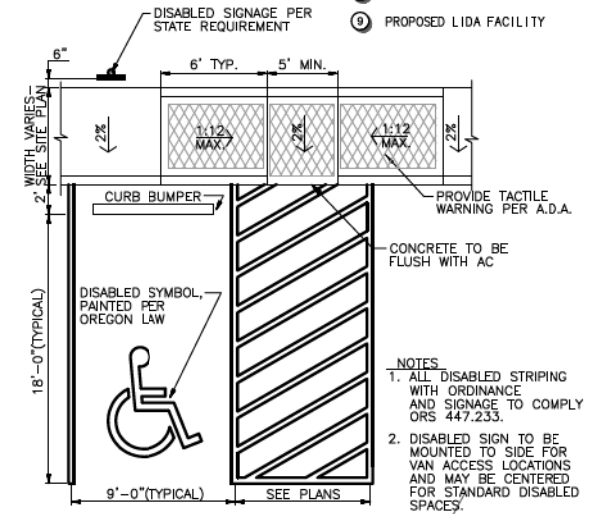
**LEGEND**

- CURB
- CURB & GUTTER
- PUBLIC SIDEWALK
- ADA PARKING STALL
- LIGHT POLE
- FIRE HYDRANT
- ADA ROUTE
- GARAGE PARKING
- RETAINING WALL
- CROSSWALK

**KEY NOTES**

- 1 8' CONCRETE SIDEWALK
- 2 ASPHALTIC CONCRETE PAVEMENT
- 3 24' COMMERCIAL DRIVEWAY APPROACH (PUBLIC IMPROVEMENT)
- 4 PROPOSED VERTICAL CURB
- 5 FIRE HYDRANT
- 6 TRASH ENCLOSURE
- 7 PEDESTRIAN CROSSING
- 8 6' CONCRETE SIDEWALK
- 9 PROPOSED LIDA FACILITY

**DISABLED PARKING LAYOUT**



- NOTES**
1. ALL DISABLED STRIPING WITH ORDINANCE AND SIGNAGE TO COMPLY ORS 447.233.
  2. DISABLED SIGN TO BE MOUNTED TO SIDE FOR VAN ACCESS LOCATIONS AND MAY BE CENTERED FOR STANDARD DISABLED SPACES.

LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT  
WEST LINN, OREGON

PRELIMINARY SITE DIMENSION PLAN



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17122 P17122P21  
Project No. Drawing No.

**P2.1**

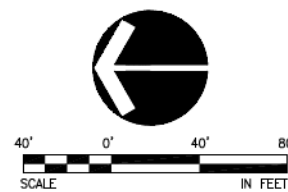
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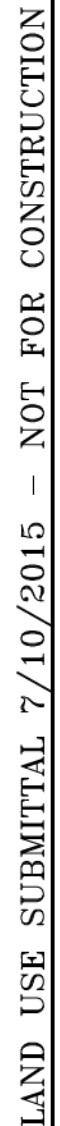
ConAm Properties, LLC  
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## TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

## OFF-SITE INTERSECTION MITIGATION



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17122 P17122P2  
Project No. Drawing

P2.2

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## PRELIMINARY

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FAX: (858) 614-1646



XREF LIST  
Lscale: 40  
Resolved  
P17122X230  
016-WEST SITE EXISTING  
016XTOPC  
P17122X001A  
P17122X430

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LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

PRELIMINARY GRADING PLAN

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


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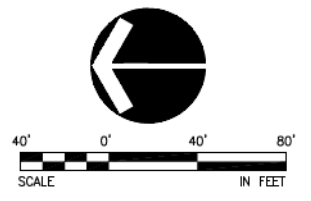
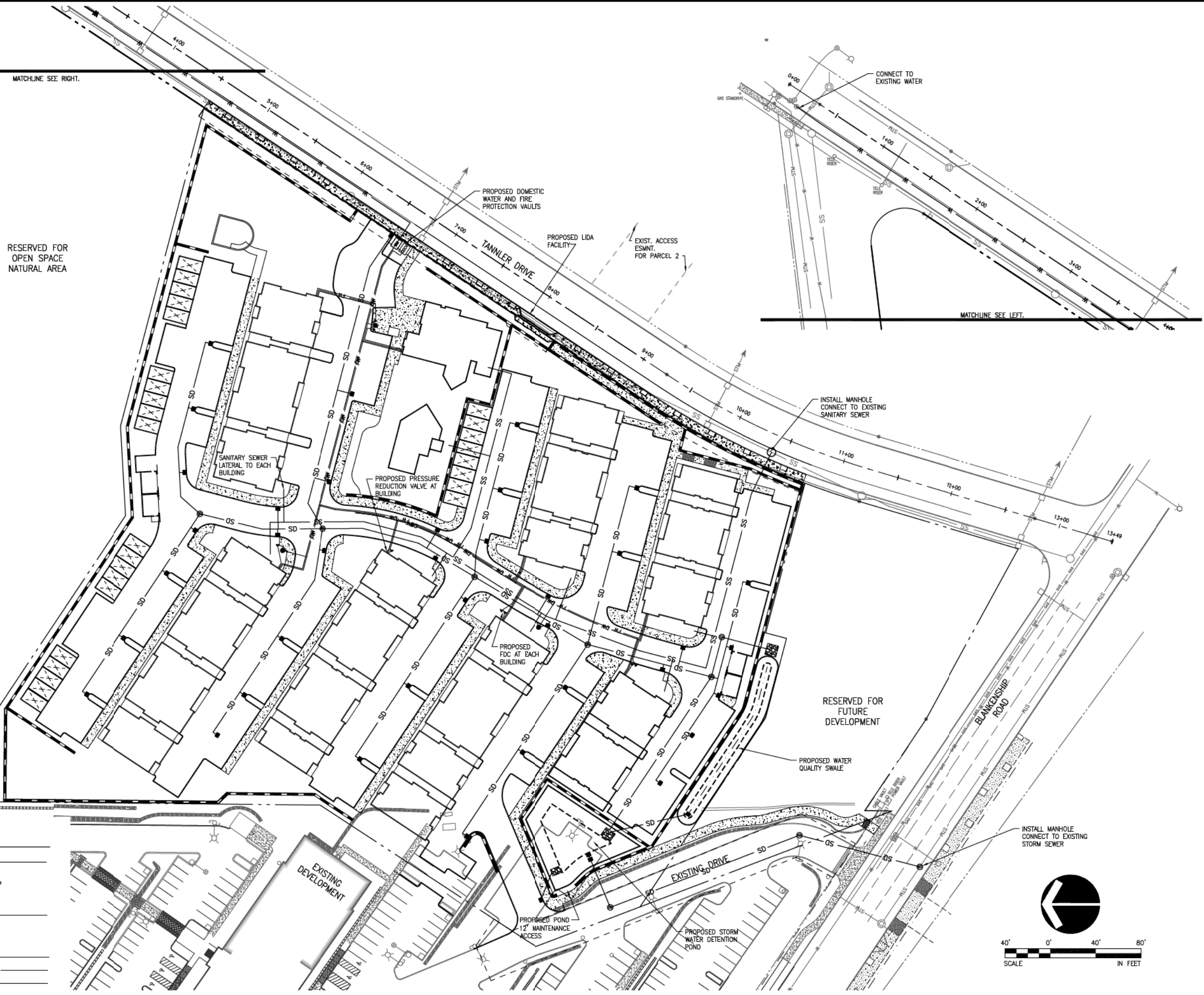
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LEGEND

- |                         |   |
|-------------------------|---|
| PUBLIC STORM LINE       | SD  |
| STORM MANHOLE           |  |
| STORM CATCH BASIN       |  |
| STORM CLEANOUT          |  |
| PUBLIC SANITARY LINE    | SS  |
| SANITARY MANHOLE        |  |
| SANITARY CLEANOUT       |  |
| PUBLIC WATER LINE       | W   |
| PRIVATE DOMESTIC        | DW  |
| PRIVATE FIRE WATER LINE | FW  |
| WATER BLOWOFF           |  |
| FIRE HYDRANT            |  |

