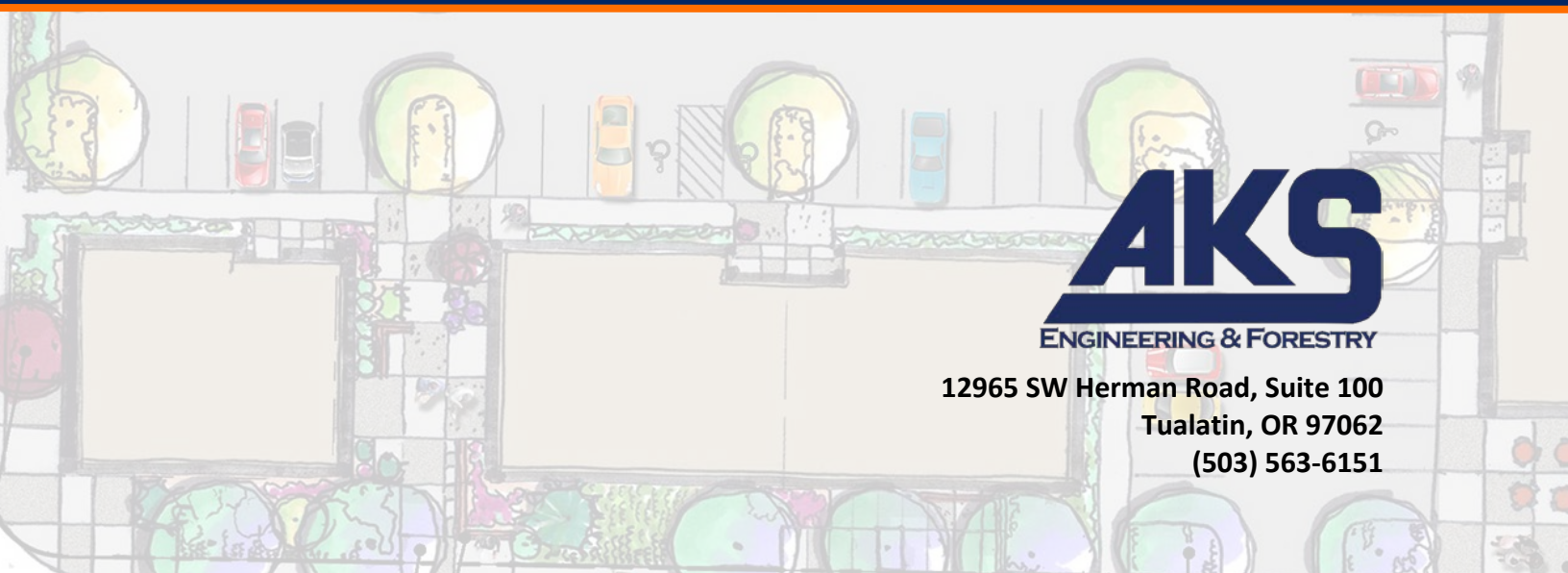
Type II Architectural Review Application for TVF&R Logistics Service Center

Date: May 2019

Submitted to:
City of Tualatin
Planning Division
18880 SW Martinazzi Avenue
Tualatin, OR 97062

Applicant:
Tualatin Valley Fire & Rescue
11945 SW 70th Avenue
Tigard, OR 97223-9196



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12965 SW Herman Road, Suite 100
Tualatin, OR 97062
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Exhibits

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Owner:	Tualatin Valley Fire & Rescue 11945 SW 70th Avenue Tigard, OR 97223-9196
Applicant:	Tualatin Valley Fire & Rescue 11945 SW 70th Avenue Tigard, OR 97223-9196
Applicant's Consultant:	AKS Engineering & Forestry, LLC 12965 SW Herman Road, Suite 100 Tualatin, OR 97062 Contact(s): Mimi Doukas, AICP, RLA Email: mimid@aks-eng.com Phone: (503) 563-6151
Site Location:	9991 SW Avery Street
Washington County Assessor's Map:	02 S1 26BA, Tax Lot 200
Site Size:	±4.33 acres
Land Use District:	Light Industrial (ML)

I. Executive Summary

Tualatin Valley Fire & Rescue (TVF&R), the property owner and Applicant, is submitting this application to redevelop the existing site to accommodate a new Logistics Service Center to serve TVF&R. The facility will include fleet maintenance, new loading docks and access lanes, interior offices, and a storage yard. A stormwater facility is proposed to be located in the northwest portion of the subject site and a fuel enclosure is proposed to be constructed in the future. Security fencing with access gates along the perimeter of the Logistics Service Center is proposed to provide adequate safety and security. The subject site has frontage on SW Avery Street and an existing access driveway on SW Avery Street. The western property line is adjacent to an existing private drive. The Applicant is in coordination with the property owner to the west to obtain a pedestrian and vehicle access to the site over the existing adjacent private drive.

The approved Director's interpretation included in the application materials demonstrates the proposed use most closely aligns as a "public works storage yard and shop," which is permitted in the Light Industrial (ML) Zone. Based upon the requirements in the Tualatin Development Code, the project is subject to an Architectural Review.

This narrative is supported by substantial evidence presented in the application materials, including preliminary plans and other written documentation. Considered together, this information provides the necessary basis for the City of Tualatin to approve the application.

II. Site Description/Setting

The subject site is located northeast of the intersection of SW Avery Street and SW Teton Avenue with frontage on SW Avery Street in the City of Tualatin, is ± 4.33 acres, and is zoned Light Industrial (ML). The subject site contains an existing building, parking area and associated improvements. The surrounding properties are also zoned ML and generally contain commercial buildings, with an elementary school to the east of the subject site.

III. Applicable Review Criteria

TUALATIN DEVELOPMENT CODE

Chapter 32 (Procedures).

(2) Applicability of Review Procedures. All land use and development permit applications and decisions, will be made by using the procedures contained in this Chapter. The procedure "type" assigned to each application governs the decision-making process for that permit or application. There are five types of permit/application procedures as described in subsections (a) through (e) below. Table 32-1 lists the City's land use and development applications and corresponding review procedure(s).

(b) Type II Procedure (Administrative/Staff Review with Notice). A Type II procedure is used when the standards and criteria require limited discretion, interpretation, or policy or legal judgment. Type II decisions are made by the City Manager and require public notice and an opportunity for appeal to the Planning Commission, Architectural Review Board, or City Council as shown in Table 32-1.

Those Type II decisions which are "limited land use decisions" as defined in ORS 197.015 are so noted in Table 32-1.

Table 32-1 – Applications Types and Review Procedures						
Application/Action	Procedure Type	Decision Body	Appeal Body	Pre-Application Conference Required	Neighborhood / Developer Meeting Required	Applicable Code Chapter
Architectural Review	II	CM	ARB/CC	Yes	Yes	TDC 33.020

Response: Based on the Table 32-1 above, this application will be reviewed as a Type II procedure.

Section 32.110 - Pre-Application Conference.

(2) When Mandatory. Pre-application conferences are mandatory for all land use actions identified as requiring a pre-application conference in Table 32-1. An applicant may voluntarily request a pre-application conference for any land use action even if it is not required.

Response: A pre-application conference was held with City staff on November 7, 2018 and pre-application materials are included in (Exhibit K).

Section 32.120 - Neighborhood/ Developer Meetings.

(2) When Mandatory. Neighborhood/developer meetings are mandatory for all land use actions identified in Table 32-1 as requiring a neighborhood/developer meeting. An applicant may voluntarily conduct a neighborhood/developer meeting even if it is not required and may conduct more than one neighborhood/developer meeting at their election.

Response: A neighborhood meeting was held to discuss the project with surrounding neighbors on January 24, 2019. The appropriate neighborhood meeting materials as provided above are included in this application (Exhibit L). This procedural standard has been met.

Section 32.140 - Application Submittal.

(1) Submittal Requirements. Land use applications must be submitted on forms provided by the City. A land use application may not be accepted in partial submittals. All information supplied on the application form and accompanying the application must be complete and correct as to the applicable facts. Unless otherwise specified, all of the following must be submitted to initiate completeness review under TDC 32.160:

(a) A completed application form. The application form must contain, at a minimum, the following information:

(i) The names and addresses of the applicant(s), the owner(s) of the subject property, and any authorized representative(s) thereof;

(ii) The address or location of the subject property and its assessor's map and tax lot number;

(iii) The size of the subject property;

(iv) The comprehensive plan designation and zoning of the subject property;

(v) The type of application(s);

(vi) A brief description of the proposal; and

(vii) Signatures of the applicant(s), owner(s) of the subject property, and/or the duly authorized representative(s) thereof authorizing the filing of the application(s).

Response: A completed City application form, which contains the required information provided above is included in the application materials in Exhibit D. Therefore, this submittal requirement is satisfied.

(b) A written statement addressing each applicable approval criterion and standard;

Response: The responses included in the written narrative below address each applicable criterion and standard. This submittal requirement is satisfied.

(c) Any additional information required under the TDC for the specific land use action sought;

Response: The written narrative below addresses each applicable criterion and standard. This submittal requirement is satisfied.

(d) Payment of the applicable application fee(s) pursuant to the most recently adopted fee schedule;

Response: The required City application fee is included with the application materials. This submittal requirement is satisfied.

(e) Recorded deed/land sales contract with legal description.

Response: The required ownership information for the subject site is included in Exhibit E. This submittal requirement has been satisfied.

(f) A preliminary title report or other proof of ownership.

Response: A current preliminary title report is included in Exhibit E. This submittal requirement is satisfied.

(g) For those applications requiring a neighborhood/developer meeting:

(i) The mailing list for the notice;

(ii) A copy of the notice;

(iii) An affidavit of the mailing and posting;

(iv) The original sign-in sheet of participants; and

(v) The meeting notes described in TDC 32.120(7).

Response: A neighborhood meeting was required and held to discuss the project with surrounding neighbors on January 24, 2019. The neighborhood meeting materials listed above are included in Exhibit L. This procedural standard is satisfied.

> **(h)** **A statement as to whether any City-recognized Citizen Involvement Organizations (CIOs) whose boundaries include, or are adjacent to, the subject property were contacted in advance of filing the application and, if so, a summary of the contact. The summary must include the date when contact was made, the form of the contact and who it was with (e.g. phone conversation with neighborhood association chairperson, meeting with land use committee, presentation at neighborhood association meeting), and the result;**

Response: The Commercial CIO was provided a notice of the neighborhood meeting via a letter sent inviting the CIO contacts to discuss the project at the scheduled neighborhood meeting. A copy of the letter is included with the neighborhood meeting materials in Exhibit L. This submittal requirement is satisfied.

> **Section 32.150 - Sign Posting.**
>
> **(1) When Signs Posted. Signs in conformance with these standards must be posted as follows:**
>
> **(a) Signs providing notice of an upcoming neighborhood/developer meeting must be posted prior to a required neighborhood/developer meeting in accordance with Section 32.120(6); and**

Response: A sign was posted at the subject site announcing the neighborhood meeting. An affidavit of posting of the neighborhood meeting sign is included with this application in Exhibit L. This submittal requirement is satisfied.

> **(b) Signs providing notice of a pending land use application must be posted after land use application has been submitted for Type II, III and IV-A applications.**

Response: Once the application has been assigned a file number by the City a sign will be posted. This requirement will be satisfied.

> **Section 33.020 - Architectural Review.**
>
> **(3) Types of Architectural Review Applications - Procedure Type.**
>
> **(c) General Development. All development applications, (except Single Family Dwelling, Clear and Objective and Large Commercial, Industrial, and Multifamily Development) are subject to Type II Review.**

Response: Based on the City of Tualatin Development Code, this Architectural Review Application will be reviewed as a Type II Procedure.

> **(4) Application Materials. The application must be on forms provided by the City. In addition to the application materials required by TDC**

32.140 (Application Submittal), the following application materials are also required:

(a) The project name and the names, addresses, and telephone numbers of the architect, landscape architect, and engineer on the project;

Response: The above information (as applicable) is included in the application materials. This submittal requirement is satisfied.

(b) Existing conditions plan, site plan, grading plan, utility plan, landscape plan, and lighting plan all drawn to scale;

Response: The application materials include the preliminary plans listed above as shown in Exhibit A. This submittal requirement is satisfied.

(c) A materials board that includes example building materials and textures;

Response: Preliminary Architectural Renderings that include proposed building materials are included in Exhibit B. This submittal requirement is satisfied.

(d) Title report; and

Response: A current title report is included in Exhibit E. This submittal requirement is satisfied.

(e) A Service Provider Letter from Clean Water Services.

Response: A Service Provider Letter signed by Clean Water Services is included in Exhibit O. This submittal requirement is satisfied.

(5) Approval Criteria.

(b) General Development.

(ii) Applications for General Development must comply with the applicable standards and objectives in TDC Chapter 73A through 73G.

Response: As discussed in this application below and as applicable, these standards are satisfied. Therefore, this approval criterion is met.

(6) Conditions of Approval.

(a) Architectural Review decisions may include conditions of approval that apply restrictions and conditions that:

(i) Protect the public from the potentially deleterious effects of the proposal;

(ii) Fulfill the need for public facilities and services created by the proposal, or increased or in part attributable to the proposal; and

(iii) Further the implementation of the requirements of the Tualatin Development Code.

Response: As applicable, this approval criterion can be met.

(b) Types of conditions of approval that may be imposed include, but are not limited to:

(i) Development Schedule. A reasonable time schedule placed on construction activities associated with the proposed development, or portion of the development.

(ii) Dedications, Reservation. Dedication or reservation of land, or the granting of an easement for park, open space, rights-of-way, bicycle or pedestrian paths, Greenway, Natural Area, Other Natural Area, riverbank, the conveyance of title or easements to the City or a non-profit conservation organization, or a homeowners' association.

(iii) Construction and Maintenance Guarantees. Security from the property owners in such an amount that will assure compliance with approval granted.

(iv) Plan Modifications. Changes in the design or intensity of the proposed development, or in proposed construction methods or practices, necessary to assure compliance with this chapter.

(v) Other Approvals. Evaluation, inspections or approval by other agencies, jurisdictions, public utilities, or consultants, may be required for all or any part of the proposed development.

(vi) Access Limitation. The number, location and design of street accesses to a proposed development may be limited or specified where necessary to maintain the capacity of streets to carry traffic safely, provided that sufficient access to the development is maintained.

Response: As applicable and if necessary, this approval criteria can be met.

Section 33.110 - Tree Removal Permit / Review.

(3) Procedure Type. Tree Removal Permit applications are subject to Type II Review in accordance with TDC Chapter 32. Tree Removal Permit applications submitted with an Architectural Review, Subdivision, or Partition application will be processed in conjunction with the Architectural Review, Subdivision, or Partition decision.

(4) Specific Submittal Requirements. In addition to the general submittal requirements in TDC 32.140 (Application Submittal), an applicant must submit the following:

(a) Tree Preservation Plan. A tree preservation plan drawn to scale must include:

(i) The location, size, species, and tag identification number of all trees on-site eight inches or more in diameter;

(ii) All trees proposed for removal and all trees proposed to be preserved;

(iii) All existing and proposed structures;

(iv) All existing and proposed public and private improvements; and

(v) All existing public and private easements.

Response: This Architectural Review application includes tree removal, which is necessary for the redevelopment of the subject site. A Preliminary Tree Preservation Plan containing the information above (as applicable) is included in Exhibit A. Therefore, these submittal requirements are satisfied.

(b) Tree Assessment Report. A tree assessment prepared by a certified arborist must include:

(i) An analysis as to whether trees proposed for preservation may be preserved in light of the development proposed, are healthy specimens, and do not pose an imminent hazard to persons or property if preserved;

(ii) An analysis as to whether any trees proposed for removal could reasonably be preserved in light of the development proposed and health of the tree;

(iii) a statement addressing the approval criteria set forth in TDC 33.110(5);

(iv) the name, contact information, and signature of the arborist preparing the report; and

(v) The tree assessment report must have been prepared and dated no more than one calendar year preceding the date the development or Tree Removal Permit application is deemed complete by the City.

Response: The Preliminary Tree Preservation Table (Exhibit A) includes a tree assessment prepared by a certified arborist that includes the information listed above. Therefore, these submittal requirements are satisfied.

(c) Tree Tags. All trees on-site must be physically identified and numbered in the field with an arborist-approved tagging system that corresponds to the Tree Preservation Plan and Tree Assessment Report.

Response: As applicable, on-site trees marked for removal will be tagged appropriately with an arborist-approved tagging system that corresponds to the Preliminary Tree Preservation Plan in Exhibit A. Therefore, this criterion will be satisfied.

(5) Approval Criteria.

(a) An applicant must satisfactorily demonstrate that at least one of the following criteria are met:

(i) The tree is diseased and:

(A) The disease threatens the structural integrity of the tree; or

(B) The disease permanently and severely diminishes the esthetic value of the tree; or

(C) The continued retention of the tree could result in other trees being infected with a disease that threatens either their structural integrity or esthetic value.

(ii) The tree represents a hazard which may include but not be limited to:

(A) The tree is in danger of falling; or

(B) Substantial portions of the tree are in danger of falling.

(iii) It is necessary to remove the tree to construct proposed improvements based on Architectural Review approval, building permit, or approval of a Subdivision or Partition Review.

Response: The Preliminary Plans (Exhibit A) demonstrate that the trees marked for removal are necessary to construct the proposed improvements, permitted by TDC 33.110(5)(a)(iii). The trees marked for removal include seven off-site trees. Two of the seven off-site trees marked for removal are street trees, please refer to the responses in Section 74.705. Five of the seven off-site trees marked for removal are located west of the site, which are necessary to remove to accommodate the two proposed driveway approaches that will access the existing adjacent private drive. TVF&R is coordination with the property owner to obtain approval to remove the five off-site trees. The Preliminary Tree Preservation Table (Exhibit A) includes a tree assessment prepared by a certified arborist that provides information pertaining to the health of each of the trees and the reason for removal. Additionally, as illustrated on the Preliminary Landscape Plan (Exhibit A) trees will be installed to replace the trees marked for removal and street trees are proposed to be installed on the site's frontage along SW Avery Street, consistent with Section 73B.070(3). Therefore, the provisions above are satisfied.

(b) If none of the conditions in TDC 33.110(5)(a) are met, the certified arborist must evaluate the condition of each tree.

(i) Evergreen Trees. An evergreen tree which meets any of the following criteria as determined by a certified arborist will not be required to be retained:

(A) Trunk Condition - extensive decay and hollow; or

(B) Crown Development - unbalanced and lacking a full crown;

(ii) Deciduous Trees. A deciduous tree which meets any of the following criteria as determined by a certified arborist will not be required to be retained:

(A) Trunk Condition - extensive decay and hollow;

(B) Crown Development - unbalanced and lacking a full crown; or

(C) Structure - Two or more dead limbs.

Response: As noted above, the trees marked for removal are in compliance with Section 33.110(5)(iii). Therefore, the provisions above do not apply.

TDC Chapter 60: Light Manufacturing Zone (ML)

Section 60.200 – Use Categories.

(1) Use Categories. Table 60-1 lists use categories Permitted Outright (P) or Conditionally Permitted (C) in the ML zone. Use categories may also be designated as Limited (L) and subject to the limitations listed in Table 60-1 and restrictions identified in TDC 60.210. Limitations may restrict the specific type of use, location, size, or other characteristics of the use category. Use categories which are not listed are prohibited within the zone, except for uses which are found by the City Manager or appointee to be of a similar character and to meet the purpose of this zone, as provided in TDC 31.070.

(2) Use Categories in the Limited Commercial Setback. Commercial uses may be further restricted within the Limited Commercial Setback, see TDC 60.210(4).

(3) Overlay Zones. Additional uses may be allowed in a particular overlay zone. See the overlay zone Chapters for additional uses.

Table 60-1 Use Categories in the ML Zone		
Use Category	**Status**	Limitations and Code References
Infrastructure and Utilities Use Categories		
Public Safety Facilities	**P (L)/C (L)**	Permitted uses limited to public works storage yard and shop Conditional uses limited to a fire station.
Commercial Use Categories		
Office	**P (L)**	Permitted uses limited to: • Offices for executive, administrative, and professional uses related to the sale or service of industrial products • Office uses if within 60 feet of the CO zone and subject to TDC 60.210(5) • Office uses including business and commercial offices, general offices, and real estate offices, but not governmental offices, are a limited use in all other locations, subject to TDC 60.210(2)

Response: Per the tables listed above coupled with the approved Director's Interpretation Letter (included in Exhibit G) the proposed Tualatin Valley Fire & Rescue Logistics Service Center is a permitted use in the ML Zone. "TVF&R is a public agency that provides fire protection and emergency medical services. AKS submitted a letter of inquiry dated April 27th, 2018

that states the potential TVF&R facility will contain the following sub uses; vehicle operations and maintenance, administrative offices, employee support, supply, and facilities. These sub uses are similar to those found in a public works shop, and that the proposed use can be considered a public works shop and yard." Therefore, the proposed use is an appropriate and permitted use in the ML zone.

Section 60.210 – Additional Limitations on Uses.

(2) Limited Commercial Uses. Commercial uses permitted as limited uses, as specified in Table 60-1, must be located on the same site as a permitted industrial use. The site must be used substantially for industrial purposes and the commercial use is subject to the following limitations. The office, retail, and service uses may be located in a stand-alone building or combined in a building with other permitted uses.

(a) Offices. Office uses must not exceed 25 percent of the total gross floor area of all buildings on the site.

(ii) Spacing Standard. Uses must not be located within 80 feet from any Residential Planning District and from the right-of-way of SW Tualatin-Sherwood Road.

(iii) Access Standard. If located in a standalone building, the uses must not have direct access onto any arterial or collector street.

Response: The Architectural Renderings included in Exhibit B illustrate the proposed layout, showing that the administrative office area does not exceed 25 percent of the total gross floor area. Therefore, this requirement is satisfied.

Section 60.300 – Development Standards.

Development standards in the ML zone are listed in Table 60-2. Additional standards may apply to some uses and situations, see TDC 60.310.

Table 60-2

Development Standards in the ML Zone

Standard	Requirement	Limitations and Code References
Lot Size		
Minimum Lot Size	20,000 square feet	--
Lot Dimensions	100 feet	When lot has frontage on public street, minimum lot width at the street is 100 feet. When lot has frontage on cul-de-sac street, minimum lot width at the street is 50 feet.
Infrastructure and Utilities Uses	--	As determined through the Subdivision, Partition, or Lot Line Adjustment process

Flag Lots	--	Must be sufficient to comply with minimum access requirements of TDC 73C.
Minimum Setbacks		
Front	30 feet	
Front Setback Adjacent to Residential or Manufacturing Park District	50 feet	
Side	0-50 feet	Determined through Architectural Review Process. No minimum setback if adjacent to railroad right-of-way or spur track.
Side Setback Adjacent to Residential or Manufacturing Park district	50 feet	
Rear	0-50 feet	Determined through Architectural Review Process. No minimum setback if adjacent to railroad right-of-way or spur track
Rear Setback Adjacent to Residential or Manufacturing Park district	50 feet	
Parking and Circulation Areas	5 feet	No minimum setback required adjacent to joint access approach in accordance with TDC 73C.
Parking and Circulation Areas Adjacent to Residential or Manufacturing Park (MP) District	10 Feet	
Fences	10 feet	From public right-of-way.
Structure Height		
Maximum Height	50 feet	May be increased to 85 feet if yards adjacent to structure are not less than a distance equal to one and one-half times the height of the structure. Measured at the 50-foot setback line, includes flagpoles. The building height may extend above 28 feet on a plane beginning at the 50-foot setback line at a slope of 45 degrees extending away from the 50-foot setback line. Flagpoles may extend to 100 feet.
Maximum Height Adjacent to Residential District	28 Feet	

Response: As illustrated on the Preliminary Plans (Exhibit A), the proposed TVF&R Logistics Service Center and associated improvements are in conformance with the development standards provided above. Therefore, these standards are satisfied.

Section 60.310 – Additional Development Standards.

(1) Outdoor Uses. All uses must be conducted wholly within a completely enclosed building, except off-street parking and loading, Basic Utilities, Wireless Communication Facilities and outdoor play areas of child day care centers as required by state day care certification standards.

Response: As illustrated on the Preliminary Plans in Exhibit A and the Architectural Renderings in Exhibit B, the uses are designed to be conducted wholly within a completely enclosed building, except uses that are necessary to be located outside, such as parking and loading (as permitted by this section) and the covered truck wash drive through, which is proposed to be attached to the building and screened. Therefore, this standard is satisfied.

> **(2) Spur Rail Tracks. Spur rail tracks are not permitted within 200 feet of an adjacent residential district.**

Response: This application does not include spur rail tracks. Therefore, this is not applicable.

> **(3) Sound Barrier Construction. Sound barrier construction is required to mitigate the impact of noise associated with overhead doors and building mechanical equipment, including but not limited to heating, cooling and ventilation equipment, compressors, waste evacuation systems, electrical transformers, and other motorized or powered machinery located on the exterior of a building. Sound barrier construction must conform to the following standards:**
>
> **(a) Applicability. New construction, including additions or changes to existing facilities, must comply with the provisions of this section. When additions or changes to existing facilities are proposed, existing structures on the property may be required to comply with the provisions of this section, as determined through the Architectural Review process. Where buildings or outdoor use areas located on more than one parcel are all part of a single use as determined through the Architectural Review process, all of the parcels may be required to comply with the provisions of this section.**
>
> **(b) Distance from Residential Use. Sound barriers must be used to intercept all straight-line (a direct line between two points) lateral paths of 450 feet or less between a residential property within a residential planning district and:**
>
> **(i) Any side edge of an overhead door or other doorway larger than 64 square feet, at a minimum height of eight feet above the floor elevation of the doorway; or**
>
> **(ii) Any building mechanical device at a minimum height equal to the height of the mechanical object to be screened.**
>
> **(c) Exemption for Existing Structures. Where existing structures (on or off site) are located such that they will reflect sound away from residential areas and will function as a sound barrier, on-site sound barrier construction is not required, except that at the time such structures are removed, sound barrier construction is required.**
>
> **(d) Design. Sound barriers must consist of masonry walls or earth berms located so as to reflect sound away from, rather than toward, noise sensitive properties. This may include**

masonry "wing walls" attached to a building, detached masonry walls (such as at the perimeter of the site), earth berms, or combinations of the three. Wing walls must be at least as tall as the tallest overhead door they are designed to screen at the point where they meet the building. The height of the wall may be reduced along a maximum incline formed by a horizontal distance twice the vertical change in height, or 26.5 degrees from horizontal.

(e) Definitions. "Wing wall" mean a wall that is attached to a building on one side and meets the screening requirements of (1) and (2) of this section.

Response: This application involves the redevelopment of and existing building to serve as the TVF&R Logistics Service Center. This project includes alterations to the existing building and associated on-site improvements to equip the site and facility for use. An Acoustical Engineering Report prepared by Listen Acoustics is included in the application materials (Exhibit H), which demonstrates that no additional mitigation is needed beyond the features in the Preliminary Plans (Exhibit A) and Architectural Renderings (Exhibit B) as detailed in the Acoustical Engineering Report and the Sound Wall Compliance Alternative Letter in Exhibit H. Based on the data collected and the acceptable/excessive sound levels as defined by the Code, the proposed development will not result in noise levels that will exceed the code maximums. Therefore, an exemption from the sound barrier construction requirements is requested.

(4) Setback Reduction for Developments Adjacent to Greenways and Natural Areas. To preserve natural areas and habitat for fish and wildlife, the decision-authority may provide a front, side, or rear yard setback reduction for developments that are adjacent to Greenways or Natural Areas that dedicate land for conservation or public recreational purposes, in accordance with the following standards:

Response: The subject site is not located adjacent to Greenways and Natural Areas. Therefore, this standard is not applicable.

Chapter 73A - Site Design

Section 73A.400 – Industrial Design Standards.

The following standards are minimum requirements for industrial development in all zones:

(1) Walkways. Industrial development must provide walkways as follows:

(a) Walkways must be a minimum of 5 feet in width;

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the walkways are a minimum of 5 feet in width. Therefore, this standard is met.

(b) Walkways must be constructed of asphalt, concrete, or a pervious surface such as pavers or grasscrete (not gravel or woody material);

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the walkways will be constructed of concrete. Therefore, this standard is met.

> (c) Walkways must meet ADA standards applicable at time of construction or alteration;

Response: The walkways are designed to be in compliance with ADA standards, as illustrated on the Preliminary Site Plan in Exhibit A. Therefore, this standard is met.

> (e) Walkways must be provided between the main building entrances and other on-site buildings, accessways, and sidewalks along the public right-of-way;

Response: As shown on the Preliminary Site Plan in Exhibit A, the subject site includes a single building and walkways are provided between the main building entrances, accessways, and sidewalks along SW Avery Street (public right-of-way). Therefore, this standard is met.

> (f) Walkways through parking areas, drive aisles, and loading areas must be of a different appearance than the adjacent paved vehicular areas; and

Response: To the extent applicable, walkways through parking areas are designed to be of a different appearance than the adjacent paved vehicular areas as shown on the Preliminary Site Plan in Exhibit A. Therefore, this standards is met.

> (g) Outdoor Recreation Access Routes must be provided between the development's walkway and bikeway circulation system and parks, bikeways and greenways where a bike or pedestrian path is designated.

Response: This application involves the redevelopment of the existing building to serve as a TVF&R logistics service center, the improvements on the subject site do not include outdoor recreation areas or routes. Therefore, this standard is not applicable.

> (2) Accessways.
>
> (a) When Required. Accessways are required to be constructed when a common wall development is adjacent to any of the following:
>
> (i) Residential property;
>
> (ii) Commercial property;
>
> (iii) Areas intended for public use, such as schools and parks; and
>
> (iv) Collector or arterial streets where transit stops or bike lanes are provided or designated.

Response: This application does not involve a common wall development. This application involves the redevelopment of the subject site to serve as the TVF&R logistics service center. Therefore, accessways are not required and this standard is not applicable.

> (3) Drive-up Uses. Drive-up uses must comply with the following:

(a) Must provide a minimum stacking area clear of the public right-of-way and parking lot aisles from the window serving the vehicles as follows:

Response: As previously noted above, this application involves the redevelopment of the subject site to serve as the TVF&R logistics service center. This application does not involve a drive-up use. Therefore, this standard is not applicable.

(4) Safety and Security. Industrial development must provide safety and security features as follows:

(a) Locate windows and provide lighting in a manner that enables tenants, employees, and police to watch over pedestrian, parking, and loading areas;

(b) Locate windows and interior lighting to enable surveillance of interior activity from the public right-of-way;

(c) Locate, orient, and select exterior lighting to facilitate surveillance of on-site activities from the public right-of-way without shining into public rights-of-way or fish and wildlife habitat areas;

(d) Provide an identification system which clearly locates buildings and their entries for patrons and emergency services; and

(e) Above ground sewer or water pumping stations, pressure reading stations, water reservoirs, electrical substations, and above ground natural gas pumping stations must provide a minimum 6 foot tall security fence or wall.

Response: The Preliminary Plans coupled with the Architectural Renderings demonstrate the proposed TVF&R Logistics Service Center is in compliance with the safety and security provisions above. Therefore, these criteria are satisfied.

(5) Service, Delivery, and Screening. Industrial development must provide service, delivery, and screening features as follows:

(a) Above grade and on-grade electrical and mechanical equipment such as transformers, heat pumps and air conditioners must be screened with sight obscuring fences, walls or landscaping;

(b) Outdoor storage must be screened with a sight obscuring fence, wall, berm or dense evergreen landscaping; and

(c) Above ground pumping stations, pressure reading stations, water reservoirs; electrical substations, and above ground natural gas pumping stations must be screened with sight-obscuring fences or walls and landscaping.

Response: The Preliminary Plans coupled with the Architectural Renderings demonstrate the proposed TVF&R Logistics Service Center is in compliance with the service, delivery, and screening provisions above. Therefore, these criteria are satisfied

(6) Adjacent to Transit. Industrial development adjacent to transit must comply with the following:

(a) Development on a transit street designated in TDC Chapter 11 (Figure 11-5) must provide either a transit stop pad on-site, or an on-site or public sidewalk connection to a transit stop along the subject property's frontage on the transit street; and

Response: The subject site abuts SW Avery Street, which is designated as a transit street in TDC Chapter 11 (Figure 11-5). As shown on the Preliminary Plans in Exhibit A, a sidewalk connection exists along the property's frontage on SW Avery Street. Therefore, this criterion is satisfied.

(b) Development abutting major transit stops as designated in TDC Chapter 11 (Figure 11-5) must:

Response: The subject site does not abut a major transit stop. Therefore, this criterion does not apply.

Chapter 73B - Landscaping Standards

Section 73B.020 – Landscape Area Standards Minimum Areas by Use and Zone

The following are the minimum areas required to be landscaped for each use and zone:

ZONE	MINIMUM AREA REQUIREMENT*	MINIMUM AREA REQUIREMENT WITH DEDICTION FOR A FISH AND WILDLIFE HABITAT*
(3) CO, CR, CC, CG, ML and MG zones except within the Core Area Parking District - All uses	15% of the total area to be developed	12.5% of the total area to be developed

Response: The subject site is located in the ML Zone and a dedication for a fish and wildlife habitat is not required or included. The proposed landscape calculations are provided on the Preliminary Landscape Plan in Exhibit A, which demonstrates compliance with the minimum landscape area in the table above. Therefore, this standard is satisfied.

Section 73B.050 – Additional Minimum Landscaping Requirements for Industrial Uses.

(1) General. In addition to requirements in TDC 73B.020, industrial uses must comply with the following:

(a) All areas not occupied by buildings, parking spaces, driveways, drive aisles, pedestrian areas, or undisturbed natural areas must be landscaped.

Response: As applicable, the Preliminary Landscape Plan in Exhibit A illustrate the proposed landscaped areas (not occupied by buildings, parking spaces, driveways, drive aisles, or pedestrian areas). Therefore, this requirement is met.

(i) This standard does not apply to areas subject to the Hedges Creek Wetlands Mitigation Agreement.

Response: The subject site is not subject to the Hedges Creek Wetlands Mitigation Agreement; therefore, this requirement is applicable (and satisfied as noted in the response above).

(b) Minimum 5-foot-wide landscaped area must be located along all building perimeters viewable by the general public from parking lots or the public right-of-way, but the following may be used instead of the 5-foot-wide landscaped area requirement:

(i) Pedestrian amenities such as landscaped plazas and arcades; and

(ii) Areas developed with pavers, bricks, or other surfaces, for exclusive pedestrian use and contain pedestrian amenities, such as benches, tables with umbrellas, children's play areas, shade trees, canopies.

(c) 5-foot-wide landscaped area requirement does not apply to:

(i) Loading areas,

(ii) Bicycle parking areas,

(iii) Pedestrian egress/ingress locations, and

(iv) Where the distance along a wall between two vehicle or pedestrian access openings (such as entry doors, garage doors, carports and pedestrian corridors) is less than 8 feet.

Response: As previously described, this application involves the redevelopment of the existing building and associated improvements to serve as the TVF&R Logistics Service Center. The required 5-foot landscaped areas are delineated on the Preliminary Landscape Plan (Exhibit A), and are proposed along the building perimeters viewable by the general public, where the installation of 5-foot-wide landscape strips are feasible and not in conflict with pedestrian amenities (which excludes loading areas, bicycle parking areas, and pedestrian ingress/egress locations). The Preliminary Plans (Exhibit A) and Architectural Renderings (Exhibit B) illustrate the portion of the existing building that will be improved with roll-up doors for the use of ingress and egress of the TVF&R fire engines. The areas in between the roll-up doors is not feasible to be landscaped with a 5-foot wide strip because these areas provide pedestrian amenities. Therefore, to the extent possible, this criterion is satisfied.

(d) Development that abuts an RL or MP Zone must have landscaping approved through Architectural Review and must provide and perpetually maintain dense, evergreen landscaped buffers between allowed uses and the adjacent RL and MP zones.

Response: The subject site does not abut an MP Zone. The subject site abuts SW Avery Street (public right-of-way) and properties designated RL are located across SW Avery Street south of the subject site. As shown on the Preliminary Landscape Plan in Exhibit A, an adequately

dense landscaped buffer is provided along the site's frontage on SW Avery Street, which will be maintained as required by this provision. Therefore, this requirement is met.

(2) **MP Area – Wetland Buffer. Wetland buffer areas up to 50 feet in width may be counted toward the required percentage of site landscaping, subject to the following:**

Response: As previously noted, the subject site does not abut (or include) an MP Area wetland buffer. Therefore, this requirement is not applicable.

Section 73B.070 - Minimum Landscaping Standards for All Zones.

The following are minimum standards for landscaping for all zones.

(1) **Required Landscape Areas**

- **Must be designed, constructed, installed, and maintained so that within three years the ground must be covered by living grass or other plant materials.**
- **The foliage crown of trees cannot be used to meet this requirement.**
- **A maximum of 10% of the landscaped area may be covered with un-vegetated areas of bark chips, rock or stone.**
- **Must be installed in accordance with the provisions of the American National Standards Institute ANSI A300 (Part 1) (Latest Edition).**
- **Must be controlled by pruning, trimming, or otherwise so that:**
  - **It will not interfere with designated pedestrian or vehicular access; and**
  - **It will not constitute a traffic hazard because of reduced**

Response: The Preliminary Landscaped Plan in Exhibit A shows that the proposed landscaping adheres to the requirements provided above. Additionally, the proposed landscaping will be maintained in compliance with the requirements above. Therefore, this standard is met.

(2) **Fences**

- **Landscape plans that include fences must integrate any fencing into the plan to guide wild animals toward animal crossings under, over, or around transportation corridors.**

Response: As shown on the Preliminary Site Plan and Preliminary Landscape Plan in Exhibit A, security fencing (with access gates) is proposed to be located around a portion of the subject site and fencing is proposed to be located around the perimeter of the stormwater facility. As applicable, this standard will be met.

(3) **Tree Preservation**

- Trees and other plant materials to be retained must be identified on the landscape plan and grading plan.

Response: The Preliminary Tree Preservation Plan, Preliminary Grading Plan, and Preliminary Landscape Plan (Exhibit A) identify the trees and other plant materials to be retained on the subject site. Therefore, this standard is met.

- During construction:
  - Must provide above and below ground protection for existing trees and plant materials identified to remain;
  - Trees and plant materials identified for preservation must be protected by chain link or other sturdy fencing placed around the tree at the drip line;
  - If it is necessary to fence within the drip line, such fencing must be specified by a qualified arborist;
  - Top soil storage and construction material storage must not be located within the drip line of trees designated to be preserved;
  - Where site conditions make necessary a grading, building, paving, trenching, boring, digging, or other similar encroachment upon a preserved tree's drip-line area, such grading, paving, trenching, boring, digging, or similar encroachment must only be permitted under the direction of a qualified arborist. Such direction must assure that the health needs of trees within the preserved area can be met; and
  - Tree root ends must not remain exposed.
- Landscaping under preserved trees must be compatible with the retention and health of the preserved tree.
- When it is necessary for a preserved tree to be removed in accordance with TDC 33.110 (Tree Removal Permit) the landscaped area surrounding the tree or trees must be maintained and replanted with trees that relate to the present landscape plan, or if there is no landscape plan, then trees that are complementary with existing, landscape materials. Native trees are encouraged
- 100% of the area preserved under any tree or group of trees (Except for impervious surface areas) retained in the landscape plan must apply directly to the percentage of landscaping required for a development

Response: The Preliminary Tree Preservation Plan in Exhibit A demonstrates the tree protection measures to be taking during construction and improvements to the TVF&R Logistics Service Center are in compliance with the standards above. Therefore, this standard is satisfied.

(4) Grading

- After completion of site grading, top-soil is to be restored to exposed cut and fill areas to provide a suitable base for seeding and planting.
- All planting areas must be graded to provide positive drainage.
- Soil, water, plant materials, mulch, or other materials must not be allowed to wash across roadways or walkways.
- Impervious surface drainage must be directed away from pedestrian walkways, dwelling units, buildings, outdoor private and shared areas and landscape areas except where the landscape area is a water quality facility.

Response: A Preliminary Grading Plan is included in Exhibit A, which is consistent with the requirements above to create suitable conditions for landscaped areas. Therefore, this standard is met.

(5) Irrigation

- Landscaped areas must be irrigated with an automatic underground or drip irrigation system

Response: The required irrigation for landscaped areas will be designed and built by contractors as specified on the Preliminary Landscape Plan. Therefore, this standard is satisfied.

(6) Re-vegetation in Un-landscaped Areas

- Vegetation must be replanted in all areas where vegetation has been removed or damaged in areas not affected by the landscaping requirements and that are not to be occupied by structures or other improvements.
- Plant materials must be watered at intervals sufficient to ensure survival and growth for a minimum of two growing seasons.
- The use of native plant materials is encouraged to reduce irrigation and maintenance demands.
- Disturbed soils should be amended to an original or higher level of porosity to regain infiltration and stormwater storage capacity.

Response: As demonstrated in the Preliminary Landscape Plan in Exhibit A (as applicable), previously vegetated areas that are impacted in association with the proposed site improvements for the TVF&R Logistics Service Center will be revegetated in compliance with the requirements provided above. Therefore, this standard is satisfied.

Chapter 73 C - Parking Standards

Section 73C.020 - Parking Lot Design Standards.

A parking lot, whether an accessory or principal use, intended for the parking of automobiles or trucks, must comply with the following:

(1) Off-street parking lot design must comply with the dimensional standards set forth in Figure 73-1;

(a) **Exception: Parking structures and underground parking where stall length and width requirements for a standard size stall must be reduced by .5 feet and vehicular access at the entrance if gated must be a minimum of 18 feet in width.**

Response: As shown on the Preliminary Site Plan in Exhibit A, the planned parking spaces are designed in conformance with the dimensional standards of this section. Therefore, this criterion is met.

(2) **Parking lot drive aisles must be constructed of asphalt, concrete, or pervious concrete;**

Response: The parking lot drive aisles will be constructed of asphalt or concrete as shown on the Preliminary Plans in Exhibit A. Therefore, this criterion is satisfied.

(3) **Parking stalls must be constructed of asphalt, concrete, previous concrete, or a pervious surface such as pavers or grasscrete, but not gravel or woody material. Pervious surfaces, are encouraged for parking stalls in or abutting the Natural Resource Protection Overlay District, Other Natural Areas, or in a Clean Water Services Vegetated Corridor;**

Response: The parking stalls will be be constructed of asphalt or concrete as shown on the Preliminary Plans in Exhibit A. The subject site does not abut and is not located within the Natural Resources Protection Overlay District, within other natural areas, or within a Clean Water Services Vegetated Corridor. Therefore, this criterion is satisfied.

(4) **Parking lots must be maintained adequately for all-weather use and drained to avoid water flow across sidewalks;**

Response: As shown on the Preliminary Plans in Exhibit A, the parking lot area is designed and maintained for all-weather use and to provide adequate drainage to avoid water flow across sidewalks. Therefore, this criterion is satisfied.

(5) **Parking bumpers or wheel stops or curbing must be provided to prevent cars from encroaching on adjacent landscaped areas, or adjacent pedestrian walkways.**

Response: As shown on the Preliminary Site Plan and Preliminary Landscape Plan, curbing and wheel stops will be provided that will prevent vehicles from encroaching on the street right-of-way, adjacent landscaped areas, or pedestrian walkways. Therefore, this criterion is met.

(6) **Disability parking spaces and accessibility must meet ADA standards applicable at time of construction or alteration;**

Response: The minimum number of disability parking spaces required is calculated based on the number of required off-street parking spaces (excluding fleet parking); therefore, two disability parking spaces are required. The two disability parking spaces and applicable ADA accessibility features are designed to be in conformance with the ADA standards applicable at the time of construction, as illustrated on the Preliminary Site Plan in Exhibit A. Therefore, this criterion is met.

(7) **Parking stalls for sub-compact vehicles must not exceed 35 percent of the total parking stalls required by TDC 73C.100. Stalls in excess of the number required by TDC 73C.100 can be sub-compact stalls;**

Response: As shown on the Preliminary Site Plan in Exhibit A, sub-compact vehicle parking spaces are not proposed. Therefore, this criterion is met.

(8) **Groups of more than 4 parking spaces must be so located and served by driveways that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley;**

Response: The Preliminary Site Plan in Exhibit A shows the location and dimensions of the driveways in the parking area, which are consistent with the provision above. Therefore, this criterion is met.

(9) **Drives to off-street parking areas must be designed and constructed to facilitate the flow of traffic, provide maximum safety of traffic access and egress, and maximum safety of pedestrians and vehicular traffic on the site;**

Response: As shown on the Preliminary Site Plan in Exhibit A, the subject site includes two drives that provide access to the off-street parking area, which are designed to be constructed to facilitate the flow of traffic, provide maximum safety of traffic access and egress and of pedestrians and vehicular traffic on the site. The subject site has frontage on SW Avery Street and an existing access driveway on SW Avery Street. The western property line is adjacent to an existing private drive. The Applicant is in coordination with the property owner to the west to obtain a pedestrian and vehicle access to the site over the existing adjacent private drive. Therefore, this criterion is met.

(10) **On-site drive aisles without parking spaces, which provide access to parking areas with regular spaces or with a mix of regular and sub-compact spaces, must have a minimum width of 22 feet for two-way traffic and 12 feet for one-way traffic; When 90 degree stalls are located on both sides of a drive aisle, a minimum of 24 feet of aisle is required. On-site drive aisles without parking spaces, which provide access to parking areas with only sub-compact spaces, must have a minimum width of 20 feet for two-way traffic and 12 feet for one-way traffic;**

Response: The Preliminary Site Plan in Exhibit A illustrates that the proposed dimensions of the on-site drive aisles without parking spaces are in compliance with the dimensions provided above. Therefore, this criterion is met.

