Cascade Columbia Distribution Company

Land Use Application for a Modification to an Approved Site Plan and a Conditional Use Permit

Date: Updated May 2022

Submitted to: City of Sherwood
22560 SW Pine Street
Sherwood, OR 97140

Applicant: Cascade Columbia Distribution Company
14200 SW Tualatin-Sherwood Road
Sherwood, OR 97140

AKS Job Number: 7431

AKS ENGINEERING & FORESTRY
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151

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Land Use Application for a Major Modification to an Approved Site Plan and a Conditional Use Permit

Submitted to:	City of Sherwood Planning Department 22560 SW Pine Street Sherwood, OR 97140
Applicant:	Cascade Columbia Distribution Company 14200 SW Tualatin-Sherwood Road Sherwood, OR 97140
Property Owner:	Sherwood Road Industrial, LLC 6900 Fox Avenue S Seattle, WA 98108
Applicant's Consultant:	AKS Engineering & Forestry, LLC 12965 SW Herman Road, Suite 100 Tualatin, OR 97062 Contact: Chris Goodell, AICP Email: chrisg@aks-eng.com Phone: (503) 563-6151
Site Location:	14200 SW Tualatin-Sherwood Road
Washington County Assessor's Map:	2S 1 28C; Tax Lot 200
Site Size:	±16.93 acres
Land Use District:	General Industrial (GI)

I. Executive Summary

Cascade Columbia Distribution Company (Applicant), a locally based, family-owned chemical distribution business, is submitting this application to the City of Sherwood (City) for a modification to a previously approved site plan (Case # SP 92-7) (Exhibit M) consisting of an additional warehouse building and a covered outdoor storage area. The Applicant's existing facility at 14200 SW Tualatin-Sherwood Road has been in operation in the City of Sherwood since 1994. While their industrial chemical demand has remained steady over the years, the Applicant has experienced significant growth in the food market. The food and beverage industry is currently the fastest-growing manufacturing sector in Oregon and represents a significant local economic development opportunity. The new warehouse will allow the Applicant to store and distribute more products used in food and beverage manufacturing, accelerating the growth of their business with Oregon, Washington, and Idaho companies, and provide its clients with more of the excellent service and uninterrupted supply chain they have come to expect from Cascade Columbia Distribution Company. Some of the local food sector companies that the Applicant currently works with include Beaverton Foods (a specialty condiment manufacturer), Oregon Cherry Growers (a fruit and vegetable preserver and specialty food manufacturer located in Salem), St. Cousair (food and beverage packing service provider located in Newberg), and Trailblazer Foods (a fruit-based food production facility in Portland), among many others. Reeser's Fine Foods based in Hillsboro recently named the Applicant a top supplier for 2022, as they are able to maintain supply without disruption.

The Applicant's distribution facility is located in the General Industrial (GI) zoning district, surrounded by other industrial properties. An 8,400-square foot warehouse is a permitted use in the underlying zone and would typically be approved using a Type II "Fast-Track" Site Plan review process. However, since the initial site plan application was approved through a Type IV procedure, the additional warehouse and storage area are considered a Major Modification to an Approved Site Plan, which elevates this application to a Type IV procedure, per City of Sherwood Zoning and Community Development Code (Code). Following the establishment of the Applicant's facility in the 1990s, the Code was subsequently updated to require a Conditional Use Permit for storage of certain materials, which were formerly permitted by right. Thus, this application includes a Conditional Use Permit to allow the storage of the same type of materials that the Applicant has been safely handling at this facility for the past three decades, in full regulatory compliance with the laws, regulations, guidelines and specifications of the applicable local, state, and federal agencies.

Based on facility's operations history, spills are highly unlikely, but in the event of a spill, Cascade Columbia Distribution is equipped and has procedures in place to quickly respond to an accidental spill. The entire Cascade Columbia Distribution facility is self-contained, which means that the premises provide complete separation from the outside environment with physical barriers, separate utilities, as well as established procedures, controls, and monitoring. Therefore, any spill on the facility's property is considered a controlled release and does not have the ability to get offsite. Spill response and clean-up procedures are described in detail under Section 16.82.020C.6 in this narrative. In the event of a spill that creates vapor, the Applicant follows a Risk Management Plan approved by Tualatin Valley Fire & Rescue (TVFR). The Plan identifies off-site zones and the surrounding businesses that would be affected in a worst-case scenario and contains notification procedures. The Washington County Local Emergency Planning Committee

(LEPC), which the Applicant helped form, also has a copy of the Risk Management Plan on record. Cascade Columbia Distribution operations and handling of certain chemicals is governed by the U.S. Environmental Protection Agency (US EPA), among other regulatory agencies, who regularly audit the facility for conformance to regulations.

In addition to the new warehouse and covered storage area in the southern portion of the site, this land use application seeks to obtain retroactive approval for a number of existing site improvements that were incrementally completed on the site since the initial approval was granted in 1993 as Cascade Columbia's operations have gradually expanded over the years. Those improvements are identified on Exhibit P and include additional paved and gravel areas in several locations used for parking and outdoor storage, additional storage tanks, which are used to store the same chemicals as were previously approved and have been stored at the facility since 1993, a truck weigh station, and two covered outdoor storage structures.

This written narrative demonstrates that the existing improvements listed above, and the planned new improvements meet the current standards of the City of Sherwood Code. Additionally, this written statement includes findings of fact demonstrating that the application complies with all applicable approval criteria and that the project will not result in a change to the original conditions of approval. These findings are supported by substantial evidence in the application, including preliminary plans and other written documentation. Considered together, this information provides the necessary basis for the City of Sherwood to approve the application.

II. Site Description/Setting

The project site is a ±16.9-acre property zoned General Industrial (GI). The northern boundary of the site has frontage and access on SW Tualatin-Sherwood Road, a Washington County arterial road. Washington County is in the process of purchasing ±9½ feet of additional frontage from the property owner for planned road widening, which is projected to occur in 2022. Portland and Western Railroad line runs along the northwestern boundary of the site.

The site is bisected by a 250-foot-wide Bonneville Power Administration (BPA) transmission easement running east and west. Existing buildings, loading docks, storage tanks, and outdoor storage areas are located on the southern portion of the site, beyond the BPA easement. The warehouse and additional storage area planned with this application will be constructed adjacent to the existing warehouse in the southern portion of the site, next to the existing buildings and loading areas. The northern portion of the property—which contains a security fence, a paved access road, a paved truck parking area, a lined retention pond, and some unimproved land—will not be impacted.

The project site is surrounded by other large-scale industrial uses on all sides. Pride Disposal operations facility and recycling depot is located along the northeastern boundary of the site. Along the project's southeastern and southern perimeter is Allied Systems Company, a manufacturer of large-material-handling equipment and machinery. The grade of Allied Systems' site is substantially higher in comparison with the grade of the Applicant's site, which effectively screens it from public view along SW Oregon Street. The southwestern boundary of the site abuts Rock Creek Greenway. The Applicant donated ±2 acres of

land within Rock Creek floodplain to the City of Sherwood in 1992; the floodplain is now preserved as a habitat conservation area, without public access. Therefore, there are no public views of the Applicant's facility from the west. The adjacent properties operate heavy machinery, have truck and trailer parking areas, and loading and outdoor storage areas along the boundaries of their sites. Warehousing, distribution, and outdoor storage activities planned to be conducted at the Applicant's facility are similar to/the same as what has been occurring for some time and are compatible with surrounding uses and will not cause adverse visual impacts on the adjacent sites.

III. Applicable Review Criteria

CITY OF SHERWOOD ZONING AND COMMUNITY DEVELOPMENT CODE

Division II. - LAND USE AND DEVELOPMENT

Chapter 16.31 - INDUSTRIAL LAND USE DISTRICTS

16.31.020 - Uses

A. The table below identifies the land uses that are permitted outright (P), permitted conditionally (C) and not permitted (N) in the industrial zoning districts. The specific land use categories are described and defined in Chapter 16.88.

B. Uses listed in other sections of this Code, but not within this specific table are prohibited.

C. Any use not otherwise listed that can be shown to be consistent or associated with the uses permitted outright or conditionally in the industrial zones or contribute to the achievement of the objectives of the industrial zones may be permitted outright or conditionally, utilizing the provisions of Chapter 16.88.

D. Additional limitations for specific uses are identified in the footnotes of this table.

USES	GI Zone
INDUSTRIAL	
Manufacture, compounding, processing, assembling, packaging, treatment, fabrication of products contained wholly within an enclosed building provided exterior odor and noise is consistent with municipal code standards and there is no unscreened storage and not otherwise regulated elsewhere in the code	P
Manufacture, compounding, processing, assembling, packaging, treatment, fabrication of products not otherwise prohibited elsewhere in the code provided other off-site impacts are compliant with local, state and federal regulations	P
Manufacture, compounding, processing, assembling, packaging, treatment, or fabrication of acids, paints, dyes, soaps, ammonia, chlorine, sodium compounds, fertilizer, herbicides, insecticides and similar chemicals	C
Distribution, warehousing and storage associated with a permitted use operating on the same site	P
Distribution and warehousing up to 150,000 square feet, provided product(s) are stored within an enclosed building [9]	P

9. For standalone warehousing and distribution only. Warehousing and distribution associated with another approved use is ancillary and permitted without size limitations.

Response: The new warehouse would allow the Applicant to store and distribute more of the following food-grade chemicals and products: salt, sugar, dextrose, vitamin C, citric acid

(which is generally used in food and drink applications for pH adjustment), vinegar, brining chemicals for fruit applications, food preservatives, food coatings (to prevent discoloration during processing), gums, and heat transfer fluids. Storage/processing/packaging of these materials is permitted outright in the General Industrial zoning district.

In the future, the warehouse may be used for storage of products that are permitted with a conditional use permit. Those are the same materials that the Applicant is already storing in their existing warehouses under their original permit. Those include caustic soda, phosphoric acid, muriatic acid, and sulfuric acid. These materials are commonly used in the personal care industry, institutional cleaning and disinfecting products, water treatment, aerospace industry, and other industries that partner with the Applicant. This application includes a conditional use permit to allow the above-listed use.

Additionally, this application seeks retroactive conditional use approval for several chemical storage tanks that were installed to the west of the previously approved tanks. As described in response to subsections 16.82.020 and 16.82.010, those additional tanks are used the store the same materials as were previously approved (Sodium Hypo, Sulfuric Acid 50%, Aluminum Chlorohydrate, Aluminum Sulfate, as well as some non-hazardous chemicals). This written narrative and the preliminary plans (Exhibit A) demonstrate that the expanded storage tank area was constructed and is being operated in compliance with the original conditions of approval, as well as in full regulatory compliance with the laws, regulations, guidelines and specifications of the applicable local, state, and federal agencies.

16.31.030 - Development Standards

[...]

B. Development Standards

Except as otherwise provided, required minimum lot areas and dimensions and setbacks shall be:

Development Standards by Zone	GI
Lot area – Industrial Uses:	20,000 SF
Lot area – Commercial Uses (subject to Section 16.31.050):	20,000 SF
Lot width at front property line	100 feet
Lot width at building line	100 feet
Front yard setback [11]	20 feet
Side yard setback [10]	None
Rear yard setback [11]	None
Corner lot street side [11]	None
Height [11]	50 feet

10. When a yard is abutting a residential zone or public park, there shall be a minimum setback of forty (40) feet provided for properties zoned Employment Industrial and Light Industrial Zones, and a minimum setback of fifty (50) feet provided for properties zoned General Industrial.

11. Structures located within one-hundred (100) feet of a residential zone shall be limited to the height requirements of that residential zone.

Response: The project does not create a new lot; therefore, lot dimensional standards are not applicable. The new warehouse building and covered storage area are located at the rear of the property, and the General Industrial zoning district does not have minimum rear or side yard setback requirements. As shown on the Preliminary Building Elevations (Exhibit A), the warehouse building will be less than 50 feet in height. Therefore, the applicable criteria are met.

16.31.070 - Community Design

For standards relating to off-street parking and loading, energy conservation, historic resources, environmental resources, landscaping, access and egress, signs, parks and open space, on-site storage, and site design, the applicable provisions of Divisions V, VIII and IX will apply.

Response: The applicable provisions of Divisions V, VIII, and IX are addressed in the responses below.

16.31.080 –Floodplain

Except as otherwise provided, Section 16.134.020 shall apply.

Response: The applicable criteria of Section 16.134.020 are addressed in the responses below.

Division III. - ADMINISTRATIVE PROCEDURES

Chapter 16.58 VISION CLEARANCE AND FENCE STANDARDS

16.58.010 Clear Vision Areas

A. A clear vision area shall be maintained on the corners of all property at the intersection of two (2) streets, intersection of a street with a railroad, or intersection of a street with an alley or private driveway.

B. A clear vision area shall consist of a triangular area, two (2) sides of which are lot lines measured from the corner intersection of the street lot lines for a distance specified in this regulation; or, where the lot lines have rounded corners, the lot lines extended in a straight line to a point of intersection, and so measured, and the third side of which is a line across the corner of the lot joining the non-intersecting ends of the other two (2) sides.