RESERVED FOR  
OPEN SPACE  
NATURAL AREA



LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT  
WEST LINN, OREGON

PRELIMINARY COMPOSITE UTILITY PLAN

  
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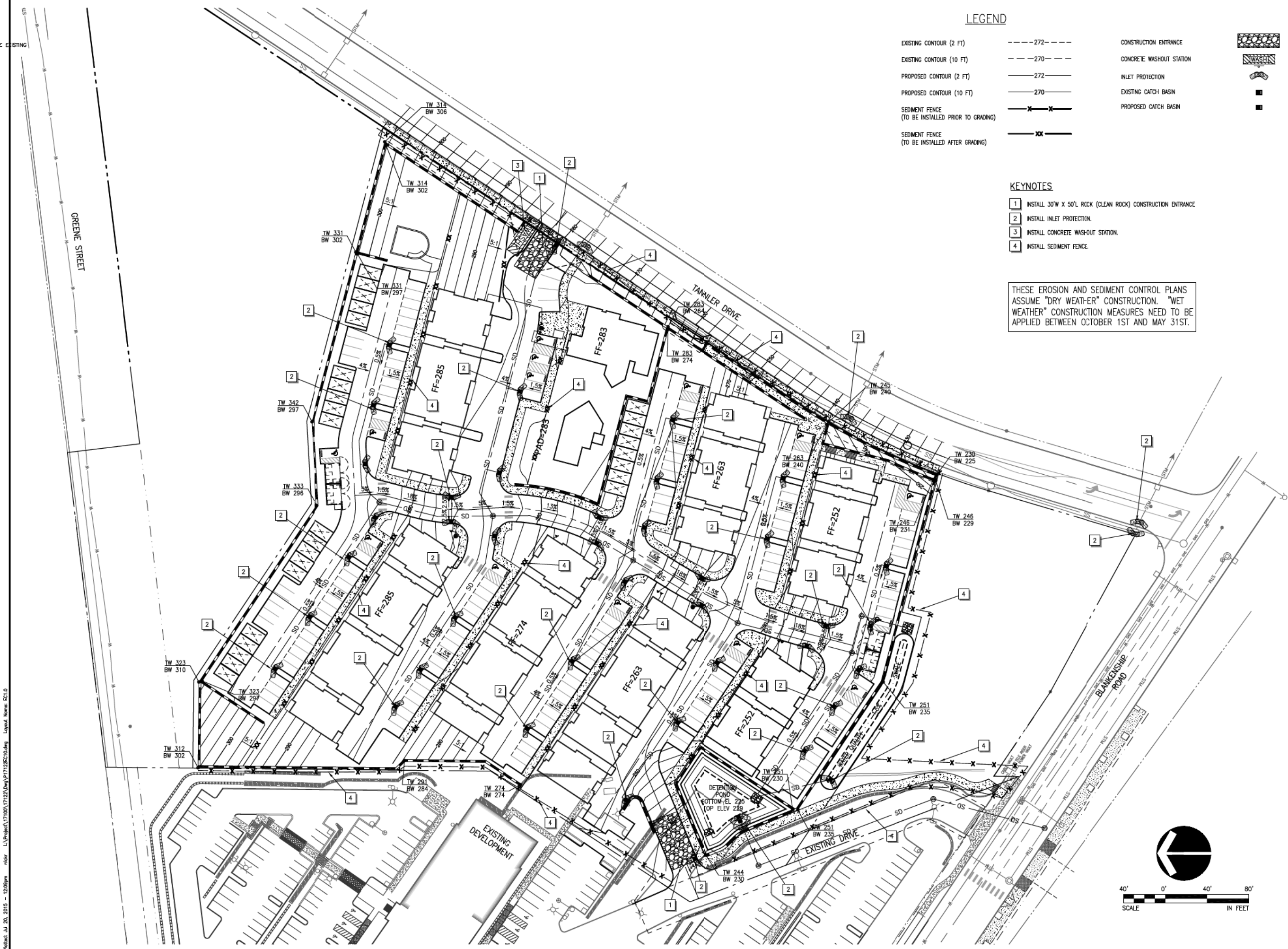
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Initial Issue Date:		Date	Initial Issue Date:
		05/02	

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PHONE: (858) 614-7200  
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XREF LIST  
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016--WEST SITE EXISTING  
016KTOPO  
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LEGEND

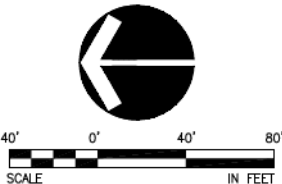
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EXISTING CONTOUR (10 FT) ---270---  
PROPOSED CONTOUR (2 FT) ---272---  
PROPOSED CONTOUR (10 FT) ---270---  
SEDIMENT FENCE (TO BE INSTALLED PRIOR TO GRADING) ---X---  
SEDIMENT FENCE (TO BE INSTALLED AFTER GRADING) ---XX---
- CONSTRUCTION ENTRANCE  
CONCRETE WASHOUT STATION  
INLET PROTECTION  
EXISTING CATCH BASIN  
PROPOSED CATCH BASIN



KEYNOTES

- 1 INSTALL 30'W X 50'L ROCK (CLEAN ROCK) CONSTRUCTION ENTRANCE  
2 INSTALL INLET PROTECTION.  
3 INSTALL CONCRETE WASH-OUT STATION.  
4 INSTALL SEDIMENT FENCE.

THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. "WET WEATHER" CONSTRUCTION MEASURES NEED TO BE APPLIED BETWEEN OCTOBER 1ST AND MAY 31ST.



LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

PRELIMINARY EROSION CONTROL PLAN

PRELIMINARY

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SAN DIEGO, CA 92123  
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Portland, OR 97204  
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EC1.0  
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Datum: NGVD 29

REF. LIST  
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P17122X230  
016- WEST SITE  
016XTOPC  
P17122X001A  
P17122X430



PLANTING LEGEND

TREES

SYMBOL	QUANTITY	COMMON NAME / Botanical name:	Size and Description
	25	EASTERN REDBUD / CERCIS CANADENSIS:	1.75" CAL.
	13	YELLOWWOOD / CLADRASTIS KENTUCKEA:	1.75" CAL.
	9	BIG LEAF MAPLE / ACER MACROPHYLLUM:	1.75" CALIPER NOT LESS THAN 10' HIGH
	15	JAPANESE ZELKOVA / ZELKOVA SERRATA:	1.75" CAL.
	7	DOUGLAS FIR / PSEUDOTSUGA MENZESII:	8'-10' HT.
	12	GREEN ARROW ALASKA YELLOW CEDAR / CHAMAECYPARIS NOOTKATENSIS 'GREEN ARROW':	8'-10' HT.
	19	GRAND FIR / ABIES GRANDIS:	8'-10' MIN.HT., B&B*
	8	LILY FLOWERED MAGNOLIA / MAGNOLIA LILIFLORA:	1.75" CALIPER, B&B*
	5	RED ALDER / ALNUS RUBRA:	1.75" CAL., B&B*
	12	LITTLE LEAF LINDEN / TILIA CORDATA:	1.75" CAL., B&B*
	3	MAJESTIC BEAUTY INDIAN HAWTHORNE / RHAPHIOLEPIS 'MAJESTIC BEAUTY' (TREE FORM):	1.75" CAL., B&B*

\*IN GROUND FABRIC BAGS MAY BE SUBSTITUTED FOR B&B. CONTRACTOR IS CAUTIONED TO PROVIDE MORE INITIAL WATER FOR IN-GROUND FABRIC BAGS THAN IS NORMALLY PROVIDED FOR B&B.