(11) **Artificial lighting, must be deflected to not shine or create glare in a residential zone, street right-of-way, a Natural Resource Protection Overlay District, Other Natural Areas, or a Clean Water Services Vegetated Corridor;**

Response: As shown on the Preliminary Lighting Plans (Exhibit C), on-site and off-site lights are included in this application. The lighting plan includes photometrics that show that the planned lighting will cast minimal light on surrounding properties. This criterion is met.

(12) Parking lot landscaping must be provided pursuant to the requirements of TDC 73C.200; and

Response: As illustrated on the Preliminary Landscape Plan (Exhibit A), the parking lot areas include adequate landscaping areas (including landscaped islands) as required by this section and further discussed in 73C.200 below. Therefore, this criterion is met.

(13) Except for parking to serve residential uses, parking areas adjacent to or within residential zones or adjacent to residential uses must be designed to minimize disturbance of residents.

Response: The subject site is near a residential zone (across SW Avery Street). However, as demonstrated on the Preliminary Site Plan and Preliminary Landscape Plan included in Exhibit A, the parking areas and associated landscaped areas are designed to minimize disturbance of residents. Therefore, this criterion is satisfied.

Section 73C.030 - Shared Parking Requirements.

Parking facilities may be shared by users on adjacent parcels if the following standards are met:

Response: On-site parking facilities are not proposed to be shared by users on adjacent parcels. This criterion is not applicable.

Section 73C.050 - Bicycle Parking Requirements and Standards.

(1) Requirements. Bicycle parking facilities must include;

(a) Long-term parking that consists of covered, secure stationary racks, lockable enclosures, or rooms in which the bicycle is stored;

(i) Long-term bicycle parking facilities may be provided inside a building in suitable secure and accessible locations.

(b) Short-term parking provided by secure stationary racks (covered or not covered), which accommodate a bicyclist's lock securing the frame and both wheels.

(2) Standards. Bicycle parking must comply with the following:

(a) Each bicycle parking space must be at least six feet long and two feet wide, with overhead clearance in covered areas must be at least seven feet;

(b) A five (5) foot-wide bicycle maneuvering area must be provided beside or between each row of bicycle parking. It must be constructed of concrete, asphalt, or a pervious hard surface such as pavers or grasscrete, and be maintained;

(c) Access to bicycle parking must be provided by an area at least three feet in width. It must be constructed of concrete, asphalt, or a pervious hard surface such as pavers or grasscrete, and be maintained;

(d) Bicycle parking areas and facilities must be identified with appropriate signing as specified in the Manual on Uniform

Traffic Control Devices (MUTCD) (latest edition). At a minimum, bicycle parking signs must be located at the main entrance and at the location of the bicycle parking facilities;

(e) Bicycle parking must be located in convenient, secure, and well-lighted locations approved through the Architectural Review process. Lighting, which may be provided, must be deflected to not shine or create glare into street rights-of-way or fish and wildlife habitat areas;

(f) Required bicycle parking spaces must be provided at no cost to the bicyclist, or with only a nominal charge for key deposits, etc. This does not preclude the operation of private for-profit bicycle parking businesses;

(g) Bicycle parking may be provided within the public right-of-way in the Core Area Parking District subject to approval of the City Engineer and provided it meets the other requirements for bicycle parking; and

(h) The City Manager or the Architectural Review Board may approve a form of bicycle parking not specified in these provisions but that meets the needs of long-term and/or short-term parking pursuant to Architectural Review.

Response: The required on-site long-term and short-term bicycle parking is proposed to be located inside the TV&R Logistics Service Center on-site building in a convenient and secure location in accordance with the provisions of Section 73C.050(1)(a)(i). The propose bicycle parking area, dimensions, and associated bicycle maneuvering area adheres to the requirements above, as applicable and noted on the Preliminary Site Plan in Exhibit A. Therefore, these requirements and standards are satisfied.

Section 73C.100 - Off-Street Parking Minimum/Maximum Requirements.

(1) The following are the minimum and maximum requirements for off-street motor vehicle parking in the City, except these standards do not apply in the Core Area Parking District. The Core Area Parking District standards are in TDC 73C.110.

Off-Street Parking		
Use	Minimum Motor Vehicle Parking Requirement	Maximum Motor Vehicle Parking Requirement
(i) Manufacturing	1.60 spaces per 1,000 square feet of gross floor area	None
(ii) Warehousing	0.30 spaces per 1,000 square feet of gross floor area	Zone A: 0.4 spaces per 1,000 square feet of gross floor area Zone B: 0.5 spaces per 1,000 square feet of gross floor area

Response: Per the Tualatin Development Code, the minimum off-street parking requirements are based on the proposed use and gross floor area. As previously described above, a Director's Interpretation (Exhibit G) pertaining to the proposed use of the subject site was approved, which determined that the proposed use (redevelopment of the existing site to serve as a TVF&R Logistics Service Center, primarily used for fleet maintenance) is permitted in the ML zone. Based on the proposed use and gross floor area of the building, 65 off-street parking spaces are required, and 74 standard spaces (2 ADA spaces) are provided. Parking and Passenger loading data is provided on the Preliminary Site Plan (Exhibit A), which demonstrates compliance with the minimum off-street parking requirement based on the above permitted use of the site. Therefore, this criterion is satisfied.

Section 73C.120 – Off-Street Loading Facilities Minimum Requirements.

(1) The minimum number of off-street loading berths for commercial, industrial, and institutional uses is as follows:

Off-Street Loading Facilities				
Use	Square Feet of Floor Area	Number of Berths	Dimensions of Berth	Unobstructed Clearance of Berth
Industrial	25,000 – 60,000	2	12 feet x 60 feet	14 feet

Response: The off-street loading facilities are illustrated on the Preliminary Site Plan in Exhibit A, which meet the two minimum berths required as provided above. Therefore, this criterion is satisfied.

(2) Loading berths must not use the public right-of-way as part of the required off-street loading area.

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the loading berths are not located within the public right-of-way; therefore, this criterion is satisfied.

(3) Required loading areas must be screened from public view, public streets, and adjacent properties by means of sight-obscuring landscaping, walls or other means, as approved through the Architectural Review process.

Response: As illustrated on the Preliminary Site Plan and the Preliminary Landscape Plan in Exhibit A, sight-obscuring landscaping provides adequate screening of the required loading areas from public view, public streets, and adjacent properties. Therefore, this criterion is satisfied.

(4) Required loading facilities must be installed prior to final building inspection and must be permanently maintained as a condition of use.

Response: The required loading facilities will be installed prior to final building inspection and will be permanently maintained as a condition of use. Therefore, this criterion will be satisfied.

(5) The off-street loading facilities must in all cases be on the same lot or parcel as the structure they are intended to serve. In no case must the required off-street loading spaces be part of the area used to satisfy the off-street parking requirements.

Response: As shown on the Preliminary Site Plan in Exhibit A, the off-street loading facilities are located on the subject site intended to serve as the TVF&R Logistics Service Center. Therefore, this criterion is satisfied.

(6) A driveway designed for continuous forward flow of passenger vehicles for the purpose of loading and unloading children must be located on the site of a school or child day care center having a capacity greater than 25 students.

Response: The proposed TVF&R Logistics Service Center does not involve a driveway designed for continuous forward flow of passenger vehicles for the purpose of loading and unloading children. Therefore, this criterion is not applicable.

Section 73C.130 - Parking Lot Driveway and Walkway Minimum Requirements.

Parking lot driveways and walkways must comply with the following requirements:

(4) Industrial Use. Ingress and egress for industrial uses must not be less than the following:

Required Parking Spaces	Minimum Number Required	Minimum Pavement Width	Minimum Pavement Walkways, Etc.
1-250	1	36 feet for first 50' from ROW, 24 feet thereafter	No curbs or walkway required

Response: The Preliminary Site Plan in Exhibit A illustrates the dimensions of the parking lot drive aisles, which are in conformance with the requirements provided above. Therefore, this criterion is met.

(5) One-way Ingress or Egress. When approved through the Architectural Review process, one-way ingress or egress may be used to satisfy the requirements. However, the hard surfaced pavement of one-way drives must not be less than 16 feet for multi-family residential, commercial, or industrial uses.

(6) Maximum Driveway Widths and Other Requirements.

(a) Unless otherwise provided in this chapter, maximum driveway widths for Commercial, Industrial, and Institutional uses must not exceed 40 feet.

(b) Driveways must not be constructed within 5 feet of an adjacent property line, unless the two adjacent property

owners elect to provide joint access to their respective properties, as provided by TDC73C.040.

(c) The provisions of subsection (b) do not apply to townhouses and duplexes, which are allowed to construct driveways within 5 feet of adjacent property lines.

(d) There must be a minimum distance of 40 feet between any two adjacent driveways on a single property unless a lesser distance is approved by the City Manager.

(e) Must comply with the distance requirements for access as provided in TDC 75.

(f) Must comply with vision clearance requirements in TDC 75.

Response: As applicable, the Preliminary Site Plan in Exhibit A illustrates that the driveways and walkways meet the requirements provided above. Therefore, this criterion is met.

Section 73C.230 – Industrial Parking Lot Landscaping Requirements.

Industrial uses must comply with the following landscaping requirements for parking lots in all zones.

(1) General. Locate landscaping or approved substitute materials in all areas not necessary for vehicular parking and maneuvering.

Response: As illustrated on the Preliminary Landscape Plan in Exhibit A, the proposed parking lot landscaping is identified and in compliance with the requirements above. Therefore, this requirement is satisfied.

(2) Clear Zone. Clear zone required for the driver at ends of on-site drive aisles and at driveway entrances, vertically between a maximum of 30 inches and a minimum of 8 feet as measured from the ground level.

Response: As illustrated on the Preliminary Landscape Plan in Exhibit A, clear zones are provided in compliance with this requirement and will be maintained as practicable. Therefore, this requirement is satisfied.

(a) Exception: does not apply to parking structures and underground parking.

Response: This application does not include parking structures or underground parking.

(3) Perimeter. Minimum 5 feet in width in all off-street parking and vehicular circulation areas, including loading areas and must comply with the following:

(a) Deciduous trees located not more than 30 feet apart on average as measured on center;

(b) Shrubs or ground cover, planted so as to achieve 90 percent coverage within three years;

(c) Plantings which reach a mature height of 30 inches in three years which provide screening of vehicular headlights year round;

(d) Native trees and shrubs are encouraged; and

(e) Exception: Not required where off-street parking areas on separate lots are adjacent to one another and connected by vehicular access.

Response: To the extent applicable, the Preliminary Landscape Plan in Exhibit A illustrates that the proposed landscaping located within the parking areas, vehicular circulation areas, and loading areas is in compliance with the provisions above. Therefore, this standard is satisfied.

(4) Landscape Island. Minimum 25 square feet per parking stall must be improved with landscape island areas and must comply with the following.

(a) May be lower than the surrounding parking surface to allow them to receive stormwater run-off and function as water quality facilities as well as parking lot landscaping;

(b) Must be protected from vehicles by curbs, but the curbs may have spaces to allow drainage into the islands;

(c) Islands must be utilized at aisle ends to protect parked vehicles from moving vehicles and emphasize vehicular circulation patterns;

(d) Landscape separation required for every eight continuous spaces in a row;

(e) Must be planted with one deciduous shade trees for every four parking spaces; Required trees must be evenly dispersed throughout the parking lot;

(f) Must be planted with groundcover or shrubs;

(g) Native plant materials are encouraged;

(h) Landscape island areas with trees must be a minimum of 5 feet in width (from inside of curb to curb);

(i) Required plant material in landscape islands must achieve 90 percent coverage within three years; and

(j) Exception: Landscape square footage requirements do not apply to parking structures and underground parking.

Response: The Preliminary Landscape Plan in Exhibit A illustrates that the proposed landscaping islands located in the parking areas are in compliance with the provisions above. Therefore, this standard is satisfied.

(5) Landscaping Along Driveway Access. For lots with 12 or more parking spaces:

(a) Landscape area at least five (5) feet in width on each side of an accessway;

(b) Landscape area must extend 30 feet back from the property line; and

(c) Exceptions: does not apply to parking structures and underground parking which must be determined through the Architectural Review process.

Response: The Preliminary Landscape Plan in Exhibit A illustrates that the landscaping in the parking areas and driveway accesses is in compliance with the provisions above. Therefore, this standard is satisfied.

Chapter 73D - Waste and Recyclables Management Standards

Section 73D.020 - Design Methods.

An applicant required to provide mixed solid waste and source separated recyclables storage areas must comply with one of following methods:

(1) The minimum standards method in TDSC 73D.030;

(2) The waste assessment method in TDC 73D.040;

(3) The comprehensive recycling plan method in TDC 73D.050; or

(4) The franchised hauler review method in TDC 73D.060.

Response: The required mixed solid waste and source separated storage facilities area is depicted on the Preliminary Site Plan in Exhibit A, and complies with the minimum standards method. Therefore, this standard is met.

Section 73D.030 - Minimum Standards Method.

This method specifies a minimum storage area requirement based on the size and general use category of the new or expanded development. This method is most appropriate when specific use of a new or expanded development is not known. It provides specific dimensional standards for the minimum size of storage areas by general use category.

(1) The size and location of the storage area(s) must be indicated on the site plan. Requirements are based on an assumed storage area height of four feet for mixed solid waste and source separated recyclables. Vertical storage higher than four feet, but no higher than 7 feet may be used to accommodate the same volume of storage in a reduced floor space (potential reduction of 43 percent of specific requirements). Where vertical or stacked storage is proposed, submitted plans must include drawings to illustrate the layout of the storage area and dimensions for containers.

Response: The mixed solid waste and recyclables facilities are shown on the Preliminary Site Plan (Exhibit A) and the Architectural Renderings (Exhibit B). The design is based on a commercial enclosure plan provided by Republic Services (Exhibit N). Vertical or stacked storage is not proposed. This criterion is satisfied.

(2) The storage area requirement is based on uses. If a building has more than one use and that use occupies 20 percent or less of the gross leasable area (GLA) of the building, the GLA occupied by that use must be counted toward the floor area of the predominant use(s). If a building has more than one use and that use occupies more than 20 percent of the GLA of the building, then the storage area

requirement for the whole building must be the sum of the area of each use. Minimum storage area requirements by use is as follows:

(c) Commercial, industrial, and institutional developments must provide a minimum storage area of 10 square feet plus:

(v) All other uses- 4 square feet/1000 square feet GLA.

Response: As previously noted above, this application is for the TVF&R Logistics Service Center and is located within the ML zone. The Minimum Standards Method has been selected to calculate the minimum size of the solid waste and recyclables storage area. As shown on the Preliminary Site Plan (Exhibit A) and Architectural Renderings (Exhibit B) the square footage of the mixed solid waste and recyclables facilities area exceeds the above minimum requirements. To the extent that they apply, these standards are met.

Section 73D.070 - Location, Design and Access Standards.

The following location, design, and access standards are applicable to all storage areas:

(1) Location Standards.

(a) The storage area for source separated recyclables may be collocated with the storage area for mixed solid waste.

Response: The source separated recyclables facility and mixed solid waste facility are located within the same enclosure on the subject site, as illustrated on the Preliminary Site Plan in Exhibit A. Therefore, this standard is met.

(b) Storage area space requirements can be satisfied with a single location or multiple locations, and can combine both interior and exterior locations.

Response: As previously noted above and as illustrated on the Preliminary Site Plan in Exhibit A, the proposed source separated recyclables facility and mixed solid waste facility storage area is located within a single enclosure on the subject site. Therefore, this standard is met.

(c) Exterior storage areas must:

(i) Be located in central and visible locations on the site to enhance security for users;

(ii) Be located in a parking area; and

(iii) Not be located within a required front yard setback or in a yard adjacent to a public or private street.

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the proposed source separated recyclables facility and mixed solid waste facility storage area is generally located near the loading area, truck staging area, and parking area, in a central and visible area. The enclosure is not located within a front yard setback or in a yard adjacent to a public or private street. Therefore, these standards are met.

(2) Design Standards.

(a) The dimensions of the storage area must accommodate containers consistent with current methods of local collection at time of construction or alteration.

Response: As previously noted above, the dimensions of the source separated recyclables facility and mixed solid waste facility storage area is illustrated on the Preliminary Site Plan (Exhibit A) and Architectural Rendering (Exhibit B, Sheet A-201), which is designed to accommodate containers consistent with current methods of local collection (Republic Services) at the time of construction or alteration. Therefore, this standard is met.

(b) Indoor and outdoor storage areas must comply with Oregon Building and Fire Code requirements.

Response: The proposed source separated recyclables facility and mixed solid waste facility storage enclosure is designed in compliance with Oregon Building and Fire Code requirements, as illustrated on the Architectural Rendering (Exhibit B). Therefore, this standard is met.

(c) Exterior storage areas must be enclosed by a sight obscuring fence or wall at least 6 feet in height.

Response: As illustrated on the Preliminary Site Plan (Exhibit A) and Architectural Rendering (Exhibit B, Sheet A-201), the exterior storage area is enclosed by a sight obscuring wall at least 6 feet in height. Therefore, this standard is met.

(d) Evergreen plants must be placed around the enclosure walls, excluding the gate or entrance openings for common wall, commercial, and institutional developments.

Response: As illustrated on the Preliminary Landscape Plan in Exhibit A, the storage area enclosure is landscaped in compliance with the provision above. Therefore, this standard is met.

(e) Gate openings for haulers must be a minimum of 10 feet wide and must be capable of being secured in a closed and open position.

Response: The dimensions of the storage enclosure area gates are illustrated on the Architectural Rendering (Exhibit B, Sheet A-201) which meets minimum gate opening requirement above. Therefore, this standard is met.

(f) Horizontal clearance must be a minimum of 10 feet and a vertical clearance of 8 feet is required if the storage area is covered.

Response: As illustrated on the Architectural Rendering (Exhibit B, Sheet A-201) the storage is not proposed to be covered. Therefore, this standard is not applicable.

(g) A separate pedestrian access must also be provided in common wall, commercial, and institutional developments.

Response: This application involves the redevelopment of the existing building and associated improvements to construct a Logistics Service Center to serve TVF&R and does not include a common wall, commercial, or institutional development. Therefore, this standard is not applicable.

(h) Exterior storage areas must have either a concrete or asphalt floor surface.

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the exterior storage area is designed to be constructed with an asphalt or concrete floor surface. Therefore, this standard is met.

(i) Storage areas and containers must be clearly labeled to indicate the type of material accepted.

Response: The proposed storage areas and containers will be clearly labeled to indicate the type of material accepted as indicated above. Therefore, this standard will be met.

(3) Access Standards.

(a) Storage areas must be accessible to users at convenient times of the day, and to hauler personnel on the day and approximate time they are scheduled to provide hauler service.

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the location of the storage area is accessible to users (TVF&R employees) and will also be accessible to hauler personnel on the approximate time they are scheduled to provide service to the subject site. A security code will be provided to Republic Services personnel prior to the start of serve to provide access through the security gate. Therefore, this standard is met.

(b) Storage areas must be designed to be easily accessible to hauler trucks and equipment, considering paving, grade, gate clearance and vehicle access.

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the storage area is designed to be easily accessible to hauler trucks and equipment. An approval letter provided by Republic Services is included in Exhibit N, please refer to this letter for further information. Therefore, this standard is met.

(c) Storage areas must be accessible to hauler trucks without requiring backing out of a driveway onto a public street. If only a single access point is available to the storage area, adequate turning radius must be provided to allow hauler trucks to safely exit the site in a forward motion.

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the storage area is located in the general area of the loading docks and truck staging lanes, which are designed to provide for adequate turning radius to allow for hauler trucks to safely exit in a forward motion. An approval letter provided by Republic Services is included in Exhibit N, please refer to this letter for further information. Therefore, this standard is met.

(d) Storage areas must located so that pedestrian and vehicular traffic movement are not obstructed on site or on public streets adjacent to the site.

Response: As illustrated on the Preliminary Site Plan, the storage area is generally located near the loading docks and truck staging lanes at the back end of the subject site, away from the main building entrance and pedestrian access, so that pedestrian and vehicular traffic

movement are not obstructed on site, or on public streets adjacent to the site. Therefore, this standard is met.

(e) The following is an exception to the access standard:

(i) Access may be limited for security reasons.

Response: As illustrated on the Preliminary Site Plan, a security fence is proposed along portions of the subject site with secured gates at access drives to ensure the safety and security of the TVF&R Logistics Service Center (which includes the access to the storage enclosure). That said, access to the trash and recyclables storage area is limited.

Chapter 73F – Wireless Communications Facilities

(2) Objectives. All wireless communication facilities and attached facilities should strive to meet the following objectives to the maximum extent practicable. Architects and developers should consider these elements in designing new development. In the case of conflicts between objectives, the proposal must provide a desirable balance between the objectives. Site elements must be placed and designed, to the maximum extent practicable, to: Be aesthetically and architecturally designed and located to be compatible with the surrounding environment and analyze co-location before seeking new sites.

(a) Select colors in consideration of lighting conditions and the context under which the structure is viewed, the ability of the material to absorb, reflect or transmit light and the color's functional role, e.g., aesthetic reasons.

(b) Select platform and antenna designs which minimize their size and visual appearance to surrounding development.

(c) Provide a composition of structural material elements which is cohesive and responds to use needs, site context, land form, a sense of place and identity, safety, and climatic factors.

(d) Select materials which contribute to the project's form and function, as well as to the surrounding environment.

(e) Minimize disruption of natural site features such as topography, trees, and water features.

(f) Take into consideration the existing topography of the site and surrounding vicinity.

(g) Reduce the visual impact of the support structure by locating within stands of existing vegetation and trees.

(h) Screen elements such as mechanical and electrical equipment from view.

(i) Locate a wireless communication facility attached to existing rooftop mechanical equipment before placement on the exterior wall of a building.

(j) Co-locate wireless communication facility or attached facility.

(k) Construct wireless communication support structures at the minimum height necessary to serve the operational requirements of the system.

(l) Separate wireless communication support structures from each other.

Response: The proposed roof mounted radio antenna is necessary for TVF&R's emergency radio communications equipment, which provides line of sight communications capability as an emergency services provider. To the extent practicable and to the extent the wireless communications facilities objectives apply, these elements have been considered in designing the proposed roof mounted antenna for the TVF&R Logistics Service Center.

Section 73F.020 - Maximum Height.

The maximum height for a wireless communication facilities, support structures, and antennas is as follows:

Planning District	Maximum Structure Height
(15) Light Manufacturing (ML)	100 feet 120 feet (including antennas) if structure is within 300 feet of the centerline of I-5

Response: As illustrated on the elevations included in the Architectural Renderings (Exhibit B) the proposed roof mounted antenna is in compliance with the maximum structure height provided in Section 73F.020. Therefore, this provision is met.

Section 73F.030 - Site Design Standards.

(1) All Wireless Communication Facilities must comply with the following minimum design standards:

Response: The subject equipment being proposed to be added to the roof differs from typical wireless communication equipment and therefore, does not directly fit the siting standards. TVF&R as a regional emergency services provider is required under its mandate to operate and maintain specific emergency communications equipment to be used for daily emergency communications as well as in the event of a disaster where the phone service both wired and wireless is rendered unusable. The Logistics Facility is considered an "essential facility" and is an integral part of the emergency response system. The systems employed rely on full line of sight connectivity to be functional. This equipment must be fully exposed, specifically placed and sited, and tall enough to maintain the line of sight connectivity at all times.

The proposed installation at TVF&R's new Logistics Center is part of this system and fulfills several roles. It consists of a 20' tall steel frame truss type mast mounted on the roof near the Communications Room below. The mast is affixed with several individual radio antennas each having a different function. Some are actively in use as elements of the daily communications system. Others are being tested after having been refurbished or repaired. Still others are new units being tested and calibrated before being put into service at one of TVF&R's many fire stations in the regional area they serve. The number and location of the individual antennas are constantly changing as the need changes.

(a) A wireless communication facility attached must not be attached to buildings which are designed solely for single family residential use;

Response: The proposed antenna will be located on the roof of the proposed TVF&R Logistics Service Center, which is not a residential use. As noted above, the proposed roof mounted antenna is necessary for TVF&R's emergency radio communications equipment, which provides line of sight communications capability as an emergency services provider. Therefore, this provision is met.

(b) Mechanical and electrical equipment and the bottom six feet of the support structure for a wireless communication facility must be screened from the public right-of-way and abutting property by the use of a minimum six foot tall security fence or wall consisting of chain link fencing with vinyl slats, solid wood fencing, concrete masonry unit block, or brick;

Response: The emergency communication radio antennas are required to maintain a clear line of sight point of access to all TVF&R fire stations and therefore cannot be obscured by any screening. The equipment must be clear and free of any obstructions. Therefore, this provision is not warranted.

(c) Equipment shelters, buildings or cabinets to house radio electronics equipment must be concealed, camouflaged, screened by vegetative, or placed underground.

Response: As illustrated on the Architectural Renderings (Exhibit B), other than the antenna itself all other equipment is housed inside of the building below the roof. Therefore, this provisions is met.

(d) A wireless communication facility must utilize existing site conditions such as surrounding vegetation and trees;

Response: As noted above, the line of sight requirements prevents full compliance with this provision.

(e) A wireless communication facility support structure must be constructed to the minimum height necessary to serve the operational requirements of the facility;

Response: The core radio mast is 20 feet in height. The antennas attached to the radio mast will not exceed an additional 5 feet in height, which results in a total height of 25 feet, the minimum height necessary to serve the operational requirements of the emergency communication radio antenna. Therefore, this provision is satisfied.

(f) A wireless communication facility must be designed to allow co-location of facilities;

Response: The proposed roof mounted antenna mandated by TVF&R is necessary for TVF&R's emergency radio communications equipment, which provides line of sight communications capability as an emergency services provider. Therefore, co-location of wireless communication facilities is not warranted or applicable.

(g) Wireless communication support structure towers must be used in all zones, except when co-locating on an existing structure.

Response: As noted above, the proposed radio antenna is not a wireless communication facility. Therefore, a wireless communication support structure is not necessary for the TVF&R emergency radio antenna. This provision is not applicable.

(h) Antennas and platforms must be designed to minimize their size and appearance to surrounding development;

Response: As illustrated on the Architectural Renderings (Exhibit B), the design of the proposed radio antenna is the minimum required to meet the mandate for emergency services communications equipment. Therefore, this provision is met.

(i) Obsolete or unused wireless communication support structures and associated equipment and antennas must be removed within 12 months of cessation of operations at a site;

Response: This provision is not applicable at this time. However, to the extent applicable in the future, this provision can be met.

(j) No new wireless communication support structure is permitted unless the applicant submits a co-location report showing whether or not any existing tower or support structure within one-half mile of the proposed site can accommodate the applicant's proposed antennae. The report must address the following:

(i) Do existing towers or support structures, or approved but not yet constructed towers or support structures, located within the geographic area meet the applicant engineering requirements;

(ii) Are existing towers or support structures of sufficient height to meet the applicant's engineering requirements;

(iii) Do existing towers or support structures have sufficient structural strength to support the applicants proposed antennae and related equipment;

(iv) Would the applicant's proposed antennae cause electromagnetic interference with the antennae on the existing tower or support structure, or would existing antennae cause interference with the applicant's proposed antennae; and

(v) Are there other limiting factors that render existing towers and support structures unsuitable or unavailable.

Response: As noted above, this application includes the installation of an antenna for TVF&R's emergency radio communication. Therefore, the provisions above are not applicable.

(k) The minimum distance between wireless communication support structure tower is 1,500 feet. Separation must be measured by following a straight line from one wireless communication support structure tower to the next. For purposes of this section, a wireless communication support structure tower includes wireless communication support structure tower for which the City has issued a development permit, or for which an application has been filed and not denied.

Response: As noted above, the proposed roof mounted antenna is necessary for TVF&R's emergency radio communications equipment, which provides line of sight communications capability as an emergency services provider. Therefore, the provision above is not applicable.

(2) In addition to complying with subsection (1), all Wireless Communication Facilities Attached must comply with the following:

(a) Wireless communication facility attached antennas must use existing rooftop mechanical equipment, and only if not practicable be placed on the exterior wall of a building; and

(b) Wireless communication facility attached antennas must be painted to match the color of the mechanical screen wall or building to which it is attached.

Response: Attachment to rooftop mechanical equipment is not compatible with the functional requirements of the radio mast and attached antennas. The radio mast will be painted to match the medium gray for the mechanical screens which, in turn, match the color of the exposed aggregate tilt concrete panels of the building's exterior walls. Therefore, to the extent feasible and applicable, these provisions are satisfied.

Section 73F.040 - Setback Requirements.

Setbacks for all Wireless Communication Facilities are determined through the Architectural Review process, and must be consistent with the following:

(1) The minimum setback must be 5 feet, except as otherwise specified in (2), below;

(2) The minimum setback from an RL zone or from an RML zone with an approved small lot subdivision must be determined as follows:

(a) The setback must be no less than 175 feet for a monopole that is no more than 35 feet in height;

(b) The setback must increase five feet for each one foot increase in height up to 80 feet in height; and

(c) The setback must increase 10 feet for each one foot increase in height above 80 feet.

(3) In making a determination of compliance with the setback requirements, the City Manager must consider the following factors:

(a) If the abutting property is in the Low Density Residential (RL) Zone or in the Medium-Low Density Residential

(RML) Zone with an approved small lot subdivision, and if natural vegetation, such as evergreen trees, does not exist to act as a screen, then a greater setback than the minimum required may be appropriate. If such natural vegetation exists, then the minimum required setback may be appropriate;

(b) If the abutting property is in the Low Density Residential (RL) Zone or in the Medium-Low Density Residential (RML) Zone with an approved small lot subdivision, and it is vacant or its use is a single family dwelling, then a greater setback than the minimum required may be appropriate. If the use is not a single family dwelling, then the minimum required setback may be appropriate; and

(c) If the abutting property is in the Low Residential Density (RL) Zone or in the Medium-Low Density Residential (RML) Zone with an approved small lot subdivision, and it is vacant or its use is a single family dwelling and it is at a lower elevation than the subject property, then a greater setback than the minimum required may be appropriate.

Response: As noted above, the proposed roof mounted antenna is necessary for TVF&R's emergency radio communications equipment, which provides line of sight communications capability as an emergency services provider. As illustrated on the Preliminary Plans (Exhibit A) the proposed roof mounted antenna is consistent with the provisions above, to the extent applicable.

Section 73F.050. Variances.

Variances to the provisions of this Chapter are as provided in TDC 33.120.

Response: A variance to the provisions of this Chapter is not necessary and is not included in this application. Therefore, this criterion is not applicable.

Chapter 74: Public Improvement Requirements

Section 74.010 Purpose.

The City's Community Plan sets forth the requirements for providing adequate transportation and utility systems to serve the community's present and future needs. Land development without adequate transportation and utility systems will adversely affect the overall economic growth of the City and cause undue damage to the public health and welfare of its citizens. Consequently, the City finds that it is in the public interest to require land development to meet the following improvement requirements.

Section 74.020 Authority.

(1) The City Manager may develop standard forms, including but not limited to deeds, easements, interim access agreements, escrow agreements, street improvement agreements, subdivision compliance agreements and agreements to dedicate right-of-way, to include the contents and warranties when they are submitted, and the procedure for implementation necessary to carry out the purpose of this chapter.

(2) Easements submitted on a final plat or on a separate easement form must be subject to this chapter.

(3) Supervision of Planting. The City Manager has jurisdiction over all trees, plants and shrubs planted or growing in or upon the public rights-of-way of the City and their planting, removal, care, maintenance and protection. The City Manager is to enforce these provisions.

Response: To the extent applicable, these provisions can be met.

Section 74.110 Phasing of Improvements.

The applicant may build the development in phases. If the development is to be phased the applicant must submit a phasing plan to the City Manager for approval with the development application. The timing and extent or scope of public improvements and the conditions of development must be determined by the City Council on subdivision applications and by the City Manager on other development applications.

Response: The Applicant is not proposing to redevelop the site in phases. Therefore, this provision is not applicable.

Section 74.120 Public Improvements.

(1) Except as specially provided, all public improvements must be installed at the expense of the applicant. All public improvements installed by the applicant must be constructed and guaranteed as to workmanship and material as required by the Public Works Construction Code prior to acceptance by the City. Work must not be undertaken on any public improvement until after the construction plans have been approved by the City Manager and a Public Works Permit issued and the required fees paid.

(2) In accordance with the Tualatin Basin Program for fish and wildlife habitat the City intends to minimize or eliminate the negative impacts of public streets by modifying right-of-way widths and street improvements when appropriate. The City Manager is authorized to modify right-of-way widths and street improvements to address the negative impacts on fish and wildlife habitat.

Response: To the extent applicable, these provision can be met.

Section 74.130 Private Improvements.

All private improvements must be installed at the expense of the applicant. The property owner must retain maintenance responsibilities over all private improvements.

Response: This provision will be met.

Section 74.140 Construction Timing.

(1) All the public improvements required under this chapter must be completed and accepted by the City prior to the issuance of a Certificate of Occupancy; or, for subdivision and partition

applications, in accordance with the requirements of the Subdivision regulations.

(2) All private improvements required under this Chapter must be approved by the City prior to the issuance of a Certificate of Occupancy; or for subdivision and partition applications, in accordance with the requirements of the Subdivision regulations.

Response: To the extent applicable, these provisions can be met.

Section 74.210 Minimum Street Right-of-Way Widths.

The width of streets in feet must not be less than the width required to accommodate a street improvement needed to mitigate the impact of a proposed development. In cases where a street is required to be improved according to the standards of the TDC, the width of the right-of-way must not be less than the minimums indicated in TDC Chapter 74, Public Improvement Requirements, Figures 74-2A through 74-2G.

(1) For subdivision and partition applications, wherever existing or future streets adjacent to property proposed for development are of inadequate right-of-way width the additional right-of-way necessary to comply with TDC Chapter 74, Public Improvement Requirements, Figures 74-2A through 74-2G must be shown on the final subdivision or partition plat prior to approval of the plat by the City. This right-of-way dedication must be for the full width of the property abutting the roadway and, if required by the City Manager, additional dedications must be provided for slope and utility easements if deemed necessary.

Response: This application does not include a partition or subdivision; therefore, this provision does not apply.

(2) For development applications other than subdivisions and partitions, wherever existing or future streets adjacent to property proposed for development are of inadequate right-of-way width, the additional right-of-way necessary to comply with TDC Chapter 74, Public Improvement Requirements, Figures 74-2A through 74-2G of the Tualatin Community Plan must be dedicated to the City for use by the public prior to issuance of any building permit for the proposed development. This right-of-way dedication must be for the full width of the property abutting the roadway and, if required by the City Manager, additional dedications must be provided for slope and utility easements if deemed necessary.

Response: This application is for the redevelopment of the existing building. The subject site has frontage on SW Avery Street which has adequate right-of-way width per City standards. Therefore, additional right-of-way is not proposed or required to be dedicated. This provision is satisfied.

(3) For development applications that will impact existing streets not adjacent to the applicant's property, and to construct necessary street improvements to mitigate those impacts would require additional right-of-way, the applicant must be responsible for obtaining the necessary right-of-way from the property owner. A right-of-way

dedication deed form must be obtained from the City Manager and upon completion returned to the City Manager for acceptance by the City. On subdivision and partition plats the right-of-way dedication must be accepted by the City prior to acceptance of the final plat by the City. On other development applications the right-of-way dedication must be accepted by the City prior to issuance of building permits. The City may elect to exercise eminent domain and condemn necessary off-site right-of-way at the applicant's request and expense. The City Council must determine when condemnation proceedings are to be used.

Response: The proposed redevelopment of the subject site will not impact existing streets not adjacent to the subject site. Therefore, this provision does not apply.

(4) If the City Manager deems that it is impractical to acquire the additional right-of-way as required in subsections (1)-(3) of this section from both sides of the center-line in equal amounts, the City Manager may require that the right-of-way be dedicated in a manner that would result in unequal dedication from each side of the road. This requirement will also apply to slope and utility easements as discussed in TDC 74.320 and 74.330. The City Manager's recommendation must be presented to the City Council in the preliminary plat approval for subdivisions and partitions, and in the recommended decision on all other development applications, prior to finalization of the right-of-way dedication requirements.

Response: As previously noted above, this application is for the redevelopment of the existing building. The subject site has frontage on SW Avery Street which has adequate right-of-way width per City standards. Therefore, this provision is not applicable.

(5) Whenever a proposed development is bisected by an existing or future road or street that is of inadequate right-of-way width according to TDC Chapter 74, Public Improvement Requirements, Figures 74-2A through 74-2G, additional right-of-way must be dedicated from both sides or from one side only as determined by the City Manager to bring the road right-of-way in compliance with this section.

Response: The subject site is not bisected by an existing of future road or street that is of inadequate right-of-way width. Therefore, this provision is not applicable.

(6) When a proposed development is adjacent to or bisected by a street proposed in TDC Chapter 11, Transportation Plan (Figure 11-3) and no street right-of-way exists at the time the development is proposed, the entire right-of-way as shown in TDC Chapter 74, Public Improvement Requirements, Figures 74-2A through 74-2G must be dedicated by the applicant. The dedication of right-of-way required in this subsection must be along the route of the road as determined by the City.

Response: As noted above, the subject site is not bisected by an existing of future road or street that is of inadequate right-of-way width. Therefore, this provision is not applicable.

Section 74.330 Utility Easements.

(1) Utility easements for water, sanitary sewer and storm drainage facilities, telephone, television cable, gas, electric lines and other public utilities must be granted to the City.

(2) For subdivision and partition applications, the on-site public utility easement dedication area must be shown to be dedicated to the City on the final subdivision or partition plat prior to approval of the plat by the City; and

(3) For subdivision and partition applications which require off-site public utility easements to serve the proposed development, a utility easement must be granted to the City prior to approval of the final plat by the City. The City may elect to exercise eminent domain and condemn necessary off-site public utility easements at the applicant's request and expense. The City Council must determine when condemnation proceedings are to be used.

(4) For development applications other than subdivisions and partitions, and for both on-site and off-site easement areas, a utility easement must be granted to the City; building permits must not be issued for the development prior to acceptance of the easement by the City. The City may elect to exercise eminent domain and condemn necessary off-site public utility easements at the applicant's request and expense. The City Council must determine when condemnation proceedings are to be used.

(5) The width of the public utility easement must meet the requirements of the Public Works Construction Code. All subdivisions and partitions must have a 6-foot public utility easement adjacent to the street and a 5-foot public utility easement adjacent to all side and rear lot lines. Other easements may be required as determined by the City Manager.

Response: As illustrated on the Preliminary Plans (Exhibit A) an 8-foot wide public utility easement is proposed to be dedicated along the site's frontage. Therefore, these provisions are satisfied, as applicable.

Section 74.420 - Street Improvements.

When an applicant proposes to develop land adjacent to an existing or proposed street, including land which has been excluded under TDC 74.220, the applicant should be responsible for the improvements to the adjacent existing or proposed street that will bring the improvement of the street into conformance with the Transportation Plan (TDC Chapter 11), TDC 74.425 (Street Design Standards), and the City's Public Works Construction Code, subject to the following provisions:

(1) For any development proposed within the City, roadway facilities within the right-of- way described in TDC 74.210 must be improved to standards as set out in the Public Works Construction Code.

(2) The required improvements may include the rebuilding or the reconstruction of any existing facilities located within the right-of-way adjacent to the proposed development to bring the facilities into compliance with the Public Works Construction Code.

(3) The required improvements may include the construction or rebuilding of off-site improvements which are identified to mitigate the impact of the development.

(4) Where development abuts an existing street, the improvement required must apply only to that portion of the street right-of-way located between the property line of the parcel proposed for development and the centerline of the right-of-way, plus any portion of the arterial street adjacent to the applicant's property. The three certain arterial streets are S.W. Tualatin-Sherwood Road, S.W. Pacific Highway (99W) and S.W. 124th Avenue. In addition, the applicant may be required to construct and place on the arterial at the intersection of the arterial and an existing or future public non-arterial street warranted traffic control devices (in accordance with the Manual on Uniform Traffic Control Devices, latest edition), pavement markings, street tapers and turning lanes, in accordance with the Public Works Construction Code.

Response: The subject site is adjacent to SW Avery Street (a public street). The existing sidewalk on the site's frontage along SW Avery Street has been evaluated and as illustrated on the Preliminary Plans (Exhibit A) the sidewalk will be reconstructed to make it compliant with the Transportation Plan (TDC Chapter 11), TDC 74.425 (Street Design Standards), and the City's Public Works Construction Code, consistent with the provisions above. Therefore, these provisions are satisfied.

Section 74.425 Street Design Standards.

(1) Street design standards are based on the functional and operational characteristics of streets such as travel volume, capacity, operating speed, and safety. They are necessary to ensure that the system of streets, as it develops, will be capable of safely and efficiently serving the traveling public while also accommodating the orderly development of adjacent lands.

(2) The proposed street design standards are shown in Figures 72A through 72G. The typical roadway cross sections comprise the following elements: right-of-way, number of travel lanes, bicycle and pedestrian facilities, and other amenities such as landscape strips. These figures are intended for planning purposes for new road construction, as well as for those locations where it is physically and economically feasible to improve existing streets.

(3) In accordance with the Tualatin Basin Program for fish and wildlife habitat it is the intent of Figures 74-2A through 74-2G to allow for modifications to the standards when deemed appropriate by the City Manager to address fish and wildlife habitat.

(4) All streets must be designed and constructed according to the preferred standard. The City Manager may reduce the requirements of the preferred standard based on specific site conditions, but in no event will the requirement be less than the minimum standard. The City Manager must take into consideration the following factors when deciding whether the site conditions warrant a reduction of the preferred standard:

Response: As previously noted above, new streets are not required or proposed. Therefore, these provisions are not applicable.

Section 74.430 Streets, Modifications of Requirements in Cases of Unusual Conditions.

(1) When, in the opinion of the City Manager, the construction of street improvements in accordance with TDC 74.420 would result in the creation of a hazard, or would be impractical, or would be detrimental to the City, the City Manager may modify the scope of the required improvement to eliminate such hazardous, impractical, or detrimental results. Examples of conditions requiring modifications to improvement requirements include but are not limited to horizontal alignment, vertical alignment, significant stands of trees, fish and wildlife habitat areas, the amount of traffic generated by the proposed development, timing of the development or other conditions creating hazards for pedestrian, bicycle or motor vehicle traffic. The City Manager may determine that, although an improvement may be impractical at the time of development, it will be necessary at some future date. In such cases, a written agreement guaranteeing future performance by the applicant in installing the required improvements must be signed by the applicant and approved by the City.

(2) When the City Manager determines that modification of the street improvement requirements in TDC 74.420 is warranted pursuant to subsection (1) of this section, the City Manager must prepare written findings of modification. The City Manager must forward a copy of said findings and description of modification to the applicant, or his authorized agent, as part of the Utility Facilities Review for the proposed development, as provided by TDC Chapter 32 (Procedures). The decision of the City Manager may be appealed to the City Council in accordance with TDC Chapter 32 (Procedures).

(3) To accommodate bicyclists on streets prior to those streets being upgraded to the full standards, an interim standard may be implemented by the City. These interim standards include reduction in motor vehicle lane width to 10 feet [the minimum specified in AASHTO's A Policy on Geo-metric Design of Highways and Streets (1990)], a reduction of bike lane width to 4-feet (as measured from the longitudinal gutter joint to the centerline of the bike lane stripe), and a paint-striped separation 2 to 4 feet wide in lieu of a center turn lane. Where available roadway width does not provide for these minimums, the roadway can be signed for shared use by bicycle and motor vehicle travel. When width constraints occur at an intersection, bike lanes should terminate 50 feet from the intersection with appropriate signing.

Response: Modifications to street improvement requirements are not necessary or applicable. Therefore, the provisions above do not apply.

Section 74.440 - Streets, Traffic Study Required.

(1) The City Manager may require a traffic study to be provided by the applicant and furnished to the City as part of the development approval process as provided by this Code, when the City Manager

determines that such a study is necessary in connection with a proposed development project in order to:

(a) Assure that the existing or proposed transportation facilities in the vicinity of the proposed development are capable of accommodating the amount of traffic that is expected to be generated by the proposed development, and/or

(b) Assure that the internal traffic circulation of the proposed development will not result in conflicts between on-site parking movements and/or on-site loading movements and/or on-site traffic movements, or impact traffic on the adjacent streets.

Response: Lancaster Engineering completed a Technical Memorandum pertaining to the expected trips generated by the proposed reuse of the existing site as a TVF&R Logistics Service Center. The Technical Memorandum is included in Exhibit M. Based on the Technical Memorandum, the proposed use of the site as a TVF&R Logistics Service Center is expected to generate a net increase of 23 morning peak hour trips, 14 evening peak hour trips, and 60 to 86 daily trips. Additionally, SW Avery Street is a Major Collector adjacent to the site, carrying relatively high traffic volumes. The net increase in trips represents a very minor increase in traffic volumes on the street. Lancaster Engineering does not recommend a full traffic impact study, given the low increase in peak-hour trip generation. City staff has indicated that a traffic study is not warranted.

Section 74.470 Street Lights.

(1) Street light poles and luminaries must be installed in accordance with the Public Works Construction Code.

Response: There are existing street lights on SW Avery Street and no new lights are proposed. The City Engineer confirmed that no improvements to the lights are needed in this location. Therefore, to the extent applicable, this criterion is satisfied.

(2) The applicant must submit a street lighting plan for all interior and exterior streets on the proposed development site prior to issuance of a Public Works Permit.