C. A clear vision area shall contain no planting, sight obscuring fence, wall, structure, or temporary or permanent obstruction exceeding two and one-half (2½) feet in height, measured from the top of the curb, or where no curb exists, from the established street center line grade, except that trees exceeding this height may be located in this area, provided all branches and foliage are removed to the height of seven (7) feet above the ground on the sidewalk side and ten (10) feet on the street side.

The following requirements shall govern clear vision areas:

1. In all zones, the minimum distance shall be twenty (20) feet.

2. In all zones, the minimum distance from corner curb to any driveway shall be twenty-five(25) feet.

3. Where no setbacks are required, buildings may be constructed within the clear vision area.

Response: The scope of this project does not include any changes at the corners of the property where clear vision areas are required. The warehouse building and covered exterior storage area are located at the southeastern portion of the site, where it does not abut a street.

16.58.020 Fences, Walls and Hedges.

A. Purpose:

The fence standards promote the positive benefits of fences without negatively impacting the community or endangering public or vehicle safety. Fences can create a sense of privacy, protect children and pets, provide separation from busy streets, and enhance the appearance of the property by providing attractive landscape materials. The negative effect of fences can include the creation of street walls that inhibit police and community surveillance, decrease the sense of community, hinder the safe movement of pedestrians and vehicles, and create an unattractive appearance. These standards are intended to promote the positive aspects of fences and to limit the negative ones.

B. Applicability:

The following standards apply to walls, fences, hedges, lattice, mounds, and decorative toppers. These standards do not apply to sound walls and landscape features that are not hedges.

[…]

D. Location—Non-Residential Zone:

1. Fences up to eight (8) feet high are allowed along front, rear and side property lines, subject to Section 16.58.010. (Clear Vision Areas) and building department requirements.

2. A sound wall is permitted when required as a part of a development review or concurrent with a road improvement project. A sound wall may not be taller than twenty (20) feet.

3. Hedges up to twelve (12) feet tall are allowed.

Response: As shown on the Preliminary Site Plan (Exhibit A), a 6-foot-tall security fencing is planned along the rear of the property.

E. General Conditions—All Fences:

1. Retaining, masonry, concrete, and modular retaining walls may not be constructed within the eight-foot public utility easement (PUE) located on the front and corner street side yards, without approval from the City Engineer.

2. Fences must be structurally sound and maintained in good repair. A fence may not be propped up in any way from the exterior side.

3. Chain link fencing is not allowed in any required residential front yard setback.

4. The finished side of the fence must face the street or the neighboring property. This does not preclude finished sides on both sides.

5. Buffering: If a proposed development is adjacent to a dissimilar use such as a commercial use adjacent to a residential use, or development adjacent to an existing farming operation, a buffer plan that includes, but is not limited to, setbacks, fencing, landscaping, and maintenance via a homeowner's association or managing company must be submitted and approved as part of the preliminary plat or site plan review process per Section 16.90.020 and Chapter 16.122.

6. In the event of a conflict between this Section and the clear vision standards of Section 16.58.010, the standards in Section 16.58.010 prevail.

7. The height of a fence or wall is measured from the actual adjoining level of finished grade measured six (6) inches from the fence. In the event the ground is sloped, the lowest grade within six (6) inches of the fence is used to measure the height.

8. Call before you dig (811) if placing a fence within the public utility easement (PUE) to have your utility lines located. This easement area is usually located eight (8) feet across the front yard and the side yard setback on a corner lot. Utility lines can be buried just beneath the surface.

Response: As shown on the Preliminary Site Plan (Exhibit A), security fencing meets the applicable requirements of this code.

Chapter 16.70 - GENERAL PROVISIONS

16.70.010 - Pre-Application Conference

Pre-application conferences are encouraged and shall be scheduled to provide applicants with the informational and procedural requirements of this Code; to exchange information regarding applicable policies, goals and standards of the Comprehensive Plan; to provide technical and design assistance; and to identify opportunities and constraints for a proposed land use action. An applicant may apply at one time for all permits or zone changes needed for a development project as determined in the pre-application conference.

Response: A pre-application conference (PAC 2021-009) was held on August 12, 2021.

16.70.020 - Neighborhood Meeting

[...]

B. Applicants of Type III, IV and V applications are required to hold a meeting, at a public location for adjacent property owners and recognized neighborhood organizations that are within 1,000 feet of the subject application, prior to submitting their application to the City. Affidavits of mailing, sign-in sheets and a summary of the meeting notes must be included with the application when submitted. Applicants for Type II land use action are encouraged, but not required to hold a neighborhood meeting.

Response: The Applicant held a virtual neighborhood meeting on November 9, 2021, via Zoom, in conformance with the City of Sherwood COVID-19 Virtual Neighborhood Meeting Requirements dated May 11, 2020. Notice was provided to owners of property within

1,000 feet of the subject property. Documentation consistent with the provisions of this section is provided in Exhibit E. The criteria are met.

Chapter 16.72 - PROCEDURES FOR PROCESSING DEVELOPMENT PERMITS

16.72.010 - Generally

A. Classifications

Except for Final Development Plans for Planned Unit Developments, which are reviewed per Section 16.40.030, all quasi-judicial development permit applications and legislative land use actions shall be classified as one of the following:

[…]

3. Type III

The following quasi-judicial actions shall be subject to a Type III review process:

a. Conditional Uses

Response: This application includes a Conditional Use permit to allow storage of certain materials; therefore, it is subject to a Type III procedure, which is done concurrently with a Type IV review of the major modification to approved site plan.

4. Type IV

The following quasi-judicial actions shall be subject to a Type IV review process:

[…]

c. Site Plans — Greater than 40,000 square feet of floor area, parking or seating capacity.

d. Site Plans subject to Section 16.90.020.D.6.f.

e. Industrial Site Plans subject to Section 16.90.020.D.7.b.

[…]

Response: As indicated by City staff during the pre-application conference and in accordance with Section 16.90.030.A, the addition of a ±12,000-square-foot warehouse building requires a Major Modification to Approved Site Plan, which is subject to Type IV review procedure.

[…]

C. Approval Criteria

1. The approval criteria for each development permit application shall be the approval standards and requirements for such applications as contained in this Code. Each decision made by a Hearing Authority or Appeal Authority shall list the approval criteria and indicate whether the criteria are met. It is the applicant's burden to demonstrate to the Hearing Authority and Appeal Authority how each of the approval criteria are met. An application may be approved with conditions of approval imposed by the Hearing Authority or Appeal Authority. On appeal, the Appeal Authority may affirm,

reverse, amend, refer, or remand the decision of the Hearing Authority.

Response: This narrative demonstrates how the project meets the applicable approval criteria contained within this Code.

2. In addition to Section 1 above, all Type IV quasi-judicial applications shall also demonstrate compliance with the Conditional use criteria of Section 16.82.020.

Response: Compliance with Section 16.82.020 is addressed in the responses below.

16.72.020 - Public Notice and Hearing

[…]

B. Posted Notice

[…]

2. Signage must be posted on the subject property fourteen (14) calendar days in advance of the staff decision on Type II applications and twenty (20) calendar days in advance of the initial hearing before the Hearing Authority for Type III, IV and V applications.

a. on-site posted notice shall provide a general description of the land use action proposed, the project number and where additional information can be obtained.

b. On-site posted notice shall be designed to be read by motorists passing by; the exact size and font style to be determined by the City.

c. On-site posted notice shall be located on the property in a manner to be visible from the public street. For large sites or sites with multiple street frontages, more than one sign may be required.

Response: This requirement is understood. The Applicant will post the required signage on the property along SW Tualatin-Sherwood Road frontage 20 days prior to the hearing. At the time of this submittal, the hearing date has not been scheduled.

[…]

Chapter 16.82 - CONDITIONAL USES

16.82.010 - Generally

[…]

B. Changes in Conditional Uses

Changes in use or expansion of a legal non-conforming use, structure or site, or alteration of structures or uses classified as conditional uses, that either existed prior to the effective date of this Code or were established pursuant to this Chapter shall require the filing of a new application for review conforming to the requirements of this Chapter if the proposed changes would increase the size, square footage, seating capacity or parking of existing permitted improvements by twenty percent (20%) or more.

Response: As discussed in the response to Section 16.31.020, above, the Applicant plans to use the new warehouse and covered storage area to serve the growing needs of their food-industry business. However, for long-term business success, the facility needs to be constructed to H-2 Building Code occupancy classification to allow flexibility in the types and quantity of materials being stored. To plan for future growth and business needs changes and to ensure that the warehouse will meet the requirements of the building code, the Applicant desires to obtain a Conditional Use approval to allow storage of chemicals in the warehouse which are permitted conditionally in Code Section 16.31.020.

Additionally, this application seeks retroactive approval for the previously completed outdoor storage areas, including covered and uncovered storage, and chemical storage tanks, beyond what was approved by the initial site permit (SP 92-07). These areas are labeled on Exhibit P. Those areas are used to store the same materials that were previously approved by SP 92-07, which include Sodium Hypo, Sulfuric Acid 50%, Aluminum Chlorohydrate, Aluminum Sulfate, as well as other non-hazardous chemicals. As further discussed under subsections 16.82.020.C and 16.98.030 in this written narrative, the Applicant has been safely handling the materials listed above at this facility for the past three decades, in compliance with the laws, regulations, guidelines and specifications of the applicable local, state, and federal agencies.

C. Application and Fee

An application for a Conditional Use Permit (CUP) shall be filed with the City and accompanied by the appropriate fee pursuant to Section 16.74.010. The applicant is responsible for submitting a complete application which addresses all criteria of this Chapter and other applicable sections of this Code.

Response: An application and fee are included with this application. This written narrative demonstrates compliance with the criteria of this Chapter and other applicable section of the Code.

16.82.020 - Permit Approval

A. Hearing Authority Action

1. The Hearings Authority shall conduct a public hearing pursuant to Chapter 16.72 and take action to approve, approve with conditions, or deny the application. Conditions may be imposed by the Hearings Authority if necessary to fulfill the requirements of the adopted Comprehensive Plan, Transportation System Plan, or the Code. The decision shall include appropriate findings of fact as required by this Section, and an effective date.

Response: The Applicant acknowledges that reasonable conditions may be imposed.

…

C. Use Criteria

No conditional use shall be granted unless each of the following is found:

1. **All public facilities and services to the proposed use, including but not limited to sanitary sewers, water, transportation facilities, and services, storm drains, electrical distribution, park and open space and public safety are adequate; or that the construction of improvements needed to provide adequate services and facilities is guaranteed by binding agreement between the applicant and the City.**

Response: As demonstrated on the Preliminary Composite Utility Plan (Exhibit A), the project, including previously improved outdoor storage areas, the new warehouse and new covered storage area, is served by adequate public facilities.

2. **Proposed use conforms to other standards of the applicable zone and is compatible with abutting land uses in regard to noise generation and public safety.**

Response: The existing and planned use is conditionally permitted in the General Industrial zoning district and is compatible with the surrounding industrial land uses.

3. **The granting of the proposal will provide for a facility or use that meets the overall needs of the community and achievement of the goals and/or policies of the Comprehensive Plan, the adopted City of Sherwood Transportation System Plan and this Code.**

Response: Granting of this conditional use will result in tangible benefits for the community by providing investment in the area, boosting economic development, increasing employment stability, and generating city tax revenues. Moreover, it will spur regional economic growth since Cascade Columbia Distribution supports small- and large-scale food producers throughout the region, as well as in the neighboring states of Washington and Idaho. The planned use is appropriate for the GI-zoned district and with the right infrastructure, which includes the needed warehousing space, Cascade Columbia Distribution can deliver jobs and economic growth. The approval of this project will ensure that local businesses like Cascade Columbia Distribution expand and/or remain in the City of Sherwood.

This is in line with the City's economic development goals outlined in Chapter 4 of the Comprehensive Plan. Specifically, Policy 5 states that "the City will seek to diversify and expand commercial and industrial development in order to provide nearby job opportunities and expand the tax base". Additionally, the Comprehensive Plan Economic Development Strategy includes supporting "existing businesses … that provide local family-wage jobs".

4. **Surrounding property will not be adversely affected by the use, or that the adverse effects of the use on the surrounding uses, the neighborhood, or the City as a whole are sufficiently mitigated by the conditions proposed.**

Response: As previously discussed, the subject site is surrounded with other industrially zoned properties and is compatible with the uses intended for General Industrial zoning district.

The construction of a warehouse and covered storage at the existing facility will not result in adverse effects on the surrounding neighborhood, or the City as a whole.

5. **The impacts of the proposed use of the site can be accommodated considering size, shape, location, topography and natural features.**

Response: This project consists of a site plan modification at a location with a pre-existing land use. The addition of a warehouse and covered storage area will not generate discernible impacts, which is supported by the findings in the technical reports, including the Transportation Analysis Memo prepared by Lancaster Mobley (Exhibit L) and the Natural Resource Assessment Report (Exhibit I).

6. **The use as proposed does not pose likely significant adverse impacts to sensitive wildlife species or the natural environment.**

Response: Clean Water Services (CWS) has reviewed the project and concluded that it will not impact sensitive wildlife species or the natural environment. Please refer to the Service Provider Letter included as Exhibit H. Notably, CWS issued a certificate of excellence to Cascade Columbia Distribution in 2020 for meeting the sanitary industrial criteria and operating the entire year without a violation that includes exceeding purchased flow capacity, late reports, and pH level. This award highlights the Applicant's commitment to help protect the environment, which is recognized by the water resources management authority.