SHRUBS AND GROUNDCOVER

SYMBOL	QTY	COMMON NAME / Botanical name:	Size and description	Spacing
	38,458	HELLER'S HOLLY / ILEX CRENATA 'HELLER'	1 GAL.	5' o.c.
		SWORD FERN / POLYSTICHUM MUNITUM	1 GAL.	4' o.c.
		RED FLOWERING CURRANT / RIBES SANGUINEUM	1 GAL.	5' o.c.
		SPIRAEA / SPIRAEA THUNBERGII	1 GAL.	5'-6" o.c.
		OREGON GRAPE / MAHONIA AQUIFOLIUM	1 GAL.	3' o.c.
		DWARF BURNING BUSH / EUONYMUS ALATA 'COMPACTA'	1 GAL.	3'-6" o.c.
		BLUE MOPHEAD HYDRANGEA / HYDRANGEA MACROPHYLLUM	1 GAL.	4.5' o.c.
		SARCOCOLLA / SARCOCOLLA CONFUSA	1 GAL.	3' o.c.
		2 GAL., 3" O.C.		
		BIG BLUE LILY TURF / LIRIOPE MUSCARI	1 GAL.	3' o.c.
		DWARF FOTHERGILLA / FOTHERGILLA GARDENII	1 GAL.	3' o.c.
		CRIMSON PYGMY BARBERRY / BERBERIS THUNBERGII 'CRIMSON PYGMY':	1 GAL.	3' o.c.

GROUND COVER LIST

COMMON NAME / Botanical name, Size, Spacing		
KINKINNICK / ARCTOSTAPHYLOS UVA-URS	4" POT	18" o.c.
BEARBERRY COTONEASTER / COTONEASTER DAMMER	1 GAL.	24" o.c.
SILVER DRAGON LILY TURF / LIRIOPE SPICATA 'SILVER DRAGON'	4" POT	18" o.c.
CREeping OREGON GRAPE / MAHONIA REPENS	4" POT	18" o.c.
PACHYSANDRA / PACHYSANDRA TERMINALIS	1 GAL.	24" o.c.

OTHER

SYMBOL	QTY	DESCRIPTION
	2,737 SF	STORM FACILITY TREATMENT AREA
	4,824 SF	STORM FACILITY SIDESLOPES
	20,388 SF	NATIVE PLANT SEED MIX
	4,356 SF	LAWN SEED: Diamond Green Turf Mixture (Extreme Low Maintenance Turf Mix) From Sunmark Seeds International Bbs./1000 SF

LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

PRELIMINARY LANDSCAPE PLAN

PRELIMINARY

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SAN DIEGO, CA 92123  
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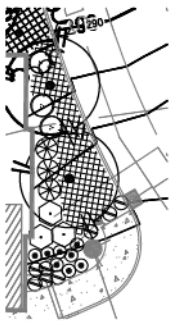
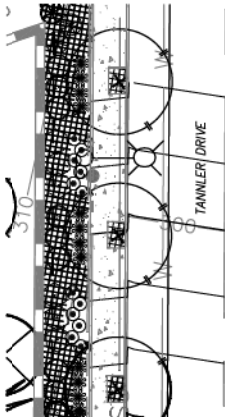
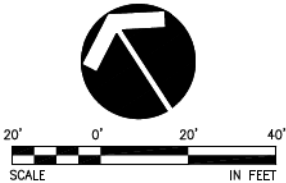
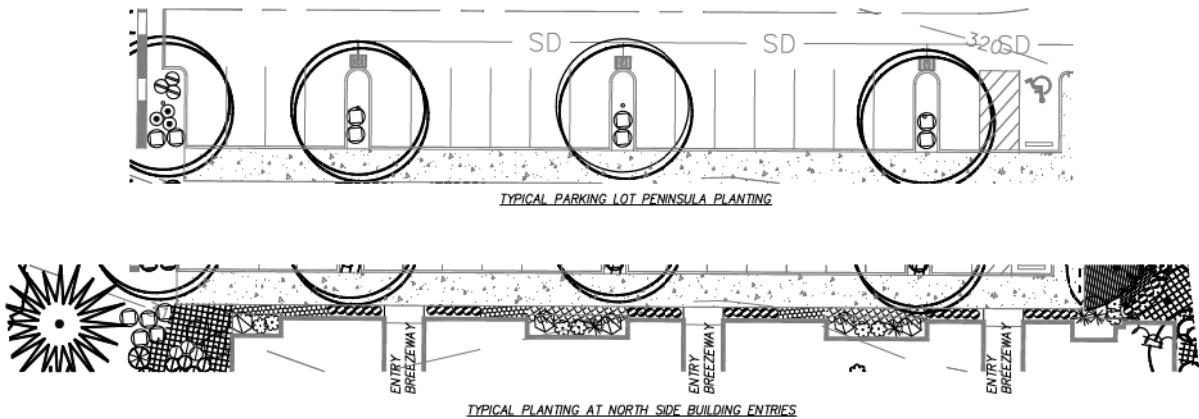


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Project No. Drawing No.  
L1.0  
Sheet No.  
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Datum: NGVD 29





PLANTING LEGEND

TREES		
SYMBOL	COMMON NAME / Botanical name:	Size and Description
	EASTERN REDBUD / <i>CERCIS CANADENSIS</i>	1.75" CAL.
	YELLOWWOOD / <i>CLADRASTIS KENTUCKEA</i>	1.75" CAL.
	BIG LEAF MAPLE / <i>ACER MACROPHYLLUM</i>	1.75" CALIPER
	JAPANESE ZELKOVA / <i>ZELKOVA SERRATA</i>	1.75" CAL.
	DOUGLAS FIR / <i>PSEUDOTSUGA MENZIESII</i>	8'-10' HT.
	GREEN ARROW ALASKA YELLOW CEDAR / <i>CHAMAECYPARIS NOOTKATENSIS</i>	'GREEN ARROW': 8'-10' HT.
	GRAND FIR / <i>ABIES GRANDIS</i>	8'-10' MIN.HT., B&B*
	LILY FLOWERED MAGNOLIA / <i>MAGNOLIA LILLIFLORA</i>	1.75" CALIPER, B&B*
	RED ALDER / <i>ALNUS RUBRA</i>	1.75" CAL., B&B*
	LITTLE LEAF LINDEN / <i>TILIA CORDATA</i>	1.75" CAL., B&B*
	MAJESTIC BEAUTY INDIAN HAWTHORNE / <i>RHAPHIOLEPIS 'MAJESTIC BEAUTY'</i> (TREE FORM)	1.75" CAL., B&B*

\*IN-GROUND FABRIC BAGS MAY BE SUBSTITUTED FOR B&B.  
CONTRACTOR IS CAUTIONED TO PROVIDE MORE INITIAL WATER FOR IN-GROUND FABRIC BAGS THAN IS NORMALLY PROVIDED FOR B&B.