Response: A Preliminary Lighting Plan included in Exhibit C. Therefore, to the extent applicable, this criterion is satisfied.

Section 74.485 Street Trees.

(1) Prior to approval of a residential subdivision or partition final plat, the applicant must pay the City a non-refundable fee equal to the cost of the purchase and installation of street trees. The location, placement, and cost of the trees must be determined by the City. This sum must be calculated on the interior and exterior streets as indicated on the final subdivision or partition plat.

(2) In nonresidential subdivisions and partitions street trees must be planted by the owners of the individual lots as development occurs.

(3) The Street Tree Ordinance specifies the species of tree which is to be planted and the spacing between trees.

Response: This application does not include a residential subdivision or partition. Therefore, the provisions above do not apply. However, street trees are proposed to be installed on the site's frontage along SW Avery Street as illustrated on the Preliminary Landscape Plan.

> **Section 74.610 Water Service.**
>
> **(1) Water lines must be installed to serve each property in accordance with the Public Works Construction Code. Water line construction plans must be submitted to the City Manager for review and approval prior to construction.**

Response: As illustrated on the Preliminary Public Facilities Plan (Exhibit A) existing water service lines will remain and continue to service the subject site and TVF&R Logistics Service Center. The new on-site water service line is also shown on the Preliminary Public Facilities Plan. Therefore, this criterion is met.

> **(2) If there are undeveloped properties adjacent to the subject site, public water lines must be extended by the applicant to the common boundary line of these properties. The lines must be sized to provide service to future development, in accordance with the City's Water System Master Plan, TDC Chapter 12.**

Response: Undeveloped properties are not adjacent to the subject site. Therefore, this criterion is not applicable.

> **(3) As set forth is TDC Chapter 12, Water Service, the City has three water service levels. All development applicants must be required to connect the proposed development site to the service level in which the development site is located. If the development site is located on a boundary line between two service levels the applicant must be required to connect to the service level with the higher reservoir elevation. The applicant may also be required to install or provide pressure reducing valves to supply appropriate water pressure to the properties in the proposed development site.**

Response: As previously noted, the proposed development is a reuse of the existing building. Therefore, the redeveloped building will continue to connect to the appropriate water service infrastructure, as illustrated on the Preliminary Public Facilities Plan in Exhibit A.

> **Section 74.620 Sanitary Sewer Service.**
>
> **(1) Sanitary sewer lines must be installed to serve each property in accordance with the Public Works Construction Code. Sanitary sewer construction plans and calculations must be submitted to the City Manager for review and approval prior to construction.**

Response: As previously noted, the proposed development is a reuse of the existing building, the creation of new property is not proposed. The Preliminary Public Facilities Plan in Exhibit A illustrates the new on-site sanitary sewer infrastructure. The existing site is served by an existing private sanitary sewer system over adjacent private properties to the north. The Applicant is proposing to continue to utilize the existing private sewer system. A sanitary sewer easement, to the benefit of the subject property, currently exists for this purpose. Based on discussions with City staff it is understood that it is acceptable for the project to remain connected to this system.

(2) If there are undeveloped properties adjacent to the proposed development site which can be served by the gravity sewer system on the proposed development site, the applicant must extend public sanitary sewer lines to the common boundary line with these properties. The lines must be sized to convey flows to include all future development from all up stream areas that can be expected to drain through the lines on the site, in accordance with the City's Sanitary Sewer System Master Plan, TDC Chapter 13.

Response: As previously noted above, adjacent properties are developed. Therefore, this criterion is not applicable.

Section 74.630 Storm Drainage System.

(1) Storm drainage lines must be installed to serve each property in accordance with City standards. Storm drainage construction plans and calculations must be submitted to the City Manager for review and approval prior to construction.

Response: As illustrated on the Preliminary Public Facilities Plan in Exhibit A, a stormwater facility and infrastructure are proposed to provide on-site stormwater management. The existing site is served by an existing private storm drainage system over adjacent private properties to the north. The Applicant is proposing to continue use of the existing private storm drainage system. The Applicant is currently working with adjacent private property owners to obtain an easement over the existing system for this purpose. Based on discussions with City staff it is understood that it is acceptable for the project to remain connected to this system. Please refer to the Preliminary Stormwater Report (Exhibit I) for additional information.

(2) The storm drainage calculations must confirm that adequate capacity exists to serve the site. The discharge from the development must be analyzed in accordance with the City's Storm and Surface Water Regulations.

Response: City staff have indicated that water quantity detention is required for the 25-year storm event for this site. The project is proposing to stay connected to the existing private storm drainage system that serves the site via adjacent properties to the north. City and CWS staff have indicated that this is acceptable. To ensure that the project does not contribute additional flows to this system, the Applicant is proposing to provide water quality detention for the 100-year storm event. Therefore, this criterion is satisfied.

(3) If there are undeveloped properties adjacent to the proposed development site which can be served by the storm drainage system on the proposed development site, the applicant must extend storm drainage lines to the common boundary line with these properties. The lines must be sized to convey expected flows to include all future development from all up stream areas that will drain through the lines on the site, in accordance with the Tualatin Drainage Plan in TDC Chapter 14.

Response: As previously noted above, undeveloped properties are not adjacent to the subject site. Therefore, this criterion is not applicable.

Section 74.640 Grading.

(1) Development sites must be graded to minimize the impact of storm water runoff onto adjacent properties and to allow adjacent properties to drain as they did before the new development.

(2) A development applicant must submit a grading plan showing that all lots in all portions of the development will be served by gravity drainage from the building crawl spaces; and that this development will not affect the drainage on adjacent properties. The City Manager may require the applicant to remove all excess material from the development site.

Response: The Preliminary Grading Plan and Preliminary Public Facilities Plan in Exhibit A demonstrate the proposed grading minimizes the impact of stormwater runoff onto adjacent properties. Therefore, these criteria are met.

Section 74.650 Water Quality, Storm Water Detention and Erosion Control.

The applicant must comply with the water quality, storm water detention and erosion control requirements in the Surface Water Management Ordinance. If required:

(2) On all other development applications, prior to issuance of any building permit, the applicant must arrange to construct a permanent on-site water quality facility and storm water detention facility and submit a design and calculations indicating that the requirements of the Surface Water Management Ordinance will be met and obtain a Stormwater Connection Permit from Clean Water Services.

(3) For on-site private and regional non-residential public facilities, the applicant must submit a stormwater facility agreement, which will include an operation and maintenance plan provided by the City, for the water quality facility for the City's review and approval. The applicant must submit an erosion control plan prior to issuance of a Public Works Permit. No construction or disturbing of the site must occur until the erosion control plan is approved by the City and the required measures are in place and approved by the City.

Response: As illustrated on the Preliminary Plans, an on-site stormwater facility is proposed as part of this application. A Preliminary Stormwater Report is included in Exhibit I, which provides information pertaining to design and calculations; please refer to this report for further information. Therefore, to the extent applicable, these criteria are satisfied.

Section 74.660 Underground.

(1) All utility lines including, but not limited to, those required for gas, electric, communication, lighting and cable television services and related facilities must be placed underground. Surface-mounted transformers, surface-mounted connection boxes and meter cabinets may be placed above ground. Temporary utility service facilities, high capacity electric and communication feeder lines, and utility transmission lines operating at 50,000 volts or above may be placed above ground. The applicant must make all necessary arrangements with all utility companies to provide the underground services. The City reserves the right to approve the location of all surface-mounted transformers.

(2) Any existing overhead utilities may not be upgraded to serve any proposed development. If existing overhead utilities are not adequate to serve the proposed development, the applicant must, at their own expense, provide an underground system. The applicant must be responsible for obtaining any off-site deeds and/or easements necessary to provide utility service to this site; the deeds and/or easements must be submitted to the City Manager for acceptance by the City prior to issuance of the Public Works Permit.

Response: The Preliminary Public Facilities Plan in Exhibit A shows that the proposed underground utilities associated with the development of the existing site and for the future construction of a fuel enclosure are designed to be constructed in accordance with the provisions above, as applicable. Therefore, these criteria are satisfied.

Section 74.670 Existing Structures.

(1) Any existing structures requested to be retained by the applicant on a proposed development site must be connected to all available City utilities at the expense of the applicant.

(2) The applicant must convert any existing overhead utilities serving existing structures to underground utilities, at the expense of the applicant.

(3) The applicant must be responsible for continuing all required street improvements adjacent to the existing structure, within the boundaries of the proposed development site.

Response: As noted above and as shown on the Preliminary Plans (Exhibit A) the proposed redevelopment of the existing building is in compliance with the provisions above. Therefore, these criteria are satisfied.

Section 74.705 Street Tree Removal Permit.

(1) A person who desires to remove or destroy a tree, as defined in TDC 31.060, in or upon public right-of-way must make application to the Operations Director on City forms.

(2) The applicant must provide:

(a) the applicant's name and contact information and if applicable that of the applicant's contractor;

(b) the number and species of all street trees the applicant desires to remove;

(c) a clear description of the street trees' the applicant desires to remove;

(d) the date of removal;

(e) the reason(s) for removal; and

(f) other information as the Operations Director deems necessary.

Response: As noted above (Section 33.110), the Preliminary Plans (Exhibit A) demonstrate that the two street trees marked for removal and replacement are necessary to construct the

proposed improvements, permitted by TDC 33.110(5)(a)(iii). The Preliminary Tree Preservation Table (Exhibit A) includes a tree assessment prepared by a certified arborist that provides information detailing the species of tree, condition, and reason for removal. Therefore, the provisions above are satisfied.

> **(3)** Upon the City Manager approving the removal of a street tree, the applicant or designated contractor must replace each removed tree on a one-for-one basis by fulfilling the following requirements:
>
> **(a)** Remove both the tree and stump prior to planting a replacement tree, or re-quest the City to remove the tree and stump and pay the applicable fee(s) established in TDC 74.706; and
>
> **(b)** Replace the removed tree by planting a species of street tree permitted by Schedule A of the TDC Chapter 74 within the time period specified in writing by the City Manager ; or, the applicant may request within sixty (60) days of the permit approval date that the City replace the street tree and pay the applicable fee(s) established in TDC 74.706. If an applicant opts for the City to plant the replacement tree, the City may plant the tree on its usual tree-planting schedule. Planting done by the applicant or designated contractor must comply with all applicable TDC sections and any additional requirements imposed by the City Manager.

Response: As illustrated on the Preliminary Landscape Plan (Exhibit A) replacement street trees are proposed to be installed on the site's frontage along SW Avery Street, consistent with Section 73B.070(3) and the provisions above, as applicable. Therefore, the provisions above will be satisfied.

> **(c)** The applicant must comply with all applicable TDC sections and additional requirements imposed by the City Manager. The City Manager may waive the one-for-one replacement requirement if the City Manager determines that the replacement would:
>
> **(i)** conflict with public improvements or utility facilities, including but not limited to fire hydrants, water meters and pipes, lighting fixtures, traffic control signs; private improvements or utility facilities – including but not limited to driveways and power, gas, telephone, cable television lines; or, minimum vision clearance;
>
> **(ii)** interfere with the existing canopy of adjacent trees, the maturation of the crown of the proposed replacement tree, or both;
>
> **(iii)** cause a conflict by planting trees too close to each other, hurting their health;
>
> **(iv)** limit the selection of species from Schedule A: and;
>
> **(v)** direct how to plant replacement tree(s).

(d) A person who fails to comply with TDC 74.705 must pay an enforcement fee and a restoration fee to the City of Tualatin, as set forth in TDC 34.220(3), in addition to civil penalties in TDC 31.111.

Response: The written narrative and the supplemental application materials demonstrate that the Applicant is in compliance with the applicable TDC sections. Therefore, to the extent applicable, the provisions above are satisfied.

TDC Chapter 75: Access Management

Section 75.040 – Driveway Approach Requirements.

(1) The provision and maintenance of driveway approaches from private property to the public streets as stipulated in this Code are continuing requirements for the use of any structure or parcel of real property in the City of Tualatin. No building or other permit may be issued until scale plans are presented that show how the driveway approach requirement is to be fulfilled. If the owner or occupant of a lot or building changes the use to which the lot or building is put, thereby increasing driveway approach requirements, it is unlawful and a violation of this code to begin or maintain such altered use until the required increase in driveway approach is authorized by the City.

(2) Owners of two or more uses, structures, or parcels of land may agree to utilize jointly the same driveway approach when the combined driveway approach of both uses, structures, or parcels of land satisfies their combined 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 deeds, easements, leases or contracts must be placed on permanent file with the City Recorder.

Response: The subject site contains an existing driveway approach. The driveway approach is illustrated on the Preliminary Plans in Exhibit A, which is in compliance with City standards. Therefore, the criteria are satisfied.

(3) Joint and Cross Access.

(a) Adjacent commercial uses may be required to provide cross access drive and pedestrian access to allow circulation between sites.

(b) A system of joint use driveways and cross access easements may be required and may incorporate the following:

(i) A continuous service drive or cross access corridor extending the entire length of each block served to provide for driveway separation consistent with the access management classification system and standards;

(ii) A design speed of 10 mph and a maximum width of 24 feet to accommodate two-way travel aisles designated to accommodate automobiles, service vehicles, and loading vehicles;

(iii) Stub-outs and other design features to make it visually obvious that the abutting properties may be tied in to provide cross access via a service drive; and

(iv) An unified access and circulation system plan for coordinated or shared parking areas.

(c) Pursuant to this section, property owners may be required to:

(i) Record an easement with the deed allowing cross access to and from other properties served by the joint use driveways and cross access or service drive;

(ii) Record an agreement with the deed that remaining access rights along the roadway will be dedicated to the city and pre-existing driveways will be closed and eliminated after construction of the joint-use driveway;

(iii) Record a joint maintenance agreement with the deed defining maintenance responsibilities of property owners; and

(iv) If subsection(i) through (iii) above involve access to the state highway system or county road system, ODOT or the county must be contacted and must approve changes to subsection(i) through (iii) above prior to any changes.

Response: As noted above and as illustrated on the Preliminary Plans (Exhibit A) this application involves the redevelopment of the existing site and the existing driveway approach will continue to serve as the main access to the TVF&R Logistics Service Center. The subject site is adjacent to an existing elementary school (to the east) and the site's western property line is adjacent to an existing private drive. As noted above, the Applicant is in coordination with the property owner to the west to obtain a pedestrian and vehicle access easement to the site over the existing adjacent private drive. However, a joint access or cross access is not necessary or warranted. To the extent applicable, these provisions are satisfied.

(4) Requirements for Development on Less than the Entire Site.

(a) To promote unified access and circulation systems, lots and parcels under the same ownership or consolidated for the purposes of development and comprised of more than one building site must be reviewed as one unit in relation to the access standards. The number of access points permitted must be the minimum number necessary to provide reasonable access to these properties, not the maximum available for that frontage. All necessary easements, agreements, and stipulations must be met. This must also apply to phased development plans. The owner and all lessees within the affected area must comply with the access requirements.

(b) All access must be internalized using the shared circulation system of the principal commercial development or retail center. Driveways should be designed to avoid queuing across surrounding parking and driving aisles.

Response: As noted above, this application involves the redevelopment of the existing site. The proposed development will not result in development of less than the entire site. Therefore, these criteria are not applicable.

(5) Lots that front on more than one street may be required to locate motor vehicle accesses on the street with the lower functional classification as determined by the City Manager.

Response: The subject site has frontage on one public street (SW Avery Street), therefore, this criteria is not applicable.

(6) Except as provided in TDC 53.100, all driveway approach must connect directly with public streets.

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the existing driveway approach connects directly with SW Avery Street (a public street), which will continue to serve the TVF&R Logistics Service Center. Therefore, this criterion is satisfied.

(7) To afford safe pedestrian access and egress for properties within the City, a sidewalk must be constructed along all street frontage, prior to use or occupancy of the building or structure proposed for said property. The sidewalks required by this section must be constructed to City standards, except in the case of streets with inadequate right-of-way width or where the final street design and grade have not been established, in which case the sidewalks must be constructed to a design and in a manner approved by the City Manager. Sidewalks approved by the City Manager may include temporary sidewalks and sidewalks constructed on private property; provided, however, that such sidewalks must provide continuity with sidewalks of adjoining commercial developments existing or proposed. When a sidewalk is to adjoin a future street improvement, the sidewalk construction must include construction of the curb and gutter section to grades and alignment established by the City Manager.

Response: As illustrated on the Preliminary Site Plan in Exhibit A, sidewalks exist along the site's frontage on SW Avery Street. The existing sidewalk will be reconstructed to make it compliant with the TDC and continue to provide safe pedestrian access and egress. Therefore, this criterion is met.

(8) The standards set forth in this Code are minimum standards for driveway approaches, and may be increased through the Architectural Review process in any particular instance where the standards provided herein are deemed insufficient to protect the public health, safety, and general welfare.

Response: To the extent applicable, this criterion can be satisfied.

(9) Minimum driveway approach width for uses are as provided in Table 75-1 (Driveway Approach Width):

Table 75-1 Driveway Approach Width	
Use	Minimum Driveway Approach Width
Industrial	36 feet

Response: As illustrated on the Preliminary Site Plan in Exhibit A, the driveway approach is in compliance with the minimum driveway approach width for an industrial use. Therefore, this criterion is met.

(10) Driveway Approach Separation. There must be a minimum distance of 40 feet between any two adjacent driveways on a single property unless a lesser distance is approved by the City Manager.

Response: As illustrated on the Preliminary Site Plan (Exhibit A), the existing driveway approach is in compliance with the minimum driveway approach separation distance. Therefore, this criterion is satisfied.

(11) Distance between Driveways and Intersections. Except for single-family dwellings, the minimum distance between driveways and intersections must be as provided below. Distances listed must be measured from the stop bar at the intersection.

(a) At the intersection of collector or arterial streets, driveways must be located a minimum of 150 feet from the intersection.

(b) At the intersection of two local streets, driveways must be located a minimum of 30 feet from the intersection.

(c) If the subject property is not of sufficient width to allow for the separation between driveway and intersection as provided, the driveway must be constructed as far from the intersection as possible, while still maintaining the 5-foot setback between the driveway and property line as required by TDC 73.400(14)(b).

(d) When considering a driveway approach permit, the City Manager may approve the location of a driveway closer than 150 feet from the intersection of collector or arterial streets, based on written findings of fact in support of the decision.

Response: The existing driveway approach meets these provisions and will continue to remain in compliance. Therefore, the provisions are satisfied.

(12) Vision Clearance Area.

(a) Local Streets. A vision clearance area for all local street intersections, local street and driveway intersections, and local street or driveway and railroad intersections must be that triangular area formed by the right-of-way lines along such lots and a straight line joining the right-of-way lines at points which are 10 feet from the intersection point of the right-of-way lines, as measured along such lines (see Figure 73-2 for illustration).

(b) Collector Streets. A vision clearance area for all collector/arterial street intersections, collector/arterial street and local street intersections, and collector/arterial

street and railroad intersections must be that triangular area formed by the right-of-way lines along such lots and a straight line joining the right-of-way lines at points which are 25 feet from the intersection point of the right-of-way lines, as measured along such lines. Where a driveway intersects with a collector/arterial street, the distance measured along the driveway line for the triangular area must be 10 feet (see Figure 73-2 for illustration).

(c) Vertical Height Restriction. Except for items associated with utilities or publicly owned structures such as poles and signs and existing street trees, no vehicular parking, hedge, planting, fence, wall structure, or temporary or permanent physical obstruction must be permitted between 30 inches and 8 feet above the established height of the curb in the clear vision area (see Figure 73-2 for illustration).

Response: The vision clearance areas are illustrated on the Preliminary Plans in Exhibit A, consistent with the provisions above. Therefore, these criteria are satisfied.

Tualatin Municipal Code

Chapter 03-05: Soil Erosion, Surface Water Management, Water Quality Facilities, and Building and Sewers

3-5-050 Erosion Control Permits.

(1) Except as noted in subsection (3) of this section, no person shall cause any change to improved or unimproved real property that causes, will cause, or is likely to cause a temporary or permanent increase in the rate of soil erosion from the site without first obtaining a permit from the City and paying prescribed fees. Such changes to land shall include, but are not limited to, grading, excavating, filling, working of land, or stripping of soil or vegetation from land.

(2) No construction, land development, grading, excavation, fill, or the clearing of land is allowed until the City has issued an Erosion Control Permit covering such work, or the City has determined that no such permit is required. No public agency or body shall undertake any public works project without first obtaining from the City an Erosion Control Permit covering such work, or receiving a determination from the City that none is required.

(3) No Erosion Control Permit from City is required for the following:

(a) For work of a minor nature provided all the following criteria are met:

(A) The development does not require a development permit or approval from the City;

(B) No development activity or disturbance of land surface occurs within 100 feet of a sensitive area defined in TMC 3-5.270;

(C) The slope of the site is less than 20 percent;

(D) The work on the site involves the disturbance of less than 500 square feet of land surface; and

(E) The excavation, fill or combination thereof involves less than 20 cubic yards of material.

(b) Permits and approvals of land division, interior improvements to an existing structure, and other activities for which there is no physical disturbance to the surface of the land.

(c) A permit shall not be required for activities within the City which constitute accepted farming practices as defined in ORS 215.203, provided any erosion does not cause sedimentation in waters of the Tualatin River basin.

(4) An exception from the permit requirement shall not relieve the property or its owner from the prohibition of TMC 3-5.040.

Response: As demonstrated in the responses to and in compliance with the TDC, the provisions above can be met at the time of construction.

3-5-060 Permit Process.

(1) Applications for an Erosion Control Permit. Application for an Erosion Control Permit shall include an Erosion Control Plan which contains methods and interim facilities to be constructed or used concurrently and to be operated during construction to control erosion. The plan shall include either:

(a) A site specific plan outlining the protection techniques to control soil erosion and sediment transport from the site to less than one ton per acre per year as calculated using the Soil Conservation Service Universal Soil Loss Equation or other equivalent method approved by the City Engineer, or

(b) Techniques and methods contained and prescribed in the Soil Erosion Control Matrix and Methods, outlined in TMC 3-5.190 or the Erosion Control Plans - Technical Guidance Handbook, City of Portland and Unified Sewerage Agency, January, 1991.

(2) Site Plan. A site specific plan, pre-pared by an Oregon registered profession-al engineer, shall be required when the site meets any of the following criteria:

(a) greater than five acres;

(b) greater than one acre and has slopes greater than 20 percent;

(c) contains or is within 100 feet of a City-identified wetland or a waterway identified on FEMA floodplain maps; or

(d) greater than one acre and contains highly erodible soils.

Response: As demonstrated in the responses to and in compliance with the TDC, the provisions of this section will be met prior to obtaining an erosion control permit.

3-5-200 Downstream Protection Requirement.

Each new development is responsible for mitigating the impacts of that development upon the public storm water quantity system. The development may satisfy this requirement through the use of any of

the following techniques, subject to the limitations and requirements in TMC 3-5-210:

(1) Construction of permanent on-site stormwater quantity detention facilities designed in accordance with this title;

(2) Enlargement of the downstream conveyance system in accordance with this title and the Public Works Construction Code;

(3) The payment of a Storm and Surface Water Management System Development Charge, which includes a water quantity component designated to meet these requirements.

Response: As illustrated on the Preliminary Plans (Exhibit A) and as demonstrated in the responses to and in compliance with the TDC, an on-site stormwater facility is proposed. Therefore, the provisions are met.

3-5-210 Review of Downstream System.

For new development other than the construction of a single family house or duplex, plans shall document review by the design engineer of the downstream capacity of any existing storm drainage facilities impacted by the proposed development. That review shall extend downstream to a point where the impacts to the water surface elevation from the development will be insignificant, or to a point where the conveyance system has adequate capacity, as determined by the City Engineer.

To determine the point at which the downstream impacts are insignificant or the drainage system has adequate capacity, the design engineer shall submit an analysis using the following guidelines:

(1) evaluate the downstream drainage system for at least ¼ mile;

(2) evaluate the downstream drainage system to a point at which the runoff from the development in a build out condition is less than 10 percent of the total runoff of the basin in its current development status. Developments in the basin that have been approved may be considered in place and their conditions of approval to exist if the work has started on those projects;

(3) evaluate the downstream drainage system throughout the following range of storms: 2, 5, 10, 25 year;

(4) The City Engineer may modify items 1, 2, 3 to require additional information to determine the impacts of the development or to delete the provision of unnecessary information.

Response: As noted in the responses to the TDC, this application involves the redevelopment of the existing site. City staff have indicated that water quantity detention is required for the 25-year storm event for this site. The project is proposing to stay connected to the existing private storm drainage system that serves the site via adjacent properties to the north. City and CWS staff have indicated that this is acceptable. To ensure that the project does not contribute additional flows to this system, the Applicant is proposing to provide water quality detention for the 100-year storm event. Therefore, as demonstrated in the

responses to and in compliance with the TDC (to the extent applicable), these provisions are satisfied.

> **If the increase in surface waters leaving a development will cause or contribute to damage from flooding, then the identified capacity deficiency shall be corrected prior to development or the development must construct onsite detention. To determine if the runoff from the development will cause or contribute to damage from flooding the City Engineer will consider the following factors:**
>
> **(1) The potential for or extent of flooding or other adverse impacts from the run-off of the development on downstream properties;**
>
> **(2) The potential for or extent of possibility of inverse condemnation claims;**
>
> **(3) Incremental impacts of runoff from the subject and other developments in the basin; and**
>
> **(4) Other factors that may be relevant to the particular situation.**
>
> **The purpose of the City Engineer's review is to protect the City and its inhabitants from the impacts or damage caused by runoff from development while recognizing all appropriate limitations on exactions from the development.**

Response: As demonstrated in the responses to and in compliance with the TDC (to the extent applicable), these provisions are satisfied.

> **3-5-220 Criteria for Requiring On-Site Detention to be Constructed.**
>
> **The City shall determine whether the onsite facility shall be constructed. If the onsite facility is constructed, the development shall be eligible for a credit against Storm and Surface Water System Development Charges, as provided in City ordinance.**
>
> **On-site facilities shall be constructed when any of the following conditions exist:**
>
> **(1) There is an identified downstream deficiency, as defined in TMC 3-5-210, and detention rather than conveyance system enlargement is determined to be the more effective solution.**
>
> **(2) There is an identified regional detention site within the boundary of the development.**
>
> **(3) There is a site within the boundary of the development which would qualify as a regional detention site under criteria or capital plan adopted by the Unified Sewerage Agency.**
>
> **(4) The site is located in the Hedges Creek Subbasin as identified in the Tualatin Drainage Plan and surface water runoff from the site flows directly or indirectly into the Wetland Protected Area (WPA) as defined in TDC 71.020. Properties located within the Wetland Protection District as described in TDC 71.010, or within the portion of the subbasin east of SW Tualatin Road are excepted from the on-site detention facility requirement.**

Response: As demonstrated in the responses to and in compliance with the TDC (to the extent applicable), these provisions are satisfied.

3-5-240 On-Site Detention Design Method.

(1) The procedure for determining the detention quantities is set forth in Section 4.4 Retention/Detention Facility Analysis and Design, King County, Washington, Surface Water Design Manual, January, 1990, except subchapters 4.4.5 Tanks, 4.4.6 Vaults and Figure 4.4.4G Permanent Surface Water Control Pond Sign. This reference shall be used for procedure only. The design criteria shall be as noted herein. Engineers desiring to utilize a procedure other than that set forth herein shall obtain City approval prior to submitting calculations utilizing the proposed procedure.

(2) For single family and duplex residential subdivisions, stormwater quantity detention facilities shall be sized for the impervious areas to be created by the subdivision, including all residences on individual lots at a rate of 2640 square feet of impervious surface area per dwelling unit, plus all roads which are assessed a surface water management monthly fee under Unified Sewerage Agency rules. Such facilities shall be constructed as a part of the subdivision public improvements. Construction of a single family or duplex residence on an existing lot of record is not required to construct stormwater quantity detention facilities.

(3) All developments other than single family and duplex, whether residential, multi-family, commercial, industrial, or other uses, the sizing of stormwater quantity detention facilities shall be based on the impervious area to be created by the development, including structures and all roads and impervious areas which are assessed a surface water management monthly fee under Unified Sewerage Agency rules. Impervious surfaces shall be determined based upon building permits, construction plans, site visits or other appropriate methods deemed reliable by City.

Response: As demonstrated in the responses to and in compliance with the TDC, the procedures for determining the size of the proposed on-site stormwater facility is consistent with the TDC. Therefore, these provisions are satisfied.

3-5-280 Placement of Water Quality Facilities.

Title III specifies that certain properties shall install water quality facilities for the purpose of removing phosphorous. No such water quality facilities shall be constructed within the defined area of existing or created wetlands unless a mitigation action, approved by the City, is constructed to replace the area used for the water quality facility.

Response: As demonstrated in the responses to and in compliance with the TDC, the subject site and proposed on-site stormwater facility are not located within the defined area of existing or created wetlands. Therefore, this provision is met.

3-5-330 Permit Required.

Except as provided in TMC 3-5-310, no person shall cause any change to improved or unimproved real property that will, or is likely to, increase the rate or quantity of run-off or pollution from the site without first obtaining a permit from the City and following the conditions of the permit.

Response: As demonstrated in the responses to and in compliance with the TDC, this provision will be met.

3-5-340 Facilities Required.

For new development, subject to the exemptions of TMC 3-5-310, no permit for construction, or land development, or plat or site plan shall be approved unless the conditions of the plat, plan or permit approval require permanent stormwater quality control facilities in accordance with this Title III.

Response: As demonstrated in the responses to and in compliance with the TDC, and to the extent applicable, this provision can be met.

3-5-350 Phosphorous Removal Standard.

The stormwater quality control facilities shall be designed to remove 65 percent of the phosphorous from the runoff from 100 percent of the newly constructed impervious surfaces. Impervious surfaces shall include pavement, buildings, public and private roadways, and all other surfaces with similar runoff characteristics.

Response: This provision can be met.

3-5-360 Design Storm.

The stormwater quality control facilities shall be designed to meet the removal efficiency of TMC 3-5-350 for a mean summertime storm event totaling 0.36 inches of precipitation falling in four hours with an average return period of 96 hours.

Response: This provision can be met.

3-5-370 Design Requirements.

The removal efficiency in TDC Chapter 35 specifies only the design requirements and are not intended as a basis for performance evaluation or compliance determination of the stormwater quality control facility installed or constructed pursuant to this Title III.

Response: The stormwater facility is designed in compliance with Title III and the Tualatin Development Code.

3-5-390 Facility Permit Approval.

A stormwater quality control facility permit shall be approved only if the following are met:

(1) The plat, site plan, or permit application includes plans and a certification prepared by an Oregon registered, professional engineer that the proposed stormwater quality control facilities have been designed in accordance with criteria expected to achieve removal

efficiencies for total phosphorous required by this Title III. Clean Water Services Design and Construction Standards shall be used in preparing the plan for the water quality facility; and

(2) The plat, site plan, or permit application shall be consistent with the areas used to determine the removal required in TMC 3-5-350; and

(3) A financial assurance, or equivalent security acceptable to the City, is provided by the applicant which assures that the stormwater quality control facilities are constructed according to the plans established in the plat, site plan, or permit approval. The financial assurance may be combined with our financial assurance requirements imposed by the City; and

(4) A stormwater facility agreement identifies who will be responsible for assuring the long term compliance with the operation and maintenance plan.

Response: As demonstrated in the responses to and in compliance with the TDC, the application materials include Preliminary Plans (Exhibit A) prepared by an Oregon registered, professional engineer, which demonstrates the proposed stormwater facility is designed in accordance with the provisions above and in compliance with the TDC. A stormwater facility agreement identifying the responsible party for the long-term compliance with the operation and maintenance plan can be obtained. Therefore, these provisions are met.

3-5-430 Placement of Water Quality Facilities.

No water quality facilities shall be constructed within the defined area of existing or created wetlands unless a mitigation action is approved by the City, and is constructed to replace the area used for water quality.

Response: As demonstrated in the responses to and in compliance with the TDC, the subject site is not located within the defined area of existing or created wetlands. Therefore, the proposed stormwater facility is in compliance with this provision.

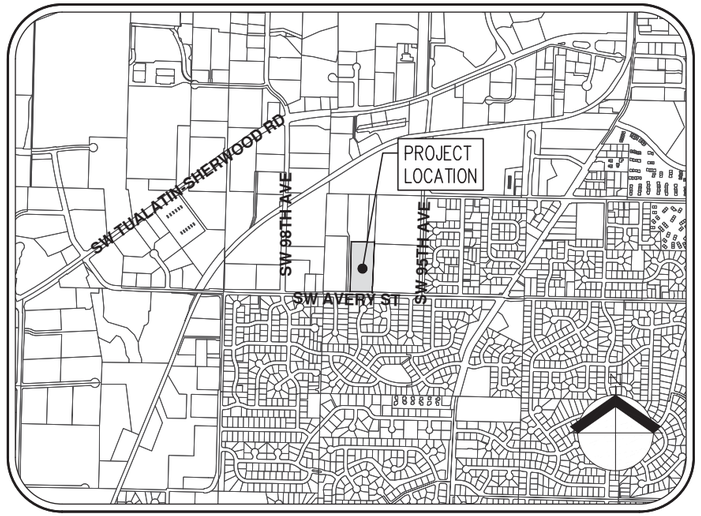
IV. Conclusion

The required findings have been made, and this written narrative and accompanying documentation demonstrate the application is consistent with the applicable provisions of the City of Tualatin Development Code. The evidence in the record is substantial and supports the City's approval of the application.

Exhibit A: Preliminary Plans

TVF&R LOGISTICS SERVICE CENTER

ARCHITECTURAL REVIEW PLANS



VICINITY MAP
NOT TO SCALE

SITE MAP
SCALE: 1" = 200'

LEGEND

	EXISTING	PROPOSED		EXISTING	PROPOSED
DECIDUOUS TREE			STORM SEWER CLEAN OUT		
CONIFEROUS TREE			STORM SEWER CATCH BASIN		
FIRE HYDRANT			STORM SEWER AREA DRAIN		
WATER BLOWOFF			STORM SEWER MANHOLE		
WATER METER			GAS METER		
WATER VALVE			GAS VALVE		
DOUBLE CHECK VALVE			GUY WIRE ANCHOR		
AIR RELEASE VALVE			UTILITY POLE		
SANITARY SEWER CLEAN OUT			POWER VAULT	P	P
SANITARY SEWER MANHOLE			POWER JUNCTION BOX		
SIGN			POWER PEDESTAL		
STREET LIGHT			COMMUNICATIONS VAULT	C	C
MAILBOX			COMMUNICATIONS JUNCTION BOX		
			COMMUNICATIONS RISER		

	EXISTING	PROPOSED
RIGHT-OF-WAY LINE		
BOUNDARY LINE		
PROPERTY LINE		
CENTERLINE		
DITCH		
CURB		
EDGE OF PAVEMENT		
EASEMENT		
FENCE LINE		
GRAVEL EDGE		
POWER LINE	PWR	PWR
OVERHEAD WIRE	OHW	OHW
COMMUNICATIONS LINE	COM	COM
FIBER OPTIC LINE	CFO	CFO
GAS LINE	GAS	GAS
STORM SEWER LINE	STM	STM
SANITARY SEWER LINE	SAN	SAN
WATER LINE	WAT	WAT

SHEET INDEX

PROJECT TEAM

APPLICANT/OWNER
TUALATIN VALLEY FIRE & RESCUE
11945 SW 70TH AVENUE
TIGARD, OR 97223

CONTRACTOR/CLIENT
EMERICK CONSTRUCTION CO.
7855 SW MOHAWK STREET
TUALATIN, OR 97062

CIVIL ENGINEERING/SURVEYING/ PLANNING/LANDSCAPE ARCHITECTURE
AKS ENGINEERING & FORESTRY, LLC.
12965 SW HERMAN ROAD, SUITE 100
TUALATIN, OR 97062
CONTACT: MIMI DOUKAS, AICP, RLA
PH: 503-563-6151
FAX: 503-563-6152

ARCHITECTURE
MERRYMAN BARNES ARCHITECTS INC.
4713 N ALBINA AVENUE, SUITE 304
PORTLAND, OR 97217

ELECTRICAL ENGINEERING
INTERFACE ENGINEERING
100 SW MAIN STREET, SUITE 1600
PORTLAND, OR 97204

PROJECT DESCRIPTION
TVF&R LOGISTICS SERVICE CENTER

PROJECT ADDRESS
9991 SW AVERY STREET
TUALATIN, OR 97062

PROPERTY DESCRIPTION:
TAX LOT 200 (WASHINGTON COUNTY TAX ASSESSOR'S MAP 2S 1 26BA) LOCATED IN THE NORTHWEST 1/4 OF SECTION 26, TOWNSHIP 2 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, CITY OF TUALATIN, WASHINGTON COUNTY, OREGON.

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TVF&R LOGISTICS SERVICE CENTER
TUALATIN OREGON
WASHINGTON COUNTY TAX LOT 200 TAX MAP 2S 1 26BA

COVER SHEET WITH VICINITY AND SITE MAP

DESIGNED BY:	DJS
DRAWN BY:	DJS
CHECKED BY:	BRB
SCALE:	AS NOTED
DATE: 5/3/2019	

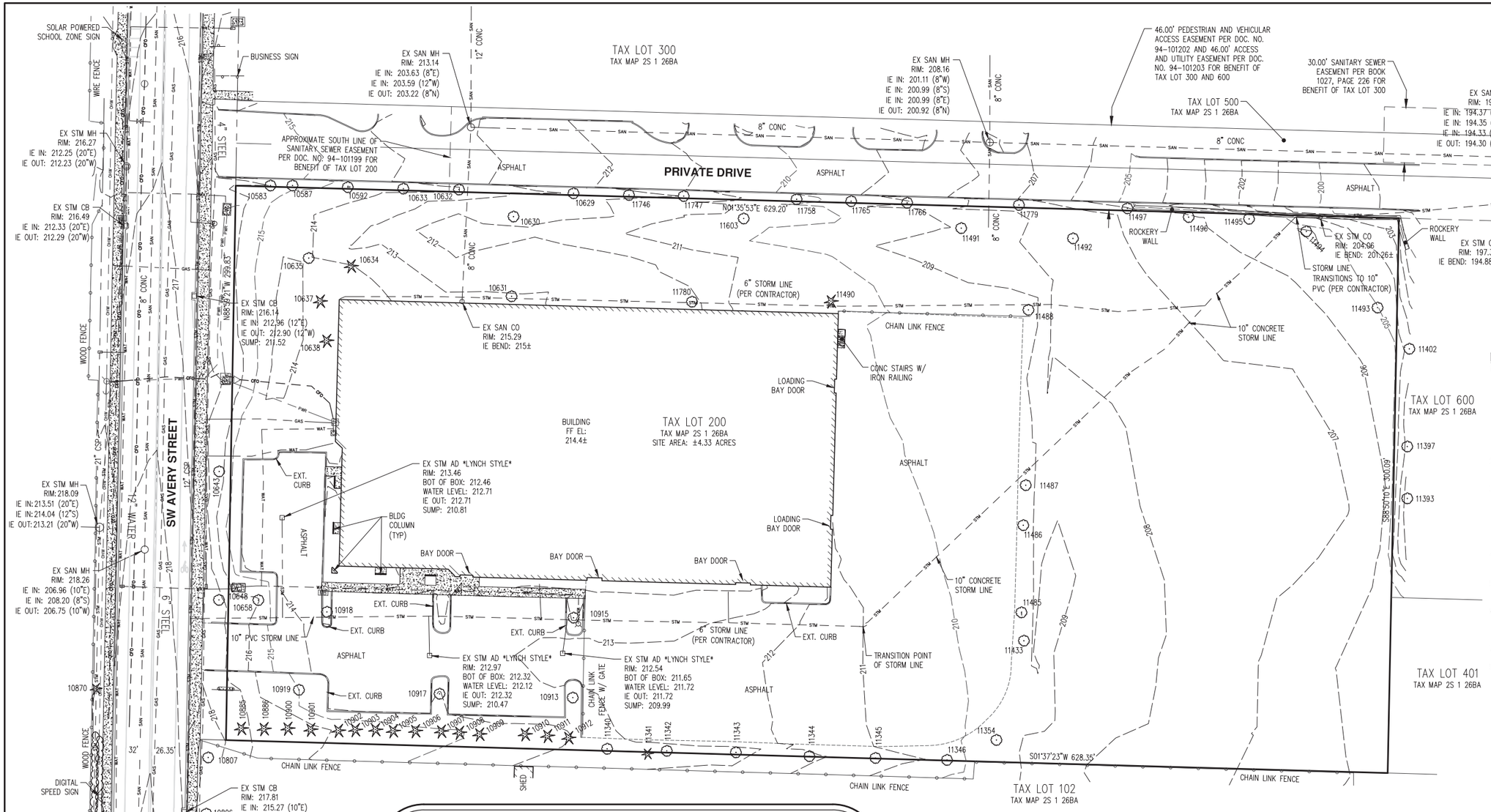
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER
5736

SHEET
P1

AKS DRAWING FILE: 5736 COVER.DWG | LAYOUT: P1



LEGEND

EXISTING		EXISTING	
DECIDUOUS TREE		RIGHT-OF-WAY LINE	
CONIFEROUS TREE		BOUNDARY LINE	
WATER METER		PROPERTY LINE	
WATER VALVE		CENTERLINE	
SANITARY SEWER CLEAN OUT		CURB	
SANITARY SEWER MANHOLE		EDGE OF PAVEMENT	
SIGN		EASEMENT	
STREET LIGHT		FENCE LINE	
MAILBOX	MB	POWER LINE	PWR
STORM DRAIN CLEAN OUT		OVERHEAD WIRE	OHW
STORM DRAIN CATCH BASIN		FIBER OPTIC LINE	CFO
STORM DRAIN AREA DRAIN		GAS LINE	GAS
STORM DRAIN MANHOLE		STORM DRAIN LINE	STM
GAS METER		SANITARY SEWER LINE	SAN
GUY WIRE ANCHOR		WATER LINE	WAT
UTILITY POLE			
POWER VAULT	P		
POWER JUNCTION BOX			
COMMUNICATIONS JUNCTION BOX			

SCALE: 1"= 30 FEET

30 0 12 18 24 30

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
10583	DECIDUOUS	8
10587	DECIDUOUS	8
10592	DECIDUOUS	7
10629	DECIDUOUS	7
10630	DECIDUOUS	30
10631	DECIDUOUS	6,6,8
10632	DECIDUOUS	7
10633	DECIDUOUS	10
10634	CONIFEROUS	19
10635	DECIDUOUS	30
10637	CONIFEROUS	21
10638	CONIFEROUS	12
10643	DECIDUOUS	11
10648	DECIDUOUS	14
10658	DECIDUOUS	7
10806	DECIDUOUS	9
10807	DECIDUOUS	9
10870	CONIFEROUS	10

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
10885	CONIFEROUS	6,7,16
10886	CONIFEROUS	12
10900	CONIFEROUS	16
10901	CONIFEROUS	22
10902	CONIFEROUS	14
10903	CONIFEROUS	14
10904	CONIFEROUS	18
10905	CONIFEROUS	16
10906	CONIFEROUS	12
10907	CONIFEROUS	17
10908	CONIFEROUS	20
10909	CONIFEROUS	10
10910	CONIFEROUS	17
10911	CONIFEROUS	17
10912	CONIFEROUS	18
10913	DECIDUOUS	13
10915	DECIDUOUS	24
10917	DECIDUOUS	8

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
10918	DECIDUOUS	13
10919	DECIDUOUS	13
11340	DECIDUOUS	15
11341	CONIFEROUS	7
11342	DECIDUOUS	17
11343	DECIDUOUS	29
11344	DECIDUOUS	16
11345	DECIDUOUS	22
11346	DECIDUOUS	20
11354	DECIDUOUS	6
11393	DECIDUOUS	9
11397	DECIDUOUS	9
11402	DECIDUOUS	8
11433	DECIDUOUS	7
11485	DECIDUOUS	7
11486	DECIDUOUS	8
11487	DECIDUOUS	11
11488	DECIDUOUS	23

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
11490	CONIFEROUS	21
11491	DECIDUOUS	29
11492	DECIDUOUS	22
11493	DECIDUOUS	20
11494	DECIDUOUS	25
11495	DECIDUOUS	6
11496	DECIDUOUS	8
11497	DECIDUOUS	9
11603	DECIDUOUS	25
11746	DECIDUOUS	9
11747	DECIDUOUS	6
11758	DECIDUOUS	6
11765	DECIDUOUS	8
11766	DECIDUOUS	7
11779	DECIDUOUS	7
11780	DECIDUOUS	11

NOTES:

1. UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PROVIDED PER UTILITY LOCATE TICKET NUMBER 18229939. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
2. FIELD WORK WAS CONDUCTED SEPTEMBER 4-12, 2018.
3. VERTICAL DATUM: ELEVATIONS ARE BASED ON WASHINGTON COUNTY BENCHMARK NO. 922,. LOCATED IN A CONCRETE CURB AT THE SOUTHEAST CORNER OF THE INTERSECTION OF SW BOONES FERRY ROAD AND SW TUALATIN ROAD. ELEVATION = 122.154 FEET (NAVD 88).
4. THIS MAP DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.
5. SURVEY IS ONLY VALID WITH SURVEYOR'S STAMP AND SIGNATURE.
6. BUILDING FOOTPRINTS ARE MEASURED TO SIDING UNLESS NOTED OTHERWISE. CONTACT SURVEYOR WITH QUESTIONS REGARDING BUILDING TIES.
7. CONTOUR INTERVAL IS 1 FOOT.
8. TREES WITH DIAMETER OF 6" AND GREATER ARE SHOWN. TREE DIAMETERS WERE DETERMINED BY VISUAL INSPECTION. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.