As noted earlier, this application also seeks retroactive conditional use approval for a previously completed improvements beyond the approved site plan, which includes existing outdoor storage areas, covered outdoor storage structures, and additional chemical storage tanks. Those improvements are identified on Exhibit P. Spills are unlikely, but in case of a spill, the facility has an advanced and reliable system in place to capture and treat the spill and not allow it to enter the adjacent creek or storm drains and cause pollution. Similarly to the chemical storage tanks that were approved under the initial site permit, the tanks that were added later are equipped with drains that collect runoff and discharge it to the special pre-treatment system. The pretreatment system is a set of tanks that capture industrial wastewater from operations. This water is pumped into a large batch tank and is pH adjusted to meet the stringent parameters of the Applicant's CWS discharge permit. Water samples are tested prior to each release. The discharge line is equipped with a permanent meter and pH probe that monitors the pH levels during the entire process and the amount of discharge that enters the drain. CWS inspects this process and regularly performs independent verification of samples.

While industrial packaging areas drain to the pre-treatment system described above, the paved truck parking area is also equipped with a secondary containment system, which provides an essential line of defense in the event of a failure of the primary containment and prevents a spill from reaching drainage channels. Surface runoff from the truck parking area flows to a lined detention pond which is equipped with a pH meter, alarm and signal light to alert the facility staff of a spill. Parking lot stormwater runoff

undergoes the same testing process as the runoff from industrial packaging areas prior to being released. In case of a spill, the Applicants has the capability to redirect stormwater to the pre-treatment system. Absolutely no water is allowed to go offsite without visual and physical confirmation that it is not contaminated. Please refer to Exhibit Q, Clean Water Services Permit, for specific the criteria for pond sampling and testing and for the effluent industrial wastewater. The Applicant's operation is highly regulated by responsible federal state, and local agencies, as described in more detail under subsection 16.98.030.C.…

D. Additional Conditions

In permitting a conditional use or modification of an existing conditional use, additional conditions may be applied to protect the best interests of the surrounding properties and neighborhoods, the City as a whole, and the intent of this Chapter. These conditions may include but are not limited to the following:

1. **Mitigation of air, land, or water degradation, noise, glare, heat, vibration, or other conditions which may be injurious to public health, safety or welfare in accordance with environmental performance standards.**
2. **Provisions for improvement of public facilities including sanitary sewers, storm drainage, water lines, fire hydrants, street improvements, including curb and sidewalks, and other above and underground utilities.**
3. **Increased required lot sizes, yard dimensions, street widths, and off-street parking and loading facilities.**
4. **Requirements for the location, number, type, size or area of vehicular access points, signs, lighting, landscaping, fencing or screening, building height and coverage, and building security.**
5. **Submittal of final site plans, land dedications or money-in-lieu of parks or other improvements, and suitable security guaranteeing conditional use requirements.**
6. **Limiting the number, size, location, height and lighting of signs.**
7. **Requirements for the protection and preservation of existing trees, soils, vegetation, watercourses, habitat areas and drainage areas.**
8. **Requirements for design features which minimize potentially harmful environmental impacts such as noise, vibration, air pollution, glare, odor and dust.**

Response: The Applicant acknowledges that reasonable conditions may be imposed; however, the findings in this narrative as well as the technical reports by third-party consultants sufficiently demonstrate that the scope of this project does not generate impacts that necessitate mitigation or additional conditions.

Division V. - COMMUNITY DESIGN

Chapter 16.90 - SITE PLANNING

[…]

16.90.020 - Site Plan Review

A. Site Plan Review Required

Site Plan review is required prior to any substantial change to a site or use that does not meet the criteria of a minor or major modification, issuance of building permits for a new building or structure, or for the substantial alteration of an existing structure or use.

Response: This written narrative demonstrates that the additional warehouse, covered outdoor storage area, and the associated site improvements are in compliance with the approval criteria of Chapter 16.90. The narrative also demonstrates that the existing improvements that were completed beyond the approved CP-92-07 and SP-04-06 site permits also meet the current standards and therefore can be approved retroactively. The existing improvements that are sought to be approved retroactively are illustrated on Exhibit P and include the following:

1. Area 1 - this gravel area was installed by the construction company working on the repairs to the rail trestle as a construction staging area. The area consists of six-inch base layer of gravel with fabric underneath. The staging yard remained after the repairs, and the Applicant currently uses it for parking/storage of equipment (truck trailers). This area is planned to be paved as part of this land use application to bring parking into compliance.

2. Area 2 – an overflow parking area was added for employees. It consists of an 8-inch base layer of gravel with fabric underneath. This application includes improvements to existing off-street parking, which bring those parking areas into compliance with the current standards, as described in subsection 16.94, including asphalt paving and striping.

3. Area 3 – this asphalt parking area was added for truck storage/parking. As described above, the area is designed with a secondary containment system, including a retention pond which is equipped with a pH meter, alarm and signal light to alert the facility staff in case of a spill. The stormwater runoff from this truck parking area is tested prior to being released to ensure compliance with the parameters of Applicant's CWS discharge permit. If needed, stormwater is routed from the retention pond to a pre-treatment system.

4. Area 4 – this gravel area was added for more efficient circulation, and it drains to the existing stormwater swale along SW Tualatin-Sherwood Road. A truck scale/weight station was added in this location, as identified on the Preliminary Existing Condition Plan – North (Exhibit A).

5. Area 5 – asphalt paving was added to accommodate storage of empty containers. The area around that is graveled and is also used for empty containers storage. This area is fully contained, a membrane is applied

underneath, and even rainwater has to go through the Applicant's sewer treatment system which is regulated by CWS.

6. Area 6 – chemical storage tanks were added to store the same chemicals that were previously approved and had already been stored at the facility, as described above under subsection 16.82.010.

7. Area 7 - a rain cover for truck loading area was added. The structure meets the current building code, and the Applicant plans to obtain a retroactive building permit for it. The ramp and the truck loading rack was all part of the original plant design and is included in the original permit.

8. Area 8 – an additional canopy cover over a poured foundation was installed for more covered workspace for existing processes, which is consistent with the conditions of approval of the initial site permit SP-92-07 recommending that roofing is extended over open storage areas for additional rainfall protection. The structure meets the current building code, and the Applicant plans to obtain a retroactive building permit for it. These areas drain to the sanitary sewer treatment tanks and runoff does not leave the site. The type of land use has not changed - there have not been any new processes or chemicals added.

9. Area 9 – this area is used for outdoor storage of empty containers. It was paved to keep forklifts from getting stuck. As demonstrated by the Preliminary Existing Conditions Plan – South (Exhibit A) and analyzed in the Preliminary Stormwater Report (Exhibit O), storm drains were installed in this area that convey runoff to the retention pond.

10. Area 10 - this area was paved as part of the scope that was approved in 2004 under site permit for Building D. Runoff from this paved area drains to the detention pond, as demonstrated by the Preliminary Existing Conditions Plan – South (Exhibit A) and described in the Preliminary Stormwater Report (Exhibit O). The needs of the facility required that this area is used for storage of approved chemicals instead of parking, as had been previously planned. This application includes a new covered outdoor storage area in this location. Previously required parking is now provided to the north of Buildings A and B.

[…]

D. Required Findings

No site plan approval will be granted unless each of the following is found:

1. The proposed development meets applicable zoning district standards and design standards in Division II, and all provisions of Divisions V, VI, VIII and IX.

Response: The findings in this written narrative, preliminary plans, and other documentation included in this application demonstrate compliance with the listed approval criteria.

2. **The proposed development can be adequately served by services conforming to the Community Development Plan, including but not limited to water, sanitary facilities, storm water, solid waste, parks and open space, public safety, electric power, and communications.**

Response: The subject property is adequately served by public urban services. Sanitary sewer, water, and franchise utilities are located within SW Tualatin-Sherwood Road. This criterion is met.

3. **Covenants, agreements, and other specific documents are adequate, in the City's determination, to assure an acceptable method of ownership, management, and maintenance of structures, landscaping, and other on-site features.**

Response: New covenants, agreements, or other specific documents addressing ownership, management, and maintenance of structures, landscaping, and other on-site features are neither necessary nor planned. The criterion does not apply.

4. **The proposed development preserves significant natural features to the maximum extent feasible, including but not limited to natural drainage ways, wetlands, trees, vegetation (including but not limited to environmentally sensitive lands), scenic views, and topographical features, and conforms to the applicable provisions of Division VIII of this Code and Chapter 5 of the Community Development Code.**

Response: As shown on the Preliminary Grading and Erosion and Sediment Control Plan (Exhibit A), the limit of grading associated with the warehouse construction is outside the off-site wetland boundary, which will be protected throughout construction activities. A portion of the 50-foot-wide Vegetated Corridor associated with the off-site wetland extends into the project area. Clean Water Services (CWS) has conducted a Sensitive Area Pre-Screening Site Assessment, verifying that the project will not encroach into the Vegetated Corridor. A CWS Service Provider Letter is included in Exhibit H. Non-native invasive vegetation is required to be removed and approximately ±3,510 square feet of the existing Vegetated Corridor is required to be enhanced from marginal condition to good condition, per Enhancement Planting Specifications approved by CWS (Exhibit H). The site does not contain any protected scenic views. Written responses to the applicable provisions of Division VIII are provided further in this narrative. The applicable criteria are met.

5. **For developments that are likely to generate more than 400 average daily trips (ADTs), or at the discretion of the City Engineer, the applicant must provide adequate information, such as a traffic impact analysis (TIA) or traffic counts, to demonstrate the level of impact to the surrounding transportation system. The developer is required to mitigate for impacts attributable to the project, pursuant to TIA requirements in Section 16.106.080 and rough proportionality requirements in Section 16.106.090. The determination of impact or effect and the scope of the impact study must be coordinated with the provider of the affected transportation facility.**

Response: A licensed traffic engineer evaluated the project with regard to the requirements in Section 16.106.080 and determined that none of the criteria are met and that traffic impact analysis (TIA) is not required. The technical memorandum by Lancaster Mobley (Exhibit L) addresses a condition of approval from the City's 1993 decision.

> […]
>
> 7. Industrial developments provide employment opportunities for citizens of Sherwood and the region as a whole. The proposed industrial development is designed to enhance areas visible from arterial and collector streets by reducing the "bulk" appearance of large buildings. […]:

Response: The warehouse building and covered storage area will be located towards the rear of the site, behind existing industrial structures, at a distance ±1,000 feet away from SW Tualatin-Sherwood Road; therefore, they will not be visible from the road. The southeastern perimeter of the site abuts other properties zoned General Industrial which are improved with existing buildings and structures and are occupied with large industrial equipment. Additionally, the site not visible from the south and west due to existing dense vegetation along the north side of SW Oregon Street and the topography of the surrounding area. Therefore, the warehouse and covered storage area will not be visible from public rights-of-way, and the above design criteria do not apply to this project.

> 8. Driveways that are more than twenty-four (24) feet in width shall align with existing streets or planned streets as shown in the Local Street Connectivity Map in the adopted Transportation System Plan (Figure 17), except where prevented by topography, rail lines, freeways, pre-existing development, or leases, easements, or covenants.

Response: This site modification does not involve new driveways—the project will utilize the existing, previously approved driveways.

16.90.030 Site Plan Modifications and Revocation

A. Modifications to Approved Site Plans

1. Major Modifications to Approved Site Plans

a. Defined. A major modification review is required if one or more of the changes listed below are proposed:

(1) A change in land use (i.e. residential to commercial, commercial to industrial, etc.);

(2) An increase in density by more than ten (10) percent, provided the resulting density does not exceed that allowed by the land use district;

(3) A change in setbacks or lot coverage by more than ten (10) percent, provided the resulting setback or lot coverage does not exceed that allowed by the land use district;

(4) A change in the type and/or location of access-ways, drives or parking areas negatively affecting off-site traffic or increasing Average Daily Trips (ADT) by more than 100;

(5) An increase in the floor area or height proposed for non-residential use by more than ten (10) percent;

(6) A reduction of more than ten (10) percent of the area reserved for common open space; or

(7) Change to a condition of approval that was specifically applied to this approval (i.e. not a "standard condition"), or a change similar to items identified in Section 16.90.030.A.1.a.(1)—(2) as determined by the Review Authority.

Response: Based on criteria (3) and (5) above, the addition of a ±12,000-square-foot warehouse and an ±8,400-square-foot covered storage area constitutes a change in lot coverage and an increase in floor area by more than 10 percent and is therefore considered a Major Modification to Approved Site Plan. As shown on the Preliminary Site Plan (Exhibit A), the setback and resulting lot coverage do not exceed GI zoning district standards.

b. Approval Criteria. An applicant may request a major modification as follows:

(1) Upon the review authority determining that the proposed modification is a major modification, the applicant must submit an application form, filing fee and narrative, and a site plan using the same plan format as in the original approval. The review authority may require other relevant information, as necessary, to evaluate the request.

(2) The application is subject to the same review procedure (Type II, III or IV), decision making body, and approval criteria used for the initial project approval, except that adding a Conditional Use to an approved Type II project is reviewed using a Type III procedure.