SHRUBS AND GROUNDCOVER LIST

SYMBOL	COMMON NAME / Botanical name:	Size and description	Spacing
	HELLER'S HOLLY / <i>ILEX CRENATA 'HELLERI'</i>	1 GAL.	5' o.c.
	SWORD FERN / <i>POLYSTICHUM MUNITUM</i>	1 GAL.	4' o.c.
	RED FLOWERING CURRANT / <i>RIBES SANGUINEUM</i>	1 GAL.	5' o.c.
	SPIRAEA / <i>SPIRAEA THUNBERGI</i>	1 GAL.	5'-6" o.c.
	OREGON GRAPE / <i>MAHONIA AQUIFOLIUM</i>	1 GAL.	3' o.c.
	DWARF BURNING BUSH / <i>EUONYMUS ALATA 'COMPACTA'</i>	24" HT., 4" O.C.	3'-6" o.c.
	BLUE MOPHEAD HYDRANGEA / <i>HYDRANGEA MACROPHYLLUM</i>	1 GAL.	4.5' o.c.
	SARCOCOCCA / <i>SARCOCOCCA CONFUSA</i>	1 GAL.	3' o.c.
	BIG BLUE LILY TURF / <i>LIRIOPE MUSCARI</i>	1 GAL.	3' o.c.
	DWARF FOTHERGILLA / <i>FOTHERGILLA GARDENII</i>	1 GAL.	3' o.c.
	CRIMSON PYGMY BARBERRY / <i>BERBERIS THUNBERGII 'CRIMSON PYGMY'</i>	1 GAL.	3' o.c.
	RED FOUNTAIN GRASS / <i>PENNISETUM SETACEUM 'RUBRUM'</i>	1 GAL.	3' o.c.

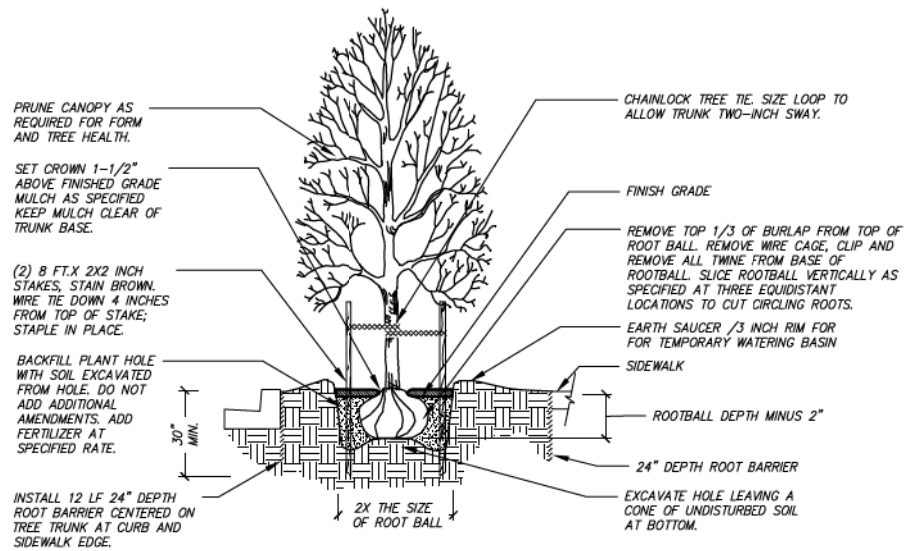
GROUND COVERS		
COMMON NAME / Botanical name:	Size	Spacing
KINNICKINICK / <i>Arctostaphylos uva-ursi</i>	4" POT	18" o.c.
BEARBERRY COTONEASTER / <i>Cotoneaster dammeri</i>	1 GAL.	24" o.c.
SILVER DRAGON LILY TURF / <i>Liriope spicata 'Silver Dragon'</i>	4" POT	18" o.c.
CREeping OREGON GRAPE / <i>Mahonia repens</i>	4" POT	18" o.c.
PACHYSANDRA / <i>Pachysandra terminalis</i>	1 GAL.	24" o.c.

LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

TYPICAL PLANTING PLANS

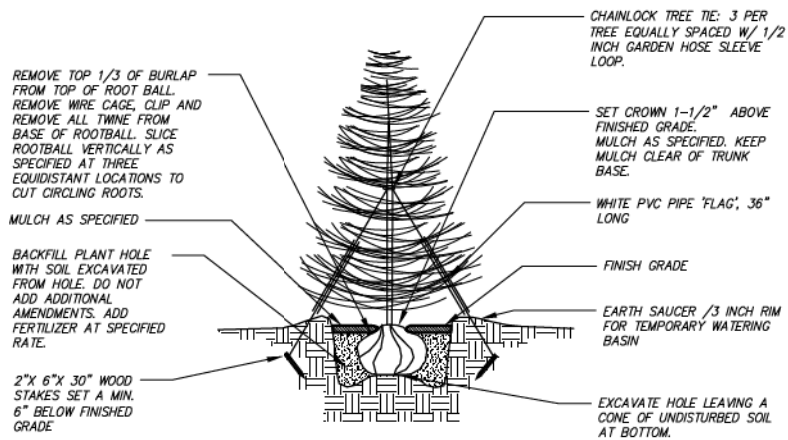


TREE PLANTING WITH ROOT BARRIER

SCALE: N.T.S.

8

L1.2

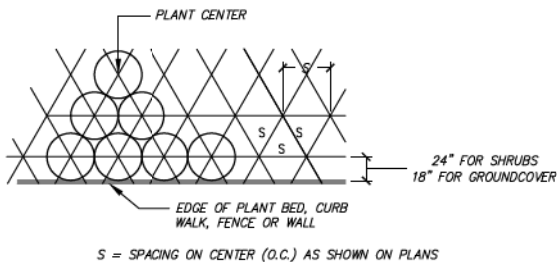


EVERGREEN TREE PLANTING

SCALE: N.T.S.

7

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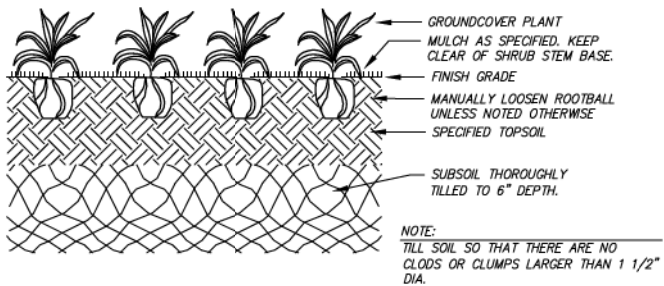


PLANT SPACING

SCALE: N.T.S.

6

L1.2

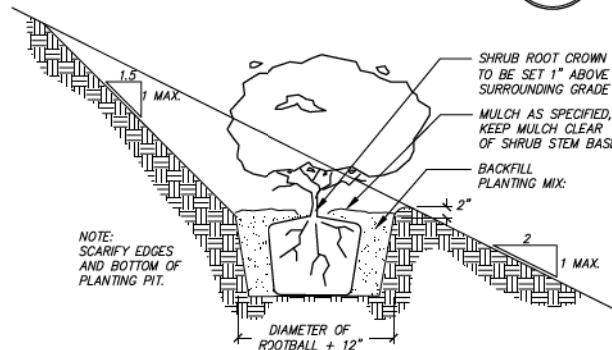


GROUNDCOVER PLANTING DETAIL

SCALE: N.T.S.

5

L1.2

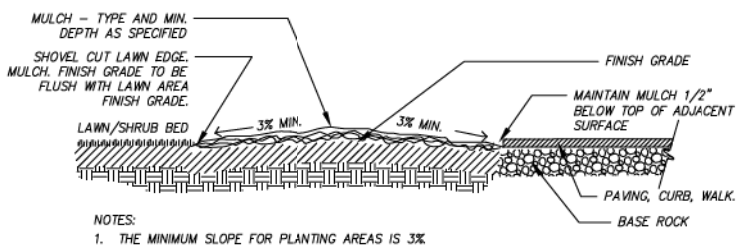


TREE/SHRUB PLANTING ON SLOPE

SCALE: N.T.S.

4

L1.2

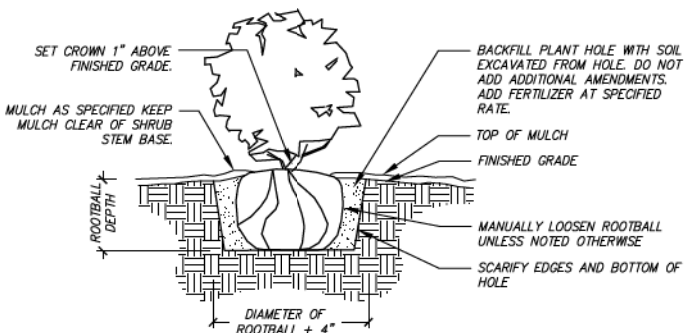


SECTION - PLANTING BED GRADING

SCALE: N.T.S.