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TVF&R LOGISTICS SERVICE CENTER

TUALATIN, OREGON
WASHINGTON COUNTY TAX LOT 200
TAX MAP 2S 1 26BA

PRELIMINARY EXISTING CONDITIONS PLAN

DESIGNED BY:
DRAWN BY: CC
CHECKED BY: MK
SCALE: AS NOTED
DATE: 5/3/2019

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 12, 2016
CHAEL S. KALINA
89558PLS
RENEWS: 6/30/19

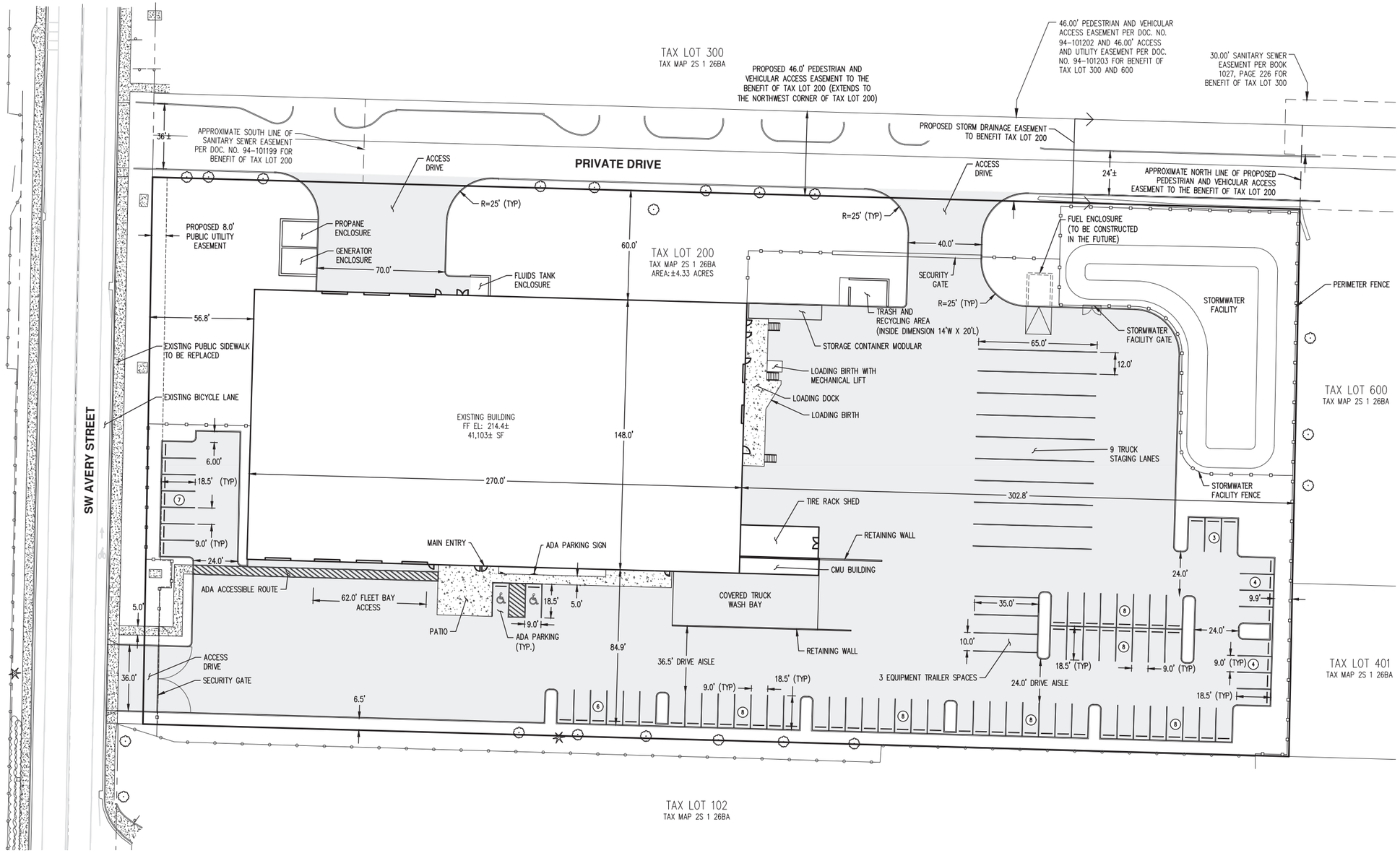
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER
5736

SHEET
P2

AKS DRAWING FILE: 5736 EXCOND.DWG | LAYOUT: P2



SITE DATA:

PLANNING DISTRICT: LIGHT MANUFACTURING (ML)
SQUARE FOOTAGE OF SITE: ±188,591 SF
SQUARE FOOTAGE OF DEVELOPMENT AREA: ±138,854 SF
SQUARE FOOTAGE OF LANDSCAPING: ±49,737 SF
SQUARE FOOTAGE OF PARKING LOT LANDSCAPING: ±2,036 SF
SQUARE FOOTAGE OF PAVEMENT: ±92,295 SF

EXISTING SQUARE FOOTAGE OF PARKING: ±5,519 SF
PROPOSED SQUARE FOOTAGE OF PARKING: ±20,131 SF
BUILDING SQUARE FOOTAGE: ±40,365 SF
BUILDING PERIMETER: ±923 FT

MINIMUM SETBACKS:
- FRONT YARD – 30 FT.
- INTERIOR SIDE YARD – TBD THROUGH ARCHITECTURAL REVIEW PROCESS
- CORNER SIDE YARD – TBD THROUGH ARCHITECTURAL REVIEW PROCESS BASED ON VISION CLEARANCE
- REAR YARD – TBD THROUGH ARCHITECTURAL REVIEW PROCESS

PARKING AND PASSENGER LOADING DATA:

TOTAL PROPOSED PARKING SPACES:
- STANDARD 18.5'X9': 72
  - –37 FLEET/MOTOR POOL VEHICLE
  - –35 NON-FLEET/MOTOR POOL VEHICLE
- ADA (18.5'X9'): 2*
- 35'X10' (EQUIPMENT TRAILER): 3
- 65'X12' (TRUCK STAGING): 9

*PER OREGON STRUCTURAL SPECIALTY CODE, CHAPTER 11, SECTION 1106 "PARKING AND PASSENGER LOADING FACILITIES", 1106.1 EXCEPTION: THIS SECTION DOES NOT APPLY TO PARKING SPACES USED EXCLUSIVELY FOR BUSES, TRUCKS, OTHER DELIVERY VEHICLES, LAW ENFORCEMENT VEHICLES, OR VEHICULAR IMPOUND AND MOTOR POOLS WHERE LOTS ACCESSED BY THE PUBLIC ARE PROVIDED WITH AN ACCESSIBLE PASSENGER LOADING ZONE.

BASED ON THE ABOVE EXCEPTION, 37 OF THE STANDARD 18.5'X9' SPACES ARE INTENDED FOR FLEET/MOTOR POOL VEHICLES AND ARE EXEMPT FROM ADA PARKING REQUIREMENTS, THEREFORE, 2 ADA PARKING SPACES (ONE BEING VAN ACCESSIBLE) HAVE BEEN PROVIDED BASED ON THE 35 NON-FLEET/MOTOR POOL PARKING SPACES.

BICYCLE PARKING IS PROPOSED TO BE INSIDE THE BUIDLING.

N

SCALE: 1" = 30 FEET
30 0 12 18 24 30

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TUALATIN OREGON
WASHINGTON COUNTY TAX LOT 200 TAX MAP 2S 1 26BA

PRELIMINARY SITE PLAN

DESIGNED BY:	DJS
DRAWN BY:	DJS
CHECKED BY:	BRB
SCALE:	AS NOTED
DATE: 5/3/2019	

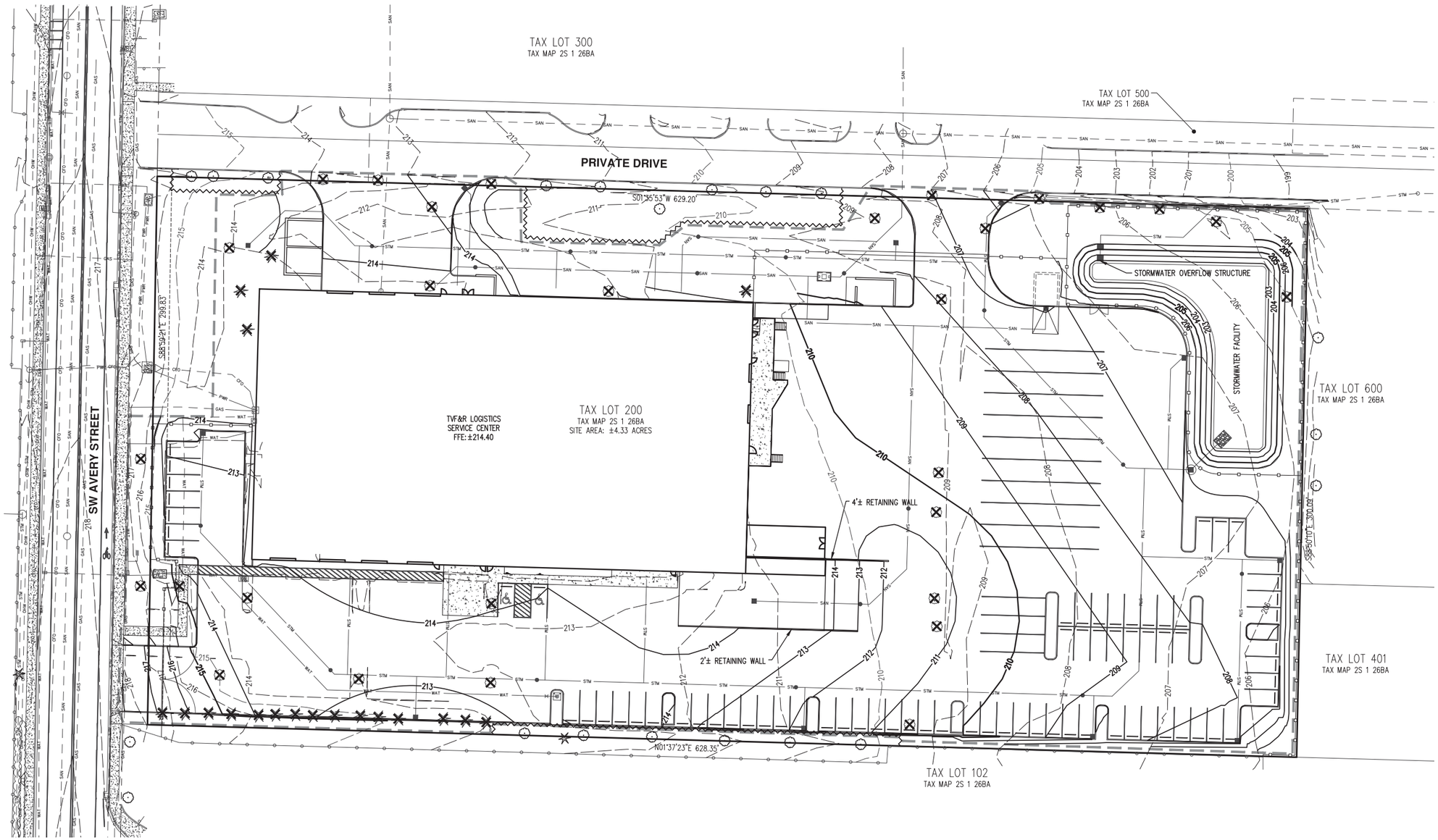
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER 5736

SHEET P3

AKS DRAWING FILE: 5736 SITE.DWG | LAYOUT: P3



LEGEND

EXISTING GROUND CONTOUR (1 FT)	209
EXISTING GROUND CONTOUR (5 FT)	210
FINISHED GRADE CONTOUR (1 FT)	209
FINISHED GRADE CONTOUR (5 FT)	210
	CONIFEROUS / DECIDUOUS
EXISTING TREES TO BE PRESERVED	
EXISTING TREES TO BE REMOVED	
TREE PROTECTION FENCE	
DISTURBED LIMITS	

NOTE:
EXISTING TREES TO BE RETAINED SHALL BE FENCED AROUND THE DRIP LINE (OR AS OTHERWISE SHOWN OR APPROVED BY PROJECT ARBORIST) WITH TREE PROTECTION FENCE. SEE SHEET P6 FOR DETAILED TREE INFORMATION.

SCALE: 1"= 30 FEET
30 0 12 18 24 30

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TUALATIN OREGON
WASHINGTON COUNTY TAX LOT 200 TAX MAP 2S 1 26BA

PRELIMINARY GRADING PLAN

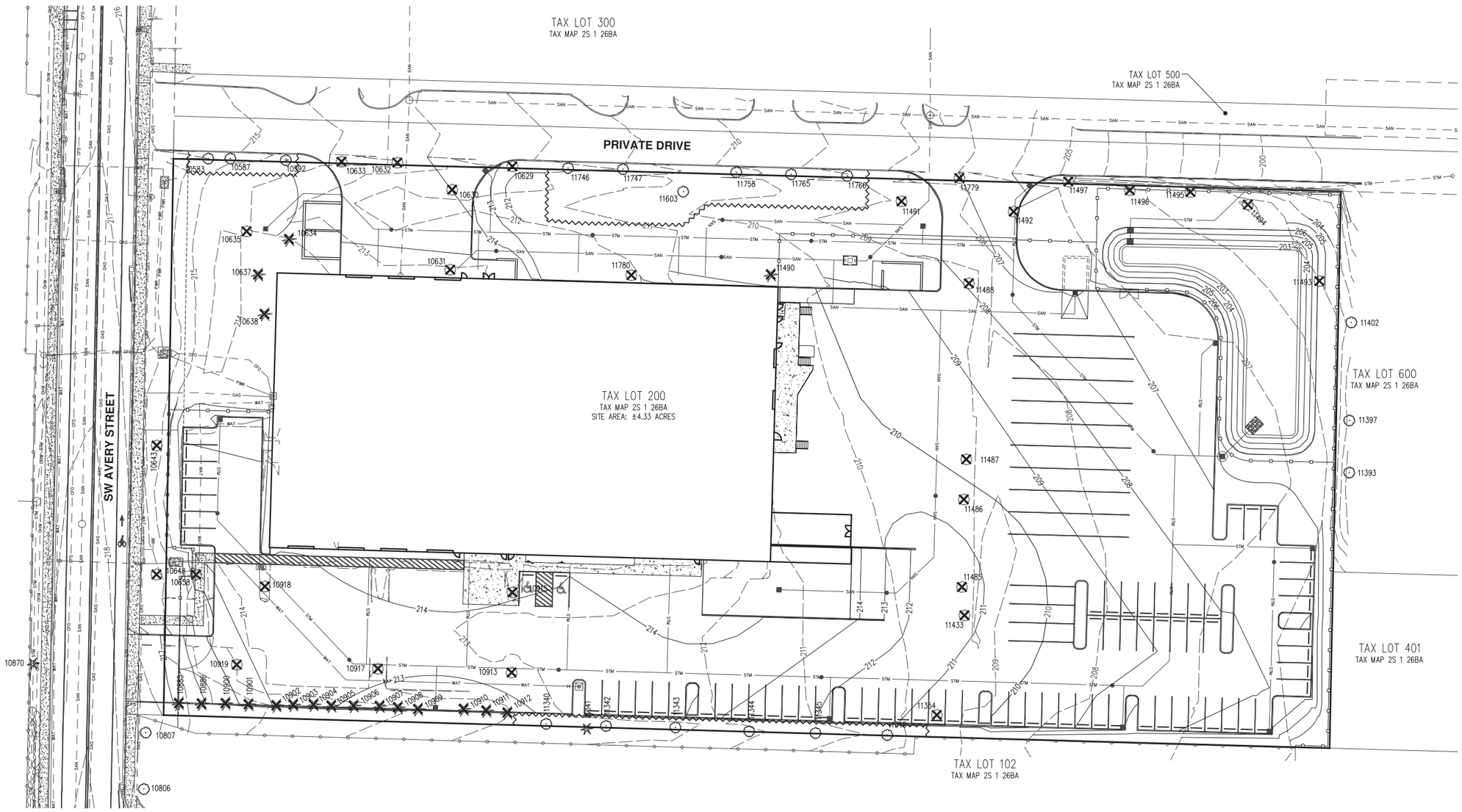
DESIGNED BY:	DJS
DRAWN BY:	DJS
CHECKED BY:	BRB
SCALE:	AS NOTED
DATE: 5/3/2019	

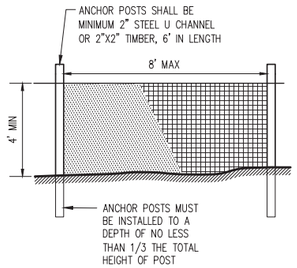
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER 5736

SHEET P4





NOTES:
1. CHAIN LINK FENCE FOR TREE PROTECTION DEVICE OR APPROVED EQUAL.
2. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
3. DEVICE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCE

NOTES:

1. ENCROACHMENTS (GRADING, CONSTRUCTION, ETC.) INTO OPTIMAL TREE ROOT ZONES OUTSIDE OF THE TREE PROTECTION AREA OF TREES TO BE PRESERVED AS SHOWN SHOULD NOT HAVE SIGNIFICANT NEGATIVE IMPACTS TO TREE HEALTH. THIS PLAN HAS BEEN REVIEWED BY A CERTIFIED ARBORIST PER TDC 73.250(2)(E).
2. GRADING ACTIVITIES SHALL NOT INCLUDE ALLOWING TREE ROOTS FROM PRESERVED TREES TO REMAIN EXPOSED PER TDC 73.250(2)(F).
3. PER TDC 31.060, A TREE IS DEFINED AS AT LEAST EIGHT (8) INCHES IN DIAMETER AT BREAST HEIGHT (DBH). THEREFORE, ALL TREES WITH A DBH OF 8 INCHES OR GREATER ARE SHOWN. SOME ADDITIONAL TREES UNDER 8 INCHES IN DBH ARE SHOWN. SEE SHEET P6 FOR ADDITIONAL INFORMATION.
4. PER TDC 33.110(4)(b)(iii), EACH TREE PROPOSED FOR REMOVAL IS BEING REMOVED TO FACILITATE PROPOSED IMPROVEMENTS OR BECAUSE IT IS IN POOR CONDITION.

LEGEND

- EXISTING GROUND CONTOUR (1 FT) — 149
- EXISTING GROUND CONTOUR (5 FT) — 150
- FINISHED GRADE CONTOUR (1 FT) — 149
- FINISHED GRADE CONTOUR (5 FT) — 150
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- TREE REMOVAL
- TREE PROTECTION FENCE (TREE PROTECTION AREA)

SCALE: 1"= 30 FEET

30 0 12 18 24 30

I, DAVID J. STEINKE, ATTEST THAT THIS TREE PRESERVATION AND REMOVAL PLAN IS IN ACCORDANCE WITH TYPICAL ARBORICULTURAL AND URBAN FORESTRY STANDARDS.

DAVID J. STEINKE, CERTIFIED ARBORIST
PN-8112A
AKS ENGINEERING & FORESTRY
STEINKED@AKS-ENG.COM

DAVID J. STEINKE
CERTIFICATE NUMBER: PN-8112A
EXPIRATION DATE: 12/31/21

AKS ENGINEERING & FORESTRY, LLC
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TVF&R LOGISTICS SERVICE CENTER

TUALATIN OREGON
WASHINGTON COUNTY TAX LOT 200 TAX MAP 2S 1 26BA

PRELIMINARY TREE PRESERVATION PLAN

DESIGNED BY:	DJS
DRAWN BY:	DJS
CHECKED BY:	BRB
SCALE:	AS NOTED

DATE: 5/3/2019

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER 5736

SHEET P5

AKS DRAWING FILE: 5736 TREELDWG | LAYOUT: P5

Detailed Tree Inventory for TVF&R Logistics Service Center

AKS Job No. 5736 - Evaluation Date: 1/16/2019

	Tree #	DBH (in.)	Avg. Crown Radius (ft)	Tree Species Common Name (*Scientific name*)	Comments	Health Rating*	Structure Rating**	Reason for Removal***
	10583	8	9	Plum (*Prunus sp.*)	OFFSITE; Crooked; Decay; Exposed roots	2	2	Preserve
	10587	8	9	Maple (*Acer sp.*)	OFFSITE; Crooked; Decay; Exposed roots; Many branches attached at one point	2	2	Preserve
****	10592	7	7	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Preserve
****	10629	7	10	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Improvements
	10630	30	25	Black Oak (*Quercus kelloggii*)	Many branches attached at one point; Some dead and broken branches	2	2	Improvements
	10631	8	9	Prunus (*Prunus sp.*)	Codominant with ~2' of included bark; Cracks; Decay	2	2	Improvements
****	10632	7	8	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Improvements
	10633	10	8	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Improvements
	10634	19	18	Pine (*Pinus sp.*)	Girdled roots; Pruned; Sap flow; Dead and broken branches	2	2	Improvements
	10635	30	29	Black Oak (*Quercus kelloggii*)	Pruned; Some dead and broken branches; Some decay; Exposed roots	2	2	Improvements
	10637	21	21	Pine (*Pinus sp.*)	Lean (SE); Pruned; Codominant top; Sap flow; Exposed roots	2	2	Improvements
	10638	12	18	Pine (*Pinus sp.*)	Crooked; Exposed roots; Canopy one sided (S); Crooked	2	2	Improvements
	10643	11	13	Plum (*Prunus sp.*)	OFFSITE; Lean (S); Many large exposed roots; Pruned; Decay; Sucker shoots	3	3	Poor Condition
	10648	14	15	Plum (*Prunus sp.*)	OFFSITE; Many large exposed roots; Broken branches; Cracks; Decay; Topped	3	3	Poor Condition
****	10658	7	8	Plum (*Prunus sp.*)	Pruned; Bulges; Decay; Root collar swell; Bore holes	2	3	Improvements
	10806	9	10	Maple (*Acer sp.*)	OFFSITE; Pruned	1	1	Preserve
	10807	9	10	Maple (*Acer sp.*)	OFFSITE; Pruned	1	1	Preserve
	10870	10	12	Spruce (*Picea sp.*)	Topped for overhead wires; Evaluation from right-of-way	2	3	Preserve
	10885	16	12	Pine (*Pinus sp.*)	Codominant top with included bark; Pruned; Sap flow; Crooked	2	2	Improvements
	10886	12	12	Pine (*Pinus sp.*)	Lean (S); Crooked; Suppressed; Pruned	2	2	Improvements
	10900	16	15	Pine (*Pinus sp.*)	Pruned; Crooked; Codominant top; Sparse foliage	2	2	Improvements
	10901	22	18	Pine (*Pinus sp.*)	Codominant top with included bark	1	2	Improvements
	10902	14	12	Pine (*Pinus sp.*)	Codominant top with included bark; Suppressed	2	2	Improvements
	10903	14	17	Pine (*Pinus sp.*)	Codominant top; Dead and broken branches; Crooked	2	2	Improvements
	10904	18	17	Pine (*Pinus sp.*)	Very crooked trunk; Codominant ~6' from ground with included bark; Large codominant trunk leans east; Decay	2	3	Improvements
	10905	16	18	Pine (*Pinus sp.*)	Codominant ~10' from ground; Pruned	1	2	Improvements
	10906	12	14	Pine (*Pinus sp.*)	Crooked; Pruned; Suppressed	2	2	Improvements
	10907	17	18	Pine (*Pinus sp.*)	Crooked; Pruned	1	2	Improvements
	10908	20	16	Pine (*Pinus sp.*)	Codominant top; Crooked	1	2	Improvements
	10909	10	10	Pine (*Pinus sp.*)	Lean (NE); Crooked; Sweep	2	2	Improvements
	10910	17	13	Pine (*Pinus sp.*)	Pruned; Crooked	1	2	Improvements
	10911	17	16	Pine (*Pinus sp.*)	Codominant top; Crooked; Pruned	1	2	Improvements
	10912	18	13	Pine (*Pinus sp.*)	Lean (NE); Pruned; Exposed roots	1	2	Improvements
	10913	13	16	Black Oak (*Quercus kelloggii*)	Codominant top with included bark; Pruned; Large exposed roots	1	2	Improvements
	10915	24	25	Black Oak (*Quercus kelloggii*)	Bulges; Exposed roots; Pruned; Codominant top	2	2	Improvements
	10917	8	10	Black Oak (*Quercus kelloggii*)	Canopy (W); Sweep; Pruned	2	2	Improvements
	10918	13	18	Black Oak (*Quercus kelloggii*)	Bulges; Large exposed roots; Pruned; Topped; Decay	2	3	Improvements
	10919	13	16	Black Oak (*Quercus kelloggii*)	Pruned; Large exposed roots; Codominant top	2	2	Improvements
	11340	15	18	Black Oak (*Quercus kelloggii*)	Codominant top; Pruned	1	2	Preserve
****	11341	7	7	Pine (*Pinus sp.*)	OFFSITE	1	1	Preserve
	11342	17	15	Black Oak (*Quercus kelloggii*)	Exposed roots	1	2	Preserve
	11343	29	26	Black Oak (*Quercus kelloggii*)	Codominant ~10' from ground with many branches attached at one point; Exposed roots; Some decay	2	2	Preserve
	11344	16	15	Black Oak (*Quercus kelloggii*)	Bulges; Pruned	1	2	Preserve
	11345	22	21	Black Oak (*Quercus kelloggii*)	Some dead branches; Codominant ~6' from ground; Many branches attached at one point	1	2	Preserve
	11346	20	18	Black Oak (*Quercus kelloggii*)	Some decay; Codominant top with included bark	1	2	Preserve
****	11354	6	5	Black Oak (*Quercus kelloggii*)		1	1	Remove
	11393	9	4	Maple (*Acer sp.*)	OFFSITE	1	1	Preserve
	11397	9	12	Maple (*Acer sp.*)	OFFSITE; Pruned	1	1	Preserve
	11402	8	12	Maple (*Acer sp.*)	OFFSITE; Pruned	1	1	Preserve
****	11433	7	7	Black Oak (*Quercus kelloggii*)	Significant sweep; Lean (N)	1	2	Improvements
****	11485	7	7	Black Oak (*Quercus kelloggii*)		1	1	Improvements
	11486	8	7	Black Oak (*Quercus kelloggii*)		1	1	Improvements
	11487	11	10	Black Oak (*Quercus kelloggii*)		1	1	Improvements
	11488	23	27	Black Oak (*Quercus kelloggii*)	Pruned	1	1	Improvements
	11490	21	21	Pine (*Pinus sp.*)	Lean (E); Exposed roots; Pruned	1	2	Improvements
	11491	29	30	Black Oak (*Quercus kelloggii*)	Some dead and broken branches	1	2	Improvements
	11492	22	27	Black Oak (*Quercus kelloggii*)	Some decay; Some dead and broken branches	2	2	Improvements
	11493	20	15	black cottonwood	Broken top; Broken branches	2	2	Improvements
	11494	25	27	Black Oak (*Quercus kelloggii*)	Some dead and broken branches; Codominant top	2	2	Improvements
****	11495	6	8	Maple (*Acer sp.*)		1	1	Improvements
	11496	8	12	Maple (*Acer sp.*)	Many exposed roots	1	1	Improvements
	11497	9	13	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Improvements
	11603	25	28	Black Oak (*Quercus kelloggii*)	Codominant top; Exposed roots with mechanical damage and decay; Broken branches	2	2	Preserve
	11746	9	13	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Preserve
****	11747	6	7	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Preserve
****	11758	6	7	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Preserve
	11765	8	9	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Preserve
****	11766	7	9	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Preserve
****	11779	7	8	Maple (*Acer sp.*)	OFFSITE; Many exposed roots	1	2	Improvements
	11780	11	13	Black Oak (*Quercus kelloggii*)	Exposed roots	1	2	Improvements

****NOTE:

1. THESE TREES ARE UNDER 8" IN DBH AND THEREFORE ARE NOT REGULATED PER TDC 31.060

Total # of Existing Trees Inventoried = 70

Total # of Existing Onsite Trees = 49
- Total # of Existing Onsite Trees to be Preserved = 8
- Total # of Existing Onsite Trees to be Removed = 41
  - *Total # of Existing Onsite Trees to be Removed that are Exempt= 5*
  - *Total # of Existing Onsite Trees to be Removed that are Non-Exempt= 36*

Total # of Existing Offsite Trees = 21
- Total # of Existing Offsite Trees to be Preserved = 14
- Total # of Existing Offsite Trees to be Removed = 7
  - *Total # of Existing Offsite Trees to be Removed that are Exempt= 3*
  - *Total # of Existing Offsite Trees to be Removed that are Non-Exempt= 4*

***Health Rating:**

1 = Good Health - A tree that exhibits typical foliage, bark, and root characteristics, for its respective species, shows no signs of infection or infestation, and has a high level of vigor and vitality.

2 = Fair Health - A tree that exhibits some abnormal health characteristics and/or shows some signs of infection or infestation, but may be reversed or abated with supplemental treatment.

3 = Poor Health - A tree that is in significant decline, to the extent that supplemental treatment would not likely result in reversing or abating its decline.

****Structure Rating:**

1 = Good Structure - A tree that exhibits typical physical form characteristics, for its respective species, shows no signs of structural defects of the canopy, trunk, and/or root system.

2 = Fair Structure - A tree that exhibits some abnormal physical form characteristics and/or some signs of structural defects, which reduce the structural integrity of the tree, but are not indicative of imminent physical failure, and may be corrected using arboricultural abatement methods.

3 = Poor Structure - A tree that exhibits extensively abnormal physical form characteristics and/or significant structural defects that substantially reduces the structural viability of the tree, cannot feasibly be abated, and are indicative of imminent physical failure.

*****Reason for Removal:**

Improvements - Trees that are within the impact limits of proposed improvements.

Poor Condition - Trees that are diseased or defective in a manner that threatens their long term viability. These trees will be replaced per the Landscape Plan in compliance with TDC 74.485.

Arborist Disclosure Statement:

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the health of trees, and attempt to reduce the risk of living near trees. The Client and Jurisdiction may choose to accept or disregard the recommendations of the arborist, or seek additional advice. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like medicine, cannot be guaranteed. Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees. Neither this author nor AKS Engineering & Forestry, LLC have assumed any responsibility for liability associated with the trees on or adjacent to this site.

At the completion of construction, all trees should once again be reviewed. Land clearing and removal of adjacent trees can expose previously unseen defects and otherwise healthy trees can be damaged during construction.

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TVF&R LOGISTICS SERVICE CENTER

TUALATIN OREGON
WASHINGTON COUNTY TAX LOT 200 TAX MAP 2S 1 26BA

PRELIMINARY TREE PRESERVATION TABLE

DAVID J. STEINKE
CERTIFICATE NUMBER: PN-8112A
EXPIRATION DATE: 12/31/21

DESIGNED BY:	DJS
DRAWN BY:	DJS
CHECKED BY:	BRB
SCALE:	AS NOTED

DATE: 5/3/2019

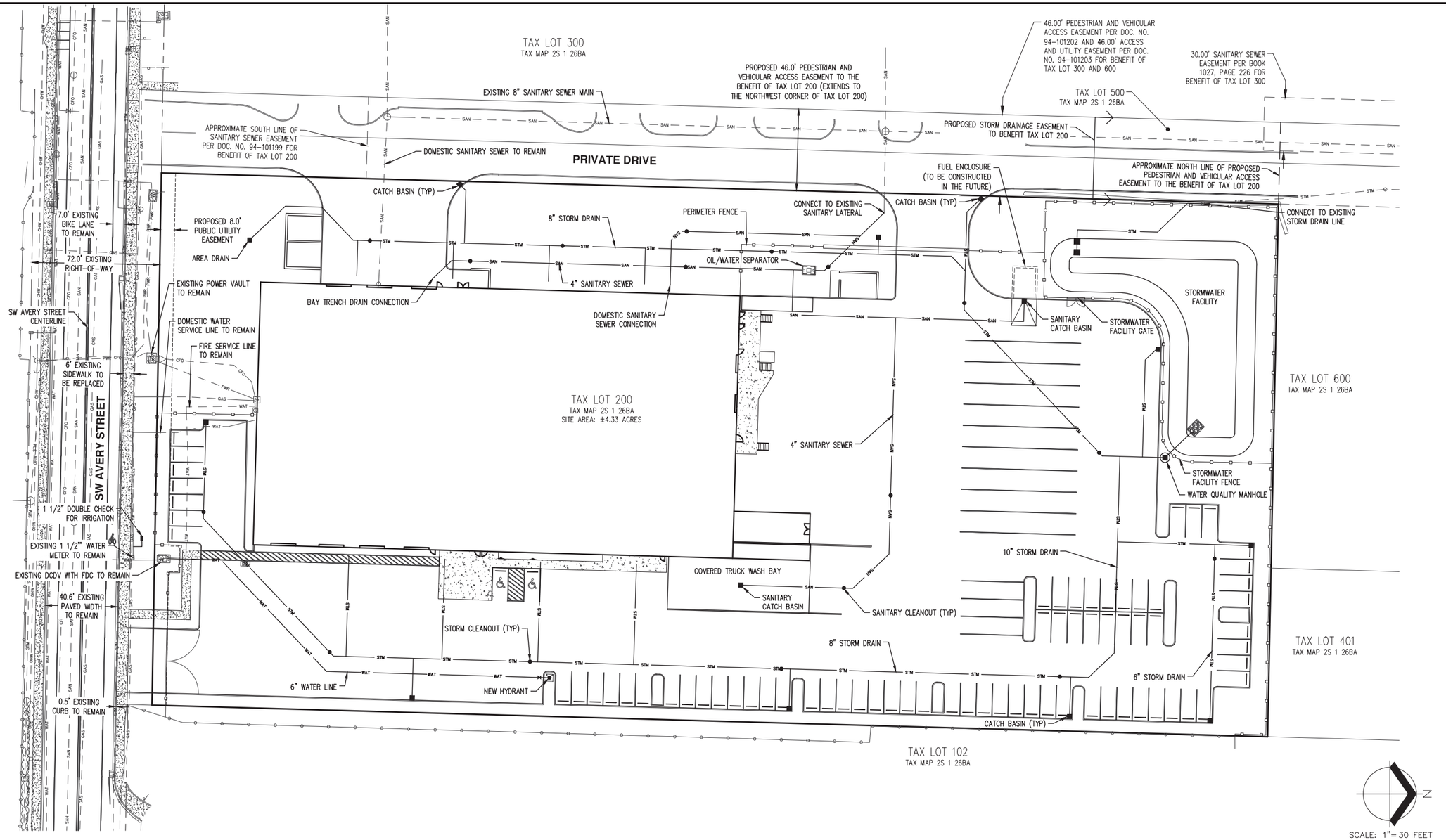
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER 5736

SHEET P6

AKS DRAWING FILE: 5736 TREE TABLES.DWG | LAYOUT: P6



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TUALATIN OREGON
WASHINGTON COUNTY TAX LOT 200 TAX MAP 2S 1 26BA

PRELIMINARY PUBLIC FACILITIES PLAN

DESIGNED BY:	DJS
DRAWN BY:	DJS
CHECKED BY:	BRB
SCALE:	AS NOTED
DATE: 5/3/2019	

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

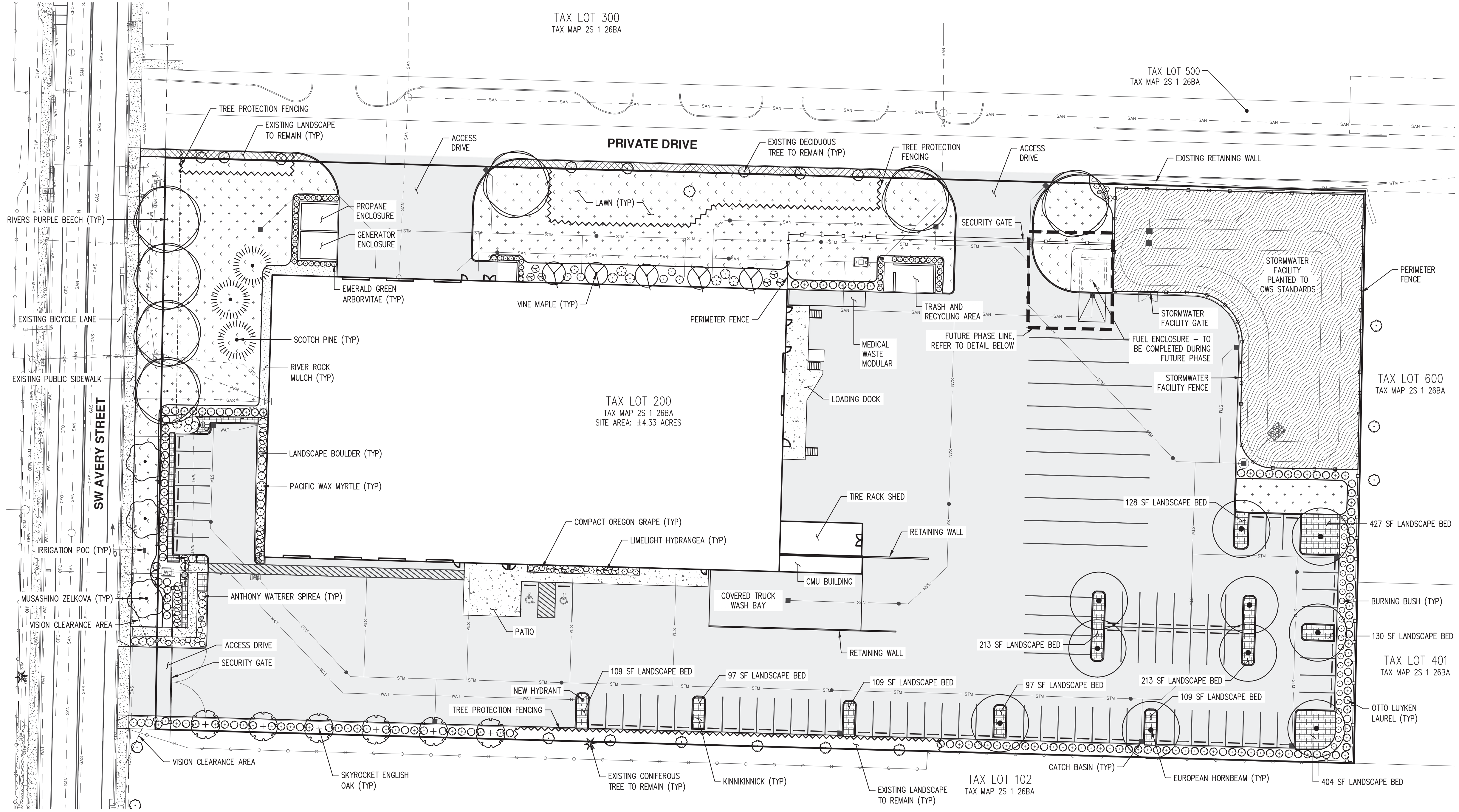
JOB NUMBER
5736

SHEET
P7

AKS DRAWING FILE: 5736 PUBLIC IMPROVEMENTS.DWG | LAYOUT: P7

PRELIMINARY LANDSCAPE PLANTING NOTES

1. LANDSCAPE PLAN IS PRELIMINARY AND INTENDED TO SHOW DESIGN INTENT ONLY. REVISIONS AND SUBSTITUTIONS, INCLUDING CHANGES TO PLANT VARIETY, SPACING, AND QUANTITIES, ETC. MAY BE NECESSARY BASED ON FINAL SITE LAYOUT AND DEVELOPMENT PRIOR TO FINAL PLAN APPROVAL.
2. ALL LANDSCAPING SHALL CONFORM TO APPLICABLE CITY OF TUALATIN DESIGN STANDARDS. PLANT MATERIAL SHALL BE HEALTHY AND TYPICAL FOR THEIR SPECIES, CONFORMING TO THE SIZE, QUALITY, AND OTHER STANDARDS OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1). PLANT IN ACCORDANCE WITH RECOGNIZED BEST-PRACTICE INDUSTRY STANDARDS SUCH AS THOSE ADOPTED BY THE OREGON LANDSCAPE CONTRACTORS BOARD (OLCB).
3. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING TREES AND VEGETATION (INCLUDING DAMAGE TO TREE ROOT ZONES OR CANOPY) DURING THE COURSE OF WORK ON SITE UNTIL DATE OF FINAL ACCEPTANCE.
4. STREET TREES SHALL BE FROM THE CITY OF TUALATIN ZONE 1 STREET TREE LIST. SUBSTITUTIONS FROM THIS LIST MAY BE ALLOWED WITH APPROVAL.
5. TREES AND LANDSCAPING BOTH WITHIN AND BEHIND THE PUBLIC RIGHT-OF-WAY SHALL BE MAINTAINED TO PROVIDE 8' OF CLEARANCE OVER SIDEWALKS AND 13' OF CLEARANCE OVER STREET AREAS.
6. IRRIGATION AND ON-GOING MAINTENANCE OF THE STREET TREES AND OTHER SITE LANDSCAPING SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. IRRIGATION SHALL BE PROVIDED BY AN AUTOMATIC, UNDERGROUND IRRIGATION SYSTEM DESIGN-BUILT BY THE LANDSCAPE CONTRACTOR UNLESS OTHER MEANS OF WATERING ARE APPROVED. WATERING SHALL OCCUR AT A RATE AS NECESSARY FOR HEALTHY PLANT ESTABLISHMENT (A MINIMUM OF AT LEAST 1" PER WEEK DURING DRY WEATHER IS RECOMMENDED) AT LEAST THROUGH THE ESTABLISHMENT PERIOD (TWO COMPLETE GROWING SEASONS). MAINTENANCE, INCLUDING PRUNING, SHALL COMPLY WITH CITY OF TUALATIN STANDARD AND CURRENT INDUSTRY RECOGNIZED BEST-PRACTICES.
7. ALL PLANTING BEDS NOT DESIGNATED AS LAWN SHALL HAVE A MINIMUM 3" LAYER OF BARK MULCH FOR SOIL MOISTURE RETENTION AND WEED SUPPRESSION. MULCHING WITHIN THE STORMWATER FACILITY SHALL COMPLY WITH CWS STANDARDS.



PRELMINARY PLANT SCHEDULE

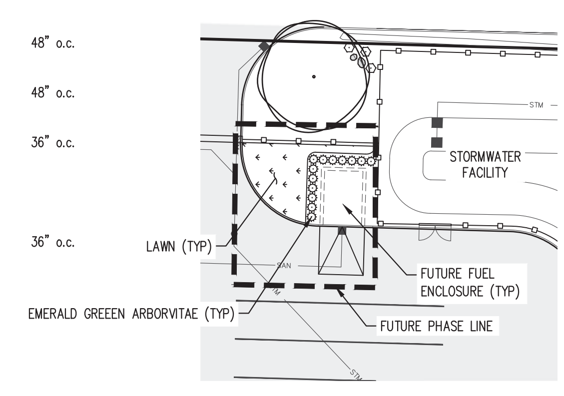
TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE/CONTAINER	SPACING
	5	ACER CIRCINATUM	VINE MAPLE	6' HT. MIN; MULTI-CANE	AS SHOWN
	10	CARPINUS BETULUS	EUROPEAN HORNBEAM	1 1/2" CAL. MIN. / B&B	AS SHOWN
	7	FAGUS SYLVATICA 'RIVERSII'	RIVERS PURPLE BEECH	1 1/2" CAL. MIN. / B&B	30' O.C. OR AS SHOWN
	3	PINUS SYLVESTRIS	SCOTCH PINE	6'-8' HT B&B	AS SHOWN
	6	QUERCUS ROBUR 'SKYROCKET'	SKYROCKET ENGLISH OAK	1 1/2" CAL. MIN. / B&B	AS SHOWN
	3	ZELKOVA SERRATA 'MUSASHINO'	MUSASHINO ZELKOVA	1 1/2" CAL. MIN. / B&B	30' O.C. OR AS SHOWN

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE/CONTAINER	SPACING
	26	EUONYMUS ALATUS 'COMPACTUS'	COMPACT BURNING BUSH	2 GAL CONT.	36" o.c.
	24	HYDRANGEA PANICULATA 'LIMELIGHT' TM	LIMELIGHT HYDRANGEA	2 GAL CONT.	48" o.c.
	23	MAHONIA AQUIFOLIUM 'COMPACTA'	COMPACT OREGON GRAPE	2 GAL CONT.	36" o.c.
	10	MYRICA CALIFORNICA	PACIFIC WAX MYRTLE	5 GAL CONT.	60" o.c.
	162	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL	2 GAL CONT.	48" o.c.
	27	SPIRAEA JAPONICA 'ANTHONY WATERER'	ANTHONY WATERER SPIREA	2 GAL CONT.	48" o.c.
	68	THUJA OCCIDENTALIS 'SMARAGD' (13) ARBORVITAE TO BE INSTALLED AT FUTURE PHASE	EMERALD GREEN ARBORVITAE	3'-4' HT B&B	36" o.c.