(3) The scope of review is limited to the modification request and does not open the entire site up for additional review unless impacted by the proposed modification. For example, a request to modify a parking lot requires site design review only for the proposed parking lot and any changes to associated access, circulation, pathways, lighting, trees, and landscaping.

(4) Notice must be provided in accordance with Chapter 16.72.020.

(5) The decision maker approves, denies, or approves with conditions an application for major modification based on written findings of the criteria.

Response: This application for a major modification is subject to Type IV review by the Planning Commission, and includes an application form (Exhibit B), filing fee and narrative, and Preliminary Plans (Exhibit A). These criteria are met.

[…]

Chapter 16.92 - LANDSCAPING

16.92.010 - Landscaping Plan Required

All proposed developments for which a site plan is required pursuant to Section 16.90.020 shall submit a landscaping plan that meets the standards of this Chapter. All areas not occupied by structures, paved roadways, walkways, or patios shall be landscaped or maintained according to an approved site plan.

Response: This project includes landscaped islands in the parking areas and a landscape strip south of the new paved parking area. A Preliminary Landscape Plan (Exhibit A) with planting details is included with this land use application. The limited scope of this modification does not include components which require additional landscaping, beyond parking islands and buffering, and beyond what was previously approved and provided by the Applicant.

16.92.030 - Site Area Landscaping and Perimeter Screening Standards

A. Perimeter Screening and Buffering

[…]

2. Perimeter Landscaping Buffer

a. A minimum ten (10) foot wide landscaped strip comprised of trees, shrubs and ground cover shall be provided between off-street parking, loading, or vehicular use areas on separate, abutting, or adjacent properties.

Response: As demonstrated by the Preliminary Existing Conditions Plan and Preliminary Site Plan (Exhibit A), there is an existing landscaping buffer along the perimeter of the site adjacent to parking, loading, and vehicular use areas and a proposed landscaping buffer south of the new paved parking area. Additionally, a privacy fence along the property line screens the site from the adjacent Pride Disposal site.

B. Parking Area Landscaping

[…]

3. Required Landscaping

There shall be at least forty-five (45) square feet parking area landscaping for each parking space located on the site. The amount of required plant materials are based on the number of spaces as identified below.

4. Amount and Type of Required Parking Area Landscaping

a. Number of Trees required based on Canopy Factor

Small trees have a canopy factor of less than forty (40), medium trees have a canopy factor from forty (40) to ninety

(90), and large trees have a canopy factor greater than ninety (90);

(1) Any combination of the following is required:

(i) One (1) large tree is required per four (4) parking spaces;

(ii) One (1) medium tree is required per three (3) parking spaces; or

(iii) One (1) small tree is required per two (2) parking spaces.

(iv) At least five (5) percent of the required trees must be evergreen.

(2) Street trees may be included in the calculation for the number of required trees in the parking area.

Response: As demonstrated by the Tree Canopy Calculations (Exhibit K) and described under subsection 16.142.070.D.3, the project site contains 170 mature trees with an expected tree canopy coverage of ±62 percent, significantly exceeding the minimum required 30 percent standard. Therefore, per the Applicant's discussion with staff, the existing onsite trees may be included in the calculation for the number of required trees in the parking area. The existing preserved trees meet the canopy factor, size and species standards.

b. Shrubs:

(1) Two (2) shrubs are required per each space.

(2) For spaces where the front two (2) feet of parking spaces have been landscaped instead of paved, the standard requires one (1) shrub per space. Shrubs may be evergreen or deciduous.

c. Ground cover plants:

(1) Any remainder in the parking area must be planted with ground cover plants.

(2) The plants selected must be spaced to cover the area within three (3) years. Mulch does not count as ground cover.

Response: As demonstrated by the Preliminary Plans (Exhibit A), parking areas are located within the high-voltage transmission line easement. In order to reduce wildfire risk, the easement agreement (Exhibit R) contains restrictions on landscaping and requires the property to be kept clear of all brush or timber and reserves the right to top, limb, fell, and remove all growing trees as part of transmission facilities maintenance. Therefore, due to the easement constraints, the parking area landscaping cannot be provided on this site.

5. Individual Landscape Islands Requirements

a. Individual landscaped areas (islands) shall be at least ninety (90) square feet in area and a minimum width of five (5) feet and shall be curbed to protect the landscaping.

b. Each landscape island shall be planted with at least one (1) tree.

c. Landscape islands shall be evenly spaced throughout the parking area.

d. Landscape islands shall be distributed according to the following:

(1) Residential uses in a residential zone: one (1) island for every eight (8) contiguous parking spaces.

(2) Multi or mixed-uses, institutional and commercial uses: one (1) island for every ten (10) contiguous parking spaces.

(3) Industrial uses: one (1) island for every twelve (12) contiguous parking spaces.

Response: As demonstrated by the Preliminary Plans (Exhibit A), the existing parking areas are being improved as part of this project to meet the current standards. Parking areas include appropriately sized and spaced landscape islands. Due to use restrictions in the transmission line easement, landscape materials in the islands are limited to shrubs and groundcover.

C. Screening of Mechanical Equipment, Outdoor Storage, Service and Delivery Areas

All mechanical equipment, outdoor storage and manufacturing, and service and delivery areas, shall be screened from view from all public streets and any adjacent residential zones. If unfeasible to fully screen due to policies and standards, the applicant shall make efforts to minimize the visual impact of the mechanical equipment.

Response: This property is not adjacent to residential zones. As discussed above, the location of the covered storage area is not visible from public streets, as it is set back ±1,000 feet from SW Tualatin-Sherwood Road. This criterion does not apply.

D. Visual Corridors

Except as allowed by subsection 6. above, new developments shall be required to establish landscaped visual corridors along Highway 99W and other arterial and collector streets, consistent with the Natural Resources and Recreation Plan Map, Appendix C of the Community Development Plan, Part II, and the provisions of Chapter 16.142 (Parks, Trees, and Open Space). Properties within the Old Town Overlay are exempt from this standard.

Response: Although the property itself is adjacent to an arterial street, no improvements are planned within the northern portion of the site, which abuts SW Tualatin-Sherwood Road. The warehouse is set ±1,000 feet from the street frontage; therefore, this criterion does not apply.

Chapter 16.94 - OFF-STREET PARKING AND LOADING

16.94.010 - General Requirements

[...]

E. Location

[…]

3. Vehicle parking is allowed only on improved parking shoulders that meet City standards for public streets, within garages, carports and other structures, or on driveways or parking lots that have been developed in conformance with this code. Specific locations and types of spaces (car pool, compact, etc.) for parking shall be indicated on submitted plans and located to the side or rear of buildings where feasible.

Response: The Preliminary Site Plan (Exhibit A) shows that required off-street parking is provided entirely on-site and existing parking areas are being improved to meet the current standards of the code. Therefore, the applicable criteria are met.

G. Surface and Drainage

1. All parking and loading areas shall be improved with a permanent hard surface such as asphalt, concrete or a durable pervious surface. Use of pervious paving material is encouraged and preferred where appropriate considering soils, location, anticipated vehicle usage and other pertinent factors.

2. Parking and loading areas shall include storm water drainage facilities approved by the City Engineer or Building Official.

Response: As demonstrated by the Preliminary Plans (Exhibit A), parking and loading areas are improved with a permanent hard surface and include storm water drainage facilities.

I. Parking and Loading Plan

An off-street parking and loading plan, drawn to scale, shall accompany requests for building permits or site plan approvals, except for single and two-family dwellings, and manufactured homes on residential lots. The plan shall show but not be limited to:

1. Delineation of individual parking and loading spaces and dimensions.

2. Circulation areas necessary to serve parking and loading spaces.

3. Location of accesses to streets, alleys and properties to be served, and any curb cuts.

4. Landscaping as required by Chapter 16.92.

5. Grading and drainage facilities.

6. Signing and bumper guard specifications.

7. Bicycle parking facilities as specified in Section 16.94.020.C.

8. Parking lots more than one (1) acre in size shall provide street-like features including curbs, sidewalks, and street trees or planting strips.

Response: Parking improvements meeting the above standards, as applicable, are demonstrated on the Preliminary Site Plan (Exhibit A).

[…]

16.94.020 - Off-Street Parking Standards

A. Generally

Where square feet are specified, the area measured shall be the gross building floor area primary to the functioning of the proposed use. Where employees are specified, persons counted shall be those working on the premises, including proprietors, during the largest shift at peak season. Fractional space requirements shall be counted as a whole space. The Review Authority may determine alternate off - street parking and loading requirements for a use not specifically listed in this Section based upon the requirements of comparable uses.

Table 1: Minimum and Maximum Parking Standards (Metro spaces are based on 1 per 1,000 sq ft of gross leasable area)			
	Minimum Parking Standard	Maximum Permitted Parking Zone A [1]	Maximum Permitted Parking Zone B [2]
General Office	2.7 (370 sf)	3.4	4.1
Warehouse	0.3	0.4	0.5

1. Parking Zone A reflects the maximum number of permitted vehicle parking spaces allowed for each listed land use. Parking Zone A areas include those parcels that are located within one-quarter (¼) mile walking distance of bus transit stops, one-half (½) mile walking distance of light rail station platforms, or both, or that have a greater than twenty-minute peak hour transit service.

2. Parking Zone B reflects the maximum number of permitted vehicle parking spaces allowed for each listed land use. Parking Zone B areas include those parcels that are located at a distance greater than one-quarter (¼) mile walking distance of bus transit stops, one-half (½) mile walking distance of light rail station platforms, or both.

Response: As demonstrated in the table below, 57 parking spaces are required for the entire site's office and warehouse uses, combined, based on the parking standards in Table 1 and the gross leasable floor area of each type of land use. Warehouse ratio (instead of industrial ratio) is applied to both indoor and covered outdoor storage areas because it the most appropriate standard based on the functioning of the Applicant's warehousing/distribution facility, which does not include manufacturing, production lines, etc.

Table 1: Required Parking Calculations

	Floor Area	Parking Standard	Number of Parking Spaces
Office floor area	±11,333 sf	2.7 spaces per 1,000 sf	31
Warehouse floor area	±87,673 sf	0.3 spaces per 1,000 sf	26
Required Parking:			57
Provided Parking:			60

B. Dimensional and General Configuration Standards

1. Dimensions. For the purpose of this Chapter, a "parking space" means a stall nine (9) feet in width and twenty (20) feet in length. Up to twenty five (25) percent of required parking spaces may have a minimum dimension of eight (8) feet in width and eighteen (18) feet in length so long as they are signed as compact car stalls.

2. Layout

Parking space configuration, stall and access aisle size shall be of sufficient width for all vehicle turning and maneuvering. Groups of more than four (4) parking spaces shall be served by a driveway so as to minimize backing movements or other maneuvering within a street, other than an alley. All parking areas shall meet the minimum standards shown in the following table and diagram.

Response: As demonstrated by the Preliminary Site Plan (Exhibit A), parking spaces meet the above dimensional and configuration standards, as applicable.

C. Bicycle Parking Facilities

1. General Provisions

a. Applicability. Bicycle parking spaces shall be provided for new development, changes of use, and major renovations, defined as construction valued at twenty-five (25) percent or more of the assessed value of the existing structure.

b. Types of Spaces. Bicycle parking facilities shall be provided in terms of short-term bicycle parking and long-term bicycle parking. Short-term bicycle parking is intended to encourage customers and other visitors to use bicycles by providing a convenient and readily accessible place to park bicycles. Long-term bicycle parking provides employees, students, residents, commuters, and others who generally stay at a site for at least several hours a weather-protected place to park bicycles.

c. Minimum Number of Spaces. The required total minimum number of bicycle parking spaces for each use category is shown in Table 4, Minimum Required Bicycle Parking Spaces.

d. Minimum Number of Long-term Spaces. If a development is required to provide eight (8) or more required bicycle parking spaces in Table 4, at least twenty-five (25) percent shall be provided as long-term bicycle with a minimum of one (1) long-term bicycle parking space.

e. Multiple Uses. When there are two or more primary uses on a site, the required bicycle parking for the site is the sum of the required bicycle parking for the individual primary uses.

Response: Long-term bicycle parking for employees is not required. Short-term bicycle parking for visitors is not planned with this application, as cycling, as transportation mode, is not compatible with the nature of the industrial chemical distribution facility, which does not have customers or visitors arriving by bicycles. Moreover, providing bike parking near the warehouse could pose potential safety issues because warehouse traffic includes forklifts and large commercial trucks, which do not invite cycling through that area.

16.94.030 - Off-Street Loading Standards

A. Minimum Standards

[…]

2. The minimum loading area for non-residential uses shall not be less than ten (10) feet in width by twenty-five (25) feet in length and shall have an unobstructed height of fourteen (14) feet.

3. Multiple uses on the same parcel or adjacent parcels may utilize the same loading area if it is shown in the development application that the uses will not have substantially overlapping delivery times.

[…]

Response: As shown on the Preliminary Site Plan (Exhibit A), an adequately sized loading area currently exists at this facility. A new loading area is not planned to be provided with this application, nor is it needed.

Chapter 16.96 - ON-SITE CIRCULATION

[…]

16.96.030 - Minimum Non-Residential Standards

Minimum standards for private, on-site circulation improvements in non-residential developments:

A. Driveways

Response: As shown on the Preliminary Site Plan (Exhibit A), the new warehouse and covered storage area are planned to be located at an improved site with existing driveways. New driveways are not needed for this project and are not planned.