3

L1.2

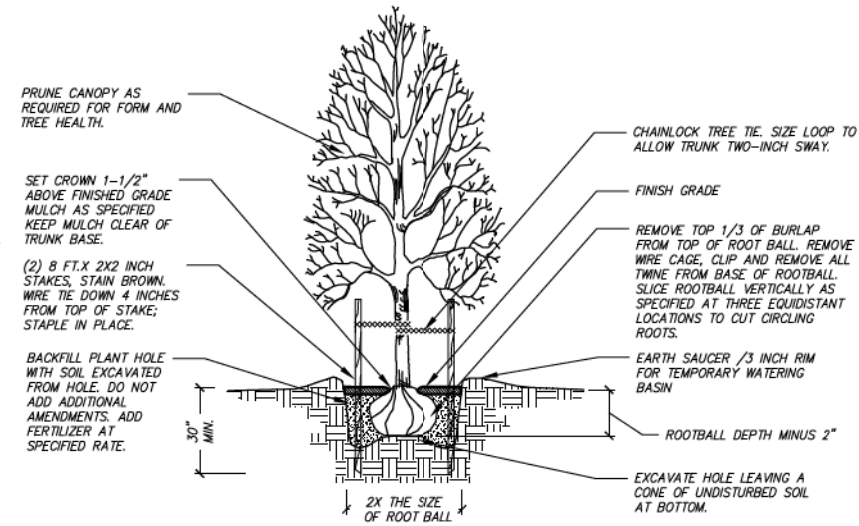


SHRUB PLANTING DETAIL

SCALE: N.T.S.

2

L1.2



TREE PLANTING DETAIL

SCALE: N.T.S.

1

L1.2

UTILITY NOTE:

CONTRACTOR IS CAUTIONED THAT EXISTING UNDERGROUND FACILITIES OCCUR THROUGHOUT THE WORK AREAS INCLUDING BUT NOT LIMITED TO POWER, GAS, TELEPHONE, WATER SUPPLY, AND IRRIGATION. CONTRACTOR SHALL MARK THE FACILITIES BEFORE WORK, POTHOLE WHERE NECESSARY, AND PROTECT DURING CONSTRUCTION. IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE IF ANY CONFLICTS ARE FOUND.

LANDSCAPE NOTES:

- GENERAL: SEVERAL OF THE FOLLOWING NOTES SUMMARIZE THE PROJECT SPECIFICATIONS FOR THE CONTRACTORS CONVENIENCE. IF A DISCREPANCY EXISTS BETWEEN THESE NOTES AND THE PROJECT SPECIFICATIONS THE SPECIFICATIONS SHALL OVERRIDE.
- THE LANDSCAPE CONTRACTOR IS TO THOROUGHLY REVIEW THE SITE. IF THERE ARE ANY DISCREPANCIES BETWEEN THE PLAN AND THE EXISTING CONDITIONS THE OWNERS REPRESENTATIVE IS TO BE NOTIFIED IMMEDIATELY.
- IF THE LANDSCAPE CONTRACTOR STARTS WORK BEFORE SITE CONDITIONS ARE READY OR CONTINUES WORK IN ADVERSE CONDITIONS WITHOUT PRIOR APPROVAL THEY WILL BE RESPONSIBLE FOR ANY ADDITIONAL COSTS RELATING TO THE CONDITION.
- IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE CONCERNING ANY CONDITION AT ANY TIME DURING CONSTRUCTION THAT IS DETRIMENTAL TO THE HEALTH AND VIGOROUS GROWTH OF THE SPECIFIED PLANT MATERIAL.
- PROVIDE QUANTITY OF PLANT MATERIAL INDICATED IN PLANT LIST OR THE QUANTITY REQUIRED TO COVER AREAS INDICATED AT SPECIFIED SPACING, WHICHEVER IS GREATER.
- IF AN AREA DIFFERS SIGNIFICANTLY IN SIZE FROM THAT SCALED ON DRAWING AND REQUIRES MORE OR LESS MATERIAL THE OWNERS REPRESENTATIVE IS TO BE INFORMED.
- TOPSOIL: 8" DEPTH IMPORT TOPSOIL SHALL BE PREPARED AND AMENDED IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS. DO NOT APPLY TOPSOIL AT STORM FACILITIES.
- SOIL ANALYSIS: CONTRACTOR SHALL OBTAIN A COPY OF OWNER-PROVIDED SOIL TEST AND AMEND AND FERTILIZE IN CONFORMANCE WITH RECOMMENDATIONS INDICATED IN THE REPORT.
- COMPOST: APPLY 4 INCH DEPTH SPECIFIED COMPOST OVER ALL PLANTING AREAS EXCEPT STORM FACILITIES. TILL IN TO IMPORT TOPSOIL TO A DEPTH OF 6 INCHES.
- FERTILIZER: APPLY FERTILIZER TO ALL PLANT HOLES AND TURF AREAS OF THE TYPE, QUANTITY, APPLICATION METHOD, AND TIMING NOTED IN THE SPECIFICATIONS. DO NOT APPLY FERTILIZER AT STORM FACILITIES.
- BARK MULCH: SPREAD 3 INCH DEPTH FINE-MEDIUM GRADE FIR/HEMLOCK BARK OVER ALL SHRUB BEDS EXCEPT AT STORM FACILITIES. KEEP BARK CLEAR OF TREE AND SHRUB STEM BASE.
- PLANTING POCKETS: BACK FILL PLANT HOLE WITH SOIL EXCAVATED FROM HOLE. DO NOT ADD ADDITIONAL AMENDMENTS.
- PLANT MATERIAL: ALL PLANT MATERIAL SHALL MEET MINIMUM QUALITY AND SIZE REQUIREMENTS ESTABLISHED IN THE AMERICAN STANDARD FOR NURSERY STOCK GUIDELINES.
- LEAVE PLANT NAME IDENTIFICATION TAGS ON TEN PERCENT OF ALL TREES AND SHRUBS INSTALLED TO AID INSPECTORS IN VERIFYING THAT SPECIFIED PLANTS HAVE BEEN INSTALLED.
- PLANT CENTER OF SHRUBS A MINIMUM OF 24 INCHES FROM ADJACENT PAVING. PLANT CENTER OF GRASS COVERS A MINIMUM OF 18 INCHES FROM ADJACENT PAVING.
- WHERE PLANT BED SLOPE IS LESS THAN 3% MOUND PLANTING BED AREAS 3% MINIMUM FOR POSITIVE DRAINAGE.
- SEE SPECIFICATIONS FOR FINAL INSPECTION, MAINTENANCE, AND WARRANTY REQUIREMENTS UNIQUE TO THIS PROJECT.
- SEE SPECIFICATIONS FOR OTHER LANDSCAPE CONSTRUCTION REQUIREMENTS.

LAND USE SUBMITTAL 7/10/2015 - NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

PLANTING NOTES AND DETAILS



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Project No. Drawing No.