GROUND COVERS	QTY	DESCRIPTION			
	299	ARCTOSTAPHYLOS UVA-URSI 'EMERALD CARPET'	KINNIKINNICK	1 GAL CONT	36" o.c.
	± 1,232 SF	EXISTING LANDSCAPE TO REMAIN (OFFSITE)			
	± 27,015 SF	LAWN - SEED OR SOD			

FUTURE PHASE DETAIL:

INSTALL LANDSCAPE AS SHOWN AFTER FUEL ENCLOSURE IS COMPLETED



SCALE: 1"=30 FEET

SITE DATA:

PLANNING DISTRICT: LIGHT MANUFACTURING (ML)
SQUARE FOOTAGE OF SITE: ±188,591 SF
SQUARE FOOTAGE OF DEVELOPMENT AREA: ±138,854 SF
SQUARE FOOTAGE OF LANDSCAPING: ±49,737 SF (±26%)
SQUARE FOOTAGE OF PARKING LOT LANDSCAPING: ±2,036 SF
SQUARE FOOTAGE OF PAVEMENT: ±92,295 SF

EXISTING SQUARE FOOTAGE OF PARKING: ±5,519 SF
PROPOSED SQUARE FOOTAGE OF PARKING: ±20,131 SF

PARKING AND PASSENGER LOADING DATA:

TOTAL PROPOSED PARKING SPACES:

- STANDARD 18.5'X9': 72
  - 37 FLEET/MOTOR POOL VEHICLE
  - 35 NON-FLEET/MOTOR POOL VEHICLE
- ADA (18.5'X9'): 2
- 35'X10' (EQUIPMENT TRAILER): 3
- 65'X12' (TRUCK STAGING): 9

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TUALATIN OREGON
WASHINGTON COUNTY TAX LOT 200 TAX MAP 2S 1 26BA

PRELIMINARY LANDSCAPE PLAN

DESIGNED BY: NKP
DRAWN BY: NKP
CHECKED BY: KAH
SCALE: AS NOTED
DATE: 5/3/2019

REGISTERED LANDSCAPE ARCHITECT
PRELIMINARY NOT FOR CONSTRUCTION

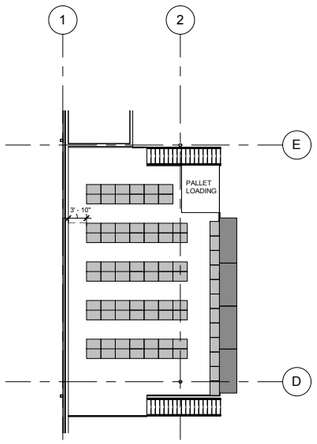
REVISIONS

JOB NUMBER 5736

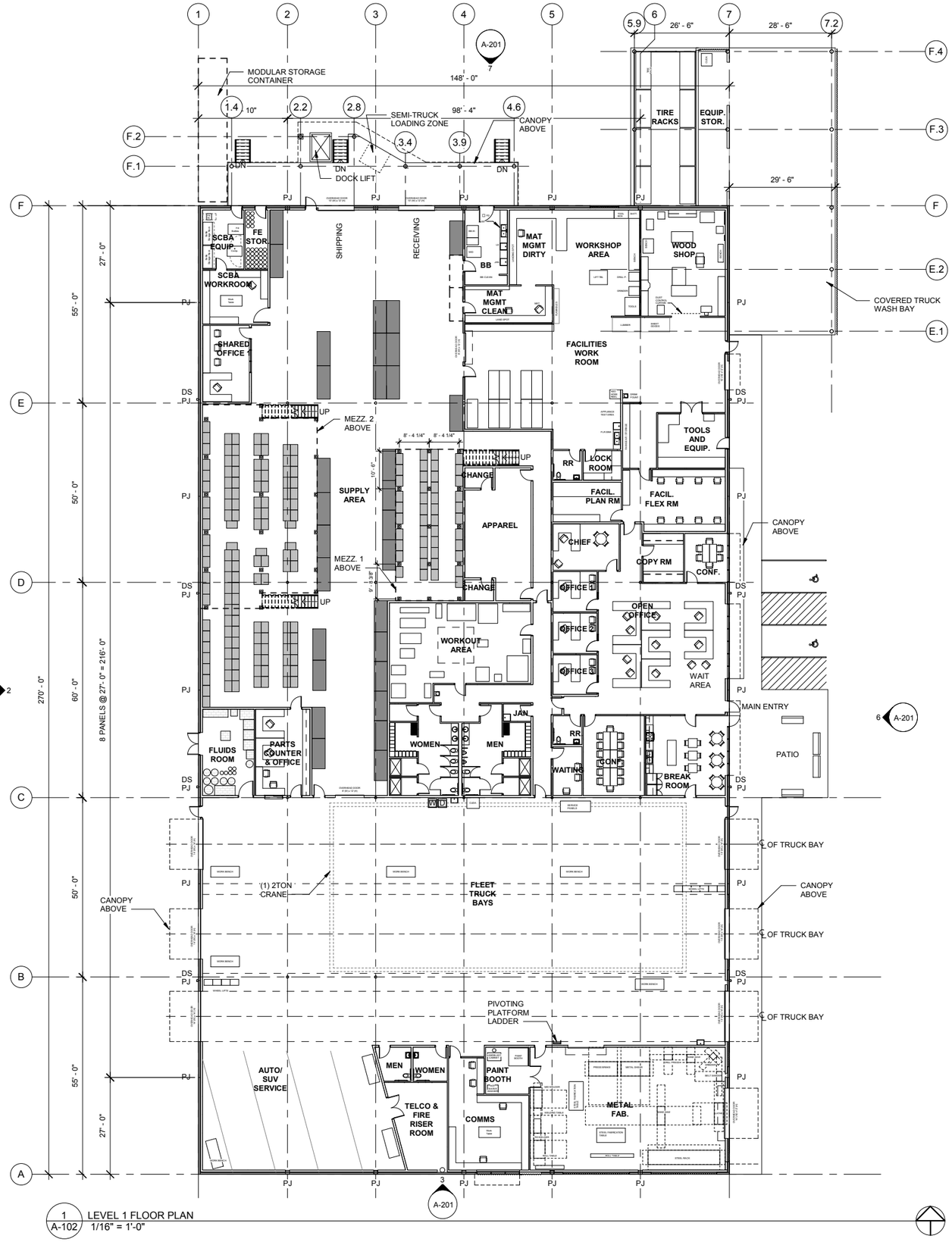
SHEET P8

AKS DRAWING FILE: 5736 LANDSCAPE.DWG | LAYOUT: P8

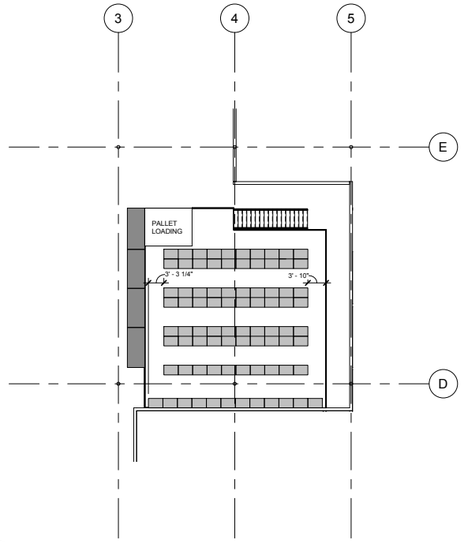
Exhibit B: Architectural Renderings



3 / A-102 LEVEL 2 MEZZANINE - WEST MEZZANINE FLOOR PLAN
1/16" = 1'-0"



1 / A-102 LEVEL 1 FLOOR PLAN
1/16" = 1'-0"



2 / A-102 LEVEL 2 MEZZANINE - EAST MEZZANINE FLOOR PLAN
1/16" = 1'-0"

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PROJECT NO. 16-1202

ISSUE DATE 03.08.2019

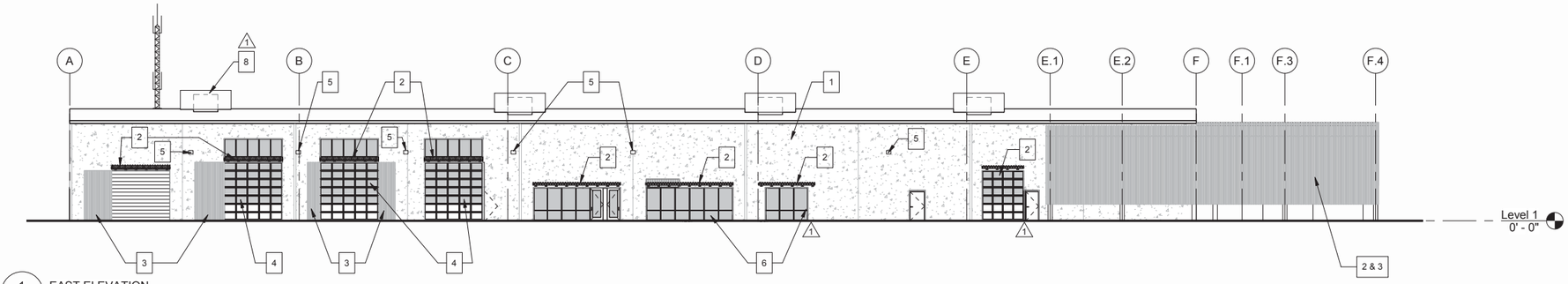
REVISIONS

SHEET

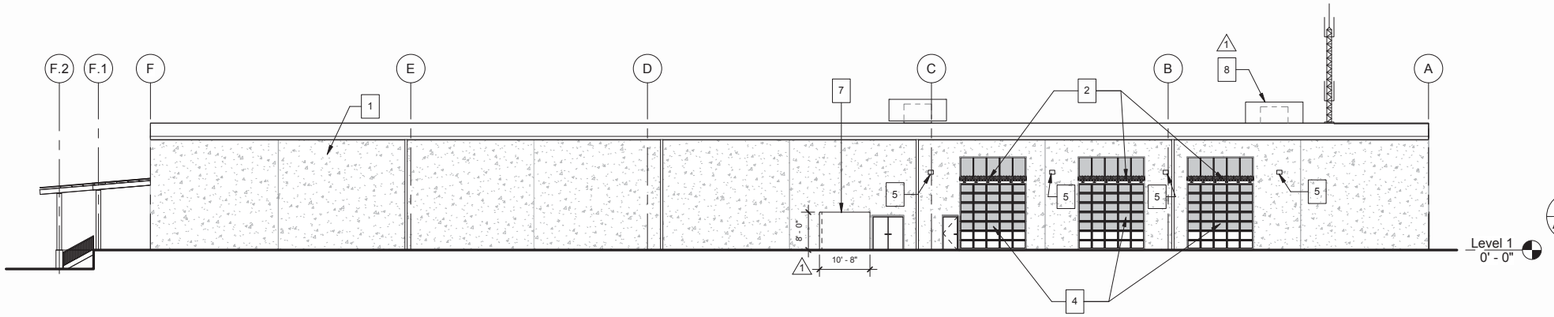
FLOOR PLAN

A-102

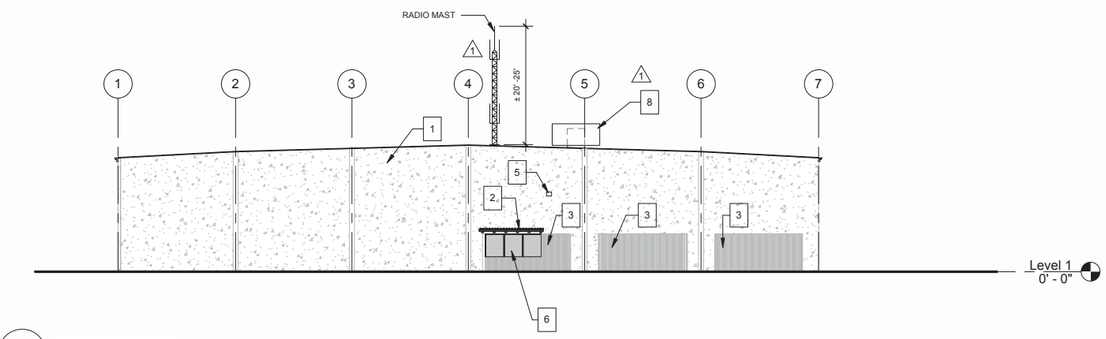
ARCHITECTURAL DESIGN REVIEW SUBMITTAL



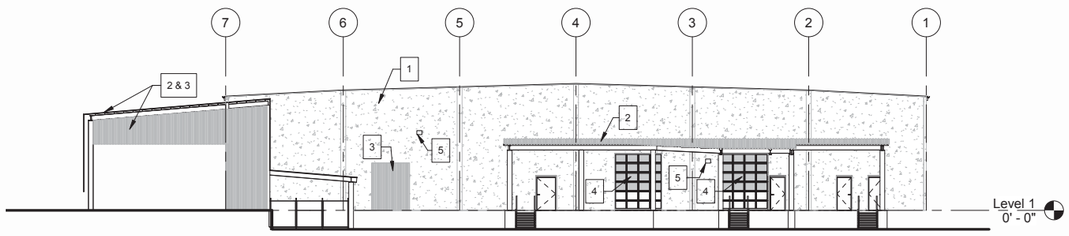
1 A-201 EAST ELEVATION
1/16" = 1'-0"



2 A-201 WEST ELEVATION
1/16" = 1'-0"



3 A-201 SOUTH ELEVATION
1/16" = 1'-0"

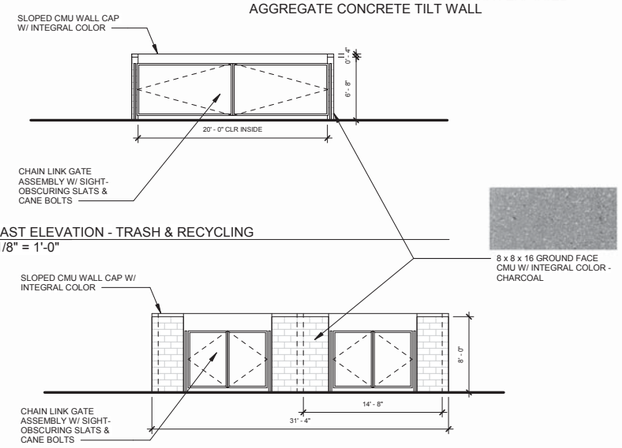


4 A-201 NORTH ELEVATION
1/16" = 1'-0"

TYP. RADIO MAST

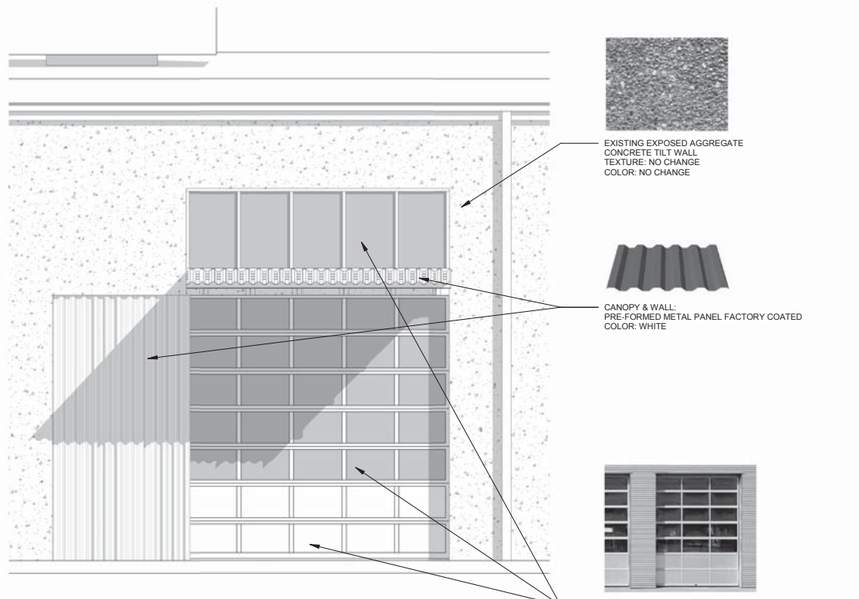
KEYNOTES:

1. EXIST. EXPOSED AGGREGATE CONCRETE TILT WALL
2. CANOPY: PRE-FORMED METAL PANEL
3. PRE-FORMED METAL ON STEEL FRAME PANEL WALL
4. ALUMINUM FRAME OVERHEAD DOOR & STOREFRONT (TYP.)
5. EXTERIOR WALL MOUNTED LUMINAIRE
6. ALUMINUM STOREFRONT
   FACTORY COATED FRAME: WHITE
   GLAZING: CLEAR
7. WASTE FLUIDS TANK ENCLOSURE - SEE 7/ A - 201 FOR MATERIALS
8. SCREENED ROOF-TOP HVAC UNIT - TYP.
   PRE-FORMED (VERTICAL RIB) METAL PANEL
   FACTORY COATED
   COLOR: LIGHT GRAY TO MATCH EXIST. EXPOSED AGGREGATE CONCRETE TILT WALL



6 A-201 EAST ELEVATION - TRASH & RECYCLING
1/8" = 1'-0"

7 A-201 NORTH ELEVATION - GENERATE/ PROPANE TANK ENCLOSURE
1/8" = 1'-0"



5 A-201 East Elevation Enlarged
1/4" = 1'-0"

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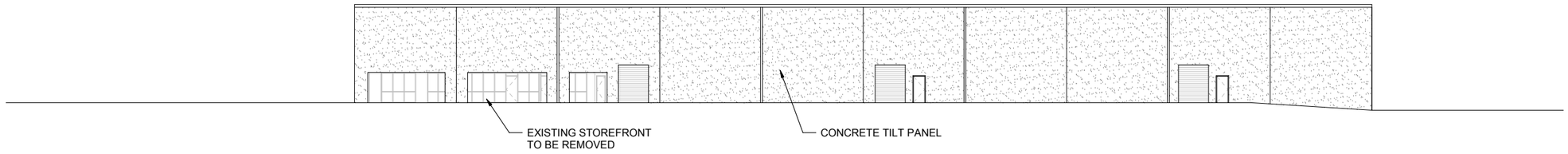
PROJECT NO. 16-1202
ISSUE DATE 03.08.2019

REVISIONS
1 04/29/19 REVISION 1

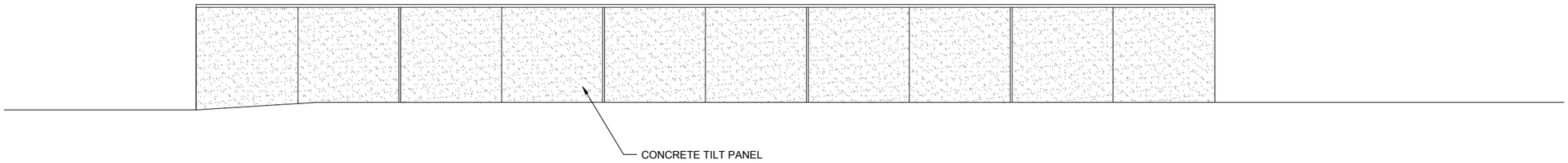
SHEET
BUILDING ELEVATIONS

A-201

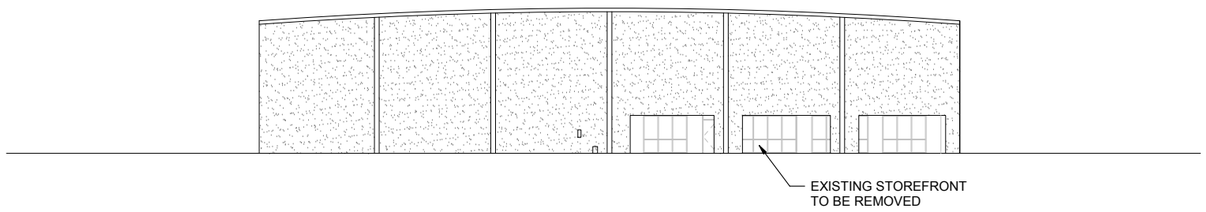
ARCHITECTURAL DESIGN REVIEW SUBMITTAL



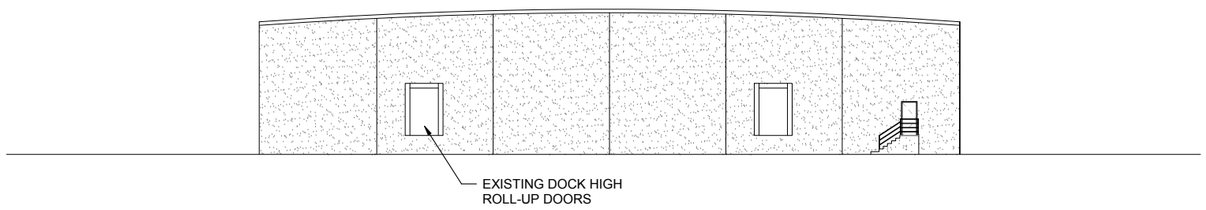
1 Level 1 East Elvation - Existing Conditions
1/16" = 1'-0"



2 Level 1 West Elevation - Existing Conditions
1/16" = 1'-0"



3 Level 1 South Elevation - Existing Conditions
1/16" = 1'-0"



4 Level 1 North Elevation - Existing Conditions
1/16" = 1'-0"

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9991 SW AVERY ST, TUALATIN, OR 97062

CLIENT: EMERICK CONSTRUCTION

MERRYMAN BARNES ARCHITECTS INC. 4713 N Albina Ave, Suite 304 Portland, OR 97217 p:503-222-3753 www.merrymanbarnesarchitects.com

PROJECT NO. 16-1202

ISSUE DATE 03.08.2019

REVISIONS

SHEET

BUILDING EXISTING ELEVATIONS

A-202

ARCHITECTURAL DESIGN REVIEW SUBMITTAL

1 View from SE Corner 02.28.2019

TVF&R LOGISTICS SERVICE CENTER

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REVISIONS

SHEET

VIEW FROM SE CORNER

A-901

ARCHITECTURAL DESIGN REVIEW SUBMITTAL

1 View from Se Corner 1 02.28.2019
12" = 1'-0"

2 Bird's-eye View from North
12" = 1'-0"

3 Bird's-eye View from SE
12" = 1'-0"

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REVISIONS

SHEET
RENDERINGS

A-902

ARCHITECTURAL DESIGN REVIEW SUBMITTAL

Exhibit C: Preliminary Lighting Plans

ELECTRICAL SYMBOL LIST

NOTE: This is a standard symbol list and not all items listed may be used.

Lighting

AREA LUMINAIRE ARM MOUNTED WITH POLE AND CONCRETE BASE. NUMBER OF HEADS AND CONFIGURATION INDICATED ON PLANS.

SURFACE OR PENDANT MOUNTED 1' X 4' LUMINAIRE

WALL MOUNTED LUMINAIRE

SITE LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	HOUSING	SHIELDING	MOUNTING	FINISH	UL/IP RATING	DRIVER/ POWER SUPPLY	LIGHT SOURCE	INPUT WATTS	MFG/CATALOG #	NOTES
SA	POLE MOUNTED LED AREA LUMINAIRE	DIE-CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINK	TYPE T3M DISTRIBUTION	18-FOOT POLE WITH CONCRETE BASE	BRONZE	WET	INTEGRAL ELECTRONIC DRIVER	4000K LED, 530MA, 6468 LUMENS	54	LITHONIA DSX1 SERIES OR APPROVED	PROVIDE WITH HOUSE-SIDE SHIELD.
SA1	POLE MOUNTED LED AREA LUMINAIRE WITH (2) HEADS PER POLE	DIE-CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINK	TYPE 3M DISTRIBUTION	18-FOOT POLE WITH CONCRETE BASE	BRONZE	WET	INTEGRAL ELECTRONIC DRIVER	4000K LED, 530MA, 17,604 LUMENS	140	LITHONIA DSX2 SERIES OR APPROVED	
SA2	POLE MOUNTED AREA LUMINAIRE	DIE-CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINK	TYPE T4M DISTRIBUTION	18-FOOT POLE WITH CONCRETE BASE	BRONZE	WET	INTEGRAL ELECTRONIC DRIVER	4000K LED, 530MA, 6468 LUMENS	54	LITHONIA DSX1 SERIES OR APPROVED	
SB	LED ADJUSTABLE WALLPACK	DIE-CAST ALUMINUM HOUSING	POLYCARBONATE	WALL MOUNTED	BRONZE	WET	INTEGRAL ELECTRONIC DRIVER	4000K LED, 7320 LUMENS	52	RAB WPLED52N OR APPROVED	
SB1	LED ADJUSTABLE WALLPACK	DIE-CAST ALUMINUM HOUSING	POLYCARBONATE	WALL MOUNTED	BRONZE	WET	INTEGRAL ELECTRONIC DRIVER	4000K LED, 9588 LUMENS	80	RAB WPLED80N OR APPROVED	
SC	LINEAR GASKETED LUMINAIRE	FIBERLASS HOUSING	ACRYLIC	SURFACE MOUNTED		WET	INTEGRAL ELECTRONIC DRIVER	4000K LED, 6400 LUMENS	48	HE WILLIAMS 96 SERIES OR APPROVED	
SC1	LINEAR GASKETED LUMINAIRE	FIBERLASS HOUSING	ACRYLIC	SURFACE MOUNTED		WET	INTEGRAL ELECTRONIC DRIVER	4000K LED, 4000 LUMENS	30	HE WILLIAMS 96 SERIES OR APPROVED	
SD	LED SLIM WALLPACK	DIE-CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINK		WALL MOUNTED	BRONZE	WET	INTEGRAL ELECTRONIC DRIVER	4000K LED, 3524 LUMENS	26	RAB SLIM 26N SERIES OR APPROVED	

NOTES:

1. THIS LUMINAIRE SCHEDULE IS NOT COMPLETE WITHOUT A COPY OF THE PROJECT MANUAL CONTAINING THE ELECTRICAL SPECIFICATIONS.
2. SPECIFIED MANUFACTURERS ARE APPROVED TO SUBMIT BID. INCLUSION DOES NOT RELIEVE MANUFACTURER FROM SUPPLYING PRODUCT AS DESCRIBED.
3. PROVIDE SUBMITTALS THAT INCLUDE THE LUMINAIRE, LAMP AND BALLAST/DRIVER INFORMATION OF EACH LUMINAIRE, WITH APPLICABLE OPTIONS CLEARLY CHECKED OR HIGHLIGHTED. SUBMITTALS NOT INCLUDING THIS INFORMATION WILL BE RETURNED AS REJECTED BY THE ENGINEER OF RECORD.

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 11, 2005
JOHN R. SATTEM
PRELIMINARY
EXPIRES: 06/30/20

TVF&R LOGISTICS SERVICE CENTER

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PROJECT NO. 16-1202
ISSUE DATE 03.08.2019

REVISIONS

SHEET
SYMBOL LIST & SCHEDULES

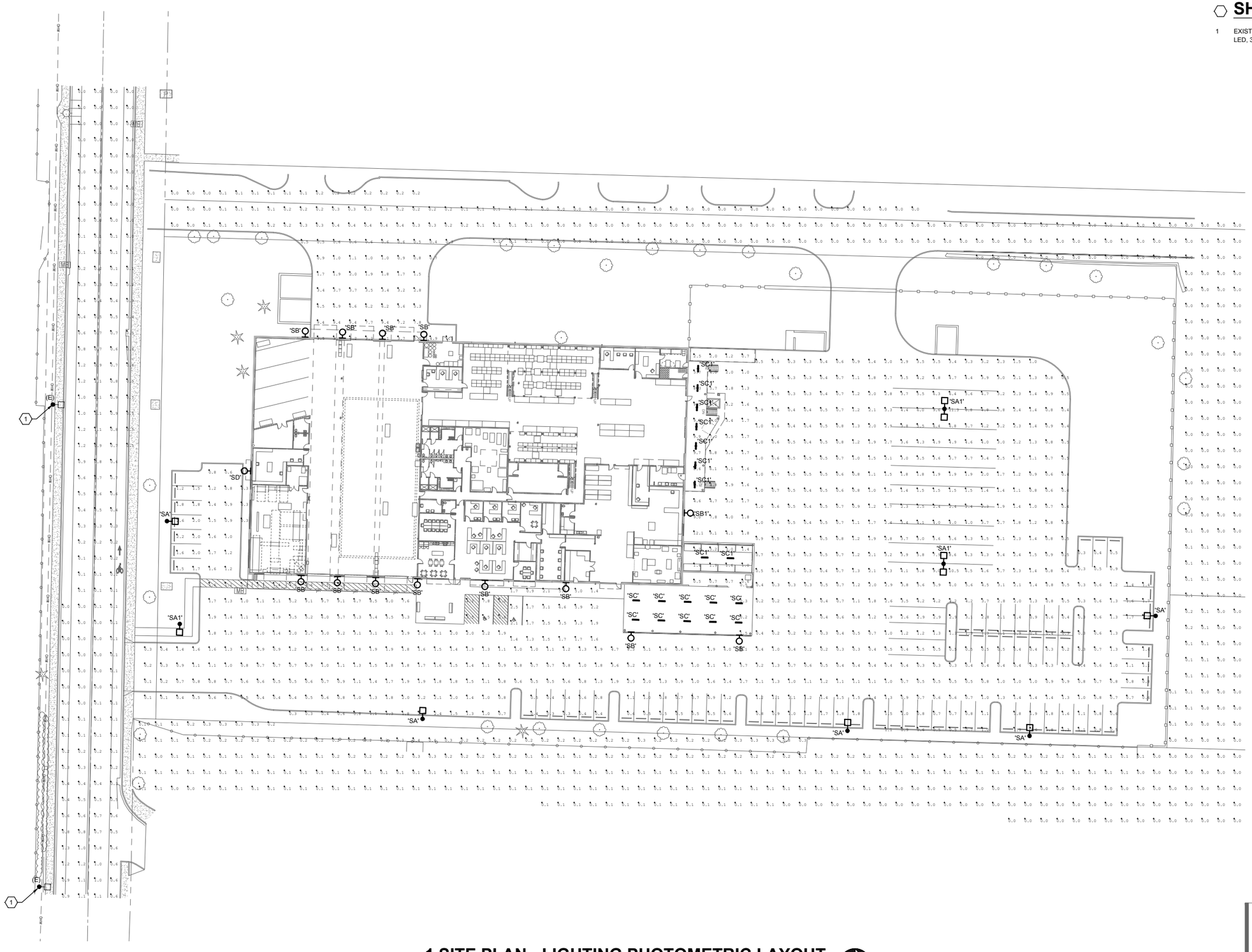
E-001PH

ARCHITECTURAL DESIGN REVIEW SUBMITTAL

PROJECT 2019-0001
CONTACT Jeff Glanville
INTERFACE ENGINEERING
100 SW Main Street
Suite 1600
Portland, OR 97204
TEL 503.382.2266
FAX 503.382.2262
www.interfaceengineering.com

SHEET KEYNOTES

1 EXISTING POLE MOUNTED STREET LUMINAIRE: 67W LED, 30'-0" MOUNTING HEIGHT WITH 12'-0" MAST ARM.



1 SITE PLAN - LIGHTING PHOTOMETRIC LAYOUT

0 30' 60'

SCALE: 1"=30'-0"

NORTH

PROJECT 2019-0001
CONTACT Jeff Glanville

INTERFACE ENGINEERING

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REGISTERED PROFESSIONAL ENGINEER
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REVISIONS

SHEET
SITE PLAN - PHOTOMETRICS

E-100PH

ARCHITECTURAL DESIGN REVIEW SUBMITTAL

Exhibit D: City Application Forms and Checklists

CITY OF TUALATIN
Community Development Department-Planning Division
Land Use Application—Type II

PROPOSAL NAME TVF&R Logistics Service Center

PROPOSAL SUMMARY (Brief description)

Redevelop the existing site to accommodate a new Logistics Service Center to serve Tualatin Valley Fire & Rescue (TVF&R).

PROPERTY INFORMATION

Location (address if available): 9991 SW Avery Street

Tax Map & Lot #(s): 2S126BA Lot 200 Planning District: ML

Total site size: ±4.33 acres ☒ Developed ☐ Undeveloped

APPLICANT/CONTACT INFORMATION

Applicant's Consultant: AKS Engineering & Forestry, LLC - Mimi Doukas
Phone: (503) 563-6151 Email: mimid@aks-eng.com

Applicant or Primary Contact Name: Tualatin Valley Fire & Rescue (TVF&R)

Mailing Address: 11945 SW 70th Avenue

City/State: Tigard, OR Zip: 97223

Phone: Please Contact Applicant's Consultant Email: Please Contact Applicant's Consultant

Applicant's Signature: Mike Ebeler Date: 3/18/19

I hereby acknowledge that I have read this application and understand the requirements for approving and denying the application, that the information provided is correct, that I am the owner or authorized agent of the owner, and that plans submitted are in compliance with the City of Tualatin Development (TDC) and Municipal (TMC) Codes.

PROPERTY OWNER/DEED HOLDER INFORMATION (Attach list if more than one)

Name: Tualatin Valley Fire & Rescue, a Rural Fire Protection District

Mailing Address: 11945 SW 70th Avenue

City/State: Tigard, Oregon Zip: 97223

Phone: Please Contact Applicant's Consultant Email: Please Contact Applicant's Consultant

Property Owner Signature: Mike Ebeler Date: 3/15/19

Power of attorney or letter of authorization required if application not signed by the property owner/deed holder.

LAND USE APPLICATION TYPE

- ☒ Architectural Review (AR)
- ☐ Historic Landmark (HIST)
- ☐ Interpretation (INT)
- ☐ Minor Variance (MVAR)
- ☐ Tree Removal (TCP)
- ☐ Other_____

FOR STAFF USE ONLY

Case No.:_____
Date Received:_____
By:_____
Fee Amount $:_____
Received by:_____

City of Tualatin
www.tualatinoregon.gov

ARCHITECTURAL REVIEW IN TUALATIN

The City of Tualatin welcomes new development. In December of 1984 the City Council adopted a goal to "Become one of the premier activity centers of the metropolitan area, achieving commercial and industrial growth within the framework of high environmental standards and excellence in urban design." The purpose of Architectural Review is to promote excellence in urban design.

What is Architectural Review

The Architectural Review (AR) process has two components consisting of Architectural Features and Public Facilities. Architectural features are reviewed by the Community Development Department - Planning Division and include all on site improvements such as building design and height, lighting, landscaping, parking, bicycle parking, loading facilities, pedestrian circulation, lot size and screening of service areas. The Public Facilities portion of the AR is reviewed by the Engineering Department and includes fire and life safety, transportation, sewer, water, storm drainage, water quality, erosion control, greenway and riverbank protection, floodplain, wetland protection and access management. These two departments coordinate with other City departments to ensure compliance with all applicable development standards.

When Architectural Review is Required

Architectural Review is required for all new buildings (except single family homes), major exterior remodeling, mobile home parks, condominiums, awnings, small lot subdivisions, and for site improvements such as paving and landscaping. AR may also be required for a change in use, for example one commercial activity to another or from one industrial activity to another industrial activity.

Who Reviews Plans

Most projects receive staff review and a staff decision, which is final unless it is appealed to the Architectural Review Board (ARB) for Architectural Features or to the City Council for Public Facilities.

The following sizes of projects go directly to the ARB for a review and decision for Architectural Features:

Commercial Buildings	50,000 square feet and larger
Industrial Buildings	150,000 square feet and larger
Multifamily Housing	100 units and above (or any number of units abutting a single family district)
Other Projects	as requested by the Community Development Director

Review Process

When an application is submitted, the Community Development and Engineering staff will review it for completeness. Once it is deemed complete within 30 days, notice will be sent to surrounding property owners, potentially affected government agencies and neighborhood associations. These entities have 14 calendar days to review the application and submit comments on it. A land use decision could be issued about two months after being deemed complete. A staff decision shall be mailed to the applicant, property owner, design team and all persons who commented. There is a fourteen-day period in which someone may file a Request for Review of the decision.

Projects that go directly to the ARB have a public hearing scheduled within 30 days of deeming the application complete. ARB hearings are publicly noticed and held on Wednesday evenings at 6:30 p.m. If a Staff Decision is appealed and goes before either the ARB or City Council, more review time will be added. Always let our staff know your anticipated construction schedule, and we will do our best to accommodate your needs.

Who Receives AR Decisions

Staff Decisions are mailed to the applicant and project team, property owners and those persons who commented on the application during the review stage. Only those persons who commented with sufficient detail and clarity and are adversely affected by the decision may request a review of the decision. If a project is appealed, it will either go to the ARB for Architectural Features or to the City Council for Public Facilities. An ARB decision can also be appealed to the City Council.

Getting Started

An optional Scoping Meeting is highly recommended prior to the required Pre-Application Meeting. To schedule a Scoping or a Pre-Application Meeting with the Community Development Department - Planning Division, you may contact Lynette Sanford, Office Coordinator at 503-691-3026 or lsanford@ci.tualatin.or.us. The Scoping/Pre-Application Meeting should occur as the earliest step of your project. The application to request a meeting is available on the city website along with the updated fee schedule. Our staff will discuss the AR process, code standards which apply to the site, and development expectations. Once the Pre-Application Meeting is held, the applicant shall hold a Neighborhood/Developer meeting pursuant to TDC 31.063.

Plan Submittal

After the Pre-Application Conference, submit the required sets of plans and other required application information to the Community Development Department - Planning Division for Architectural Review. We recommend you call ahead when you are submitting your application to ensure a staff person is available. The application packet has a checklist describing in detail what is to be shown on each plan and what needs to be submitted. It is very important the checklist be followed carefully, because the Community Development Department will not accept an incomplete application. Plan on staying in close contact with the Community Development Department - Planning Division throughout the review process. If there are substantial changes made by the applicant after submittal of the application, the changes may be significant enough to warrant starting a new application and review.

Posting AR Sign

On the same day plans are submitted for AR, you must post a sign on the subject property announcing your development plans. The application packet describes sign posting criteria. You supply the sign.

Review Criteria

The objectives and standards of the Tualatin Development Code (TDC) and other applicable City ordinances are applied during Architectural Review. The Architectural Features portion of the review utilizes Chapter 73, Community Design Standards. This chapter contains design standards, which include site planning and structure design, landscaping, parking lot landscaping, and off-street parking and loading. Each of these sections has objectives (guidelines), which are to be considered when developing a project and specific standards (requirements) which implement the objectives. The Public Facilities review utilizes access provisions in Chapter 75 and sections of the TDC concerning transportation, water, sewer, storm drainage, and ordinances for water quality and erosion control. Each of these elements is discussed in detail in the

Architectural Review Findings and Decision. The Staff Decision based on the review criteria and analysis will be one of the following:

(a) approval;
(b) approval with conditions; or
(c) denial.

If the Architectural Features decision is appealed to the ARB, a hearing must be scheduled no sooner than seven calendar days and no more than 21 calendar days from the end of the appeal period.

If the Public Facilities decision is appealed to the City Council, a hearing will be held at the next available regular Council meeting, generally within 6 - 8 weeks from the end of the appeal period.

After Architectural Review

Architectural Review (Architectural Features and Public Facilities), public works permit review and Building Permit Plan Check Review must occur before issuance of a Building Permit for a project. Any required changes to the AR plans to meet conditions of approval should be turned in to the Community Development Department - Planning Division as soon as possible after the Architectural Review Decision is final. You may submit plans to the Building Division after you review the draft decision letter. The Architectural Review Decision is valid for one year with the possibility of one six-month extension.

Obtaining a Building Permit and Occupancy

After the Building Division completes Plan Check Review, they will circulate a sign-off form to all applicable departments. Each department must sign off before a Building Permit is issued. Before the Community Development and Engineering Departments sign the form, all conditions of approval of the Architectural Features and Public Facilities Decisions must be met. Prior to issuing a Certificate of Occupancy, the Building Division circulates a second sign-off sheet. Before the Planning Division signs off, a site inspection is conducted to determine the project complies with approved plans for the building exterior, parking, landscaping, etc. It is **very important** to clear any Architectural Features changes to the development plans during construction with the Community Development Department - Planning Division. All construction **must** occur in accordance with the approved AR Decision.

A Special Word About Trees

The City Council has adopted tree protection and landscape standards which require mature trees be retained in developments whenever possible. If there are mature trees on your property, they cannot be cut nor can site grading begin before permission has been given by the Community Development Department. To do so may result in expensive fines. We value trees in Tualatin and include retained trees as meeting part of the landscape requirements.

Fee Schedule

Fees are based on the value of the project to be reviewed. You may find the current fee schedule on our web site.

Our staff is eager to assist you through the AR process. Please call the Community Development Department - Planning Division at 503-691-3026 if you have any questions on the Architectural Features review or the Engineering Department at 503-692-3031 for questions on Public Facilities review.

WE WELCOME YOUR BUSINESS IN TUALATIN.

Architectural Review (AR) Intake Check List

Project Name: TVF&R Logistics Service Center

AR-___-____ Date Received:_____ Submittal # _____

- ☑ Project name or title that matches CRW scoping/pre-application meeting name. (Names should be somewhat descriptive of the project i.e. ABC Company New Building).
- ☑ Include page numbers, a Table of Contents, and staple documents or put documents in a binder. Do not use binder clips or paper clips.
- ☑ Plans should have page numbers and an Index to Sheets that matches page numbers. All symbols, line types, and textures must have a legend. Please direct to page of legend on each sheet. Plans should be stapled down the length of the left side.
- ☑ Application shall contain the names, addresses, e-mails, and telephone numbers of:
  - ☑ Property Owner(s)
  - ☑ Applicant
  - ___Project Planner
  - ☑ Architect
  - ☑ Engineer
  - ☑ Landscape Architect
- ☑ Signatures from Property Owner(s) and the Applicant– along with printed name and date.
- ☑ Street Address(s), Tax Lot Number(s), and current tax map(s).
- ☑ Clean Water Services (CWS) Service Provider Letter (SPL) indicating a "Stormwater Connection Permit Authorization Letter" will likely be issued or Pre-Screen signed by CWS with appropriate box checked to indicate that it serves as an SPL.
- N/A ☐ Wetland delineations and floodplain, if applicable
- N/A ☐ Fill/Removal Permit Issued by the Oregon Division of State Lands (DSL) and the U.S. Army Corps of Engineers, if applicable
- ☑ Application Fee (must be paid at time of first submittal).
- ☑ Hydraulic Modeling worksheet and fee* (must be paid at time of first submittal).
  * Based on the Hydraulic Modeling worksheet, there is no fee for this project
- ☑ 3 plan sets of the following plans:
  - Existing Conditions Plan
  - Site Plan
  - Grading Plan
  - Landscape Plan
  - Elevations including specifications as to type, color, and texture of exterior surfaces of proposed structures (scale of 1/16": 1', 1/8":1', ¼":1', ½". 1", ¾".1")
  - Tree Preservation Plan

Architectural Review (AR) Intake Check List

Project Name: TVF&R Logistics Service Center

AR-___-____ Date Received:_____ Submittal # _____

- All plan sets shall be collated, stapled and folded and shall include a north arrow, scale and legend corresponding to symbols on the plans.
- Scale for Existing Conditions, Site Plan, Grading, Landscape and Tree Preservation shall be 1":10', 1":20", 1":30", for larger developments 1':40' or 1":50'. Adjust the scale accordingly on ledger (11x17) and letter (8.5x11) size copies.
- 3 sets of 8 ½" x11", 11"x17", 24"x36"
- Attachment 1 to this check list contains detailed plan requirements for each of the above

☑ Public Utility Facility Plan (Per Tualatin Development Code Ch. 74) including the following information:

- show the location type, size, and grade of all existing and proposed utility facilities such as: sanitary and storm sewers, water lines, fire hydrants, streets and sidewalks, and water quality facilities.
- Water quality, detention, and conveyance calculations and plans. (Soils report will also be required if soils type used for drainage calculations).
- Traffic study information as required by the City Engineer- 4 copies
- Other utility facilities as required by the City Engineers such as a fire flow test
- All plan sets shall be collated, stapled and folded and shall include a north arrow, scale and legend corresponding to symbols on the plans.
- Scale shall be 1":10', 1":20", 1":30", for larger developments 1':40' or 1":50'.Adjust the scale accordingly on ledger (11x17) and letter (8.5x11) size copies.
- 3 sets of 8 ½" x11", 11"x17", 24"x36"
- Attachment 1 to this check list contains detailed plan requirements.

N/A ☐ Developments in the Central Design District shall provide the Neighborhood Meeting notes and evidence of the notice posting required in TDC 31.071(5) and shall provide narratives statements considering each of the Design Guidelines in TDC 73.610 Narrative, (TDC Fig. 73-4 maps this district)

☑ Completed City fact sheet on the project

☑ Recent Title Report (no older than 30 days)

☑ A letter from the franchise solid waste and recycling hauler reviewing the proposed solid waste and recyclables method and facility signed and dated by a designee of the hauler. Attach a site plan and elevations of trash enclosures signed and dated by the hauler, if applicable.

☑ Acoustical engineer report as required by the Community Development Director

Architectural Review (AR) Intake Check List

Project Name: TVF&R Logistics Service Center

AR-___-____ Date Received:_____ Submittal # _____

☑ Neighborhood Meeting information including the following:

- Mailing affidavit and
- Sign Posting certification on current City forms;
- attendance log and notes;
- copy of Neighborhood Meeting invitation;
- GIS buffer map and mailing list including CIO contacts and mailing labels.
- Neighborhood Meeting must have occurred no more than 180 days from date of first submittal.
- Pursuant to TDC 31.063

N/A ☐ Indication of a railroad (RR) at-grade crossing that provides sole access to the subject property, if applicable.

☑ Land Use application notification information including:

- ☑ Provide a list of mailing list recipients pursuant to TDC 31.064(1)
- * Post a sign pursuant to TDC 31.064(2)
- * Sign and dated posting certification with given case file number on current City Form.

*A notice sign will be posted once a case file number has been assigned and the required certification will be provided at that time.

☑ Narrative containing responses to the applicable criteria in the Tualatin Development and Municipal Code.

☑ Evidence of completed pre-application and scoping meeting with dates (no older than 180 days from date of 1st submittal).

☑ Pre-Printed labels of mailing list (size 5160)

☑ Adobe PDF(s) of application materials (direct conversions, not scans) on a CD or USB flash drive.