B. Sidewalks and Curbs

4. Exceptions. Private pathways/sidewalks shall not be required where physical or topographic conditions make a connection impracticable, where buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment; or pathways would violate provisions of leases, restrictions or other agreements.

Response: Pedestrian sidewalks and curbs are not planned with this application, as this project qualifies for an exception under Section 16.96.030.B.4, above, due to physical conditions making such connection impracticable. The planned warehouse and covered outdoor storage area are an addition to an existing facility that was constructed in 1994. As shown on the Preliminary Existing Conditions Plan (Exhibit A), the site is currently improved with concrete pavement, which functions as a vehicular use area for forklifts and large trucks, as well as a storage area for outdoor pallets and large drums. Providing a new private pathway/sidewalk system at the planned warehouse and covered storage area would necessitate retrofitting the entire distribution facility, which would not only impede the Applicant's operations and traffic circulation at this distribution center but would also be cost-prohibitive. Moreover, for reasons outlined above, it is not industry standard practice to provide sidewalks with curbs at a warehouse/distribution business. Instead, the Applicant has created and adheres to a warehouse traffic management plan, which serves to satisfy the intent of this Code to provide safe pedestrian access.

16.96.040 - On-Site Vehicle Circulation

[...]

C. Connection to Streets

1. Except for joint access per this Section, all ingress and egress to a use or parcel shall connect directly to a public street, excepting alleyways.

2. Required private sidewalks shall extend from the ground floor entrances or the ground floor landing of stairs, ramps or elevators to the public sidewalk or curb of the public street which provides required ingress and egress.

Response: As shown on the Preliminary Existing Conditions Plan (Exhibit A), there is an existing connection to SW Tualatin-Sherwood Road. The scope of this project does not include changes to on-site vehicular circulation on the existing site. To the extent that this criterion is applicable, it is met.

Chapter 16.98 - ON-SITE STORAGE

[…]

16.98.020 - Solid Waste and Recycling Storage

All uses shall provide solid waste and recycling storage receptacles which are adequately sized to accommodate all solid waste generated on site. All solid waste and recycling storage areas and receptacles shall be located out of public view. Solid waste and recycling receptacles for multi-family, commercial, industrial and institutional uses shall be screened by six (6) foot high sight-obscuring fence or masonry wall and shall be easily accessible to collection vehicles.

Response: The facility will continue to use the existing trash enclosure; changes to its size or location are not planned with this project. The Preliminary Site Plan (Exhibit A) showing the new warehouse and covered storage area was reviewed and approved by Pride Disposal; please refer to Exhibit N.

16.98.030 - Material Storage

A. Generally. Except as otherwise provided herein, external material storage is prohibited, except in commercial and industrial zones where storage areas are approved by the Review Authority as part of a site plan or per Section 16.98.040.

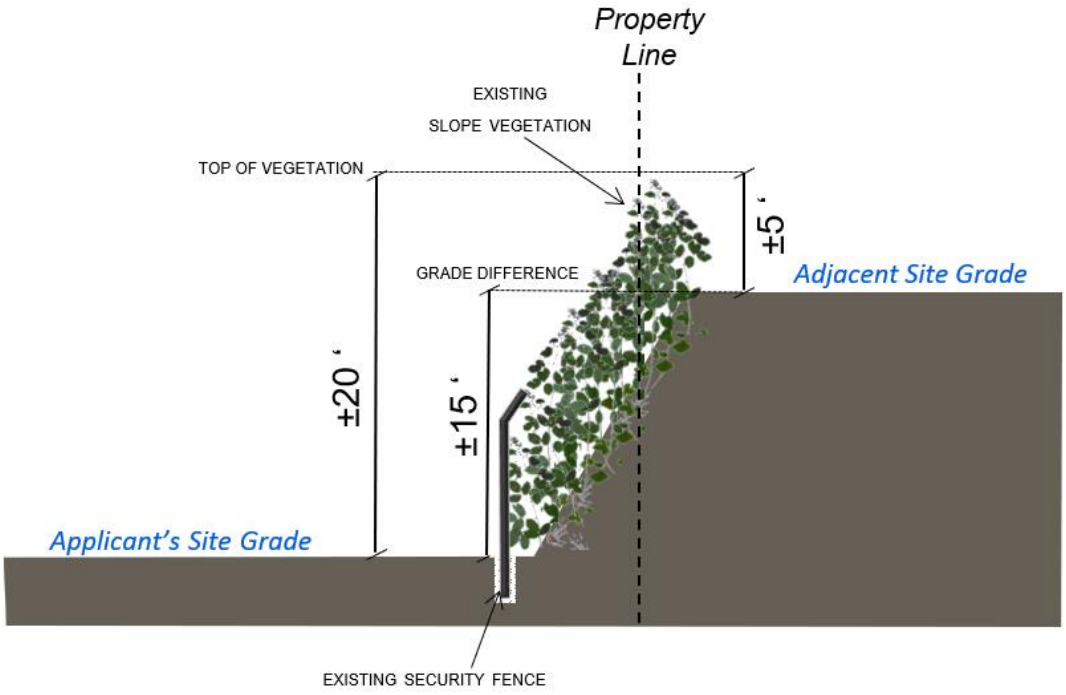
Response: External material storage is permitted in industrial zones, subject to site plan approval.

B. Standards. Except as per Section 16.98.040, all service, repair, storage, and merchandise display activities carried on in connection with any commercial or industrial activity, and not conducted within an enclosed building, shall be screened from the view of all adjacent properties and adjacent streets by a six (6) foot to eight (8) foot high, sight obscuring fence subject to chapter 16.58.020. In addition, unless adjacent parcels to the side and rear of the storage area have existing solid evergreen screening or sight-obscuring fencing in place, new evergreen screening no less than three (3) feet in height shall be planted along side and rear property lines. Where other provisions of this Code require evergreen screening, fencing, or a landscaped berm along

side and rear property lines, the additional screening stipulated by this Section shall not be required.

Response: The portion of the site where the new exterior covered storage area is planned is ±15 feet below the grade of the adjacent industrial site. The slope separating the two lots is currently covered with dense vegetation, which extends another ±5 feet above the top of the higher grade. Please refer to Figure 1 below for a conceptual illustration of the site topography. Since the slope and existing vegetation along the property line essentially serves as a visual screen and exceeds the 6- to 8-foot height of the fencing that would otherwise be required by this code, additional screening along covered storage area is not necessary and is not planned.

Figure 1: Site Topography



C. Hazardous Materials. Storage of hazardous, corrosive, flammable, or explosive materials, if such storage is otherwise permitted by this Code, shall comply with all local fire codes, and Federal and State regulations.

Response: The materials planned to be stored at Cascade Columbia's warehouse and covered storage area are described in the response to Section 16.31.020. Storage of these materials is permitted in the GI zoning district with a conditional use approval. This application also seeks retroactive approval for expanded additional checmical storage areas which were added beyond the approved site plan. As discussed earlier in this written narrative, the additional chemical storage tanks (Area 6 on Exhibit P) and outdoor storage areas (Areas 5 and 8 on Exhibit P) are used to store the same materials as

previously approved by SP 92-07 and as the Applicant has been storing and handling at the facility since 1993. The Applicant's facility operates in compliance with applicable local fire codes, and State and Federal regulations. Below is a list of some of the various agencies that regulate and routinely monitor the operations of Cascade Columbia Distribution facility:

1. **U.S. Food and Drug Administration**: the Applicant's facility is licensed with the USDA and is subject to periodic inspections. They are licensed on two packing lines with FDA Pharma and are subject to annual inspections by federal regulatory officers on a routine basis.
2. **U.S. Department of Homeland Security** conducts annual audits of the facility's operations.
3. **U.S. Environmental Protection Agency (EPA):** the Applicant's facility handles multiple products licensed by the EPA for disinfection and are used in food applications and CIP (Cleaning in Place). Cascade Columbia Distribution's Risk Management Plan is monitored by the EPA and audited ever 5 years.
4. **Federal Rail Authority and ODOT Rail** conduct annual audits and review of all rail traffic. Cascade Columbia Distribution staff regularly attend training offered by ODOT Rail.
5. **Federal Motor Carrier Safety Administration** oversees the Applicant's drivers and commercial truck traffic. They provide safety rating as trucks are inspected at roadside scales and jump scales.
6. **U.S. Department of Transportation, Pipeline and Hazardous Materials Safety** overseas all transport, packaging, procedures, safety, security, training of the Applicant's hazmat operations.
7. **State of Oregon Department of Environmental Quality** regulates Cascade Columbia Distribution as a Conditionally Exempt Generator.
8. **Tualatin Valley Fire & Rescue** conducts annual audits and holds training drills to help all parties respond better and more efficiently to any potential chemical spills around the area. The Applicant offers frequent tours for the TVF&R trainees to familiarize them with packaging/labeling and types of material present at the facility, offers training on chemicals to TVF&R and acts as a resource for TVF&R to call on to better deal with chemical responses they may not be familiar with.
9. **Clean Water Services**: the Applicant holds an active permit; CWS conducts inspections every six months and monitors the testing of the sewer and stormwater output.
10. **Water Quality Association (WQA)** is an independent trade association providing accreditation to water treatment industry in the United States to American

National Standards Institute (ANSI) standards. The Applicant's facility is certified by WQA to NSF 60 standards (National Sanitation Foundation). The Applicant undergoes annual audit and submits samples for testing.

11. **The Safe Quality Food Institute** maintains a third-party certification on every process related to the Applicant's food storage, packaging, and distribution. They conduct annual audits of the facility.

12. **National Association of Chemical Distributors (NACD)**: Cascade Columbia Distribution is a member of the NACD. This professional industry association has published standards and requirements for distribution and sets the bar above others in the industry. Annual audits are conducted at the facility.

13. **Oregon Kosher:** rabbis conduct periodic inspections of food warehouse and labeling.

Division VI. - PUBLIC INFRASTRUCTURE

Chapter 16.106 - TRANSPORTATION FACILITIES

16.106.010 - Generally

A. Creation

Public streets shall be created in accordance with provisions of this Chapter. Except as otherwise provided, all street improvements and rights-of-way shall conform to standards for the City's functional street classification, as shown on the Transportation System Plan (TSP) Map (Figure 15) and other applicable City standards. The following table depicts the guidelines for the street characteristics.

Response: The subject property has frontage on SW Tualatin-Sherwood Road (Washington County arterial road). The scope of this project does not include creation of public streets.

16.106.020 - Required Improvements

A. Generally

Except as otherwise provided, all developments containing or abutting an existing or proposed street, that is either unimproved or substandard in right-of-way width or improvement, shall dedicate the necessary right-of-way prior to the issuance of building permits and/or complete acceptable improvements prior to issuance of occupancy permits. Right-of-way requirements are based on functional classification of the street network as established in the Transportation System Plan, Figure 17.

B. Existing Streets

Except as otherwise provided, when a development abuts an existing street, the improvements requirement shall apply to that portion of the street right-of-way located between the centerline of the right-of-way and the property line of the lot proposed for development. In no event shall a required street improvement for an existing street exceed a pavement width of thirty (30) feet.

Response: Washington County Department of Land Use and Transportation (DLUT) is coordinating right-of-way acquisition with the Applicant for the planned widening of SW Tualatin-

Sherwood Road as part of a larger project. Please refer to the trip analysis in Lancaster Mobley's Engineering Traffic Analysis Memo (Exhibit L), which concluded that the planned site modifications, as well as previously expanded storage areas, related to this land use application do not increase vehicle trips to/from the site and will not affect the planned road improvements. Along with the new warehouse and covered storage area, the trip generation estimate includes the existing outdoor storage areas that were added by the Applicant after the project had been originally approved (Exhibit P). The Traffic Analysis Memo concludes that the combined improvements do not warrant a traffic signal or additional analysis beyond the included trip generation memorandum.

[…]

16.106.080 - Traffic Impact Analysis (TIA)

[...]

B. Applicability

A traffic impact analysis (TIA) shall be required to be submitted to the City with a land use application at the request of the City Engineer or if the proposal is expected to involve one (1) or more of the following:

1. An amendment to the Sherwood Comprehensive Plan or zoning map.

2. A new direct property approach road to Highway 99W is proposed.

3. The proposed development generates fifty (50) or more PM peak-hour trips on Highway 99W, or one hundred (100) PM peak-hour trips on the local transportation system.

4. An increase in use of any adjacent street or direct property approach road to Highway 99W by ten (10) vehicles or more per day that exceed the twenty thousand-pound gross vehicle weight.

5. The location of an existing or proposed access driveway does not meet minimum spacing or sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, thereby creating a safety hazard.

6. A change in internal traffic patterns that may cause safety problems, such as back up onto the highway or traffic crashes in the approach area.

Response: A licensed traffic engineer at Lancaster Mobley evaluated the project relative to Section 16.106.080 and determined that none of the criteria are met and a TIA is not required. The technical memorandum (Exhibit L) addresses a condition of approval from the City's 1993 decision.