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NO.	DATE	BY	REVISION COMMENTS
1	7/20/15		COMPLETENESS REVIEW

Design	Drawn	Checked	Date	Initial	Issue Date
MAP	SLR	BS	05/02		

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## EXISTING

Layout Name: TP1.0

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Plotting


 TREE PROTECTIVE FENCING  
 TREE TO BE REMOVED  
 PROTECTION ZONE: 10' BEYOND DRIP LINE OF TREE  
 TREE CANOPY  
 ARBORIST TO MONITOR EXCAVATION

1. THE CONTRACTOR IS REQUIRED TO MEET ON SITE WITH THE PROJECT ARBORIST TO DISCUSS REMOVAL AND TREE PROTECTION PRIOR TO ANY CONSTRUCTION.
2. THE LOCATION OF THE TREE PROTECTION ZONE IS 10 FEET BEYOND THE DRIPLINE OF THE SIGNIFICANT TREES AND AT THE DRIPLINE OF NON-SIGNIFICANT TREES AS SHOWN ON THE PLAN.
3. THE TREE PROTECTION FENCING SHOULD BE INSTALLED PRIOR TO DEMOLITION, GRUBBING, GRADING, OR CONSTRUCTION BEGINS.
4. TREE PROTECTION FENCING SHOULD BE 6" HIGH CHAIN LINK FENCING SECURED TO 2" DIAMETER GALVANIZED IRON POSTS, DRIVEN TO A DEPTH OF AT LEAST 2' AND NO FURTHER APART THAN 10'.
5. AN 8.5x11-INCH SIGN STATING, "WARNING: TREE PROTECTION ZONE," SHOULD BE DISPLAYED ON EACH PROTECTION FENCE AT ALL TIMES.
6. PRIOR TO START OF CONSTRUCTION, THE PROJECT ARBORIST SHALL VERIFY IN WRITING TO THE CITY ARBORIST THAT THE TREE PROTECTION FENCING HAS BEEN SATISFACTORILY INSTALLED.
7. THE TREE PROTECTION ZONE SHALL BE MAINTAINED THROUGHOUT THE PERIOD OF CONSTRUCTION UNLESS DIRECTED BY THE PROJECT ARBORIST, IN COORDINATION WITH THE CITY ARBORIST.

8. THE CONTRACTOR SHALL NOT STORE CONSTRUCTION MATERIALS OR EQUIPMENT WITHIN THE TREE PROTECTION ZONE.
9. EXCAVATION WITHIN THE TPZ WILL NOT BE ALLOWED EXCEPT UNDER THE GUIDANCE OF A QUALIFIED ARBORIST.
10. THE PROJECT ARBORIST SHALL SUPERVISE THE EXECUTION OF THIS PLAN DURING CONSTRUCTION ACTIVITIES THAT COULD IMPACT RETAINED TREES AND PROVIDE TREE PROTECTION REPORTS TO THE CLIENT AND CITY ON A REGULAR BASIS.
11. THE ARBORIST SHALL PROVIDE A FINAL REPORT TO THE DEVELOPER AND THE CITY. THE REPORT SHALL INCLUDE CONCERNS ABOUT ANY TREES NEGATIVELY IMPACTED DURING CONSTRUCTION AND DESCRIBE MEASURES NEEDED TO MAINTAIN AND PROTECT REMAINING TREES FOR A MINIMUM OF TWO YEARS AFTER PROJECT COMPLETION.

NOTE:  
ARBORIST'S REPORT INCLUDED IN APPLICATION PACKET

LAND USE SUBMITTAL 7/10/2015 – NOT FOR CONSTRUCTION

TANNER DRIVE MIXED-USE DEVELOPMENT

WEST LINN, OREGON

## TREE REMOVAL AND PRESERVATION PLAN

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17122 TP17122M  
Project No. Drawing

TP1.0

Sheet No. \_\_\_\_\_  
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EXISTING

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MHA1472 Tanner and Blankenship - Tree Data 4-28-15 Rev. 7-9-15.xlsx Page 1 of 3									
No.	Common Name	Species Name	DBH*	C-Rad*	Cond*	Defects and Comments	Sig?	Treatment	
1	Norway maple	Acer platanoides	10	12	F	invasive species, some included bark, street tree	Off-site	protect	
18	bigleaf maple	Acer macrophyllum	2x8	12	F	moderate structure	Off-site	protect	
2	pacific madrone	Arbutus menziesii	12	16	G	visual assessment inhibited by blackberries	Off-site	protect	
2b	pacific madrone	Arbutus menziesii	8	10	G	visual assessment inhibited by blackberries	Off-site	protect	
3	Douglas-fir	Pseudotsuga menziesii	12	14	F	moderate structure	No	remove	
4	black cottonwood	Populus trichocarpa	15	22	F	inherent species limitations, old broken top with new leader, increased risk potential	No	remove	
4b	bigleaf maple	Acer macrophyllum	14	20	F	natural regen on slope above street	No	remove	
5	Douglas-fir	Pseudotsuga menziesii	12	14	G	visual assessment inhibited by blackberries	No	remove	
6	Douglas-fir	Pseudotsuga menziesii	18	16	G	visual assessment inhibited by blackberries	No	remove	
7	black cottonwood	Populus trichocarpa	20	20	F	inherent species limitations, moderate structure, trunk decay	No	remove	
8	Douglas-fir	Pseudotsuga menziesii	34	25	G	visual assessment inhibited by blackberries, few broken branches, long lateral limbs	Yes	retain	
9	Oregon white oak	Quercus garryana	10	14	G	visual assessment inhibited by blackberries	Yes	retain	
16	Oregon white oak	Quercus garryana	20	24	P	very poor structure, trunk decay	No	remove	
11	Oregon white oak	Quercus garryana	50	40	G	codominant stems with included bark and a prominent seam, high risk	No	remove	
12	pacific madrone	Arbutus menziesii	10	14	F	some branch dieback, moderate structure	No	remove	
13	Oregon white oak	Quercus garryana	20	20	P	very poor structure, trunk decay	No	remove	
14	Oregon white oak	Quercus garryana	22	24	G	no major defects, dead branches	Yes	retain	
15	Oregon white oak	Quercus garryana	10	10	G	no major defects, retain with group	Yes	retain	
15b	Oregon white oak	Quercus garryana	2x8	10	G	codominant stems, retain with group	Yes	retain	
15c	Oregon white oak	Quercus garryana	10	10	G	no major defects, retain with group	Yes	retain	
16	Oregon white oak	Quercus garryana	18	20	G	no major defects, moderate structure	Yes	retain	
16b	Oregon white oak	Quercus garryana	2x10	10	G	no major defects, codominant stems at ground level	Yes	retain	
17	Oregon white oak	Quercus garryana	6.8, 3x12	16	F	moderate structure, retain with group	Yes	retain	
18	Oregon white oak	Quercus garryana	2x8	10	G	no major defects, codominant stems just above ground level	Yes	retain	
19	Oregon white oak	Quercus garryana	2x5, 12	12	G	epicormic sprouts, codominant stems just above ground level	Yes	retain	
20	Oregon white oak	Quercus garryana	12	12	G	no major defects, few dead and broken branches	Yes	retain	
21	Oregon white oak	Quercus garryana	18	14	F	hoig dieback, poor vigor, possible decline	No	retain	
22	Oregon white oak	Quercus garryana	24	18	G	no major defects	Yes	retain	
23	Oregon white oak	Quercus garryana	6.8, 16	G	G	codominant stems at ground level	Yes	retain	
24	Douglas-fir	Pseudotsuga menziesii	10	16	G	visual assessment inhibited by blackberry, few broken branches	Off-site	protect	
24b	Oregon white oak	Quercus garryana	10	14	G	visual assessment inhibited by blackberry	Off-site	protect	
24c	Oregon white oak	Quercus garryana	14	14	G	visual assessment inhibited by blackberry	Off-site	protect	
25	Oregon white oak	Quercus garryana	8, 3x12	12	G	codominant stems at ground level, visual assessment limited to south side of tree	Off-site	protect	
26	Douglas-fir	Pseudotsuga menziesii	38	20	G	visual assessment limited to south side of tree	Yes	retain	
27	Oregon white oak	Quercus garryana	2x8	10	G	no major defects, codominant stems just above ground level	Yes	retain	
28	Oregon white oak	Quercus garryana	26	24	G	basal trunk wound on north face	Yes	retain	
29	Oregon white oak	Quercus garryana	2x8	10	F	codominant stems just above ground level, old trunk wounds on eastern stem	Yes	retain	
30	Oregon white oak	Quercus garryana	4x10	16	G	codominant stems at ground level, moderate structure, retain with group	Yes	retain	
31	Oregon white oak	Quercus garryana	10	12	G	few dead branches	Yes	retain	
32	Oregon white oak	Quercus garryana	11	4	P	broken top, advanced trunk decay with hollow 0-10', very dead branches	No	remove	
33	Oregon white oak	Quercus garryana	24	26	G	no major defects	Yes	retain	
34	Oregon white oak	Quercus garryana	14	12	G	one-sided crown, old trunk wound on east face	Yes	retain	
35	Oregon white oak	Quercus garryana	10, 14	14	G	codominant stems at ~2" above ground level, visual assessment limited to south side of tree	Yes	retain	
36	bigleaf maple	Acer macrophyllum	7x12	20	F	poor structure, advanced basal decay with hollow, high risk	No	remove	
37	Oregon white oak	Quercus garryana	30	18	F	advanced trunk decay with hollow, decay in plane of lean to south, dead and broken branches, crown decay, high risk	No	remove	
38	Oregon white oak	Quercus garryana	24	16	F	extensive ivy up trunk into crown, advanced basal and trunk decay with hollow, high risk	No	remove	
39	Oregon white oak	Quercus garryana	22	22	G	no major defects, barbed wire compartmentalized in trunk	Yes	remove	
40	Oregon white oak	Quercus garryana	7x6	12	G	codominant stems at ground level, moderate structure, retain with group	Yes	remove	
41	Oregon white oak	Quercus garryana	22	22	G	few dead branches, branch decay	Yes	remove	