☑ Lighting Plan with “scattered” photometrics, light specs, and a legend. All photometric measurements must be shown covering all subject site property lines and the entire subject site. All light specs must show lights that are full cut off. Photometric measurement labels must be large enough to read.

Application Re-Submittals:

N/A ☐ Revisions to application must include date of resubmission on all new and revised materials. Provide a response letter addressing each incomplete item and on what page the missing information can be found. Please submit 3 copies of an entire new packet, not just the revised and new materials, in paper and electronic format. Please organize the new and revised materials and put them in the appropriate places it the application.

Architectural Review (AR) Intake Check List

Project Name: TVF&R Logistics Service Center

AR-___-____ Date Received:_____ Submittal # _____

Please provide 3 full paper copies of every piece of the application for completeness review. During every completeness review staff will retain at least one paper copy of the submission for the record. Additional copies may be slip sheeted for resubmission at the staff member's discretion.

After the application is deemed complete, the project planner will request the appropriate number of complete application paper copies.

Revised date December 22, 2016

M:/Planning Web Forms/AR Intake checklist

Architectural Review (AR) Intake Check List
PLAN REQUIREMENTS

Project Name: TVF&R Logistics Service Center

AR-____-_____ Date Received_____ Submittal # _____

✓ PROPOSED SITE PLAN AND EXISTING CONDITIONS PLAN:

- North arrow and scale of drawing (Scale 1":10', 1":20': 1":30', for larger developments 1":40' or 1":50'). Adjust the scale accordingly on ledger (11 x 17) and letter (8.5 x 11) size copies.
- Site Data to include Planning District designation, square footage of site, square footage of development area, square footage of landscaping, square footage of parking lot landscaping, square footage of pavement, number of parking spaces (standard, subcompact and disability), square footage of building (gross and perimeter). Information must contain existing and proposed square footage of parking spaces. Identify landscape credits available and building setback reduction.
- Correct lot area and lot line dimensions of the site. Correct location of Natural Resource Protection Overlay District, including greenways, wetland natural areas and open space natural areas, and 25' vegetated corridors adjacent to a sensitive area. Also show delineated wetland boundary, top of bank and centerline for rivers and creeks. Indicate if wetlands or greenways are proposed to be dedicated.
- Location of buildings and main building entrance, dimensions and square footage of existing and proposed development, including setback distances to property lines and setback distances between buildings. Include location of bicycle parking and covered bicycle parking.
- Location of accessways, walkways and on-site bikeways.
- Fronting street(s), right-of-way lines, driveways, sidewalks, curbs, paths, railroad right-of-way, bicycle paths, pedestrian paths, transit stop locations and easements (include dimensions).
- Parking circulation and loading areas (dimensions of spaces) and type of surface. Show entrances, exits, direction of traffic flow, maneuvering areas and setbacks. Indicate location of subcompact spaces, vanpool and car pool parking and type of curbing. Identify disability stall locations and stall dimensions.
- Location of fences, walls, trash enclosures, recycling areas, electric transformer pads, rooftop mechanical equipment and exterior light fixtures.
- Outdoor storage areas and future development areas, if applicable.
- Include all property lines and easements based on survey or other recorded county documents.
- Include all proposed building envelopes.

✓ GRADING PLAN:

- North arrow and scale of drawing (scale 1":10', 1":20', 1":30').
- Correct lot area and lot line dimensions of the site. Correct location of Natural Resource Protection Overlay District, including greenways, delineated wetland boundary, wetland natural areas and open space natural areas, and CWS vegetated corridors adjacent to a sensitive area. Also show top of bank and centerline for rivers and creeks. Indicate if wetlands or greenways are proposed to be dedicated.

- Show site contour lines and elevations (existing and proposed, referenced from mean sea level. Minimum five-foot contours).
- Location, size and species of all existing trees having a trunk diameter of 8" or greater measured at a point 4' above the ground. Indicate trees to be removed or retained.
- Place a note on the plan stating that existing trees to be retained shall be fenced around the drip line with chain link or other sturdy fencing during construction. Indicate topsoil replacement in all landscape areas.
- Location, size and grading plan of water quality facility, if applicable.

TREE PRESERVATION PLAN:

- Tree Preservation Site Plan (drawn to scale 1:10, 1:20, or 1:30), including a north arrow, existing and proposed property lines, existing and proposed topographical contour lines (existing to remain and proposed structure envelopes), structures, impervious surfaces, wells, septic systems, stormwater retention/detention facilities, utility and access locations/easements, vision clearance areas, and all trees having a trunk diameter of 8" or greater as measured at a point 4' above the ground. All trees proposed for removal and all trees proposed for preservation shall be indicated on the site plan as such by identifying symbols. For each tree illustrated, include information on size, species, and tag i.d. number.
- A Tree Assessment Report, prepared by a qualified arborist, including the following information: an analysis as to whether trees proposed for preservation can in fact be preserved in light of the development proposed, are healthy specimens, and do not pose an imminent hazard to persons or property if preserved; an analysis as to whether any trees proposed for removal could be reasonably preserved in light of the development proposed and health of the tree; a statement addressing the tree removal approval criteria set forth in TDC 34.230; and arborist's signature and contact information. The Tree Assessment Report shall have been prepared no more than one calendar year preceding the date the Architectural Review application is deemed complete by the City.
- Tagging. All trees on-site shall be physically identified and numbered in the field with an arborist-approved tagging system. The tag i.d. numbers shall correspond with the tag i.d. numbers illustrated on the Tree Preservation Site Plan.
- Where Clean Water Services (CWS) has approved delineation of a "sensitive area" or "vegetated corridor" on the subject property, and CWS has required dedication of an easement that prohibits encroachment into the delineated area, and the CWS-required easement boundary is clearly illustrated and identified on the site plan, then all trees located within the CWS-required easement need not be individually identified on the Tree Preservation Site Plan, need not be addressed in the Tree Assessment Report, and need not be tagged.

ELEVATIONS:

- Color elevations. View of proposed structures drawn at scale of 1/16":1', 1/8":1', 1/4":1' (buildings, covered bicycle parking and mixed solid waste and source separated recyclable storage areas).
- Scaled elevations. View of exterior light fixtures, electrical transformer pads, and rooftop mechanical equipment.
- Colored elevation views shall include specifications as to materials and colors to be used in the development, including walls, roof, windows, doors, garages and trim.
- Cut sheet of exterior lighting units showing down deflecting lighting pattern. Include parking lot pole- mounted lighting and wall-mounted lights.
- Plans drawn at scale of 1/16":1', 1/8":1' or 1/4":1'.

LANDSCAPE PLAN:

- North arrow and scale of drawing (scale of 1":10', 1":20', 1":30').

- Correct lot area and lot line dimensions of the site. Correct location of Natural Resource Protection Overlay District, including greenways, wetland natural areas and open space natural areas, and 25' vegetated corridors adjacent to a sensitive area. Also show top of bank and centerline for rivers and creeks. Indicate if wetlands or greenways are proposed to be dedicated.
- Specific locations of all proposed and existing landscaping, including greenway landscaping (if applicable). Identify location of sensitive area buffer landscaping.
- Location, size and species of all existing trees having a trunk diameter of 8" or greater as measured at a point 4' above the ground. Designate trees to be removed or retained. When trees are to be retained, please put tree protection measures on both the Grading and Landscape plans.
- Take-off sheet table indicating square footage of landscaping. Indicate square footage of landscape islands in parking lot.
- Plant legend which includes:
  - Total percentage and square footage of landscaped areas.
  - Square footage of parking lot landscaping.
  - Common and botanical names of plants.
  - Quantity and spacing of plants.
  - Size of plants (caliper, height or container size).
  - Landscaping materials to be used (bark dust, river rock, etc.).
  - Notation on type of irrigation system (automatic underground or drip).
  - Replacement of topsoil.
  - Location of street trees.

✔**PUBLIC FACILITIES PLAN**:

- North arrow and scale of drawing (scale of 1":10', 1":20', 1":30').
- Correct lot area and lot line dimensions of the site. Correct location of Natural Resource Protection Overlay District, including greenways, wetland natural areas and open space natural areas, and 25' vegetated corridors adjacent to a sensitive area. Also show top of bank and centerline for rivers and creeks. Indicate if wetlands or greenways are proposed to be dedicated.
- Street - existing and proposed. Show centerline, right-of way lines, dimensions, sidewalks, and curbs, bike lanes, accessways, walkways, landscape strips, signalized intersections and nearby transit stops.
- Water - show existing and proposed water lines, fire hydrants, meters, line sizes, easements, public or private lines.
- Sanitary Sewer - existing and proposed. Sewer lines laterals, manholes and cleanouts, line sizes, easements, public or private line.
- Flood Plain - If applicable, show 100-year flood plain and/or floodway boundaries.
- Storm Sewer - existing and proposed. Storm lines, catch basins, manholes, line sizes, easement, public or private line.
- Calculations supporting the water quality facility design.
- Traffic Study Information - as required by City Engineer (5 copies).
- Identify greenway areas, bicycle paths and pedestrian paths.
- Location of all signs within the public right-of-way adjacent to the parcel.

GENERAL INFORMATION	
Site Address:	9991 SW Avery Street
Assessor's Map and Tax Lot #:	2S126BA Tax Lot 200
Planning District:	Light Industrial (ML)
Parcel Size:	±4.33 acres (±188,591 square feet)
Property Owner:	Tualatin Valley Fire & Rescue, a Rural Fire Protection District
Applicant:	Tualatin Valley Fire & Rescue
Proposed Use:	TVF&R Logistics Service Center

ARCHITECTURAL REVIEW DETAILS	
Residential ☐ Commercial ☒ Industrial	
Number of parking spaces:	74
Square footage of building(s):	±40,365 square feet
Square footage of landscaping:	±49,737 square feet
Square footage of paving:	±92,295 square feet
Proposed density (for residential):	N/A

For City Personnel to complete:

Staff contact person:

CITY OF TUALATIN FACT SHEET

General

Proposed use: Redevelop the existing site to accommodate a new vehicle maintenance and support facility to serve Tualatin Valley Fire & Rescue.	
Site area: ±4.33 acres	Building footprint: ±40,365 sq. ft.
Development area: acres ±138,854 square feet Sq. ft.	Paved area: ± 92,295 sq. ft.
	Development area coverage: ±74 %

Parking

Spaces required (see TDC 73.400) *(example: warehouse @ 0.3/1000 GFA)* manufacturing @ 1.60 /1000 GFA = ±65 _____@_____/1000 GFA = _____ _____@_____/1000 GFA =_____Total parking required: spaces ADA accessible = 2 Van pool = 0 Compact = *(max. 35% allowed)* 0 = Loading berths = 2	Spaces provided: Total parking provided: 74 spaces Standard = 72 ADA accessible = 2 Van pool = 0 Compact = 0 Loading berths = 2

Bicycles

Covered spaces required: ±4	Covered spaces provided: ±4

Landscaping

Landscaping required: 15 % of dvpt. area ±28,289 Square feet	Landscaping provided: ±26 % of dvpt. area ±49,737 Square feet
Landscaped parking island area required: * ~~%~~ * ±1,850 square feet	Landscaped parking island area provided: * ~~%~~ * ±2,036 square feet

Trash and recycling facility

Minimum standard method: ±280 square feet
Other method: N/A square feet

For commercial/industrial projects only

Total building area: ± 43,223 sq. ft. Main floor: ± 40,365 sq. ft. Mezzanine: ± 2,858 sq. ft.	2nd floor: N/A sq. ft. 3rd floor: N/A sq. ft. 4th floor: N/A sq. ft.

For residential projects only N/A

Number of buildings:	Total sq. ft. of buildings: sq. ft.
Building stories:	

City of Tualatin
www.tualatinoregon.gov

Hydraulic Modeling Fee

Water supply modeling is necessary for larger projects to determine the impact of the project's water demand on the water supply system. Water supply modeling will be performed by a consulting engineer based on the most recent version of the Tualatin Water System Master Plan.

Due to possible impacts to the water supply system, the following projects in Tualatin require hydraulic modeling based on the size and type of the project and projected water use for the finished project. The outcome of modeling could require offsite improvements to the water supply system in order to ensure that adequate water supply is available to serve the project and reduce impacts to the overall system.

Hydraulic modeling of the water supply system is required for the following project type/sizes/demand:

Project Type	Criteria	Permit Fee
Commercial or Industrial Building	Building floor area greater than 48,300 square feet **or** Anticipated daily water demand greater than 870 gallons per acre per day	$ 300 per building
Residential development	More than 49 dwelling units	$ 1,000
Multi-family development	More than 49 dwelling units **or** a combined building floor area greater than 48,300 square feet	$ 300 per building

Please complete this form and submit the form and required fee (if applicable) with your land-use application (architectural review, subdivision, etc.).

☑ Commercial or Industrial Development

- Building floor area ±43,223* square feet * After improvements
- Anticipated water demand (if known) unkown gallons per day
- Described planned building use TVF&R Logistics Service Center

☐ Residential Development

- Number of dwelling units or single family home lots _____

☐ Multi-Family Residential Development

- Number of dwelling units_____
- Building floor area (sum of all building) _____
- Number of multi-family buildings_____

Permit fee required based on the information provided above $ 0

- If no fee is required, enter $0.

NOTE: Water Supply Modeling does not replace the requirement for fire hydrant flow testing. Flow testing of fire hydrants will still be required to verify adequate fire flow of finished system

Exhibit E: Title Report

Lawyers Title
Commercial Branch
1455 SW Broadway Suite 1400
Portland, OR 97201
503-553-5664 FAX 877-638-9521

Lawyers Title
1455 SW Broadway Suite 1400
Portland, OR 97201

Date Prepared: March 15, 2019

REVISION 1st
TITLE PLANT RECORDS REPORT

Report of Requested Information from Title Plant Records
Lawyers Title
herein the Company,

Customer Ref : Tualatin Valley Fire and Rescue

Order No. : 32F0006471A
Effective Date : March 11, 2019
Fee: : $350.00

The information contained in this report is furnished by Lawyers Title (the "Company") as an information service based on the records and indices maintained by the Company for the county identified below. THIS IS NOT TITLE INSURANCE, NOR IS IT A PRELIMINARY TITLE REPORT OR A COMMITMENT FOR TITLE INSURANCE. No examination has been made of the Company's records, other than as specifically set forth herein. Liability for any loss arising from errors and/or omissions is limited to the lesser of the fee paid or the actual loss to the customer, and the Company will have no greater liability by reason of this report.

County and Time Period

This report is based on a search of the Company's title plant records for Washington, Oregon, for the time period from March 11, 2019 through March 11, 2019 (with the through date being the "Effective Date").

Ownership and Property Description

(The Company reports that, as of the Effective date and with respect to the following described property ("the Property"):

Owner. The apparent vested owner of the Property is:

Tualatin Valley Fire & Rescue, a Rural Fire Protection District

Premises. The Property is:

(a) Street Address

9991 SW Avery St.
Tualatin, OR 97062

(b) Legal Description

SEE ATTACHED EXHIBIT "A"

Encumbrances

Encumbrances. For the above stated time period, the Company reports that, as of the Effective Date, the Property appears subject to the following encumbrances, not necessarily in order of priority:

STANDARD EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public record; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.

2. Any facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.

3. Easements, claims of easements, or encumbrances not shown by the public records, reservations or exceptions in patents or in acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.

5. Any lien, or right to lien, for unemployment taxes, workmen's compensation, services, labor, equipment rental or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

SPECIAL EXCEPTIONS:

6. NOTE: 2018-19 TAXES ARE PAID IN FULL and are being shown for informational purposes only.
   Original Amount : $49,127.01
   Account No. R982967; Levy Code 023.76; Map 2S126BA-00200

7. City Liens, if any, in favor of the City of Tualatin. None found as of June 25, 2018.

8. The rights of the public in and to that portion of the herein described property lying within the limits of roads and highways.

9. Easement Agreement, including the terms and provisions thereof

   Recording Date : November 4, 1994
   Recording No. : 1994-101199

10. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

11. Existing leases and tenancies, if any, and any interests that may appear upon examination of such leases.

12. Personal property taxes, if any.

General Liens against Named Party

For the above stated county and time period, and as of the Effective Date, with respect to the following named party or parties:

Tualatin Valley Fire & Rescue, A Rural Fire Protection District

The Company reports that the following general involuntary monetary liens, such as judgments, federal tax liens, state warrants or orders and county tax warrants, may be unsatisfied:

End of Reported Information

There will be additional charges for additional information or copies. For questions or additional requests, contact:

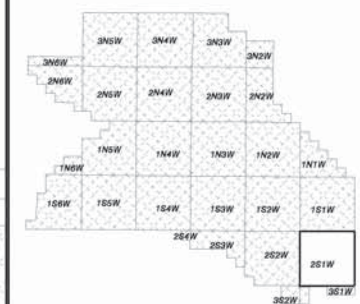
Title Officer: Bob Brandon: 503-553-5690

Exhibit "A"

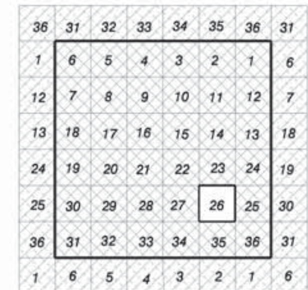
A tract of land in the Northwest quarter of Section 26, Township 2 South, Range 1 West, Willamette Meridian, Washington County, Oregon, and more particularly described as follows:

Beginning at an iron rod at the Southeast corner of that certain tract of land as described in Book 965, Page 741, Washington County, Oregon, Deed Records; said point bears North 88° 05' 51" East 1330.14 feet, South 0° 02' 20" West 1353.18 feet and North 89° 34' 10" East 690.07 feet from the Northwest corner of said Section 26, and running; thence South 89° 34' 10" West 300.00 feet to an iron rod; thence North 0° 02' East 669.06 feet to an iron rod; thence North 89° 34' 10" East 300.00 feet to an iron rod on the East line of said tract of land in Book 965, Page 741; thence South 0° 02' 25" West along said East line 669.06 feet to the point of beginning.

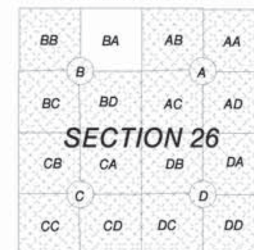
Exhibit F: Washington County Assessor's Map



WASHINGTON COUNTY OREGON
NE1/4 NW1/4 SECTION 26 T2S R1W W.M.
SCALE 1" = 100'



FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT
www.co.washington.or.us



Cancelled Taxlots For: 2S126BA
101,103,400,

SCALE 1" = 100'
0 50 100 200 300

Assessment
CARTOGRAPHY
Taxation

PLOT DATE: June 29, 2012

FOR ASSESSMENT PURPOSES ONLY - DO NOT RELY ON FOR OTHER USE

Map areas delineated by either gray shading or a cross-hatched pattern are for reference only and may not indicate the most current property boundaries. Please consult the appropriate map for the most current information.

TUALATIN
2S 1 26BA

Exhibit G: Director's Interpretation (Permitted Use)

Submittal Transmittal

City of Tualatin | 18880 SW Martinazzi Ave Suite 200 Tualatin, OR 97062

FROM: Erin Engman
City of Tualatin
18880 SW Martinazzi Ave Suite 200
Tualatin, OR 97062
eengman@ci.tualatin.or.us
503.691.3024

TO: Mimi Doukas
AKS Engineering & Forestry LLC
12965 SW Herman Rd.
Suite 100
Tualatin, OR 97062
MimiD@aks-eng.com
503-563-6151

PROJECT:	TVF&R Logistics Service Center 5736	DATE SENT:	5/16/2018
SUBJECT:	City of Tualatin Directors Interpretation	ID:	00001
PURPOSE:	Approved	VIA:	Email

REMARKS: DI - Concurrence

Hi Mimi- Thank you for submitting an informal interpretation for review of the TVF&R vehicle maintenance and support facility as a permitted use for property located at 9991 SW Avery Street in the Light Manufacturing (ML) district. We agree that the TVF&R support facility as described in your letter resembles a "public works shop and yard" which is a permitted use similar in TDC 60.020(24).

TDC 60.020(24) permits the use of, "Public works shop and storage yard." Neither TDC 1.020 "Definitions" nor 31.060 "Definitions" defines public works shop and/ or storage yard. TVF&R is a public agency that provides fire protection and emergency medical services. AKS submitted a letter of inquiry dated, April 27th, 2018 that states the potential TVF&R facility will contain the following sub uses: vehicle operations and maintenance, administrative offices, employee support, supply, and facilities. These sub uses are similar to those found in a public works shop and that the proposed use can be considered a public works shop and yard. Please note that if the site ever transitions to a fire station, the property owner is required to obtain a Conditional Use Permit.

Erin Engman
503.691.3024

DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	SIZE

Submittal Transmittal

DATE: 5/16/2018
ID: 00001

QTY	DATED	TITLE	SIZE
1	5/16/2018	5736 20180423 Tualatin Director's Interpretation FINAL.pdf	

April 27, 2018

Aquilla Hurd-Ravich
Community Development Director
City of Tualatin
18880 SW Martinazzi Ave
Tualatin, OR 97062

RE: Tualatin Valley Fire & Rescue (TVF&R) Vehicle Maintenance and Support Facility- 9991 SW Avery Street

Dear Aquilla,

Thank you for your assistance in determining if the Tualatin Valley Fire & Rescue vehicle maintenance and support facility is a permitted use in the Light Manufacturing district. Tualatin Valley Fire & Rescue is currently evaluating the property at 9991 SW Avery Street in Tualatin, which is zoned Light Manufacturing (ML). The intent of this letter is to outline the proposed use and describe how the use is consistent with other permitted uses of the ML Planning District.

Nature of the Use:
Section 60.010 of the Tualatin Development Code states that the ML District is suitable for warehousing, wholesaling, and light manufacturing processes that are not hazardous and do not create undue amounts of noise, dust, odor, vibration, or smoke. The primary use of the TVF&R facility is light maintenance of emergency vehicles and associated office and storage uses. The uses are all indoor, are not hazardous and do not create undue amounts of noise, dust, odor, vibration, or smoke.

Overall, this bundle of uses can be considered a "public works shop and storage yard" (a permitted use in the ML district). We have provided a programming sketch of the building with the various components. Although the bundle of uses appears to fall under "public works shop and storage yard" we analyzed the sub uses as well.

The following is a breakdown of the proposed uses as illustrated in the attached visual diagram:

Vehicle Operations and Maintenance: Within the list of permitted uses of the ML District (Section 60.020) in the Tualatin Development Code, "Public works shop and storage yard" (#24) most closely aligns with the proposed use. Regular maintenance of vehicles, including oil changes, tune-ups, trouble-shooting, etc, will occur on site. However, major repairs (such as those that would trigger a Conditional Use in Section 60.040(1)(a)) are contracted out to off-site vendors. Additionally, the vehicle maintenance use is not considered a "machine shop" since parts are not fabricated or cut on site.

Administrative Offices: The offices are for full and part-time office and field employees. Offices for executive, administrative, and professional uses related to the sale or service of industrial products are a permitted use (Section 60.020(18)). Section 60.037 lists "Governmental Offices" as not being permitted in the ML District. This property will not be open to the public and the office use should not be considered a "Governmental Office."

Employee Support: The site includes an employee break area, restrooms, locker room, and exercise facility. These uses are incidental to the primary use of fleet maintenance and storage.

Supply: The site will store emergency services equipment including gear, emergency supplies, facility supplies, etc. Warehousing related to an industrial use is a permitted use under Section 60.020(34).

Facilities: The facilities area will include storage and work area incidental to the maintenance of all TVF&R fire stations. This use is like the above permitted uses of maintenance, office and supply storage.

Other Restrictions on Permitted Uses:
Section 60.021 Restrictions on Permitted Uses in ML states that "the use must be conducted wholly within a completely enclosed building, except off-street parking and loading, utility facilities, wireless communication facilities, outdoor storage of materials and products directly related to the permitted use." The TVF&R facility will have limited outdoor storage and can meet this requirement. Retail uses are also restricted in the ML District. There are no retail uses associated with the proposed facility.

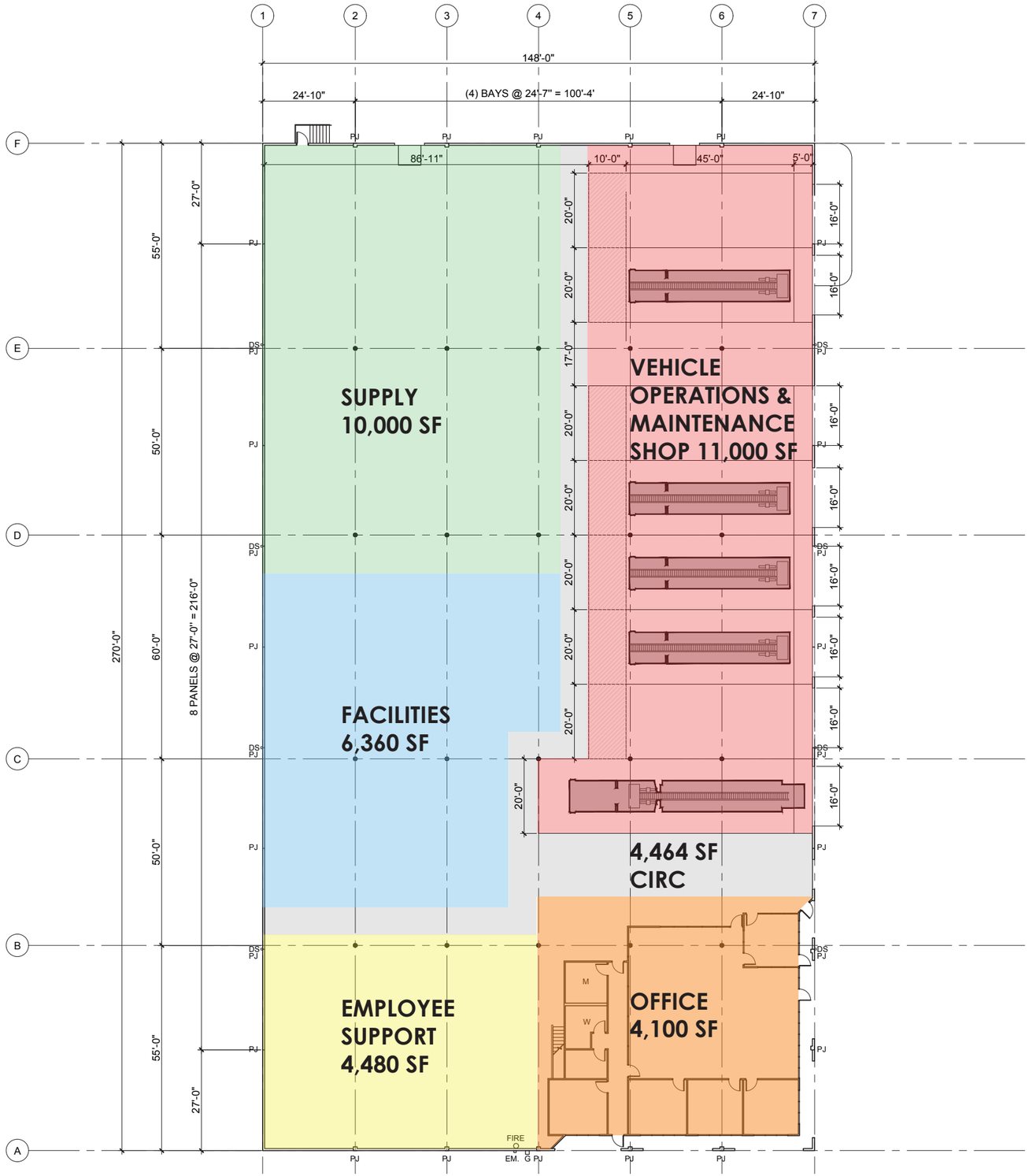
Development Standards:
There is an existing 40,000 square foot building on the property and 35 parking stalls. If staff concurs that this facility is a permitted use in the ML zone, a Site Development Review application will be submitted for review of the proposed use, the parking and site development standards, and to bring the site into conformance with the current development code.

We hope you will concur that the TVF&R vehicle maintenance and support facility is a permitted use in the ML Planning District and is appropriate for the property at 9991 SW Avery Street. Please let me know if you have any questions or concerns. I look forward to hearing back from you soon.

Sincerely,
AKS ENGINEERING & FORESTRY, LLC

Mimi Doukas, AICP, RLA - Associate
503-563-6151 | MimiD@aks-eng.com

Enc: Zoning Compliance Diagram



ZONING COMPLIANCE DIAGRAM

ADMINISTRATIVE OFFICES – 4,100 sf / 10%

- Offices for Full and Part Time Office and Field Employees
- Office Support Facilities

EMPLOYEE SUPPORT – 4,480 sf / 11%

- Restrooms
- Locker Facilities
- Employee Break, Kitchen and Lunch Room
- Exercise Facility

SUPPLY – 10,000 sf / 25%

- Receiving and Distribution of all Personnel Equipment (fire-fighting gear, uniforms, boots, etc.)
- Storage and Distribution of all Emergency Services Equipment
- Supply Management Personnel Offices

FACILITIES – 6,360 sf / 16%

- Central Storage, Dispatch and Work Area for staff and equipment assigned to perform maintenance for all TVF&R Fire Stations

VEHICLE OPERATIONS AND MAINTENANCE SHOP – 11,000 sf / 27%

- Regular Maintenance bays for all Fire Fighting, Emergency Services and Fire Sup port vehicles (major repairs are contracted out to off-site vendors)
- Work performed involves lube, oil, tune-ups, routine maintenance, trouble shooting, Etc.
- All service preformed indoors

N

TVF&R
SW AVERY STREET
OWNER:

MERRYMAN BARNES ARCHITECTS 4713 N ALBINA AVE SUITE 304 PORTLAND, OREGON 97217 p. 503.222.3763 www.merrymanbarnesarchitects.com

PROJECT NO. 16-1202
ISSUE DATE 04.18.2018
REVISIONS
SHEET

NOT FOR CONSTRUCTION
PRELIMINARY

Exhibit H: Acoustic Engineering Report and Sound Wall Compliance Alternative Letter

LISTEN ACOUSTICS™
acoustical and audio/visual systems engineering

Memo

To: Doug Benson, Merryman Barnes Architects

From: Tobin Cooley, P.E.

Date: March 12, 2019

RE: TVFR Site and Door Noise

We measured the operation of an installed operational door specified for this project at the new Clackamas Fire Logistics Facility in Clackamas. Sound data from the emergency generator and the HVAC rooftop units were also obtained, as well as a rooftop unit diagram. This data was used to predict the noise level at the nearest residential receivers. For comparison, we also measured the current site noise levels at the proposed TVFR SW Avery site.

Noise Code:

- Section 6-14 of the City of Tualatin Noise Ordinance states the sound level cannot be louder than 50 dBA between 10:00 PM and 7:00 AM and 70 dBA between 7:00 AM and 10:00 PM, when measured at the nearest noise sensitive property.
- The Tualatin Development Code Chapter 60.300 also describes requirements and exemptions for Sound Barrier Construction due to new overhead doors.

Door Sound Levels:

- The door in operation at a distance of 10' away was measured at **58 dBA.**
- At the closest property line on the subject property, this level is calculated to be less than 38 dBA, including additional noise levels from multiple door up/down operations at one time.

Generator Sound Levels:

- The generator must be tested on a bi-weekly or weekly schedule**.** The worst-case sound levels are 85 dBA for the unit with a sound package and upgraded muffler.
- At the closest property line on the subject property, this level is calculated to be less than 48 dBA for the short time (20 min) it is being tested.

Rooftop HVAC Sound Levels:

- The HVAC units are between 4 and 10 tons in size, with sound levels from 87-94 dBA. The units are spread across the rooftop and are shielded by screens, as well as the edge of the roof.

- At the closest property line on the subject property, the sound level is calculated to be less than 45 dBA for all units in operation.

Ambient Site Noise:
The current site noise was measured during typical daytime traffic, and was found to be:

- 60.2 to 67.3 dBA 100' back from Avery Street (South side of lot – residential across street)
- 61.2 to 64.3 dBA on the East side
- 61.1 to 63.6 dBA on the West Side of the lot (adjacent to commercial/industrial)
- 55.0 to 57.8 dBA on the North side of the lot (adjacent to commercial/industrial)

Expert Opinion

- The existing building shields the residential areas to the Southwest and West of the property from door noise.
- The building shields residential areas to the East from generator noise.
- The location of the HVAC units on the roof shields residences from a significant amount of noise from the HVAC units by blocking the line of sight/sound.
- The current ambient sound levels are above the calculated door, generator, and HVAC sound levels at all property lines of the nearest residences.
- In my opinion, no additional mitigation is needed beyond the features in the current plans. The roll-up doors are sufficiently quiet themselves, and the sound reduction due to building shielding and distance to the nearest residences is sufficient to warrant an exemption from the "wing wall" requirements.

Please feel free to call or email with any questions

March 12, 2019

Tabitha Boschetti, Assistant Planner
City of Tualatin
18880 SW Martinazzi Ave.
Tualatin, OR 97062

RE: Tualatin Valley Fire & Rescue Logistics Service Center
Sound Wall Compliance Alternative

Background / Existing Conditions / Proposed Design

TVFR has purchased an existing building located at 9991 SW Avery in Tualatin and plans to convert it to serve as the district wide center for Fleet Maintenance, Supply and Facilities functions in service to their fire stations. The existing building is a one story tilt up concrete warehouse building built in the late 1970's. The building is located on the site with its short dimension facing SW Avery and the long facades oriented towards adjacent non-residential properties.

Improvements planned include a full structural upgrade to "Essential Facility" level together with extensive new openings into the exterior, new dock facilities, interior offices and all new paving and related exterior site improvements. All of the new openings occur on the East and West faces of the building and face away from the adjacent residential neighborhood. New openings will consist of personnel access doors (3' x 8') and roll up overhead doors (14' w x 14' h). Above the overhead doors a series of clerestory windows will be added to bring additional natural light into the work areas to reduce the need for artificial light.

As part of the review of the Tualatin Development Code we have identified a portion of the code that is very challenging to comply with exactly as the code is written. This document will present the details of the code requirement, what challenges have impacted us and our proposal for an alternative approach that, we believe, meets the intent of the code and protects the adjacent residential neighborhood from the negative impacts the provisions of the code are designed to mitigate.

Technical Development of Alternative Approach

The alternative approach to meeting the requirements of the Sound Barrier section of the code was developed in collaboration with Tobin Cooley. P.E. Principal of Listen Acoustics a Portland based Acoustical Engineering firm.

Code Requirements

There are three primary sections of the TDC and Municipal Code that we will address in this document. They are:

- **TDC, Section 60.080 Sound Barrier Construction** - Defines the requirements for the location and construction of sound barriers for sites adjacent to residential neighborhoods.
- **TDC, Chapter 60, Section 60.300, Paragraph, Item 3, Item (3)** – Defines the conditions for the granting of an exemption to the requirements for sound barrier construction in the Light Manufacturing (ML) zone.

MERRYMAN BARNES ARCHITECTS INC. 4713 N Albina Avenue, Suite 304 | Portland, OR 97217 | P: 503-222-3753
MERRYMAN BARNES ARCHITECTS INC. 4713 N Albina Avenue, Suite 304 | Portland, OR 97217 | P: 503-222-3753

• **Municipal Code, Chapter 06-14 Noise Ordinance, 6-14-050 Exceeding Decibel Level** – Defines the maximum decibel levels at various locations and during various times that are considered to be excessive in Tualatin.

Our first focus is on Section 60.080 Sound Barrier Construction. The code section as written defines a specific configuration for the path sound will travel and what barrier is required to mitigate that path from allowing sound to travel to adjacent residential properties. We have identified three sources for sound, the overhead doors, roof mounted mechanical equipment and a ground mounted emergency generator.Our proposed alternative is based on two specific documented conditions:

1. The application to our site plan of the documented path sound travels as defined by our acoustic engineer and the extent of what construction, if any, is required to mitigate that path.
2. Detailed sound measurements taken by our acoustic engineer of existing overhead doors of the same manufacture and operation as those proposed for our building together with calculations for the sound levels from these doors at the boundary of the property. Using manufacturers data for the sound levels of the mechanical equipment and the generator, we have also addressed the sound mitigation for these items. We have also taken measurements of the existing ambient sound levels on SW Avery and in the adjacent residential neighborhood to the south.

Furthermore, in the absence of stated sound level criteria in TDC Section 60.080 Sound barrier Construction we have elected to measure the performance of our alternative solutions against the requirements of Chapter 06-14 Noise Ordinance as follows:

6-14-050 Exceeding Decibel Level

(1) Where the recipient property is a noise sensitive property:

(a) 50 decibels at any time between 10:00 pm and 7:00 am the following day, or

(b) 70 decibels at any time between 7:00 am and 10:00 pm

Proposed Alternative – Wing Walls Requirement

Members of our design and construction team have recently completed the design and construction of a new Clackamas Fire District Fleet and Logistics Facility in Clackamas whose program and systems are identical to the program planned for the TVFR facility on Avery St. At the Clackamas facility several overhead doors have been installed that are identical to those being planned for the TVFR facility. In early January of 2019 our acoustic consultant, Tobin Cooley of Listen Acoustics conducted onsite measurements of the sound levels of these overhead doors. His findings are detailed in the attached memo dated January 23, 2019. In summary the readings show that at 120’ from the door the sound level is 58.1 dBA. The calculation for the resulting sound levels at the property line 60’ from the nearest door is reduced to less than 30 dBA. This measurement includes provisions for the sound levels of opening and closing multiple doors at one time.

Additionally, Listen Acoustics conducted measurements of the ambient sound levels south of Avery in the residential neighborhood and they were found to be generally in the 60 dBA range. For comparison Chapter 06-14 Noise Ordinance of the Tualatin Municipal Code establishes Excessive Noise Levels as those in excess of 70 dBA during the hours of 7:00 am and 10:00 pm at the recipient property where the subject property is a noise sensitive property.

We have prepared the attached diagram illustrating the sound levels that are anticipated based on a combination of field measurements of sound levels for overhead doors together with manufacturers data for the rooftop mechanical units, all adjusted by our acoustical consultant to reflect the impacts of existing screening and the reduction in sound levels over distance as the sound travels from the source to the recipient property.

Based on the data collected and the acceptable/excessive sound levels as defined by the Tualatin Municipal Code we believe our project will not result in noise levels that will exceed the code maximums. Therefore, we request that we be deemed exempt from the requirements of **TDC, Section 60.080 Sound Barrier Construction** for Sound barrier Walls.

Proposed Alternative – Rooftop Mechanical Units & Emergency Generator

On the roof we intend to mount several package rooftop mechanical units at scattered locations. These will be fully screened both visually and to reduce sound transfer. The screens will consist of a combination of steel frame members and metal mesh surface material. Additionally, on the ground we are locating an emergency generator which will also be screened/enclosed to mitigate sound as well as to provide security.

The installation of screening as specifically called for in Section 60.080 is not possible for several reasons. First, the use of the optional earth berm is ot practical. The loads of the soils required would not be able to be carried by the existing roof structure. Additionally, it would not be possible to meet the code requirements for load capability of the roof to carry the excessive loads that would be imposed by that amount of earth mounted on the roof. The allowed alternative of roof mounted masonry walls is also structurally challenging. The Building Code requires masonry on upper levels to be fully supported by additional masonry or concrete fully down to the building's foundation. To do this at all locations on the roof where units will be placed would render the interior of the facility unusable for the Owners.

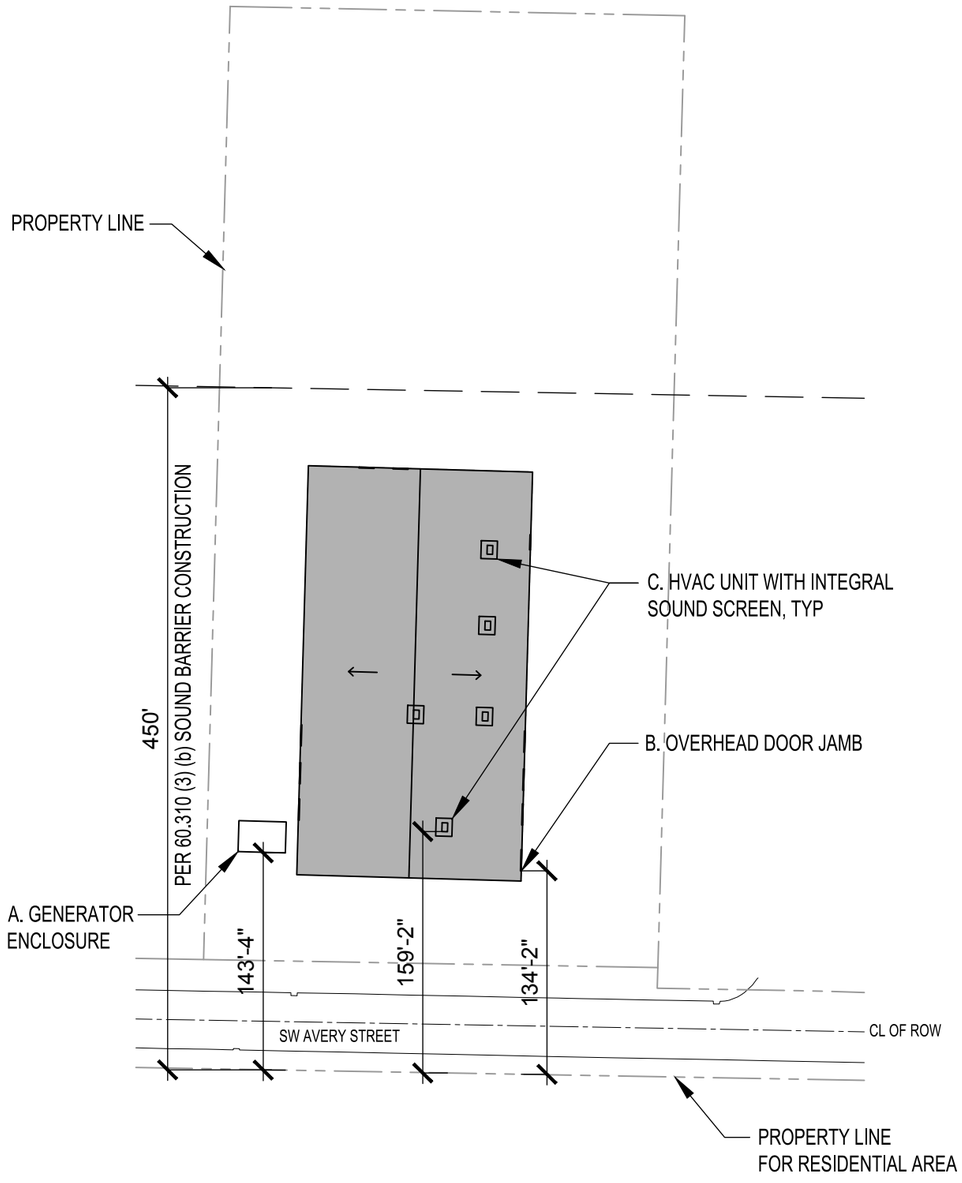
Therefore, we have developed an alternative proposal we believe meets the requirements to mitigate sound transfer to the adjacent residential neighborhood. We plan to utilize visual screens that also function as sound screens. These screens will reduce the sound level measurements at the south property lines substantively. Additionally, Listen Acoustics has reviewed the manufacturers data for the sound levels of the selected rooftop and ground mounted equipment and calculated the reduction in dBA from the screens and the corresponding reduction over distance as the sound travels from the source south to the property line. From that effort we have determined that the sound levels at the north side of SW Avery will be below that of the above referenced Chapter 06-14 Noise Ordinance of the Tualatin Municipal Code.

Attached is a diagram that illustrates the sound conditions for the proposed overhead doors and the rooftop and ground mounted mechanical units together with the resulting sound levels projected at the TVFR property boundary.

Summary

The combination of sound measurements taken in the field at conditions that match those to be implemented on SW Avery for TVFR together with engineered calculations of anticipated sound levels indicates that the proposed alternatives will meet the intent of the Sound Wall provisions of the TDC.

We request the installations as proposed be approved as meeting the intent and requirements of the code sections referenced.



1 SITE DIAGRAM FOR ACOUSTICS

1"=100'-0"

TRUE N

A. GENERATOR

SOUND LEVEL AT SOURCE:		85 dBA
REDUCTION BY SCREEN:	-12 dBA	
REDUCTION OVER DISTANCE:	-22 dBA	
SOUND LEVEL @ RESIDENTIAL PROPERTY LINE:		**51 dBA**

B. OVERHEAD DOOR

SOUND LEVEL AT SOURCE:		58 dBA
REDUCTION OVER DISTANCE:	-22 dBA	
SOUND LEVEL @ RESIDENTIAL PROPERTY LINE:		**36 dBA**

C. ROOFTOP HVAC UNITS (5 UNITS)

SOUND LEVEL AT SOURCE:		94 dBA
REDUCTION BY SCREEN:	-14 dBA	
REDUCTION OVER DISTANCE:	-35 dBA	
SOUND LEVEL @ RESIDENTIAL PROPERTY LINE:		**45 dBA**

TVF&R LOGISTICS SERVICE CENTER

03.12.2019

MERRYMAN BARNES ARCHITECTS 4713 N ALBINA AVE. SUITE 304 PORTLAND, OREGON 97217 p 503.222.3753

Exhibit I: Preliminary Stormwater Report

TVF&R Logistics Service Center
Tualatin, Oregon

Preliminary Stormwater Report

Date:	March 15, 2019
Client:	Tualatin Valley Fire & Rescue 11945 SW 70th Avenue Tigard, OR 97223
Engineering Contact:	Alex Hurley, PE, PLS 503-563-6151 | Alex@aks-eng.com
Engineering Firm:	AKS Engineering & Forestry, LLC 12965 SW Herman Road, Suite 100 Tualatin, OR 97062
AKS Job Number:	5736

AKS ENGINEERING & FORESTRY
www.aks-eng.com

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Appendices

Preliminary Stormwater Report
TVF&R Logistics Service Center
Tualatin, Oregon

1.0 Purpose of Report
The purpose of this report is to analyze the effects the proposed development will have on the existing stormwater conveyance system; document the criteria, methodology, and informational sources used to design the proposed stormwater system; and present the results of the preliminary hydraulic analysis.