16.106.090 Rough Proportionality

A. Purpose

The purpose of this section is to ensure that required transportation facility improvements are roughly proportional to the potential impacts of the proposed development. The rough proportionality requirements of this section apply to both frontage and non-frontage improvements. A

proportionality analysis will be conducted by the City Engineer for any proposed development that triggers transportation facility improvements pursuant to this chapter. The City Engineer will take into consideration any benefits that are estimated to accrue to the development property as a result of any required transportation facility improvements. A proportionality determination can be appealed pursuant to Chapter 16.76. The following general provisions apply whenever a proportionality analysis is conducted.

B. Mitigation of impacts due to increased demand for transportation facilities associated with the proposed development shall be provided in rough proportion to the transportation impacts of the proposed development. When applicable, anticipated impacts will be determined by the TIA in accordance with Section 16.106.080. When no TIA is required, anticipated impacts will be determined by the City Engineer.

Response: Since this project does not have an impact on transportation facilities, mitigation not is necessary.

Chapter 16.108 IMPROVEMENT PLAN REVIEW

16.108.010 Preparation and Submission

An improvement plan shall be prepared and stamped by a Registered Civil Engineer certifying compliance with City specifications. Two (2) sets of the plan shall be submitted to the City for review. An improvements plan shall be accompanied by a review fee as per this Section.

A. Review Fee

Plan review fees are calculated as a percentage of the estimated total cost of improvements and are set by the "Schedule of Development and Business Fees" adopted by Resolution of the Council. This schedule is included herein for the purposes of information, but is deemed to be separate from and independent of this Code.

B. Engineering Agreement

A copy of an agreement or contract between the applicant and Registered Civil Engineer for:

1. Surveying sufficient to prepare construction plans.
2. Preparation of construction plans and specifications.
3. Construction staking, and adequate inspection.
4. Construction notes sufficient to develop accurate as-built plans.
5. Drawing of accurate as-built plans and submission of reproducible mylars for finals to the City.
6. Certificate stating that construction was completed in accordance with required plans and

Response: Following land use approval, the Applicant will submit an improvement plan meeting the above criteria, as necessary.

[…]

Chapter 16.110 - SANITARY SEWERS

16.110.010 - Required Improvements

Sanitary sewers shall be installed to serve all new developments and shall connect to existing sanitary sewer mains. Provided, however, that when impractical to immediately connect to a trunk sewer system, the use of septic tanks may be approved, if sealed sewer laterals are installed for future connection and the temporary system meets all other applicable City, Clean Water Services, Washington County and State sewage disposal standards.

16.110.020 - Design Standards

A. Capacity

Sanitary sewers shall be constructed, located, sized, and installed at standards consistent with this Code, the Sanitary Sewer Service Plan Map in the Sanitary Sewer Master Plan, and other applicable Clean Water Services and City standards, in order to adequately serve the proposed development and allow for future extensions.

B. Over-Sizing

1. When sewer facilities will, without further construction, directly serve property outside a proposed development, gradual reimbursement may be used to equitably distribute the cost of that over-sized system.

2. Reimbursement shall be in an amount estimated by the City to be a proportionate share of the cost for each connection made to the sewer by property owners outside of the development, for a period of ten (10) years from the time of installation of the sewers. The boundary of the reimbursement area and the method of determining proportionate shares shall be determined by the City. Reimbursement shall only be made as additional connections are made and shall be collected as a surcharge in addition to normal connection charges.

16.110.030 - Service Availability

Approval of construction plans for new facilities pursuant to Chapter 16.106, and the issuance of building permits for new development to be served by existing sewer systems shall include certification by the City that existing or proposed sewer facilities are adequate to serve the development.

Response: The existing facility is already connected to the 15-inch-diameter public sanitary sewer main located within SW Tualatin-Sherwood Road. Please refer to the Preliminary Utility Plan (Exhibit A) showing planned on-site private sewer connection to the new warehouse building.

Chapter 16.112 - WATER SUPPLY

16.112.010 - Required Improvements

Water lines and fire hydrants conforming to City and Fire District standards shall be installed to serve all building sites in a proposed development. All waterlines shall be connected to existing water mains or shall construct new mains appropriately sized and located in accordance with the Water System Master Plan.

16.112.020 - Design Standards

A. Capacity

Water lines providing potable water supply shall be sized, constructed, located and installed at standards consistent with this Code, the Water System Master Plan, the City's Design and Construction Manual, and with other applicable City standards and specifications, in order to adequately serve the proposed development and allow for future extensions.

B. Fire Protection

All new development shall comply with the fire protection requirements of Chapter 16.116, the applicable portions of Chapter 7 of the Community Development Plan, and the Fire District.

C. Over-Sizing

1. When water mains will, without further construction, directly serve property outside a proposed development, gradual reimbursement may be used to equitably distribute the cost of that over-sized system.

2. Reimbursement shall be in an amount estimated by the City to be the proportionate share of the cost of each connection made to the water mains by property owners outside the development, for a period of ten (10) years from the time of installation of the mains. The boundary of the reimbursement area and the method of determining proportionate shares shall be determined by the City. Reimbursement shall only be made as additional connections are made and shall be collected as a surcharge in addition to normal connection charges.

3. When over-sizing is required in accordance with the Water System Master Plan, it shall be installed per the Water System Master Plan. Compensation for over-sizing may be provided through direct reimbursement, from the City, after mainlines have been accepted. Reimbursement of this nature would be utilized when the cost of over-sizing is for system wide improvements.

16.112.030 - Service Availability

Approval of construction plans for new water facilities pursuant to Chapter 16.106, and the issuance of building permits for new development to be served by existing water systems shall include certification by the City that existing or proposed water systems are adequate to serve the development.

Response: According to comments provided by the City's Engineering Department during the pre-application conference (PAC 2021-009), there is currently a 12-inch-diameter public water main within SW Tualatin-Sherwood Road. A domestic backflow assembly for the domestic service already exist. Planned private improvements related to water utility are shown on the Preliminary Utility Plan (Exhibit A). The applicable standards are met.

Chapter 16.114 - STORM WATER

16.114.010 - Required Improvements

Storm water facilities, including appropriate source control and conveyance facilities, shall be installed in new developments and shall connect to the existing downstream drainage systems consistent with the Comprehensive Plan and the requirements of the Clean Water Services water quality regulations contained in their Design and Construction Standards R&O 04-9, or its replacement.

16.114.020 - Design Standards

A. Capacity

Storm water drainage systems shall be sized, constructed, located, and installed at standards consistent with this Code, the Storm Drainage Master Plan Map, attached as Exhibit E, Chapter 7 of the Community Development Plan, other applicable City standards, the Clean Water Services Design and Construction standards R&O 04-9 or its replacement, and hydrologic data and improvement plans submitted by the developer.

B. On-Site Source Control

Storm water detention and groundwater recharge improvements, including but not limited to such facilities as dry wells, detention ponds, and roof top ponds shall be constructed according to Clean Water Services Design and Construction Standards.

C. Conveyance System

The size, capacity and location of storm water sewers and other storm water conveyance improvements shall be adequate to serve the development and accommodate upstream and downstream flow. If an upstream area discharges through the property proposed for development, the drainage system shall provide capacity to the receive storm water discharge from the upstream area. If downstream drainage systems are not sufficient to receive an increase in storm water caused by new development, provisions shall be made by the developer to increase the downstream capacity or to provide detention such that the new development will not increase the storm water caused by the new development.

16.114.030 - Service Availability

Approval of construction plans for new storm water drainage facilities pursuant to Chapter 16.106, and the issuance of building permits for new development to be served by existing storm water drainage systems shall include certification by the City that existing or proposed drainage facilities are adequate to serve the development.

Response: As shown on the Preliminary Utility Plan (Exhibit A), the stormwater runoff from the new warehouse and covered storage area will be conveyed to the same location as the existing runoff, at the bottom of the slope in the southern portion of the site. The runoff from paved areas that were added after the original permit had been issued is conveyed to a retention pond on the west side of the property where the water quality is monitored prior to release. The stormwater system is appropriately sized for the existing and additional impervious areas. Please refer to the Preliminary Stormwater Report (Exhibit O) and Clean Water Services Industrial Wastewater Discharge Permit (Exhibit Q). The applicable standards are met.

Chapter 16.116 - FIRE PROTECTION

16.116.010 - Required Improvements

When land is developed so that any commercial or industrial structure is further than two hundred and fifty (250) feet or any residential structure is further than five hundred (500) feet from an adequate water supply for fire protection, as determined by the Fire District, the developer shall provide fire protection facilities necessary to provide adequate water supply and fire safety.

16.116.020 - Standards

A. Capacity

All fire protection facilities shall be approved by and meet the specifications of the Fire District, and shall be sized, constructed, located, and installed consistent with this Code, Chapter 7 of the Community Development Plan, and other applicable City standards, in order to adequately protect life and property in the proposed development.

B. Fire Flow

Standards published by the Insurance Services Office, entitled "Guide for Determination of Required Fire Flows" shall determine the capacity of facilities required to furnish an adequate fire flow. Fire protection facilities shall be adequate to convey quantities of water, as determined by ISO standards, to any outlet in the system, at no less than twenty (20) pounds per square inch residual pressure. Water supply for fire protection purposes shall be restricted to that available from the City water system. The location of hydrants shall be taken into account in determining whether an adequate water supply exists.

C. Access to Facilities

Whenever any hydrant or other appurtenance for use by the Fire District is required by this Chapter, adequate ingress and egress shall be provided. Access shall be in the form of an improved, permanently maintained roadway or open paved area, or any combination thereof, designed, constructed, and at all times maintained, to be clear and unobstructed. Widths, height clearances, ingress and egress shall be adequate for District firefighting equipment. The Fire District, may further prohibit vehicular parking along private accessways in order to keep them clear and unobstructed, and cause notice to that effect to be posted.

D. Hydrants

Hydrants located along private, accessways shall either have curbs painted yellow or otherwise marked prohibiting parking for a distance of at least fifteen (15) feet in either direction, or where curbs do not exist, markings shall be painted on the pavement, or signs erected, or both, given notice that parking is prohibited for at least fifteen (15) feet in either direction.

Response: Adequate water supply consisting of a 12-inch-diameter public water main within SW Tualatin-Sherwood Road along the property frontage, as well as and an existing fire system for the facility are already in place. As shown on the Preliminary Utility Plan (Exhibit A), fire hydrants will be placed at locations approved by the City and Tualatin Valley Fire & Rescue to ensure adequate access and flows for the proposed structures. No deficiencies have been identified. The applicable standards are met.

Chapter 16.118 - PUBLIC AND PRIVATE UTILITIES

[...]

16.118.020 - Standard

A. Installation of utilities shall be provided in public utility easements and shall be sized, constructed, located and installed consistent with this Code, Chapter

7 of the Community Development Code, and applicable utility company and City standards.

B. Public utility easements shall be a minimum of eight (8) feet in width unless a reduced width is specifically exempted by the City Engineer. An eight-foot wide public utility easement (PUE) shall be provided on private property along all public street frontages. This standard does not apply to developments within the Old Town Overlay.

C. Where necessary, in the judgment of the City Manager or his designee, to provide for orderly development of adjacent properties, public and franchise utilities shall be extended through the site to the edge of adjacent property(ies).

D. Franchise utility conduits shall be installed per the utility design and specification standards of the utility agency.

E. Public Telecommunication conduits and appurtenances shall be installed per the City of Sherwood telecommunication design standards.

F. Exceptions: Installation shall not be required if the development does not require any other street improvements. In those instances, the developer shall pay a fee in lieu that will finance installation when street or utility improvements in that location occur.

Response: Right-of-way acquisition by Washington County will include the required 8-foot public utility easement (PUE) along SW Tualatin-Sherwood Road.

16.118.030 - Underground Facilities

Except as otherwise provided, all utility facilities, including but not limited to, electric power, telephone, natural gas, lighting, cable television, and telecommunication cable, shall be placed underground, unless specifically authorized for above ground installation, because the points of connection to existing utilities make underground installation impractical, or for other reasons deemed acceptable by the City.

Response: New utilities necessary to serve this project are planned to be constructed underground. This standard is met.

Division VIII. - ENVIRONMENTAL RESOURCES

Chapter 16.134 FLOODPLAIN (FP) OVERLAY

[…]

16.134.080 - Floodplain Development

A. Floodplain Alterations

1. Floodplain Survey

The floodplain, including the floodway and flood fringe areas, shall be surveyed by a registered land surveyor or civil engineer, and approved by the City, based on the findings of the flood insurance study and other available data. Such delineation shall be based on the current FIRM and FIS data and be field-located from recognized valid benchmarks.

Response: As shown on the Preliminary Site Plan (Exhibit A), a small portion of the property in the southwest corner is located within the 100-year floodplain boundary. The limits of grading

for the site improvements associated with this land use permit are located outside the floodplain; therefore, the provisions of this Chapter do not apply to this project.

Chapter 16.142 - PARKS, TREES AND OPEN SPACES

[…]

16.142.040 - Visual Corridors

A. Corridors Required

New developments located outside of the Old Town Overlay with frontage on Highway 99W, or arterial or collector streets designated on Figure 8-1 of the Transportation System Plan shall be required to establish a landscaped visual corridor according to the following standards:

Category		Width
1.	Highway 99W	25 feet
2.	Arterial	15 feet
3.	Collector	10 feet

In residential developments where fences are typically desired adjoining the above described major street the corridor may be placed in the road right-of-way between the property line and the sidewalk. In all other developments, the visual corridor shall be on private property adjacent to the right-of-way.