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Consulting Arborists and Urban Forest Management  
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morgan.holen@comcast.net | 971.409.9354

MHA1472 Tanner and Blankenship - Tree Data 4-28-15 Rev. 7-9-15.xlsx Page 2 of 3									
No.	Common Name	Species Name	DBH*	C-Rad*	Cond*	Defects and Comments	Sig?	Treatment	
42	Oregon white oak	Quercus garryana	8, 10	14	G	codominant stems ~1' above ground level	Yes	remove	
43	Oregon white oak	Quercus garryana	26	20	G	no major defects, barbed wire compartmentalized in trunk	Yes	remove	
44	Oregon white oak	Quercus garryana	2x16	18	F	codominant stems ~1' above ground level, dead branches, moderate vigor, old wounds on north side	Yes	retain	
45	Oregon white oak	Quercus garryana	10	14	F	moderate structure, previous report notes roots cut 2' from trunk on north side and hazard potential	Yes	retain	
46	Douglas-fir	Pseudotsuga menziesii	32	20	F	a few small Phellinus pini conks	Yes	retain	
47	Douglas-fir	Pseudotsuga menziesii	24	14	G	no major defects	Yes	remove	
48	Oregon white oak	Quercus garryana	28	28	F	moderate vigor	Yes	remove	
49	Douglas-fir	Pseudotsuga menziesii	34	20	G	codominant crown class, few dead branches, only suitable for retention in group with 49-52	Yes	remove	
50	Douglas-fir	Pseudotsuga menziesii	36	20	G	codominant crown class, old basal wound on east face, only suitable for retention in group with 49-52	Yes	remove	
51	Douglas-fir	Pseudotsuga menziesii	32	20	F	codominant crown class, old basal wound on west face, a few small Phellinus pini conks, dead and defective branches, only suitable for retention in group with 49-52	Yes	remove	
52	Douglas-fir	Pseudotsuga menziesii	22, 36	20	F	codominant crown class, codominant stems ~1' above ground level, moderate crown structure, dead and defective branches, only suitable for retention in group with 49-52	Yes	remove	
53	Oregon white oak	Quercus garryana	2x18	16	F	codominant crown class, codominant stems ~1' above ground level, some included bark with a small seam, trunk wound on west face, decay, retain with group	Off-site	protect	
53b	Oregon white oak	Quercus garryana	32	26	F	trunk decay 0-10', barbed wire compartmentalized in trunk	Off-site	protect	
53c	Austrian pine	Pinus nigra	12	6	P	dead top, suppressed beneath 53b	No	remove	
54	Austrian pine	Pinus nigra	14	11	G	moderate structure, sweep in lower trunk, wound on east face at 10'	No	remove	
54b	green ash	Fraxinus pennsylvanica	8	6	P	very poor crown structure, suppressed beneath 53b	No	remove	
54c	Austrian pine	Pinus nigra	10	10	G	forked top	No	remove	
55	Lodon planifolia	Platanus x acerifolia	12	14	G	no major defects	No	remove	
56	Austrian pine	Pinus nigra	14	14	F	moderate structure, forked tops	No	remove	
57	Austrian pine	Pinus nigra	8	12	F	moderate structure, forked tops	No	remove	
58	Austrian pine	Pinus nigra	10	12	F	moderate structure, forked tops	No	remove	
59	Lodon planifolia	Platanus x acerifolia	10	16	G	blackberry growing into lower crown	No	remove	
60	green ash	Fraxinus pennsylvanica	10	12	F	codominant stem failure, wound on east face	No	remove	
60b	Douglas-fir	Pseudotsuga menziesii	8	10	F	crowded by adjacent trees	No	remove	
60c	Douglas-fir	Pseudotsuga menziesii	8	10	G	blackberry growing into lower crown	No	remove	
61	Lodon planifolia	Platanus x acerifolia	14	16	G	no major defects	No	remove	
61b	Douglas-fir	Pseudotsuga menziesii	10	6	F	poor structure, overcrowded by 61	No	remove	
62	Lodon planifolia	Platanus x acerifolia	12	14	G	some crown asymmetry	No	remove	
63	Austrian pine	Pinus nigra	6	8	G	some crown asymmetry	No	remove	
64	Lodon planifolia	Platanus x acerifolia	10	14	G	blackberry growing into lower crown	No	remove	
65	Lodon planifolia	Platanus x acerifolia	14	16	G	no major defects	No	remove	
66	Douglas-fir	Pseudotsuga menziesii	14	8	F	poor crown structure, suppressed	No	remove	
67	Lodon planifolia	Platanus x acerifolia	12	20	G	no major defects	Off-site	protect	
68	scts pine	Pinus sylvatica	10	8	F	blackberry growing into lower crown, moderate structure	Off-site	protect	
69	Lodon planifolia	Platanus x acerifolia	12	16	G	no major defects	Off-site	protect	
70	scts pine	Pinus sylvatica	6	0	D	whole tree failure	Off-site	protect	
71	scts pine	Pinus sylvatica	8	8	F	visual assessment inhibited by blackberry, moderate structure	Off-site	protect	
72	Leiland cypress	Cupressus x leylandii	14	16	G	no major defects	Off-site	protect	
73	Leiland cypress	Cupressus x leylandii	14	16	G	no major defects	Off-site	protect	
74	Douglas-fir	Pseudotsuga menziesii	12	14	G	no major defects, south edge of row on slope above street	Off-site	protect	
75	black cottonwood	Populus trichocarpa	14	12	G	inherent species limitations	Off-site	protect	
76	pacific madrone	Arbutus menziesii	10	8	F	phototropic lean to west	Off-site	protect	
77	black cottonwood	Populus trichocarpa	12	8	F	inherent species limitations	Off-site	protect	
78	Douglas-fir	Pseudotsuga menziesii	9	6	F	crowded in dense row on steep slope above street	Off-site	protect	
79	black cottonwood	Populus trichocarpa	16, 22	18	F	inherent species limitations, codominant stems with included bark	Off-site	protect	