2.0 Project Location/Description
The proposed TVF&R Logistics Service Center will be located at 9991 SW Avery Street in Tualatin Oregon, encompassing +/-4.33 acres (Tax Lot 200, Tax Map 2S 1 26BA).

The proposed project will consist of upgrading the existing building and site improvements into the new Logistics Service Center. Site improvements will include expansion of the existing parking lot, underground utilities, a stormwater facility, and other site amenities to facilitate operation of the facility.

3.0 Regulatory Design Criteria
3.1 STORMWATER QUANTITY
Per City of Tualatin Municipal Code 3-5-220 Criteria for Requiring On-Site Detention to be Constructed, the City shall determine whether the onsite facility shall be constructed. On-site facilities shall be constructed when any of the following conditions exist:

1. *There is an identified downstream deficiency, as defined by TMC 3-5-210, and detention rather than conveyance system enlargement is determined to be more effective solution.*

2. *There is an identified regional detention site within the boundary of the development.*

3. *There is a site within the boundary of the development which would qualify as a regional detention site under criteria or capital plan adopted by the Unified Sewerage Agency.*

4. *The site is located in the Hedges Creek Subbasin as identified in the Tualatin Drainage Plan and surface water runoff from the site flows directly or indirectly into the Wetland Protected Area (WPA) as defined in TDC 71.020. Properties located within the Wetland Protection District as described in TDC 71.010, or within the portion of the subbasin east of SW Tualatin Road are expected from the on-site detention facility requirement.*

City staff have indicated that water quantity detention is required for the 25-year storm event for this site. The project is proposing to stay connected to the existing private storm drainage system that serves the site via adjacent properties to the north. City and CWS staff have indicated that this is acceptable. To ensue that the project does not contribute additional flows to this system, the applicant is proposing to provide water quality detention for the 100-year storm event.

3.2 STORMWATER QUALITY

Per City of Tualatin Municipal Code 3-5-380:

Onsite facilities shall be constructed as required by OAR 340-41-455, unless otherwise approved by the City on a case by case basis due to the size of the development, topography, or other factors causing the City to determine that the construction of onsite permanent stormwater treatment systems is impracticable or undesirable. Determinations by the City may be based upon, but not limited to, consideration of the following factors:
Site topography, geological stability, hazards to public safety, accessibility for maintenance, environmental impacts to sensitive areas, size of the site and development, existence of a more efficient and effective regional site with the basin capable of serving the site, and consistency with subbasin master plan.

4.0 Design Methodology

The Santa Barbara Urban Hydrograph (SBUH) Method was used to analyze stormwater runoff from the site. This method utilizes the SCS Type 1A 24-hour design storm. HydroCAD 10 computer software aided in the analysis. Representative CN numbers were obtained from the *Technical Release 55* and are included in Appendix C.

5.0 Design Parameters

5.1 DESIGN STORMS

Per City of Tualatin requirements, the stormwater analysis utilized the 24-hour storm for the evaluation and design of the existing and proposed stormwater facilities. The following 24-hour rainfall intensity was utilized as the design storm for the recurrence interval:

Table 5-1: Rainfall Intensities

Recurrence Interval (Years)	Total Precipitation Depth (Inches)
25	3.90
100	4.50

5.2 PRE-DEVELOPED SITE CONDITIONS

5.2.1 Site Topography

Existing on-site grades generally vary from ±1% to ±8%, with the site draining towards the northwest. The site has a high point of ±218 feet in the southeast property corner and a low point of ±201 feet near the northwest property corner.

5.2.2 Land Use

The existing site consists of a warehouse facility with asphalt pavement driveway and parking lot, building, landscaped areas, and open undeveloped areas.

5.3 SOIL TYPE

The soil beneath the project site and associated drainage basins is classified as Amity Silt Loam, according to the USDA Soil Survey for Washington County. The following table outlines the Hydrologic Soil Group rating for the soil type:

Table 5-3: Hydrologic Soil Group Ratings		
NRCS Map Unit Identification	**NRCS Soil Classification**	**Hydrologic Soil Group Rating**
2	Amity Silt Loam	C/D

Further information on this soil type is included in the NRCS Soil Resource Report located in Appendix B of this report.

5.4 POST-DEVELOPED SITE CONDITIONS

5.4.1 Site Topography

The on-site slopes will be modified with minor cuts and fills to accommodate the construction of additional parking lot area and stormwater facility.

5.4.2 Land Use

The post-developed site land use will consist of the TVF&R Logistics Service Center, with associated parking, sidewalks, underground utilities, and other amenities to facilitate operation of the facility.

5.4.3 Post-Developed Input Parameters

See HydroCAD Analysis in the attached appendices.

5.4.4 Description of Off-Site Contributing Basins

The surrounding properties do not direct any stormwater runoff towards the subject site.

6.0 Stormwater Analyses

6.1 PROPOSED STORMWATER QUALITY CONTROL FACILITY

Stormwater quality treatment for the project will be provided by an extended dry basin designed to meet Section 4.05.6 of Clean Water Services' *Design and Construction Standards for Sanitary Sewer and Surface Water Management (R&O 17-05).* The stormwater facility design and checks against CWS criteria is located at the end of this section.

IMPERVIOUS AREA

Total Site Area:	4.33	acres
Total Site Area:	188,591	square feet (sf)
Impervious Area Requiring Treatment:	139,770	sf

WATER QUALITY VOLUME (WQV)

(Per CWS 4.05.6b - R&O 17-05)

$$WQV = \frac{0.36" \text{ X Area (ft)}}{12" \text{ per ft}} = \textbf{4193 cubic feet}$$

WATER QUALITY FLOW (WQF)

(Per CWS 4.05.6b - R&O 17-05)

$$WQF = \frac{WQV \text{ (sf)}}{4*60*60} = \textbf{0.29 cfs}$$

WATER QUALITY MANHOLE SUMP VOLUME CALCULATIONS

(Per CWS 4.06.1b - R&O 17-05)

CWS Criteria: Sump Volume = 20 cubic feet per 1.0 cfs of flow

Calculated 25-year Flow through WQ Manhole =	**3.38**	**cfs**		
Calculated Manhole Sump Volume =	**67.6**	**cubic feet**		
Calculated Manhole Sump Depth (60" Dia. Manhole) =	**3.44**	**ft**	**>**	**3 feet minimum**
			<	**5 feet maximum**

EXTENDED DRY BASIN DESIGN & CALCULATIONS

Hydraulic Design Criteria (Per CWS 4.06.3 - R&O 17-05)

Permanent Pool Depth: 0.4 ft
Permanent Pool covers bottom of basin
Design Detention Volume: 1.0 x Water Quality Volume (WQV)
Water Quality Drawdown Time: 48 hours
Maximum Depth of WQ Pool: 4 ft
Avoid direct flow across WQ pond to avoid short circuiting

Extended Dry Basin Sizing Design:

Bottom Slope (ft/ft)	Minimum Bottom Width (ft)	Side Slopes H:V	Top of Pond Elev. (ft)	Perm. Pool Depth (ft)	Pool Bottom Area (sf)	Bottom of Pool Elev. (ft)
0.0	12	3.0	206.00	0.4	3648	202.50

Water Quality Flow Hydraulic Calculations:

WQF (cfs)	Pool Elev. at WQV (ft)	Orifice CL Height (ft)	Calculated Orifice Diameter (in)	Max. Pool Elev., 25-yr Flow (ft)	Calculated Pond WQV (cubic feet)	Calculated WQV Pool Depth (ft)
0.29	203.43	0.76	3.50	204.64	4193	0.93

Check Against CWS Design Criteria:

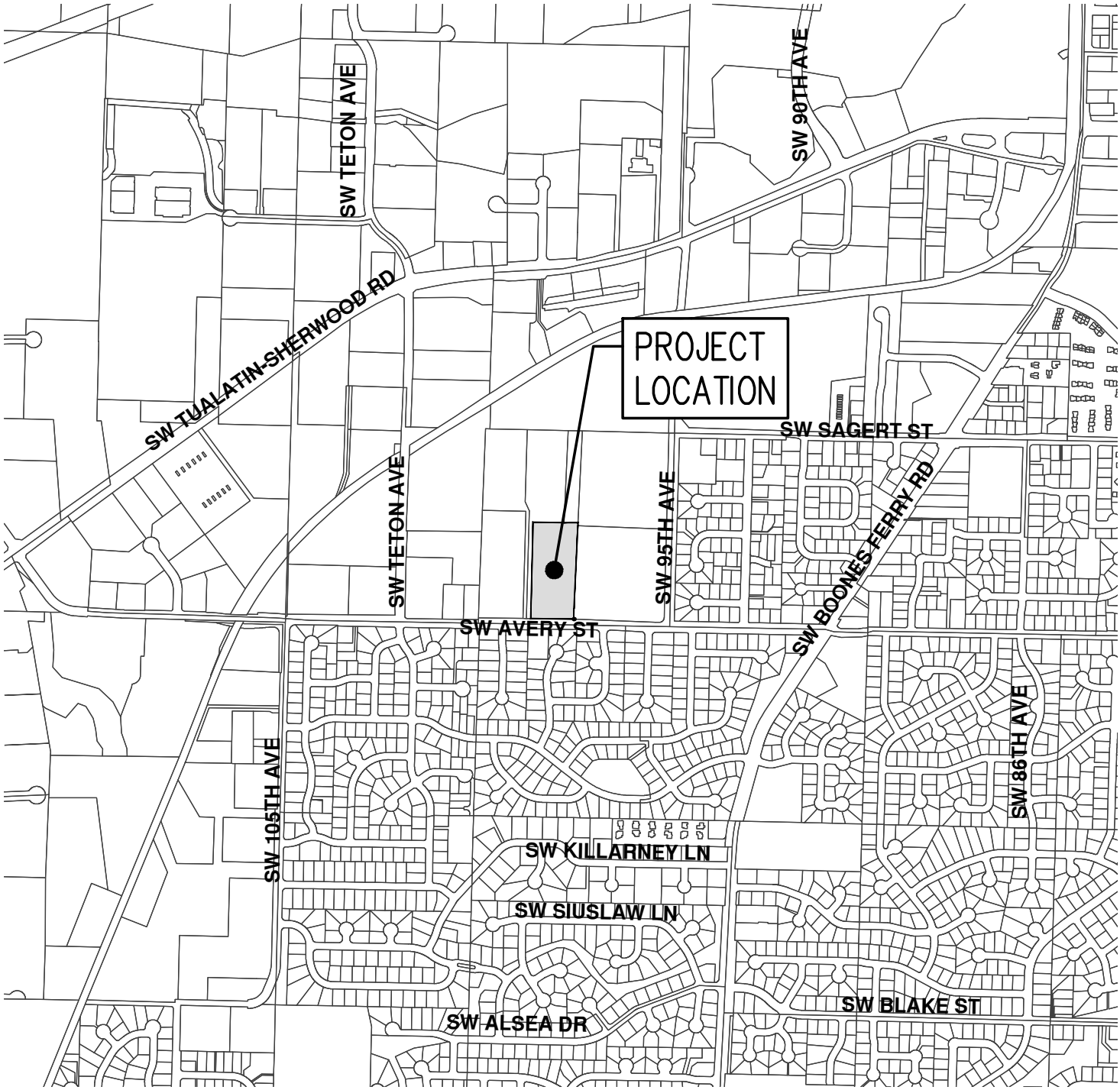
	Calculated		Meet CWS Criteria?		
Minimum Freeboard:	1.4	feet	**Yes**	≥	1 foot
Minimum Bottom Width:	12	feet	**Yes**	>	4 feet
Maximum Pool Depth at WQV:	0.9	feet	**Yes**	<	4 feet
Detained Water Quality Volume:	4193	cubic feet	**Yes**	≥	4193 cf

6.2 PROPOSED STORMWATER QUANTITY CONTROL FACILITY DESIGN

The stormwater system has been designed to detain the post-developed basin flows to the pre-developed flows for the 25-year and 100-year storm events. The extended dry basin has been designed to detain stormwater flows. Because the project is detaining flows up to the 100-year storm event, a downstream analysis is not required or included.

Table 6-2: Peak Flows Comparison

Storm Event	Peak Pre-Development Flows (cfs)	Peak Post-Development Flows (cfs)	Peak Flow Increase or (Decrease) – (cfs)
25-Year	1.23	1.22	(0.01)
100-Year	1.46	1.44	(0.02)



N

SCALE: 1"=1000 FEET

1000 0 400 600 8001000

DATE: 3/15/2019

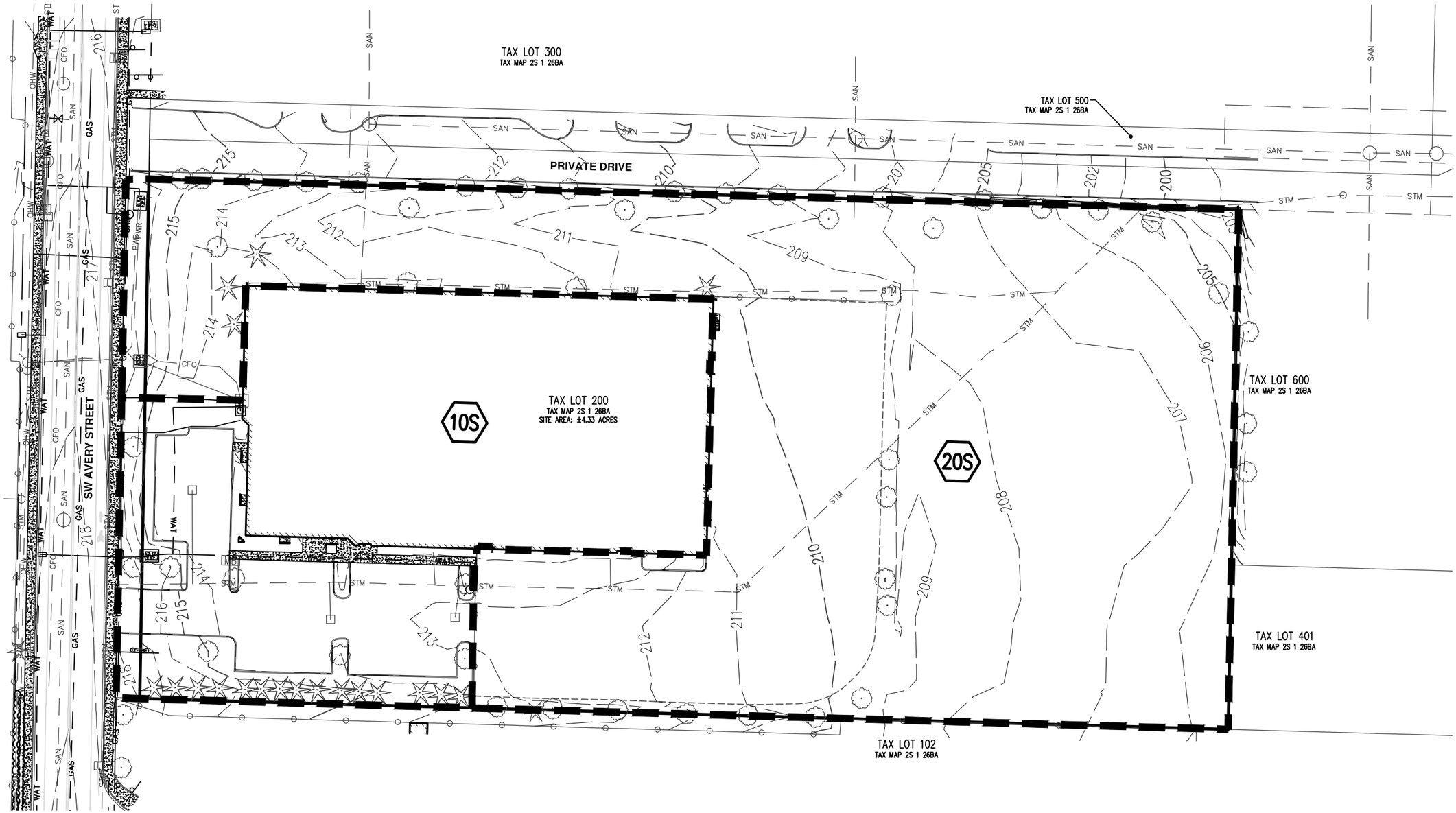
TVF&R LOGISTICS SERVICE CENTER VICINITY MAP

FIGURE 1

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
P: 503.563.6151 F: 503.563.6152 aks-eng.com

DRWN: AZV
CHKD: BRB
AKS JOB: 5736

DWG: 5736 VICINITY | P1



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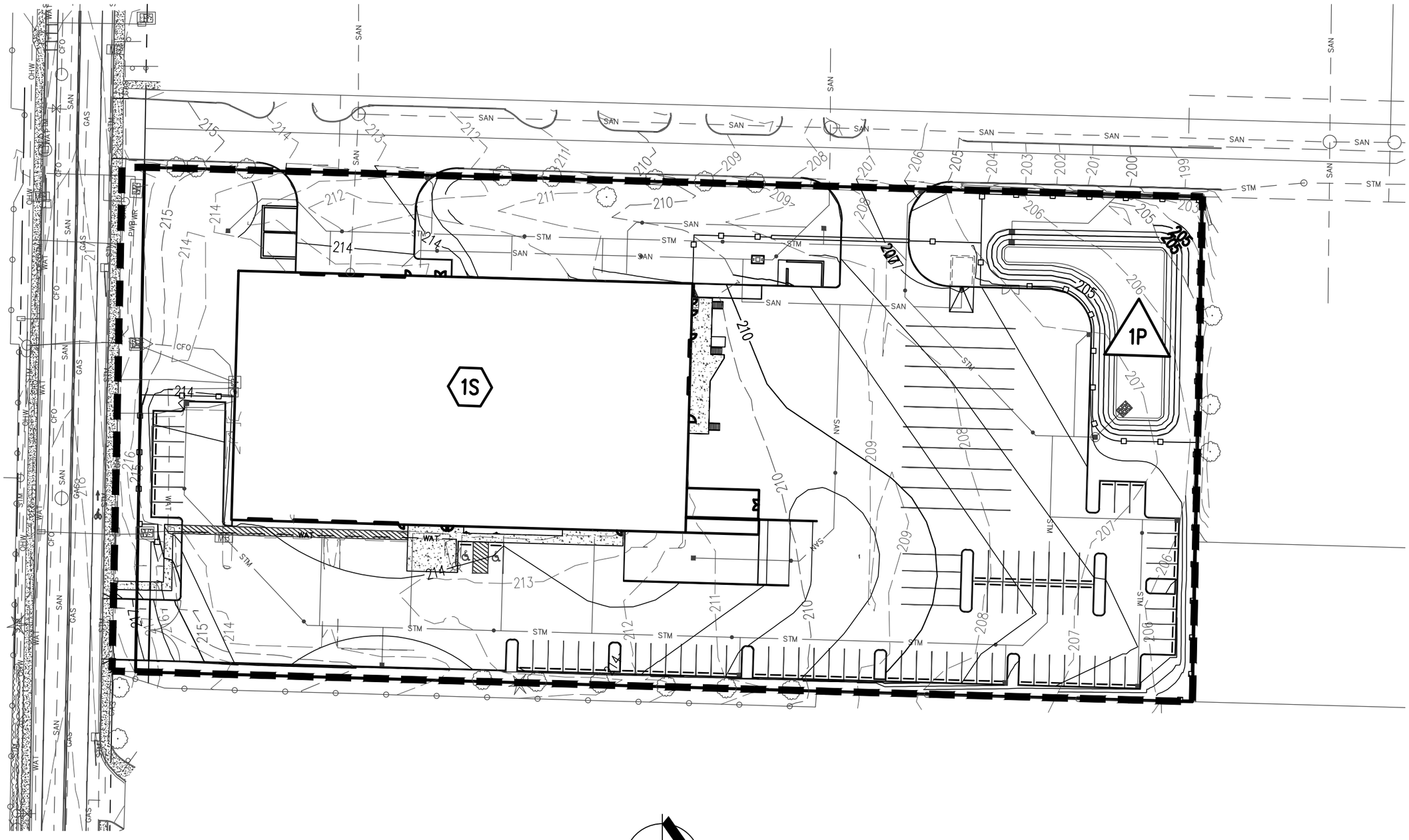
SCALE: 1"= 60 FEET

60 0 24 36 48 60

DATE: 3/15/2019

EXISTING BASIN DELINEATION	FIGURE 2
TVF&R LOGISTICS SERVICE CENTER	
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 P: 503.563.6151 F: 503.563.6152 aks-eng.com	DRWN: AZV CHKD: BRB AKS JOB: 5736

DWG: 5736 PRE | P2



N

SCALE: 1"= 60 FEET

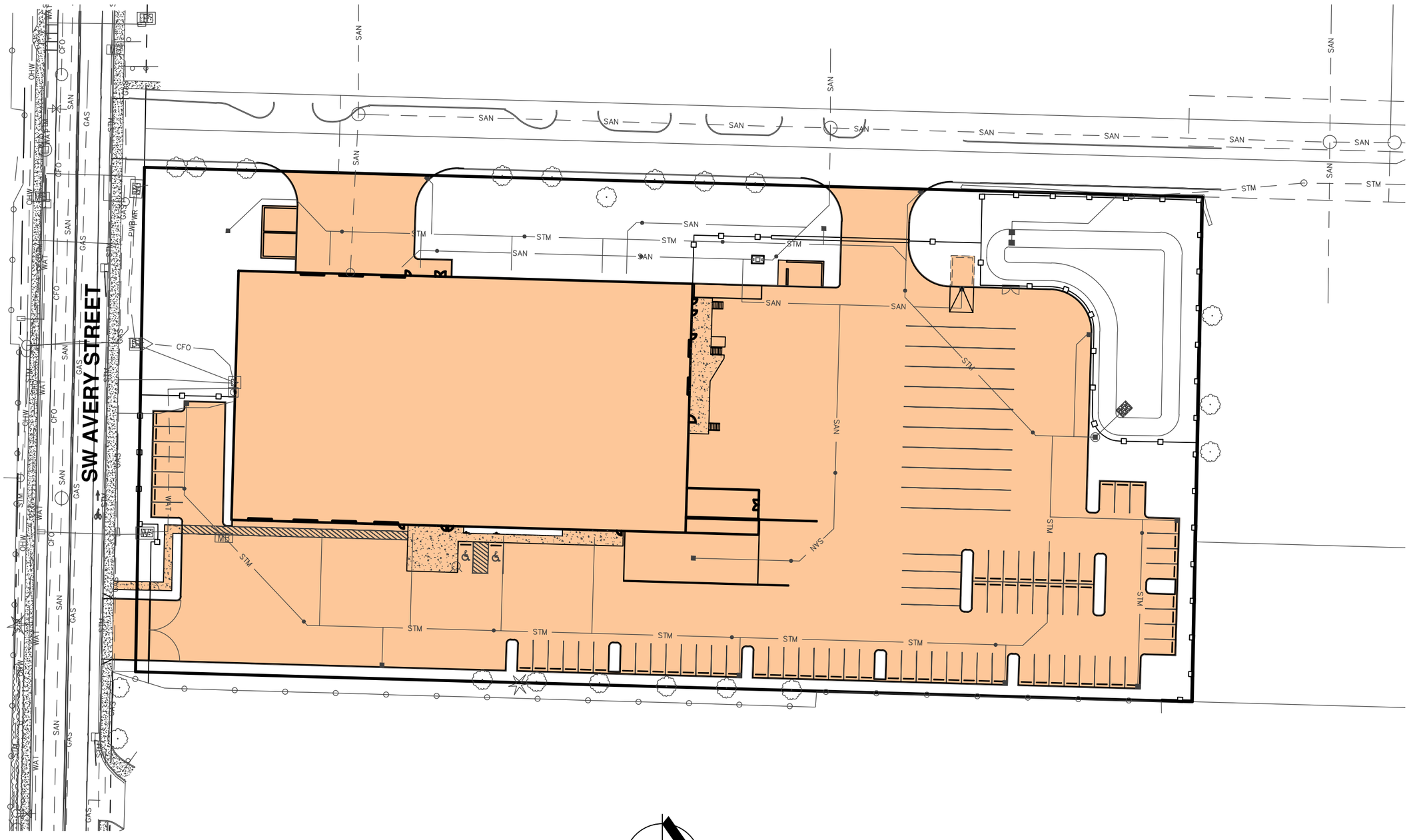
60 0 24 36 48 60

DATE: 3/15/2019

POST-DEVELOPED BASIN DELINEATION	FIGURE 3
TVF&R LOGISTICS SERVICE CENTER	

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
P: 503.563.6151 F: 503.563.6152 aks-eng.com

DRWN: AZV
CHKD: BRB
AKS JOB: 5736



IMPERVIOUS AREA LEGEND

AREA TO BE TREATED ±139,770 SF

N

SCALE: 1"= 60 FEET

60 0 24 36 48 60

DATE: 3/15/2019

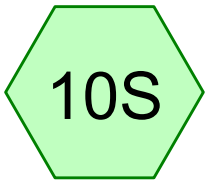
WATER QUALITY TREATMENT EXHIBIT	FIGURE 4
TVF&R LOGISTICS SERVICE CENTER	

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
P: 503.563.6151 F: 503.563.6152 aks-eng.com

DRWN: AZV
CHKD: BRB
AKS JOB: 5736

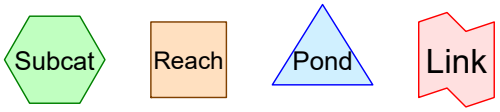
DWG: 5736 TREAT | P4

Appendix A: Existing Site Storm Event Analysis



PRE-DEVELOPED AREA DISCHARGING TO PRIVATE CONVEYANCE PIPE

PRE-DEVELOPED AREA SURFACE RUNOFF



Routing Diagram for 5736 PRE-DEVELOPED MODEL
Prepared by AKS Engineering & Forestry, LLC, Printed 3/4/2019

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SBUH method, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: PRE-DEVELOPED Runoff Area=64,462 sf 84.37% Impervious Runoff Depth>3.22"
Tc=5.0 min CN=94 Runoff=1.23 cfs 0.397 af

Subcatchment 20S: PRE-DEVELOPED Runoff Area=128,169 sf 26.42% Impervious Runoff Depth>1.95"
Tc=5.0 min CN=80 Runoff=1.35 cfs 0.479 af

Total Runoff Area = 4.422 ac Runoff Volume = 0.876 af Average Runoff Depth = 2.38"
54.19% Pervious = 2.396 ac 45.81% Impervious = 2.026 ac

Summary for Subcatchment 10S: PRE-DEVELOPED AREA DISCHARGING TO PRIVATE CONVEYANCE P

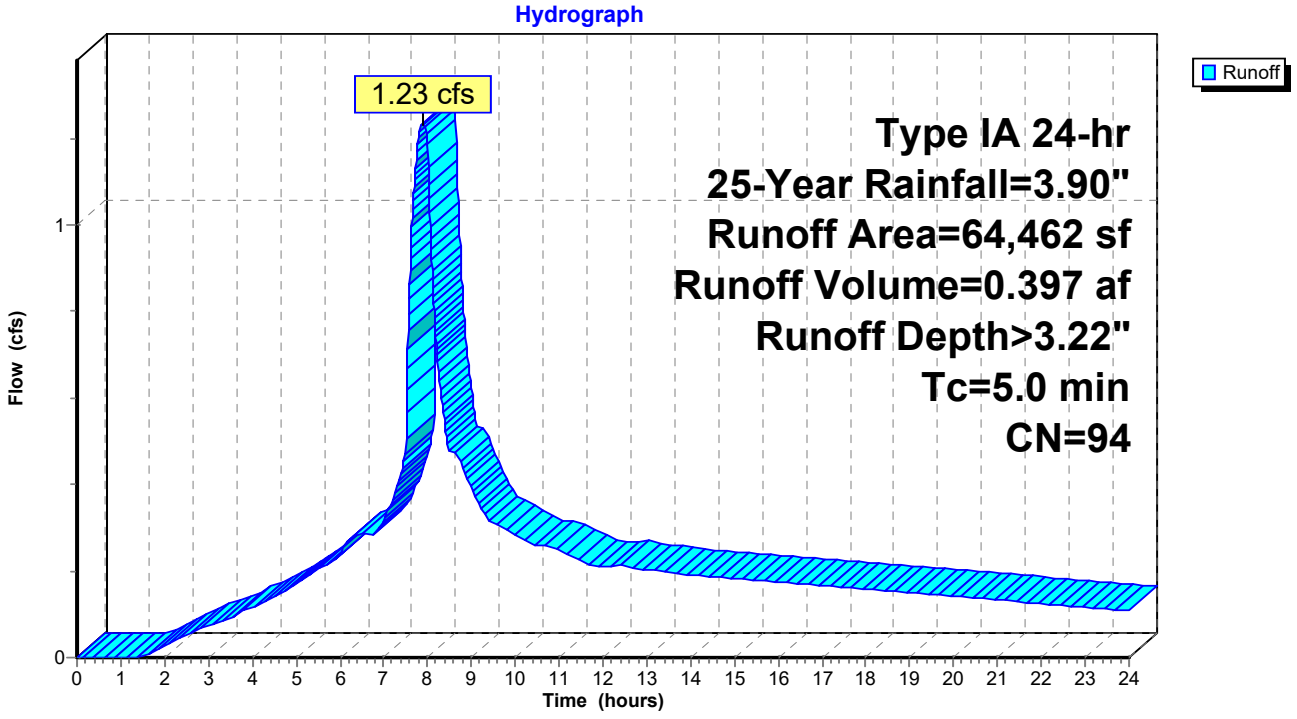
Runoff = 1.23 cfs @ 7.89 hrs, Volume= 0.397 af, Depth> 3.22"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.90"

Area (sf)	CN	Description
39,399	98	Unconnected roofs, HSG C
14,988	98	Paved parking, HSG C
10,075	74	>75% Grass cover, Good, HSG C
64,462	94	Weighted Average
10,075		15.63% Pervious Area
54,387		84.37% Impervious Area
39,399		72.44% Unconnected

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

Subcatchment 10S: PRE-DEVELOPED AREA DISCHARGING TO PRIVATE CONVEYANCE PIPE



Summary for Subcatchment 20S: PRE-DEVELOPED AREA SURFACE RUNOFF

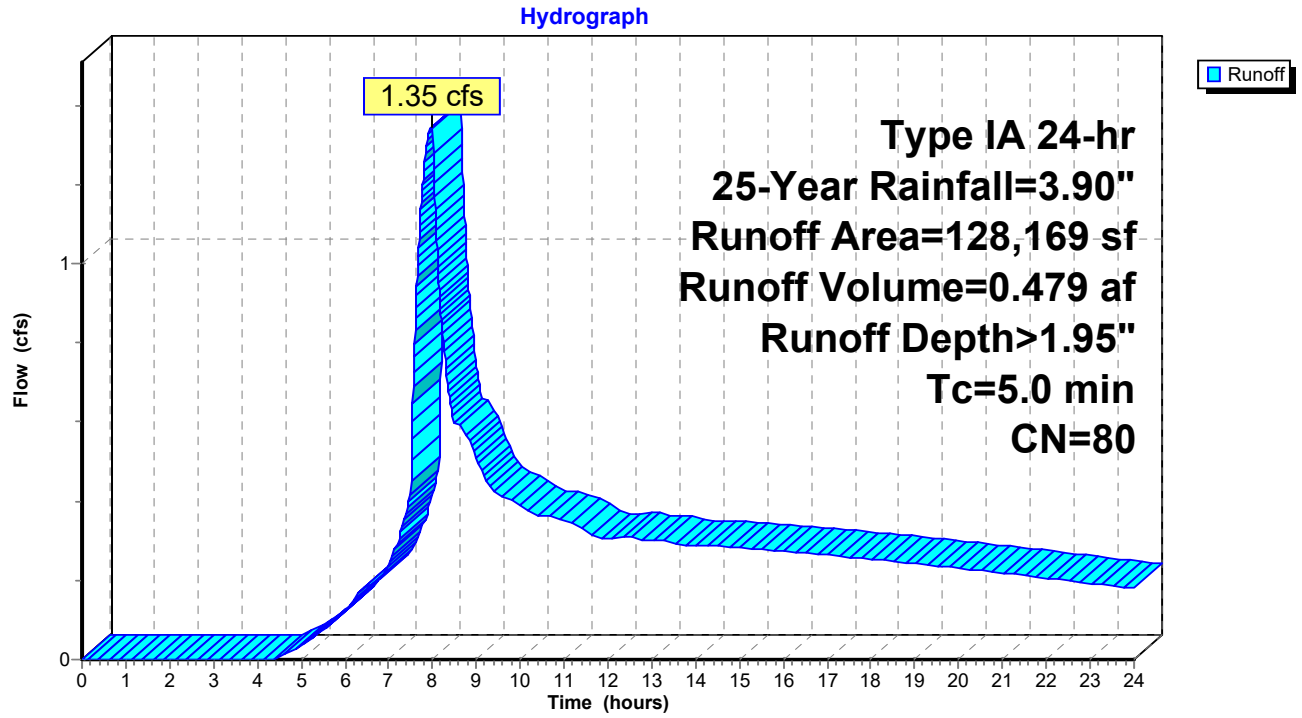
Runoff = 1.35 cfs @ 7.97 hrs, Volume= 0.479 af, Depth> 1.95"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.90"

Area (sf)	CN	Description
33,863	98	Paved parking, HSG C
94,306	74	>75% Grass cover, Good, HSG C
128,169	80	Weighted Average
94,306		73.58% Pervious Area
33,863		26.42% Impervious Area

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

Subcatchment 20S: PRE-DEVELOPED AREA SURFACE RUNOFF



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SBUH method, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: PRE-DEVELOPED Runoff Area=64,462 sf 84.37% Impervious Runoff Depth>3.81"
Tc=5.0 min CN=94 Runoff=1.46 cfs 0.470 af

Subcatchment 20S: PRE-DEVELOPED Runoff Area=128,169 sf 26.42% Impervious Runoff Depth>2.46"
Tc=5.0 min CN=80 Runoff=1.74 cfs 0.602 af

Total Runoff Area = 4.422 ac Runoff Volume = 1.072 af Average Runoff Depth = 2.91"
54.19% Pervious = 2.396 ac 45.81% Impervious = 2.026 ac

Summary for Subcatchment 10S: PRE-DEVELOPED AREA DISCHARGING TO PRIVATE CONVEYANCE P

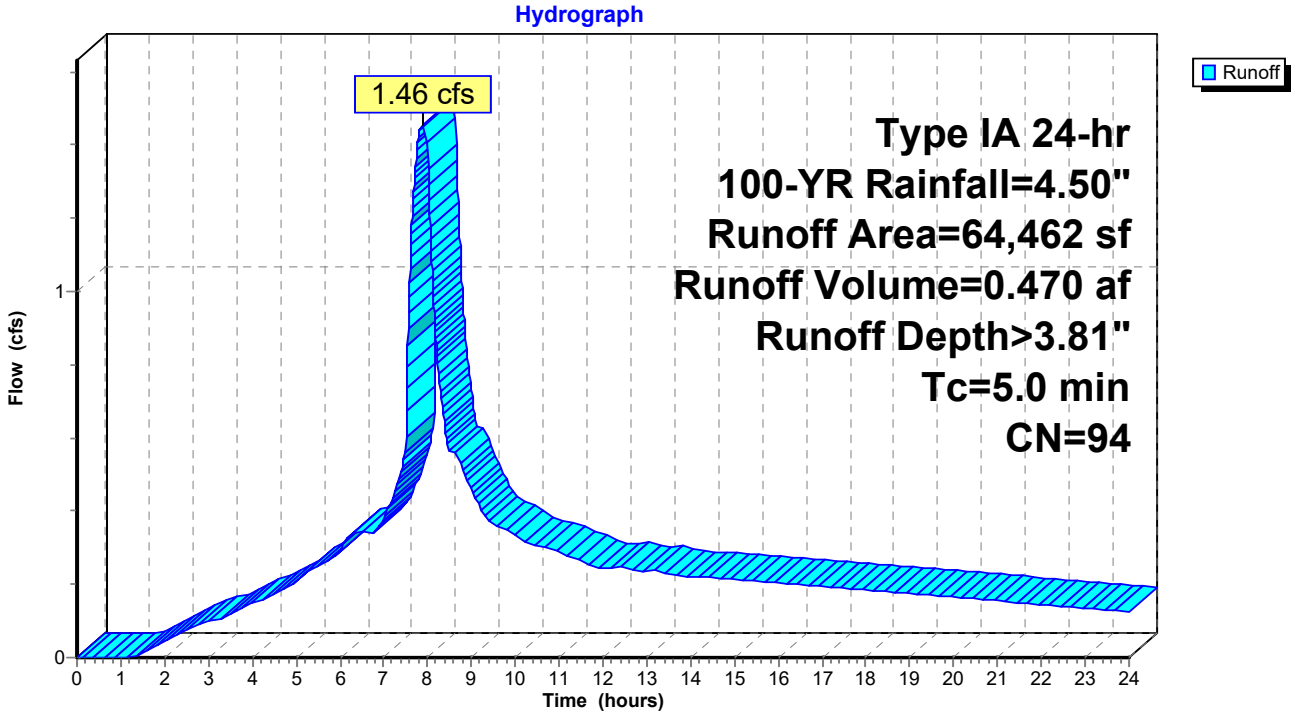
Runoff = 1.46 cfs @ 7.89 hrs, Volume= 0.470 af, Depth> 3.81"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-YR Rainfall=4.50"

Area (sf)	CN	Description
39,399	98	Unconnected roofs, HSG C
14,988	98	Paved parking, HSG C
10,075	74	>75% Grass cover, Good, HSG C
64,462	94	Weighted Average
10,075		15.63% Pervious Area
54,387		84.37% Impervious Area
39,399		72.44% Unconnected

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

Subcatchment 10S: PRE-DEVELOPED AREA DISCHARGING TO PRIVATE CONVEYANCE PIPE



Summary for Subcatchment 20S: PRE-DEVELOPED AREA SURFACE RUNOFF

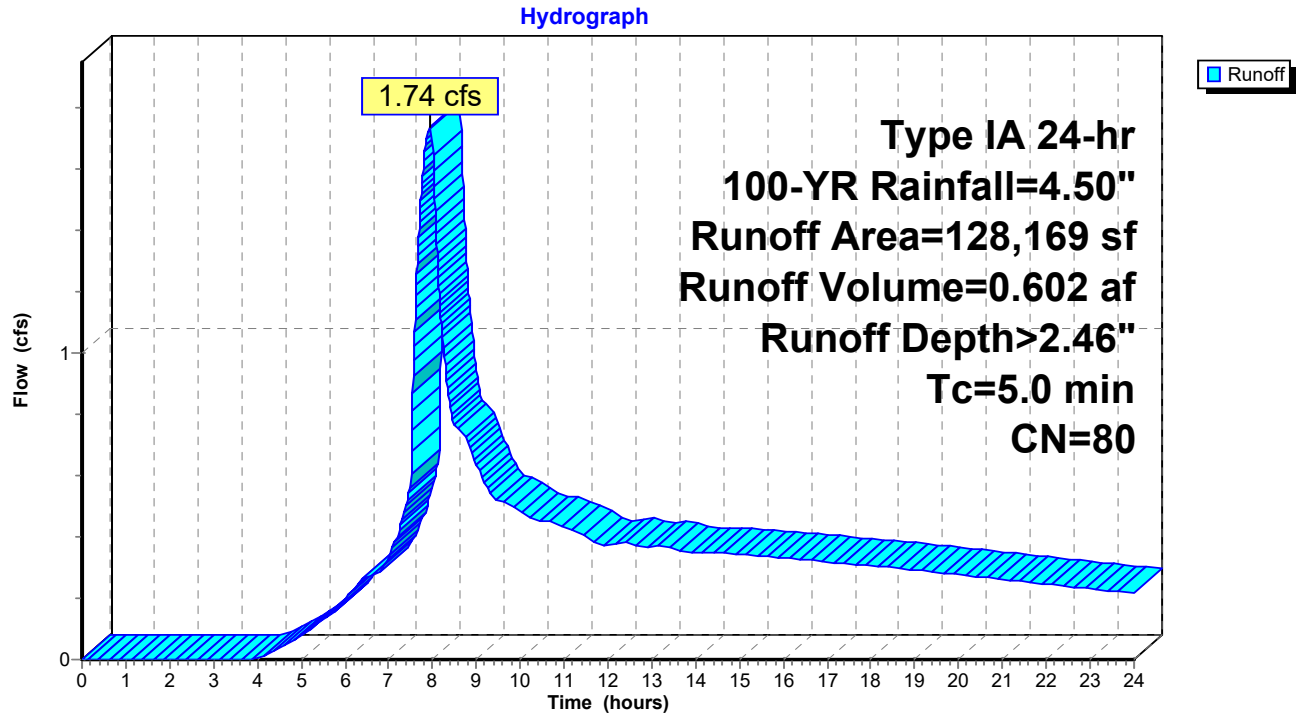
Runoff = 1.74 cfs @ 7.96 hrs, Volume= 0.602 af, Depth> 2.46"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-YR Rainfall=4.50"

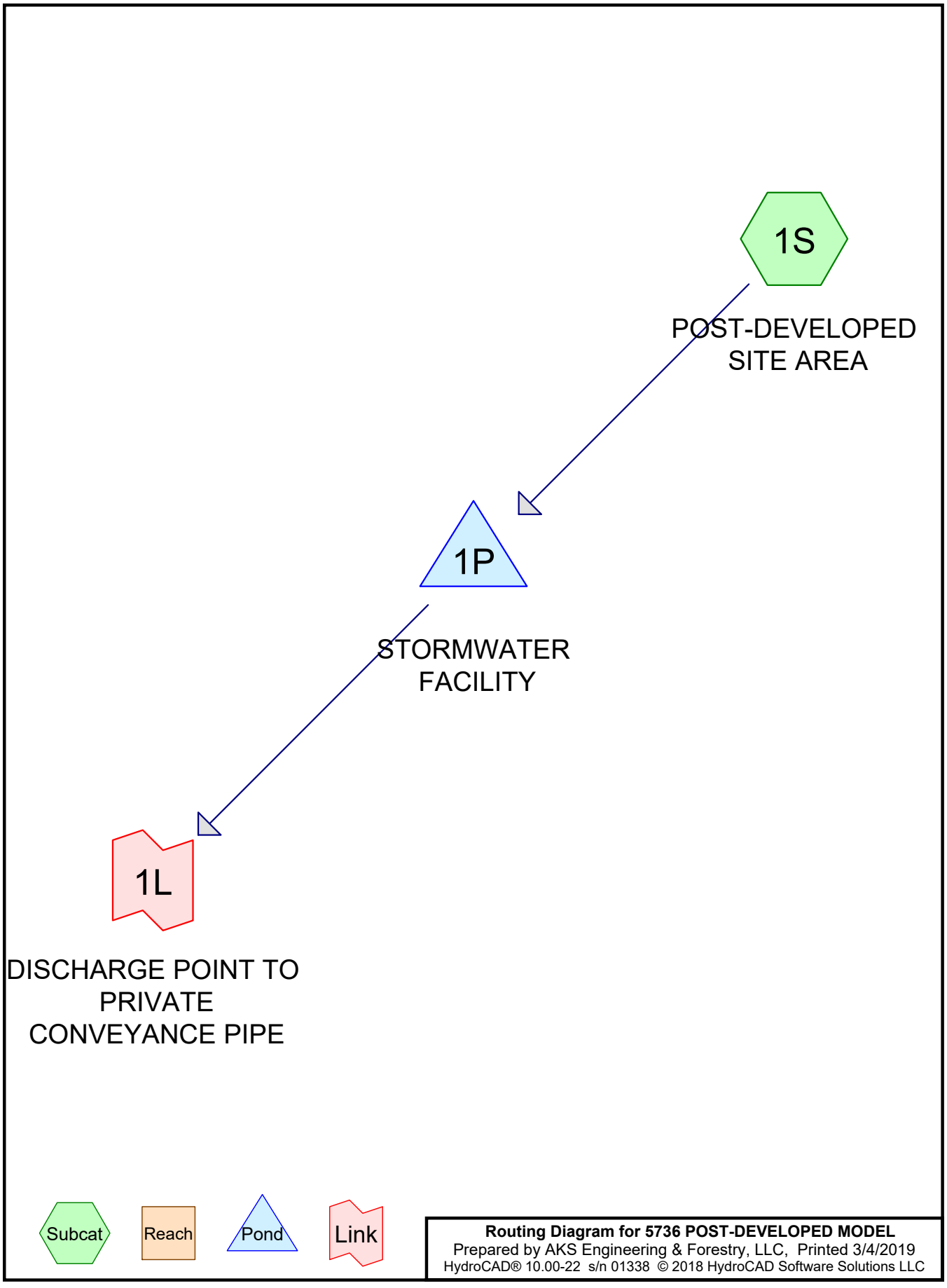
Area (sf)	CN	Description
33,863	98	Paved parking, HSG C
94,306	74	>75% Grass cover, Good, HSG C
128,169	80	Weighted Average
94,306		73.58% Pervious Area
33,863		26.42% Impervious Area