Response: Although the project site has frontage on an arterial street (SW Tualatin-Sherwood Road), the northern portion of the site that is adjacent to the road are planned to remain as-is; therefore, a visual corridor is not planned as part of this project.

16.142.070 - Trees on Property Subject to Certain Land Use Applications

[...]

B. Applicability

All applications including a Type II - IV land use review, shall be required to preserve trees or woodlands, as defined by this Section to the maximum extent feasible within the context of the proposed land use plan and relative to other codes, policies, and standards of the City Comprehensive Plan.

Response: This is a Type IV land use application; therefore, the requirements of Section 16.142.070 are applicable to this project.

C. Inventory

1. To assist the City in making its determinations on the retention of trees and woodlands, land use applications including Type II - IV development shall include a tree and woodland inventory and report. The report shall be prepared by a qualified professional and must contain the following information:

a. Tree size (in DBH and canopy area)

b. Tree species

c. The condition of the tree with notes as applicable explaining the assessment

d. The location of the tree on the site

e. The location of the tree relative to the planned improvements

f. Assessment of whether the tree must be removed to accommodate the development

g. Recommendations on measures that must be taken to preserve trees during the construction that are not proposed to be removed.

2. In addition to the general requirements of this Section, the tree and woodland inventory's mapping and report shall also include, but is not limited to, the specific information outlined in the appropriate land use application materials packet.

Response: The Preliminary Tree Preservation and Removal Plan (Exhibit A) and Preliminary Tree Preservation and Removal Inventory Table (Exhibit J) contain the required information, as applicable.

D. Retention requirements

1. Trees may be considered for removal to accommodate the development including buildings, parking, walkways, grading etc., provided the development satisfies of D.2 or D.3, below.

Response: As shown on the Preliminary Tree Preservation and Removal Plan (Exhibit A) and Preliminary Tree Preservation and Removal Inventory Table (Exhibit J), some trees are required to be removed to accommodate the necessary site improvements; however, the site will continue to meet the minimum canopy coverage standards through preservation of the remaining trees. The response below demonstrates compliance with criterion D.3.

[...]

3. Required Tree Canopy - Non-Residential and Multi-family Developments

Each net development site shall provide a variety of trees to achieve a minimum total tree canopy of 30 percent. The canopy percentage is based on the expected mature canopy of each tree by using the equation πr^2 to calculate the expected square footage of each tree. The expected mature canopy is counted for each tree even if there is an overlap of multiple tree canopies.

The canopy requirement can be achieved by retaining existing trees or planting new trees. Required landscaping trees can be used toward the total on site canopy required to meet this standard. The expected mature canopy spread of the new trees will be counted toward the required canopy cover. A certified arborist or other qualified professional shall provide an estimated tree canopy for all proposed trees to the planning department for review as a part of the land use review process.

	Commercial, Industrial, Institutional Public and Multi-family
Canopy Requirement	30%
Counted Toward the Canopy Requirement	
Street trees included in canopy requirement	No
Landscaping requirements included in canopy requirement	Yes
Existing trees onsite	Yes x 2
Planting new trees onsite	Yes
Mature Canopy in Square Feet Equation πr^2 or (3.14159*radius ^{2}) (This is the calculation to measure the square footage of a circle. The Mature Canopy is given in diameter. In gardening and horticulture reference books, therefore to get the radius you must divide the diameter in half.	

Response: The Tree Canopy Calculations (Exhibit K) show an expected tree canopy coverage of ±62 percent of the total site area, which exceeds the minimum 30 percent canopy coverage requirement.

G. Tree Protection During Development

The applicant shall prepare and submit a final Tree and Woodland Plan prior to issuance of any construction permits, illustrating how identified trees and woodlands will be retained, removed or protected as per the Notice of Decision. Such plan shall specify how trees and woodlands will be protected from damage or destruction by construction activities, including protective fencing, selective pruning and root treatments, excavation techniques, temporary drainage systems, and like methods. At a minimum, trees to be protected shall have the area within the drip line of the tree protected from grading, stockpiling, and all other construction related activity unless specifically reviewed and recommended by a certified arborist or other qualified professional. Any work within the dripline of the tree shall be supervised by the project arborist or other qualified professional onsite during construction.

Response: This requirement is understood. The Applicant will submit a final Tree and Woodland Plan prior to issuance of building permits, pursuant to the provision of this code.

Chapter 16.144 WETLAND, HABITAT AND NATURAL AREAS

[…]

16.144.020 - Standards

A. The applicant shall identify and describe the significance and functional value of wetlands on the site and protect those wetlands from adverse effects of the development. A facility complies with this standard if it complies with the criteria of subsections A.1.a and A.1.b, below:

1. The facility will not reduce the area of wetlands on the site, and development will be separated from such wetlands by an area determined by the Clean Water Services Design and Construction Standards R&O 00-7 or its replacement provided Section 16.140.090 does not require more than the requested setback.

a. A natural condition such as topography, soil, vegetation or other feature isolates the area of development from the wetland.

b. Impact mitigation measures will be designed, implemented, and monitored to provide effective protection against harm to the wetland from sedimentation, erosion, loss of surface or ground water supply, or physical trespass.

c. A lesser setback complies with federal and state permits, or standards that will apply to state and federal permits, if required.

2. If existing wetlands are proposed to be eliminated by the facility, the applicant shall demonstrate that the project can, and will develop or enhance an area of wetland on the site or in the same drainage basin that is at least equal to the area and functional value of wetlands eliminated.

Response: As shown on the Preliminary Existing Conditions Plan (Exhibit A), wetlands are not present on the site. The Preliminary Existing Conditions Plan (Exhibit A) identifies the approximate boundary of the off-site wetland, which will not be disturbed during construction.

B. The applicant shall provide appropriate plans and text that identify and describe the significance and functional value of natural features on the site (if identified in the Community Development Plan, Part 2) and protect those features from impacts of the development or mitigate adverse effects that will occur. A facility complies with this standard if:

1. The site does not contain an endangered or threatened plant or animal species or a critical habitat for such species identified by Federal or State government (and does not contain significant natural features identified in the Community Development Plan, Part 2, Natural Resources and Recreation Plan).

2. The facility will comply with applicable requirements of the zone.

3. The applicant will excavate and store topsoil separate from subsurface soil, and shall replace the topsoil over disturbed areas of the site not covered by buildings or pavement or provide other appropriate medium for re-vegetation of those areas, such as yard debris compost.

4. The applicant will retain significant vegetation in areas that will not be covered by buildings or pavement or disturbed by excavation for the facility; will replant areas disturbed by the development and not covered by buildings or pavement with native species vegetation unless other vegetation is needed to buffer the facility; will protect disturbed areas and adjoining habitat from potential erosion until replanted vegetation is established; and will provide a plan or plans identifying each area and its proposed use.

5. Development associated with the facility will be set back from the edge of a significant natural area by an area determined by the Clean Water Services Design and Construction standards R&O 00-7 or its replacement, provided Section 16.140.090A does not require more than the requested setback. Lack of adverse effect can be

demonstrated by showing the same sort of evidence as in subsection A.1 above.

Response: This application includes a Natural Resource Assessment Report prepared by a qualified natural resource specialist (Exhibit I). The report contains the information required by this Code section, as applicable. Please refer to Exhibit I for findings to support the decision that the facility complies with the standard of Code Section 16.144.020.B.

C. When the Regionally Significant Fish and Wildlife Habitat map indicates there are resources on the site or within 50 feet of the site, the applicant shall provide plans that show the location of resources on the property. If resources are determined to be located on the property, the plans shall show the value of environmentally sensitive areas using the methodologies described in Sections 1 and 2 below.

The Metro Regionally Significant Fish and Wildlife Habitat map shall be the basis for determining the location and value of environmentally sensitive habitat areas. In order to specify the exact locations on site, the following methodology shall be used to determine the appropriate boundaries and habitat values:

1. Verifying boundaries of inventoried riparian habitat. Locating habitat and determining its riparian habitat class is a four-step process:

a. Located the Water Feature that is the basis for identifying riparian habitat.

1. Locate the top of bank of all streams, rivers, and open water within 200 feet of the property.

2. Locate all flood areas within 100 feet of the property.

3. Locate all wetlands within 150 feet of the property based on the Local Wetland Inventory map and on the Metro 2002 Wetland Inventory map (available from the Metro Data Resource Center, 600 NE Grand Ave., Portland, OR 97232). Identified wetlands shall be further delineated consistent with methods currently accepted by the Oregon Division of State Lands and the US Army Corps of Engineers.

b. Identify the vegetative cover status of all areas on the property that are within 200 feet of the top of bank of streams, rivers, and open water, are wetlands or are within 150 feet of wetlands, and are flood areas or are within 100 feet of flood areas. Vegetative cover status shall be as identified on the Metro Vegetative Cover map. In the event of a discrepancy between the Metro Vegetative Cover map and the existing site conditions, document the actual vegetative cover based on the following definitions along with a 2002 aerial photograph of the property;

1. Low structure vegetation or open soils — Areas that are part of a contiguous area one acre or larger of grass, meadow, crop-lands, or areas of open soils

located within 300 feet of a surface stream (low structure vegetation areas may include areas of shrub vegetation less than one acre in size if they are contiguous with areas of grass, meadow, croplands, orchards, Christmas tree farms, holly farms, or areas of open soils located within 300 feet of a surface stream and together form an area of one acre in size or larger).

2. Woody vegetation — Areas that are part of a contiguous area one acre or larger of shrub or open or scattered forest canopy (less than 60% crown-closure) located within 300 feet of a surface stream.

3. Forest canopy — Areas that are part of a contiguous grove of trees of one acre or larger in area with approximately 60% or greater crown closure, irrespective of whether the entire grove is within 200 feet of the relevant water feature.

c. Determine whether the degree that the land slopes upward from all streams, rivers, and open water within 200 feet of the property is greater than or less than 25% (using the Clean Water Services Vegetated Corridor methodology); and

d. Identify the riparian habitat classes applicable to all areas on the property using Table 8-1 below:

Distance in feet from Water Feature	Development/Vegetation Status			
	Developed areas not providing vegetative cover	Low structure vegetation or open soils	Woody vegetation (shrub and scatted forest canopy)	Forest Canopy (closed to open forest canopy)
Surface Streams				
0-50	Class II	Class I	Class I	Class I
50-100		Class II	Class I	Class I
100-150		Class II if slope >25%	Class II if slope >25%	Class II
150-200		Class II if slope >25%	Class II if slope >25%	Class II if slope >25%
Wetlands (Wetland feature itself is a Class I Riparian Area)				
0-100			Class I	Class I
100-150				Class II
Flood Areas (undeveloped portion of a flood area is a Class I Riparian area)				
0-100			Class II	Class II

2. Verifying boundaries of inventoried upland habitat. Upland habitat was identified based on the existence of contiguous patches of forest canopy, with limited canopy openings. The "forest canopy" designation is made based on analysis of aerial photographs, as part of determining the vegetative cover status of land within the region. Upland habitat shall be as identified on the HCA map. The perimeter of an area delineated as "forest canopy" on the Metro Vegetative Cover map may be adjusted to more precisely indicate the drip line of the trees within the canopied area.

Response: A portion of the property in the southwestern corner of the site is within Metro-mapped sensitive resources overlay. The Natural Resource Assessment Report (Exhibit I) includes the required plans meeting the applicable requirements of this section of the code.

16.144.030 - Exceptions to Standards

In order to protect environmentally sensitive areas that are not also governed by floodplain, wetland and Clean Water Services vegetated corridor regulations, the City allows flexibility of the specific standards in exchange for the specified amount of protection inventoried environmentally sensitive areas as defined in this code.

Response: This application does not include exceptions to standards.

Chapter 16.146 - NOISE

16.146.010 - Generally

All otherwise permitted commercial, industrial, and institutional uses in the City shall comply with the noise standards contained in OAR 340-35-035. The City may require proof of compliance with OAR 340-35-035 in the form of copies of all applicable State permits or certification by a professional acoustical engineer that the proposed uses will not cause noise in excess of State standards.

Response: The subject site is surrounded entirely by other properties zoned General Industrial. Noise levels at the planned warehouse would be similar to nearby industrial uses. Warehousing uses do not typically generate noise beyond that associated with traffic entering and leaving the site, along with other activities typical of what could be expected to occur in an urban area. The noise levels associated with warehousing use are anticipated to comply with OAR 340-35-035 standards. Therefore, this standard will be met.

16.146.020 - Noise Sensitive Uses

When proposed commercial and industrial uses do not adjoin land exclusively in commercial or industrial zones, or when said uses adjoin special care, institutional, or parks and recreational facilities, or other uses that are, in the City's determination, sensitive to noise impacts, then:

A. The applicant shall submit to the City a noise level study prepared by a professional acoustical engineer. Said study shall define noise levels at the boundaries of the site in all directions.

B. The applicant shall show that the use will not exceed the noise standards contained in OAR 340-35-035, based on accepted noise modeling procedures and worst case assumptions when all noise sources on the site are operating simultaneously.

C. If the use exceeds applicable noise standards as per subsection B of this Section, then the applicant shall submit a noise mitigation program prepared by a professional acoustical engineer that shows how and when the use will come into compliance with said standards.