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MHA1472 Tanner and Blankenship - Tree Data 4-28-15 Rev. 7-9-15.xlsx Page 3 of 3									
No.	Common Name	Species Name	DBH*	C-Rad*	Cond*	Defects and Comments	Sig?	Treatment	
80	black cottonwood	Populus trichocarpa	2x20	16	F	inherent species limitations, codominant stems with included bark, trunk decay	Off-site	protect	
81	Douglas-fir	Pseudotsuga menziesii	6	6	P	suppressed	Off-site	protect	
82	Douglas-fir	Pseudotsuga menziesii	20	10	G	crowded in dense row on steep slope above street	Off-site	protect	
83	Douglas-fir	Pseudotsuga menziesii	16	8	F	crowded in dense row on steep slope above street	Off-site	protect	
84	Douglas-fir	Pseudotsuga menziesii	11	10	P	suppressed	Off-site	protect	
85	black cottonwood	Populus trichocarpa	3x16	14	F	inherent species limitations, poor structure	Off-site	protect	
86	Douglas-fir	Pseudotsuga menziesii	16	8	F	crowded in dense row on steep slope above street	Off-site	protect	
87	Douglas-fir	Pseudotsuga menziesii	13	8	F	crowded in dense row on steep slope above street, crown asymmetry	Off-site	protect	
88	Douglas-fir	Pseudotsuga menziesii	8	8	P	suppressed	Off-site	protect	
89	Douglas-fir	Pseudotsuga menziesii	7	8	P	suppressed	Off-site	protect	
90	pacific madrone	Arbutus menziesii	10, 16	14	F	crowded in dense row on steep slope above street, crown asymmetry	Off-site	protect	
91	black cottonwood	Populus trichocarpa	13	12	G	inherent species limitations	Off-site	protect	
92	Douglas-fir	Pseudotsuga menziesii	17	10	F	crowded in dense row on steep slope above street, crown asymmetry	Off-site	protect	
93	black cottonwood	Populus trichocarpa	17	12	G	inherent species limitations	No	remove	
94	black cottonwood	Populus trichocarpa	12	10	G	inherent species limitations	No	remove	
95	black cottonwood	Populus trichocarpa	10	10	F	inherent species limitations, poor structure	No	remove	
96	Douglas-fir	Pseudotsuga menziesii	9	8	P	suppressed	No	remove	
97	black cottonwood	Populus trichocarpa	14	12	F	inherent species limitations, high live crown	No	remove	
98	bigleaf maple	Acer macrophyllum	12	10	F	crowded in dense row on steep slope above street, crown asymmetry	No	remove	
99	bigleaf maple	Acer macrophyllum	10	10	F	crowded in dense row on steep slope above street, one-sided crown	No	remove	
100	Douglas-fir	Pseudotsuga menziesii	12	8	F	crowded in dense row on steep slope above street	No	remove	
101	black cottonwood	Populus trichocarpa	24	14	G	inherent species limitations	No	remove	
102	Douglas-fir	Pseudotsuga menziesii	8	6	F	crowded in dense row on steep slope above street	No	remove	
103	Douglas-fir	Pseudotsuga menziesii	8	6	F	crowded in dense row on steep slope above street, crown asymmetry	No	remove	
104	Douglas-fir	Pseudotsuga menziesii	8	6	F	suppressed	No	remove	
105	black cottonwood	Populus trichocarpa	12	10	F	inherent species limitations, poor structure, old broken top with new leader, trunk wound on east face	No	remove	
106	black cottonwood	Populus trichocarpa	17	12	G	inherent species limitations, basal wound on east face	No	remove	
107	Douglas-fir	Pseudotsuga menziesii	10	6	P	suppressed	No	remove	
108	Douglas-fir	Pseudotsuga menziesii	8	6	P	suppressed	No	remove	
109	Douglas-fir	Pseudotsuga menziesii	16	8	G	crowded in dense row on steep slope above street, crown asymmetry	No	remove	
110	black cottonwood	Populus trichocarpa	14	12	F	inherent species limitations	No	remove	
111	black cottonwood	Populus trichocarpa	14	12	F	inherent species limitations	No	remove	
112	black cottonwood	Populus trichocarpa	10	12	F	inherent species limitations	No	remove	
113	bigleaf maple	Acer macrophyllum	10	12	F	inherent species limitations	No	remove	
114	black cottonwood	Populus trichocarpa	2x16	16	F	inherent species limitations, moderate structure	No	remove	
115	bigleaf maple	Acer macrophyllum	2x10	14	F	crowded in dense row on steep slope above street, moderate structure	No	remove	
116	black cottonwood	Populus trichocarpa	16	16	F	inherent species limitations, moderate structure	No	remove	
117	black cottonwood	Populus trichocarpa	16	14	F	inherent species limitations, moderate structure	No	remove	
118	Douglas-fir	Pseudotsuga menziesii	9	6	P	suppressed	No	remove	
119	Douglas-fir	Pseudotsuga menziesii	10	8	P	suppressed	No	remove	
120	black cottonwood	Populus trichocarpa	2x14	14	F	inherent species limitations, poor structure	No	remove	
120b	bigleaf maple	Acer macrophyllum	16	10	F	crowded in dense row on steep slope above street, poor structure	No	remove	
121	black cottonwood	Populus trichocarpa	18	12	G	inherent species limitations	No	remove	
121b	bigleaf maple	Acer macrophyllum	7	8	F	crowded in dense row on steep slope above street, poor structure	No	remove	
121c	Douglas-fir	Pseudotsuga menziesii	16	10	G	crowded in dense row on steep slope above street, moderate structure	No	remove	
122	black cottonwood	Populus trichocarpa	17	12	G	inherent species limitations	No	remove	
123	bigleaf maple	Acer macrophyllum	10	12	F	multiple attachments with included bark	No	remove	

\*DBH is tree diameter measured at breast







SCALE: 1" = 20'-0"



SCALE: 1" = 20'-0"

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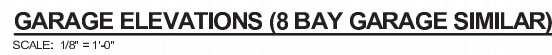
WEST LINN MIXED USE DEVELOPMENT

WEST LINN, OREGON

CLUBHOUSE ELEVATIONS



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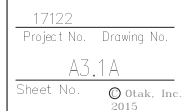
# WEST LINN MIXED USE DEVELOPMENT

## TRASH ENCLOSURES AND GARAGES



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WEST LINN, OREGON

BUILDING TYPE 2 ELEVATIONS

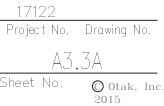


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**BUILDING TYPE 4 LEFT ELEVATION**  
SCALE: 1/8" = 1'-0"

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	<p>17122</p>		<p>Project No. Drawing No.</p>		
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WEST LINN MIXED USE DEVELOPMENT

WEST LINN, OREGON

BUILDING TYPE 4 ELEVATIONS



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**BUILDING TYPE 6 BACK ELEVATION**

SCALE: 1/8" = 1'-0"



**BUILDING TYPE 6 RIGHT ELEVATION**

SCALE: 1/8" = 1'-0"

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BUILDING TYPE 6 ELEVATIONS

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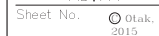
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WEST LINN MIXED USE DEVELOPMENT

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BUILDING TYPE 7 ELEVATIONS

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BLDG 1	101-308
BLDG 2	101-312
BLDG 3	101-312
BLDG 4	101-310
BLDG 5	101-304
BLDG 6	101-308
BLDG 7	101-308

A	Tenant
B	Tenant
C	Tenant
D	Tenant
E	Tenant
F	Tenant
G	Tenant



### Site Entry Wayfinding Sign - Detail

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WEST LINN MIXED USE DEVELOPMENT

WEST LINN, OREGON

## SITE INFORMATION SIGN

Unnamed



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