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

Subcatchment 20S: PRE-DEVELOPED AREA SURFACE RUNOFF



Appendix B: Post-Developed Site Storm Event Analysis



Routing Diagram for 5736 POST-DEVELOPED MODEL
Prepared by AKS Engineering & Forestry, LLC, Printed 3/4/2019

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SBUH method, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: POST-DEVELOPED Runoff Area=188,591 sf 74.11% Impervious Runoff Depth>3.02"
Tc=5.0 min CN=92 Runoff=3.38 cfs 1.088 af

Pond 1P: STORMWATER FACILITY Peak Elev=204.64' Storage=10,529 cf Inflow=3.38 cfs 1.088 af
Outflow=1.22 cfs 0.992 af

Link 1L: DISCHARGE POINT TO PRIVATE CONVEYANCE PIPE Inflow=1.22 cfs 0.992 af
Primary=1.22 cfs 0.992 af

Total Runoff Area = 4.329 ac Runoff Volume = 1.088 af Average Runoff Depth = 3.02"
25.89% Pervious = 1.121 ac 74.11% Impervious = 3.209 ac

Summary for Subcatchment 1S: POST-DEVELOPED SITE AREA

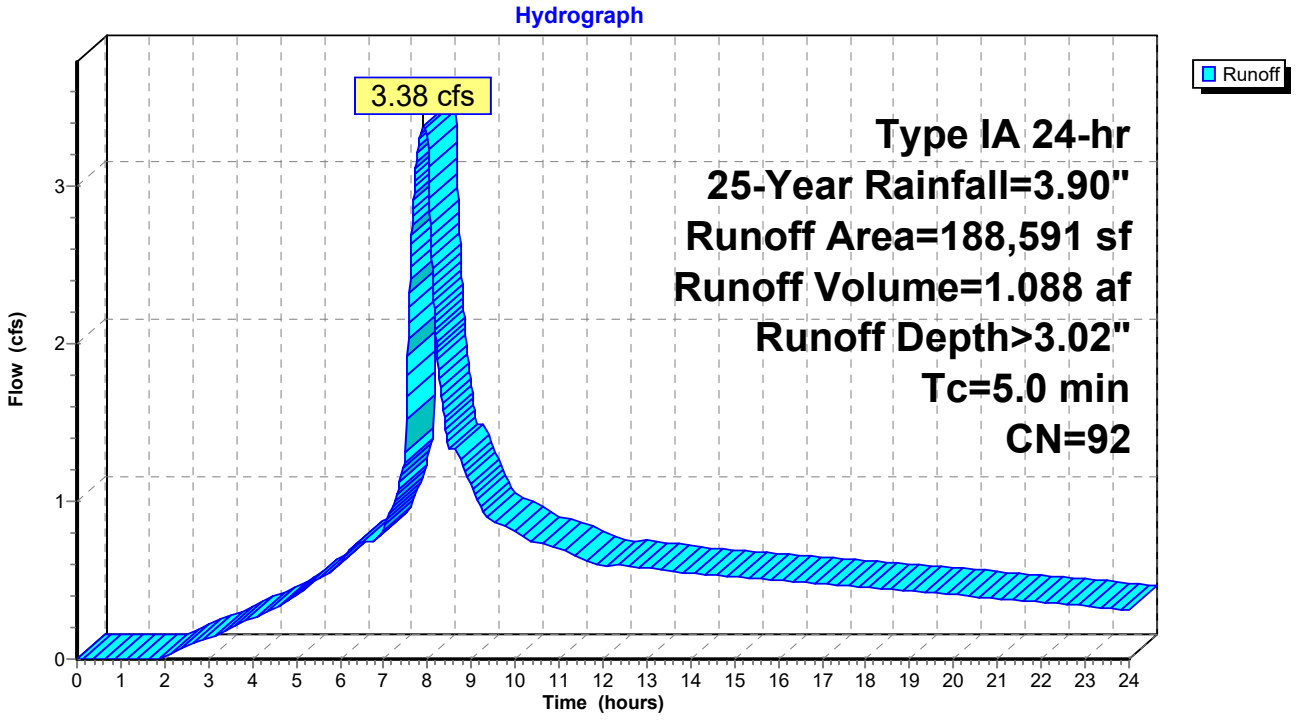
Runoff = 3.38 cfs @ 7.90 hrs, Volume= 1.088 af, Depth> 3.02"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.90"

Area (sf)	CN	Description
39,399	98	Roofs, HSG C
100,371	98	Paved parking, HSG C
48,821	74	>75% Grass cover, Good, HSG C
188,591	92	Weighted Average
48,821		25.89% Pervious Area
139,770		74.11% Impervious Area

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

Subcatchment 1S: POST-DEVELOPED SITE AREA



Summary for Pond 1P: STORMWATER FACILITY

Inflow Area = 4.329 ac, 74.11% Impervious, Inflow Depth > 3.02" for 25-Year event
Inflow = 3.38 cfs @ 7.90 hrs, Volume= 1.088 af
Outflow = 1.22 cfs @ 8.83 hrs, Volume= 0.992 af, Atten= 64%, Lag= 55.4 min
Primary = 1.22 cfs @ 8.83 hrs, Volume= 0.992 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 204.64' @ 8.83 hrs Surf.Area= 6,139 sf Storage= 10,529 cf

Plug-Flow detention time= 145.4 min calculated for 0.992 af (91% of inflow)
Center-of-Mass det. time= 85.5 min (801.8 - 716.3)

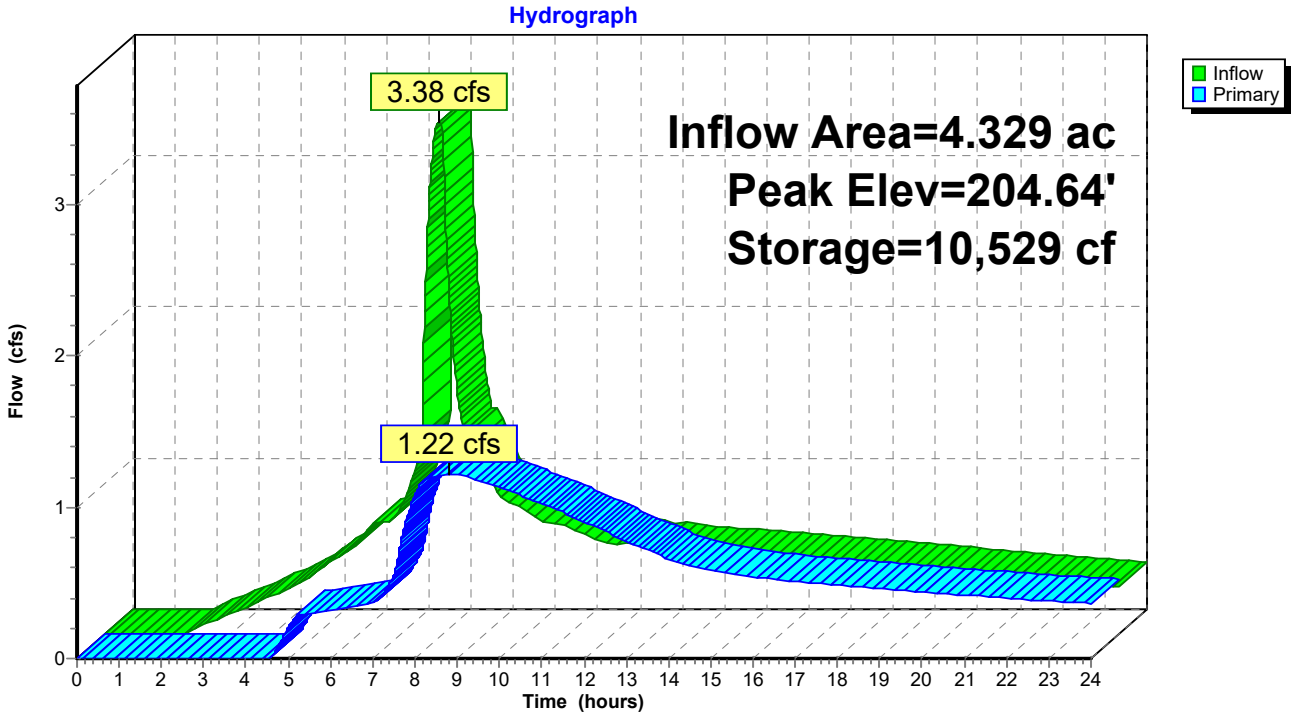
Volume	Invert	Avail.Storage	Storage Description
#1	202.50'	19,908 cf	**Custom Stage Data (Irregular)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.50	3,648	367.5	0	0	3,648
203.00	4,207	376.9	1,962	1,962	4,235
204.00	5,366	395.7	4,775	6,737	5,454
205.00	6,581	414.6	5,963	12,700	6,738
206.00	7,853	433.4	7,208	19,908	8,076

Device	Routing	Invert	Outlet Devices
#1	Device 2	202.90'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31
#2	Device 4	202.14'	**3.5" Vert. WQ Orifice** C= 0.620
#3	Device 4	204.95'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31
#4	Primary	202.00'	**10.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 202.00' / 201.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#5	Device 4	203.43'	**5.2" Vert. 25-YR Orifice** C= 0.600

Primary OutFlow Max=1.22 cfs @ 8.83 hrs HW=204.64' TW=0.00' (Dynamic Tailwater)
- **4=Culvert** (Passes 1.22 cfs of 3.55 cfs potential flow)
  - **2=WQ Orifice** (Orifice Controls 0.51 cfs @ 7.63 fps)
    - **1=Broad-Crested Rectangular Weir** (Passes 0.51 cfs of 15.01 cfs potential flow)
  - **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  - **5=25-YR Orifice** (Orifice Controls 0.71 cfs @ 4.79 fps)

Pond 1P: STORMWATER FACILITY

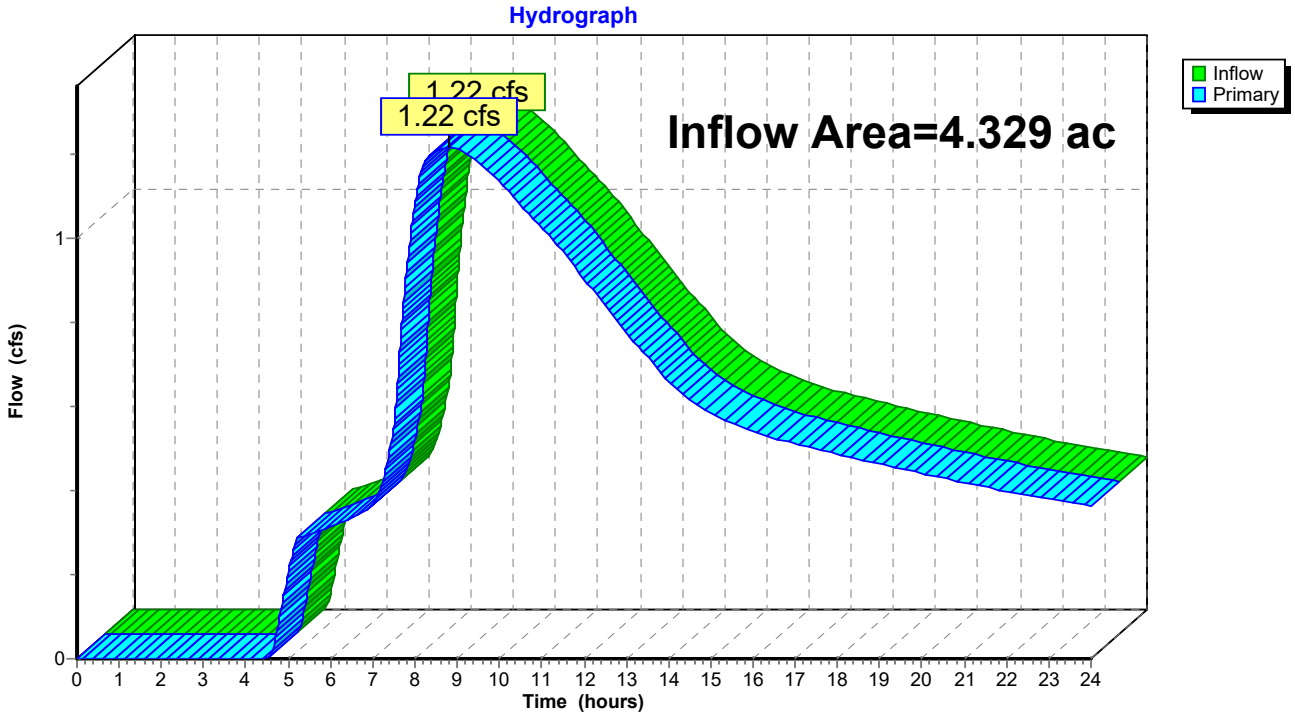


Summary for Link 1L: DISCHARGE POINT TO PRIVATE CONVEYANCE PIPE

Inflow Area = 4.329 ac, 74.11% Impervious, Inflow Depth > 2.75" for 25-Year event
Inflow = 1.22 cfs @ 8.83 hrs, Volume= 0.992 af
Primary = 1.22 cfs @ 8.83 hrs, Volume= 0.992 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: DISCHARGE POINT TO PRIVATE CONVEYANCE PIPE



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SBUH method, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: POST-DEVELOPED Runoff Area=188,591 sf 74.11% Impervious Runoff Depth>3.60"
Tc=5.0 min CN=92 Runoff=4.04 cfs 1.297 af

Pond 1P: STORMWATER FACILITY Peak Elev=205.00' Storage=12,713 cf Inflow=4.04 cfs 1.297 af
Outflow=1.44 cfs 1.193 af

Link 1L: DISCHARGE POINT TO PRIVATE CONVEYANCE PIPE Inflow=1.44 cfs 1.193 af
Primary=1.44 cfs 1.193 af

Total Runoff Area = 4.329 ac Runoff Volume = 1.297 af Average Runoff Depth = 3.60"
25.89% Pervious = 1.121 ac 74.11% Impervious = 3.209 ac

Summary for Subcatchment 1S: POST-DEVELOPED SITE AREA

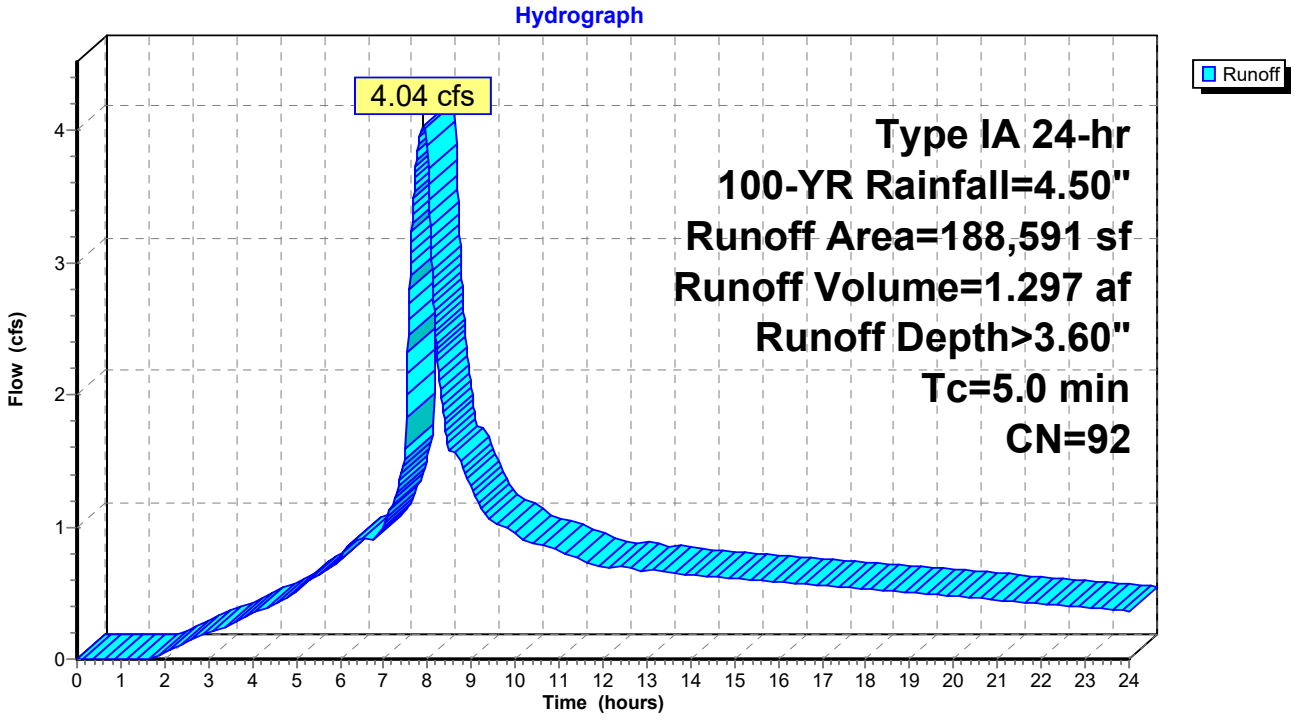
Runoff = 4.04 cfs @ 7.90 hrs, Volume= 1.297 af, Depth> 3.60"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-YR Rainfall=4.50"

Area (sf)	CN	Description
39,399	98	Roofs, HSG C
100,371	98	Paved parking, HSG C
48,821	74	>75% Grass cover, Good, HSG C
188,591	92	Weighted Average
48,821		25.89% Pervious Area
139,770		74.11% Impervious Area

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

Subcatchment 1S: POST-DEVELOPED SITE AREA



Summary for Pond 1P: STORMWATER FACILITY

Inflow Area = 4.329 ac, 74.11% Impervious, Inflow Depth > 3.60" for 100-YR event
Inflow = 4.04 cfs @ 7.90 hrs, Volume= 1.297 af
Outflow = 1.44 cfs @ 8.82 hrs, Volume= 1.193 af, Atten= 64%, Lag= 55.3 min
Primary = 1.44 cfs @ 8.82 hrs, Volume= 1.193 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 205.00' @ 8.82 hrs Surf.Area= 6,583 sf Storage= 12,713 cf

Plug-Flow detention time= 142.7 min calculated for 1.193 af (92% of inflow)
Center-of-Mass det. time= 87.3 min (795.5 - 708.2)

Volume	Invert	Avail.Storage	Storage Description
#1	202.50'	19,908 cf	**Custom Stage Data (Irregular)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.50	3,648	367.5	0	0	3,648
203.00	4,207	376.9	1,962	1,962	4,235
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205.00	6,581	414.6	5,963	12,700	6,738
206.00	7,853	433.4	7,208	19,908	8,076

Device	Routing	Invert	Outlet Devices
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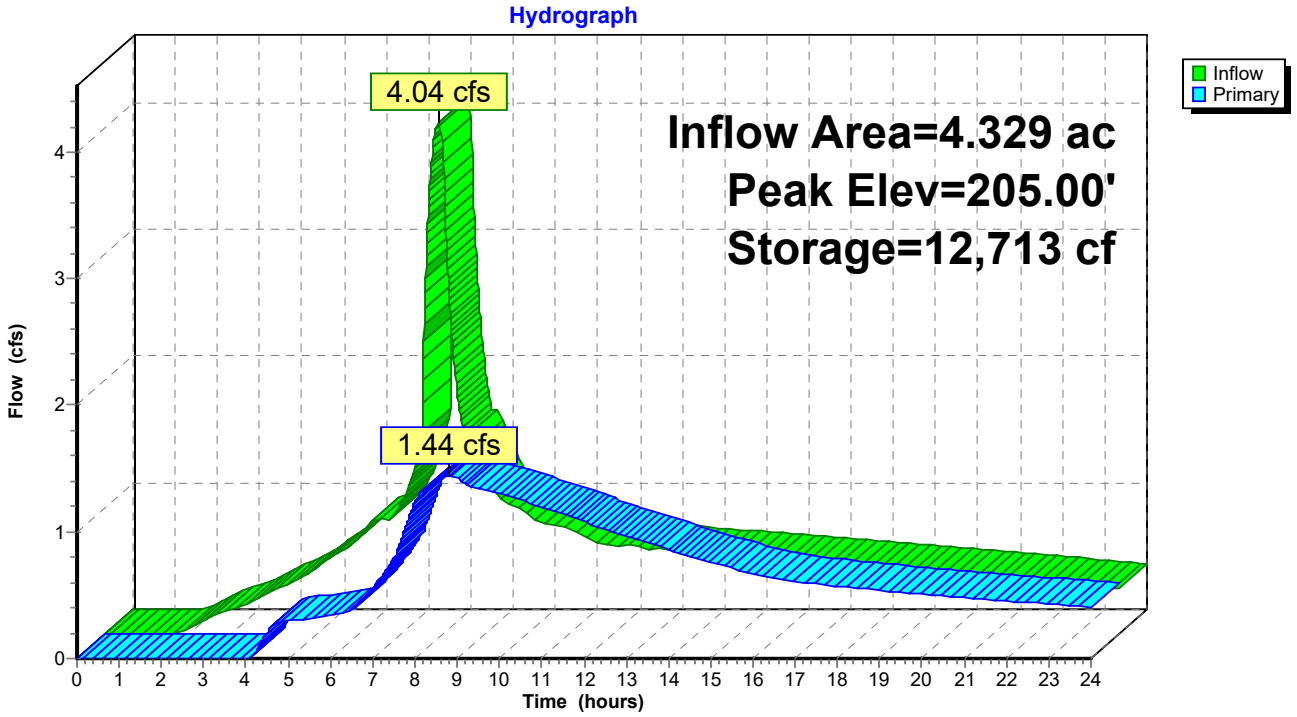
#2	Device 4	202.14'	**3.5" Vert. WQ Orifice** C= 0.620
#3	Device 4	204.95'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31
#4	Primary	202.00'	**10.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 202.00' / 201.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#5	Device 4	203.43'	**5.2" Vert. 25-YR Orifice** C= 0.600

Primary OutFlow Max=1.44 cfs @ 8.82 hrs HW=205.00' TW=0.00' (Dynamic Tailwater)
- **4=Culvert** (Passes 1.44 cfs of 3.82 cfs potential flow)
  - **2=WQ Orifice** (Orifice Controls 0.55 cfs @ 8.20 fps)
    - **1=Broad-Crested Rectangular Weir** (Passes 0.55 cfs of 20.13 cfs potential flow)
  - **3=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.65 fps)
  - **5=25-YR Orifice** (Orifice Controls 0.83 cfs @ 5.61 fps)

Pond 1P: STORMWATER FACILITY

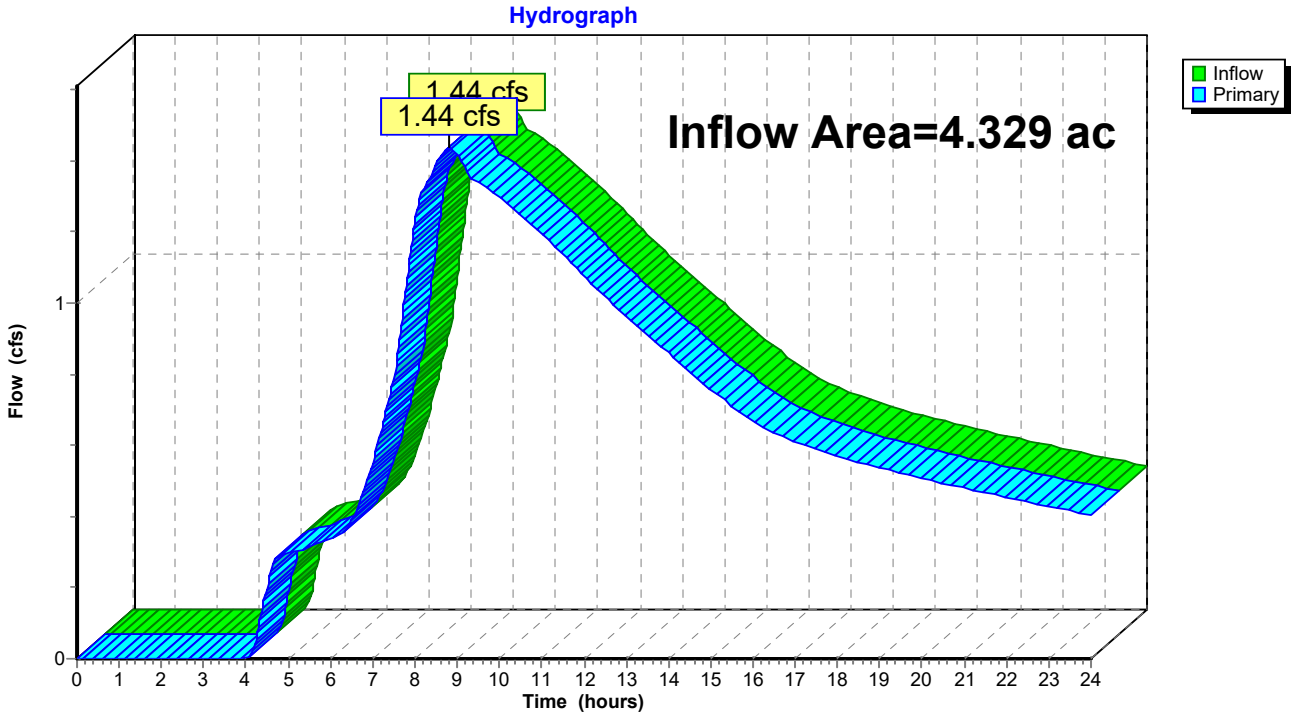


Summary for Link 1L: DISCHARGE POINT TO PRIVATE CONVEYANCE PIPE

Inflow Area = 4.329 ac, 74.11% Impervious, Inflow Depth > 3.31" for 100-YR event
Inflow = 1.44 cfs @ 8.82 hrs, Volume= 1.193 af
Primary = 1.44 cfs @ 8.82 hrs, Volume= 1.193 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: DISCHARGE POINT TO PRIVATE CONVEYANCE PIPE



Appendix C: USDA-NRCS Soil Resource Report

United States Department of Agriculture

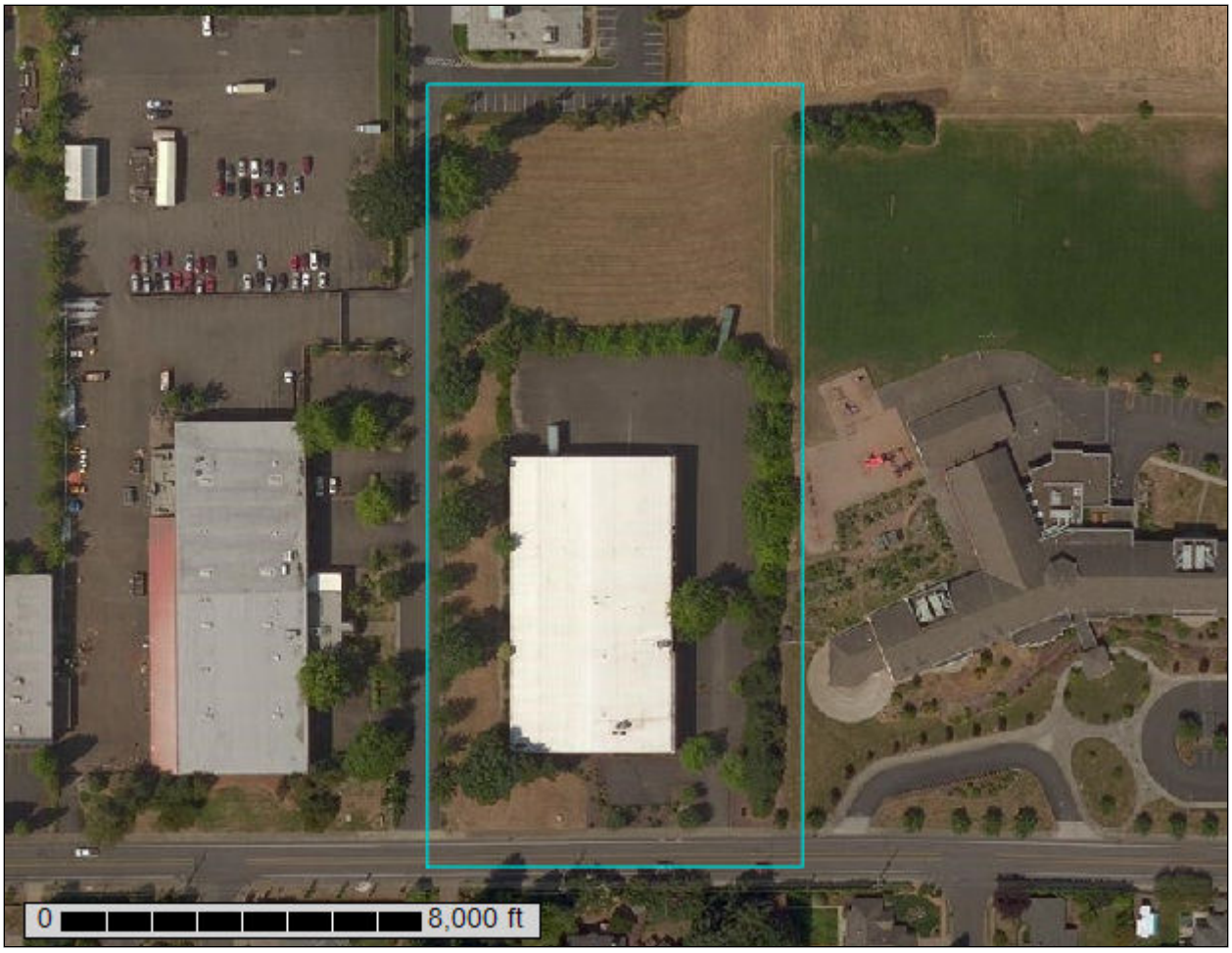
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Washington County, Oregon

TVF&R Logistics



December 12, 2018

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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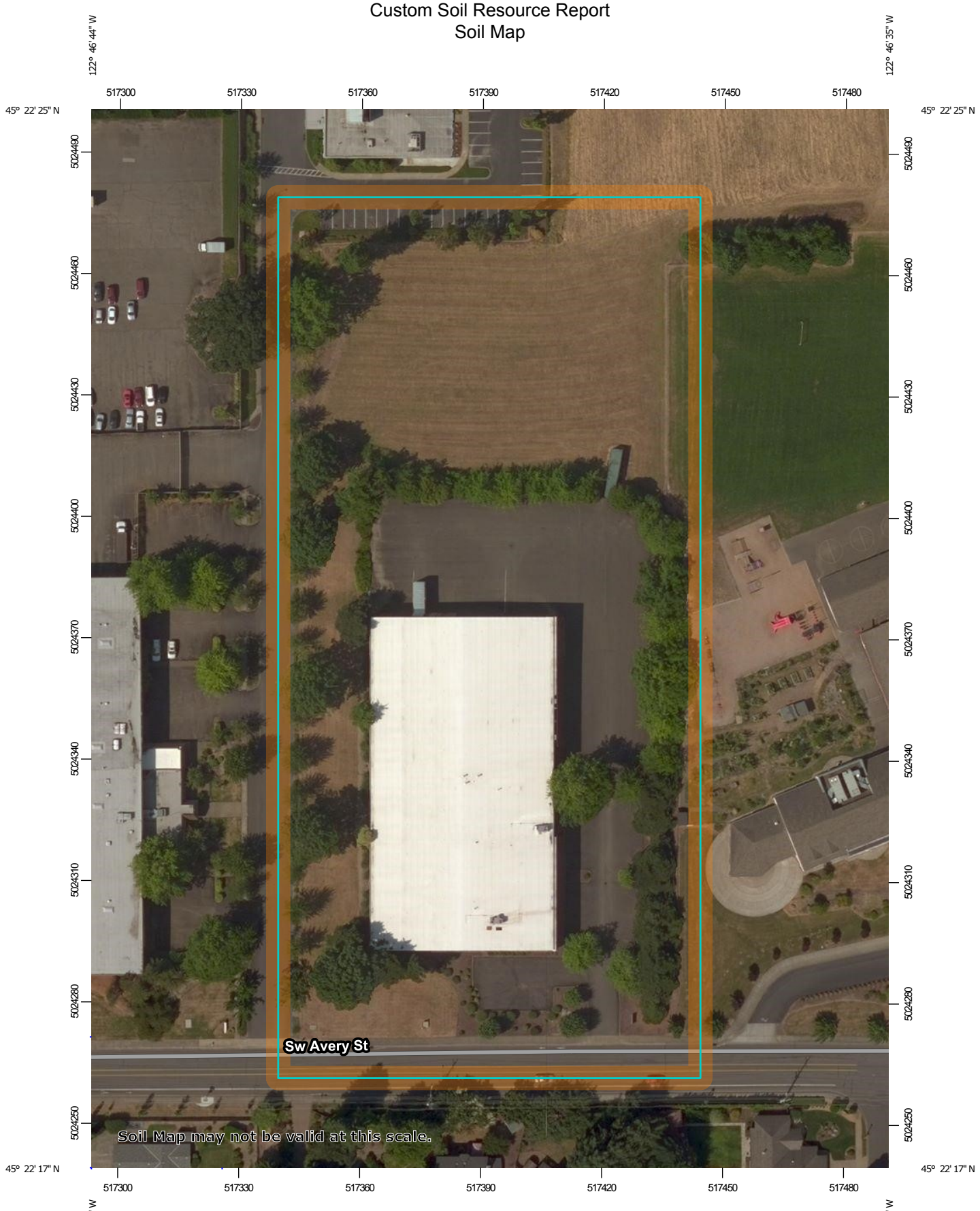
Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:1,270 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Washington County, Oregon
Survey Area Data: Version 16, Sep 18, 2018

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

Date(s) aerial images were photographed: Aug 3, 2014—Aug 23, 2014

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Amity silt loam	5.7	100.0%
Totals for Area of Interest		**5.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Washington County, Oregon

2—Amity silt loam

Map Unit Setting

National map unit symbol: 21y1
Elevation: 150 to 400 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Amity and similar soils: 85 percent
Minor components: 4 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Amity

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Old loamy alluvium

Typical profile

H1 - 0 to 12 inches: silt loam
H2 - 12 to 40 inches: silty clay loam
H3 - 40 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Forage suitability group: Somewhat Poorly Drained (G002XY005OR)
Hydric soil rating: No

Minor Components

Dayton

Percent of map unit: 4 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear

Across-slope shape: Linear
Hydric soil rating: Yes

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix D: TR55 Runoff Curve Numbers

Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description: Cover type and hydrologic condition	Average percent impervious area [2/]	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
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) [4/]		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
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1] Average runoff condition, and $I_a = 0.2S$.

[2] 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.

[3] CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

[4] 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.

[5] 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.

Exhibit J: Fire Flow Test

www.unitedfirepdx.com
4611 NE MLK JR BLVD
PORTLAND, OR 97211
Phone: 503-249-0771
Fax: 503-249-0572
Email: service@unitedfirepdx.com
Oregon CCB# 65290
Washington EC06# UNTDFFH95ONT

FOR FIRE BUREAU USE ONLY	
DATE RECEIVED	
COMPLEX #	
BUILDING #	
BUSINESS #	
LOCATION #	
BILL TO: #	
PHYS. FAC. #	
APPEAL #	
DATE ENTERED	

CHECK SHEET FOR TEST OF

PRIVATE FIRE HYDRANTS

TEST DATE: 1/3/2019

BUSINESS NAME: TUALATIN VALLEY FIRE & RESCUE - FLEET MAINTENANCE FACILITY

BUILDING NAME:

BUILDING ADDRESS: 9991 SW AVERY ST TUALATIN, OR 97062

CONTACT: JAMIE MAY PHONE: 503-649-8577

NUMBER OF FIRE HYDRANTS ON THIS SYSTEM: 1 (If more than 3, use additional forms)

	# 1	# 2	# 3
Location of Hydrant? MAKE/MODEL	FRONT OF BLDG OFF AVERY (B28-76) DRESSER 500		
Access unobstructed ? Faced correctly? Set properly?	YES ☑ NO ☐ YES ☑ NO ☐ YES ☑ NO ☐	YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐	YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐
Location of residual pressure gauge	ON HYDRANT		
Static pressure	80		
Residual pressure	74		
Sizes of outlets flowed	2.5"		
Number of outlets flowed	1		
Pitot reading	26		
GPM flowed @20 psi residual	2912		
Threads in good repair? Lubricated? Caps replaced?	YES ☑ NO ☐ YES ☑ NO ☐ YES ☐ NO ☑	YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐	YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐
Leakage in base, dome or sleeve when under pressure?	YES ☐ NO ☑	YES ☐ NO ☐	YES ☐ NO ☐
Hydrant operates properly? Operating nut lubricated?	YES ☑ NO ☐ YES ☑ NO ☐	YES ☐ NO ☐ YES ☐ NO ☐	YES ☐ NO ☐ YES ☐ NO ☐
Hydrant drains properly after test?	YES ☑ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐

CHECK SHEET FOR TEST OF

PRIVATE FIRE HYDRANTS

REQUIRED CORRECTIONS AND EXPLANATION OF PROBLEMS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

CORRECTIONS MADE:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Has the building owner / representative been notified of any deficiencies? YES ☐ NO ☑

If YES, who was notified? _____

If NO, why wasn't the owner / representative notified? NONE

_____

Certified Personnel Conducting Test (PLEASE PRINT NAME) ADAM JAMISON

Certification # 5788 **Signature:** _____

Name of Company: UNITED FIRE **Phone:** 503-249-0771

Exhibit K: Evidence of Pre-Application Conference Information

From:	Tabitha Boschetti
To:	Mimi Doukas
Cc:	Tony Doran; Steve Koper; Kevin Rex; Mooney, Thomas A.
Subject:	TVF&R Maintenance Facility Pre-App follow-up
Date:	Thursday, November 8, 2018 4:38:40 PM
Attachments:	Pre-App Comments 11-2018.pdf

Mimi,

To follow up on yesterday's pre-app meeting for TVF&R's proposed maintenance facility:

The proposed project should be reviewed under a Type II Architectural Review. As we discussed with Kevin, structural interior work to the existing building, such as a upgrading the existing slab and seismic work, would be able to proceed without triggering any further land use review.

Noise:

The sound barrier requirements I referenced for the Light Manufacturing district can be found here: https://www.tualatinoregon.gov/developmentcode/tdc-chapter-60-light-manufacturing-planning-district-ml#60.070

Parking:

The provisions I mentioned that provide for making a case for appropriate parking ratios for this use are under 73.370(1)(g):

> *(g) Parking and loading requirements for structures not specifically listed herein shall be determined by the Community Development Director, based upon requirements of comparable uses listed.*

I would definitely welcome seeing an early proposal on how to evaluate parking and getting you feedback prior to submittal.

Tom Mooney has also shared some of TVF&R's development requirements, attached.

Please be in touch if any questions come up during your process or if you would like to revisit any of the things we discussed. Best regards,

Tabitha Boschetti

Assistant Planner
City of Tualatin | Community Development
503.691.3029 | Fax 503.692.0147
www.tualatinoregon.gov
tboschetti@tualatin.gov

November 8, 2018

Tabitha Boschetti
Assistant Planner
City of Tualatin
18880 SW Martinazzi Avenue
Tualatin, Oregon 97062

Re: TVFR Vehicle Maintenance and Support Facility
Tax Lot I.D: 2S12BA00200

Dear Tabitha,

Thank you for the opportunity to review the proposed site plan surrounding the above named development project. These notes are provided in regards to the pre-application meeting held on November 7, 2018. There may be more or less requirements needed based upon the final project design, however, Tualatin Valley Fire & Rescue will endorse this proposal predicated on the following criteria and conditions of approval.

FIRE APPARATUS ACCESS:

1. **FIRE APPARATUS ACCESS ROAD DISTANCE FROM BUILDINGS AND FACILITIES:** Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. An approved turnaround is required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 150 feet. (OFC 503.1.1)

2. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. (OFC 503.2.1 & D103.1)

3. **NO PARKING SIGNS:** Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, "No Parking" signs shall be installed on one or both sides of the roadway and in turnarounds as needed. Signs shall read "NO PARKING - FIRE LANE" and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC D103.6)

4. **NO PARKING:** Parking on emergency access roads shall be as follows (OFC D103.6.1-2):
   1. 20-26 feet road width – no parking on either side of roadway
   2. 26-32 feet road width – parking is allowed on one side
   3. Greater than 32 feet road width – parking is not restricted

   Note: For specific widths and parking allowances, contact the local municipality.

5. **PAINTED CURBS:** Where required, fire apparatus access roadway curbs shall be painted red (or as approved) and marked "NO PARKING FIRE LANE" at 25 foot intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background (or as approved). (OFC 503.3)

6. **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)

7. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load) and 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with approved plans or the requirements of the Fire Code may be requested. (OFC 503.2.3)

8. **TURNING RADIUS:** The inside turning radius and outside turning radius shall not be less than 28 feet and 48 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3)

9. **ACCESS ROAD GRADE:** Fire apparatus access roadway grades shall not exceed 15%. Alternate methods and materials may be available at the discretion of the Fire Marshal (for grade exceeding 15%).

10. **GATES:** Gates securing fire apparatus roads shall comply with all of the following (OFC D103.5, and 503.6):
    1. Minimum unobstructed width shall be not less than 20 feet (or the required roadway surface width).
    2. Gates shall be set back at minimum of 30 feet from the intersecting roadway or as approved.
    3. Electric gates shall be equipped with a means for operation by fire department personnel
    4. Electric automatic gates shall comply with ASTM F 2200 and UL 325.

11. **ACCESS DURING CONSTRUCTION:** Approved fire apparatus access roadways shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. Temporary address signage shall also be provided during construction. (OFC 3309 and 3310.1)

12. **TRAFFIC CALMING DEVICES:** Shall be prohibited on fire access routes unless approved by the Fire Marshal. (OFC 503.4.1). Traffic calming measures linked here: http://www.tvfr.com/DocumentCenter/View/1578

FIREFIGHTING WATER SUPPLIES:

13. **COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW:** The minimum fire flow and flow duration shall be determined in accordance with OFC Table B105.2. The required fire flow for a building shall not exceed the available GPM in the water delivery system at 20 psi residual. (OFC B105.3)
    Note: OFC B106, Limiting Fire-Flow is also enforced, except for the following:
    - The maximum needed fire flow shall be 3,000 GPM, measured at 20 psi residual pressure.
    - Tualatin Valley Fire & Rescue does not adopt Occupancy Hazards Modifiers in section B105.4-B105.4.1

14. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B)

    Provide documentation of fire hydrant flow test or flow test modeling.

15. **WATER SUPPLY DURING CONSTRUCTION:** Approved firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3312.1)

FIRE HYDRANTS:

16. **FIRE HYDRANTS – COMMERCIAL BUILDINGS:** Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided. (OFC 507.5.1)
    - This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
    - The number and distribution of fire hydrants required for commercial structure(s) is based on Table C105.1, following any fire-flow reductions allowed by section B105.3.1. Additional fire hydrants may be required due to spacing and/or section 507.5 of the Oregon Fire Code.

17. **FIRE HYDRANT(S) PLACEMENT:** (OFC C104)
    - Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
    - Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the Fire Marshal.
    - Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the Fire Marshal.
    - Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the Fire Marshal.

18. **PRIVATE FIRE HYDRANT IDENTIFICATION:** Private fire hydrants shall be painted red in color. Exception: Private fire hydrants within the City of Tualatin shall be yellow in color. (OFC 507)

19. **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD:** Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the Fire Marshal. (OFC C102.1)

20. **REFLECTIVE HYDRANT MARKERS:** Fire hydrant locations shall be identified by the installation of blue reflective markers. They shall be located adjacent and to the side of the center line of the access roadway that the fire hydrant is located on. In the case that there is no center line, then assume a center line and place the reflectors accordingly. (OFC 507)

21. **PHYSICAL PROTECTION:** Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312)

22. **CLEAR SPACE AROUND FIRE HYDRANTS:** A 3 foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)

23. **FIRE DEPARTMENT CONNECTION (FDC) LOCATIONS:** FDCs shall be located within 100 feet of a fire hydrant (or as approved). Hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle, fully visible, and recognizable from the street or nearest point of the fire department vehicle access or as otherwise approved. (OFC 912.2.1 & NFPA 13)
    - Fire department connections (FDCs) shall normally be located remotely and outside of the fall-line of the building when required. FDCs may be mounted on the building they serve, when approved.
    - FDCs shall be plumbed on the system side of the check valve when sprinklers are served by underground lines also serving private fire hydrants.

Current FDC is more than 100ft from a fire hydrant. If sprinkler system and drive aisle is to be torn up relocate fire hydrant to within 100ft of FDC.

BUILDING ACCESS AND FIRE SERVICE FEATURES

24. **KNOX BOX:** A Knox Box for building access may be required for structures and gates. See Appendix B for further information and detail on required installations. Order via www.tvfr.com or contact TVF&R for assistance and instructions regarding installation and placement. (OFC 506.1)

25. **FIRE PROTECTION EQUIPMENT IDENTIFICATION:** Rooms containing controls to fire suppression and detection equipment shall be identified as "Fire Control Room." Signage shall have letters with a minimum of 4 inches high with a minimum stroke width of 1/2 inch, and be plainly legible, and contrast with its background. (OFC 509.1)

26. **PREMISES IDENTIFICATION:** New and existing buildings shall have approved address numbers; building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. (OFC 505.1)

If you have questions or need further clarification, please feel free to contact me at 503-259-1419**.**

Sincerely,

Tom Mooney

Tom Mooney
Deputy Fire Marshal II

Thomas.mooney@tvfr.com

Cc: File
City of Tualatin

A full copy of the New Construction Fire Code Applications Guide for Commercial and Multi-Family Development is available at http://www.tvfr.com/DocumentCenter/View/1296