Response: The subject property is surrounded entirely by other land zoned General Industrial and does not adjoin special care, institutional, recreational facilities, or other noise-sensitive uses. Noise levels would be similar to the nearby commercial and industrial uses.

16.146.030 - Exceptions

This Chapter does not apply to noise making devices which are maintained and utilized solely as warning or emergency signals, or to noise caused by automobiles, trucks, trains, aircraft, and other similar vehicles when said vehicles are properly maintained and operated and are using properly designated rights-of-way, travel ways, flight paths or other routes. This Chapter also does not apply to noise produced by humans or animals. Nothing in this Chapter shall preclude the City from abating any noise problem as per applicable City nuisance and public safety ordinances.

Response: Warehousing use is not anticipated to generate noise problems. It is understood that the City has authority to abate noise problems per applicable City nuisance and public safety ordinances.

Chapter 16.148 - VIBRATIONS

16.148.010 - Generally

All otherwise permitted commercial, industrial, and institutional uses shall not cause discernible vibrations that exceed a peak of 0.002 gravity at the property line of the originating use, except for vibrations that last five (5) minutes or less per day, based on a certification by a professional engineer.

16.148.020 - Exceptions

This Chapter does not apply to vibration caused by construction activities including vehicles accessing construction sites, or to vibrations caused by automobiles, trucks, trains, aircraft, and other similar vehicles when said vehicles are properly maintained and operated and are using properly designated rights-of-way, travelways, flight paths or other routes. Nothing in this Chapter shall preclude the City from abating any vibration problem as per applicable City nuisance and public safety ordinances.

Response: Vibration levels are expected to be similar to the surrounding industrial uses. Elevated levels of vibration, beyond what is expected in an urban area, are not anticipated. Therefore, the proposed use will be within required standards, and there will be no adverse impacts.

Chapter 16.150 - AIR QUALITY

16.150.010 - Generally

All otherwise permitted commercial, industrial, and institutional uses shall comply with applicable State air quality rules and statutes:

A. All such uses shall comply with standards for dust emissions as per OAR 340-21-060.

B. Incinerators, if otherwise permitted by Section 16.140.020, shall comply with the standards set forth in OAR 340-25-850 through 340-25-905.

C. Uses for which a State Air Contaminant Discharge Permit is required as per OAR 340-20-140 through 340-20-160 shall comply with the standards of OAR 340-220 through 340-20-276.

Response: The planned warehousing use will not generate dust and is anticipated to comply with the standards in OAR 340-21-060. Air quality impacts are expected to be similar to the surrounding industrial uses. Odorous or unusual emissions, beyond what is expected in an urban area, are not anticipated. The planned use will be within required standards,

and there will be no adverse impacts. A State Air Contaminant Discharge Permit is not required for the operation of this project; therefore, this criterion does not apply.

16.150.020 - Proof of Compliance

> **Proof of compliance with air quality standards as per Section 16.150.010 shall be in the form of copies of all applicable State permits, or if permits have not been issued, submission by the applicant, and acceptance by the City, of a report certified by a professional engineer indicating that the proposed use will comply with State air quality standards. Depending on the nature and size of the use proposed, the applicant may, in the City's determination, be required to submit to the City a report or reports substantially identical to that required for issuance of State Air Contaminant Discharge Permits.**

Response: As stated above, air quality permits are not necessary for the planned warehousing use; therefore, this Code section is not applicable to this project.

16.150.030 - Exceptions

> **Nothing in this Chapter shall preclude the City from abating any air quality problem as per applicable City nuisance and public safety ordinances.**

Response: This standard is understood.

Chapter 16.152 - ODORS

16.152.010 - Generally

> **All otherwise permitted commercial, industrial, and institutional uses shall incorporate the best practicable design and operating measures so that odors produced by the use are not discernible at any point beyond the boundaries of the development site.**

16.152.020 - Standards

> **The applicant shall submit a narrative explanation of the source, type and frequency of the odorous emissions produced by the proposed commercial, industrial, or institutional use. In evaluating the potential for adverse impacts from odors, the City shall consider the density and characteristics of surrounding populations and uses, the duration of any odorous emissions, and other relevant factors.**

Response: Warehousing use does not produce odors; therefore, the project will be within required standards, and there will be no adverse impacts.

16.152.030 - Exceptions

> **Nothing in this Chapter shall preclude the City from abating any odor problem as per applicable City nuisance and public safety ordinances.**

Response: This standard is understood.

Chapter 16.154 - HEAT AND GLARE

16.154.010 - Generally

> **Except for exterior lighting, all otherwise permitted commercial, industrial, and institutional uses shall conduct any operations producing excessive heat or glare entirely within enclosed buildings. Exterior lighting shall be directed away from adjoining properties, and the use shall not cause such glare or lights to shine off site in excess of one-half (0.5) foot candle when adjoining properties are zoned for residential uses.**

16.154.020 - Exceptions

Nothing in this Chapter shall preclude the City from abating any heat and glare problem as per applicable City nuisance and public safety ordinances.

Response: The planned warehousing use does not produce heat or glare. The subject property does not adjoin any properties zoned for residential uses. Consequently, foot candle analysis is not required.

Chapter 16.156 - ENERGY CONSERVATION

16.156.020 - Standards

A. Building Orientation - The maximum number of buildings feasible shall receive sunlight sufficient for using solar energy systems for space, water or industrial process heating or cooling. Buildings and vegetation shall be sited with respect to each other and the topography of the site so that unobstructed sunlight reaches the south wall of the greatest possible number of buildings between the hours of 9:00 AM and 3:00 PM, Pacific Standard Time on December 21st.

Response: The planned warehouse building will be oriented in a generally north-south direction. The building is intended for storage of goods that do not require heating or cooling; therefore, solar energy systems are not planned.

B. Wind - The cooling effects of prevailing summer breezes and shading vegetation shall be accounted for in site design. The extent solar access to adjacent sites is not impaired vegetation shall be used to moderate prevailing winter wind on the site.

Response: Since the warehouse building is not intended for human occupancy, this standard is not applicable to this project.

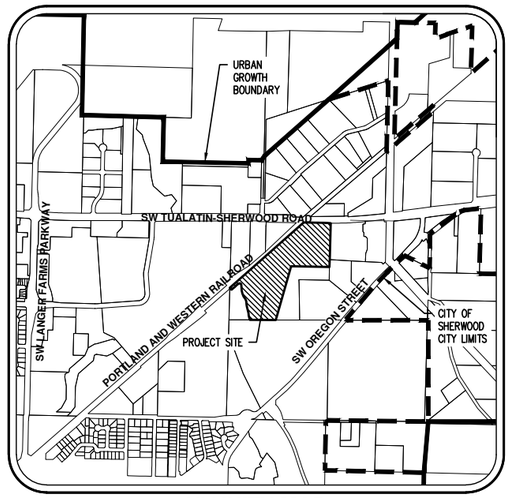
IV. Conclusion

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 Sherwood Zoning and Community Development Code. The evidence in the record is substantial and supports approval of the application. The City can rely upon this information in its approval of the application.

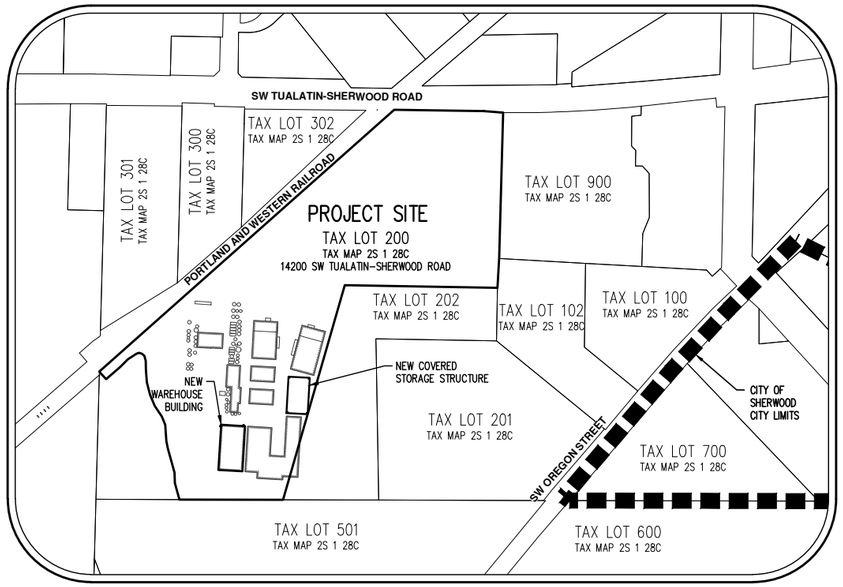
Exhibit A: Preliminary Plans

CASCADE COLUMBIA DISTRIBUTION COMPANY

PRELIMINARY PLANS FOR A MODIFICATION TO APPROVED SITE PLAN



VICINITY MAP
NTS



SITE MAP
1"=250'

LEGEND

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

APPLICANT:
CASCADE COLUMBIA DISTRIBUTION COMPANY
14200 SW TUALATIN-SHERWOOD ROAD
SHERWOOD, OR 97140

OWNER:
SHERWOOD ROAD INDUSTRIAL, LLC
6900 FOX AVE S
SEATTLE, WA 98108

PLANNING/CIVIL ENGINEERING/ LANDSCAPE ARCHITECTURE/ SURVEYING FIRM:
AKS ENGINEERING & FORESTRY, LLC.
CONTACT: CHRIS GOODELL, AICP
12965 SW HERMAN RD STE 100
TUALATIN, OR 97062
P: (503) 563-6151
F: (503) 563-6152

PROJECT LOCATION:
14200 SW TUALATIN-SHERWOOD ROAD
SHERWOOD, OR 97140

SITE AREA:
±16.93 ACRES

PROPERTY DESCRIPTION:
TAX LOT 200 WASHINGTON COUNTY ASSESSOR'S MAP 2S 1 28C, LOCATED IN THE SOUTHWEST 1/4 OF SECTION 28, TOWNSHIP 2 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON.

EXISTING LAND USE:
INDUSTRIAL SITE WITH WAREHOUSES AND OFFICE SPACE, RAIL SPUR, AND ASSOCIATED INFRASTRUCTURE FOR CASCADE COLUMBIA DISTRIBUTION COMPANY AND NORTHSTAR CHEMICAL INC.

PROJECT PURPOSE:
ADD NEW COVERED STORAGE STRUCTURE AND WAREHOUSE BUILDING, AND ASSOCIATED SITE IMPROVEMENTS.

VERTICAL DATUM:
ELEVATIONS ARE BASED ON WASHINGTON COUNTY BENCHMARK NO. 103, LOCATED AT THE SW CORNER OF THE INTERSECTION OF SW TUALATIN-SHERWOOD ROAD AND PORTLAND AND WESTERN RAILROAD. ELEVATION = 171.38 FEET (NGVD 29).

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

CASCADE COLUMBIA DISTRIBUTION COMPANY
SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

COVER SHEET WITH VICINITY AND SITE MAPS

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 9, 1999 — STEVEN C. ROPER — RENEWAL DATE: 12/31/22

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER
7431

SHEET
P01

AKS DRAWING FILE: 7431 PRELIM COVER.DWG | LAYOUT: P01

INDUSTRIAL/COMMERCIAL
GI
RETAIL/COMMERCIAL
GI
GOVERNMENT
GI
INDUSTRIAL/REPAIR
GI
TRIMET 97-TUALATIN-SHERWOOD RD
TRANSIT ROUTE
SW TUALATIN-SHERWOOD ROAD
TRIMET 97-TUALATIN-SHERWOOD RD
TRANSIT ROUTE
PORTLAND AND WESTERN RAILROAD
INDUSTRIAL/MANUFACTURING
GI
EXISTING FIRE
HYDRANT
EXISTING FIRE
HYDRANT
EXISTING ±20'
SECONDARY ACCESS GATE
EXISTING ±26' ACCESS GATE
INDUSTRIAL/DISPOSAL
GI
NEW PAVED
PARKING AREA
TVF&R MINIMUM FIRE APPARATUS
ACCESS REQUIREMENTS (TYP)
PER DETAIL (THIS SHEET)
INDUSTRIAL/DISTRIBUTION
GI
EXISTING TRASH
ENCLOSURE
INDUSTRIAL/MANUFACTURING
GI
INDUSTRIAL/DISPOSAL
GI
INDUSTRIAL/DISPOSAL
GI
RELOCATED
FIRE HYDRANT
NEW
COVERED
STORAGE
AREA
EXISTING FIRE
HYDRANT
FDC MOUNTED
ON BUILDING
EXISTING FIRE
HYDRANT
INDUSTRIAL/MANUFACTURING
GI
EXISTING 20' SANITARY SEWER EASEMENT
EXISTING 20' SANITARY SEWER EASEMENT
NEW
WAREHOUSE
BUILDING
ROCK CREEK
GI
20' WIDE FIRE APPARATUS ACCESS
ALONG WEST SIDE OF NEW WAREHOUSE
BUILDING WITH SIGNAGE INDICATING
"FIRE LANE DO NOT BLOCK"
SW OREGON STREET
INDUSTRIAL/MANUFACTURING
GI
40'
26'
40'
26'
40'
26'
20'
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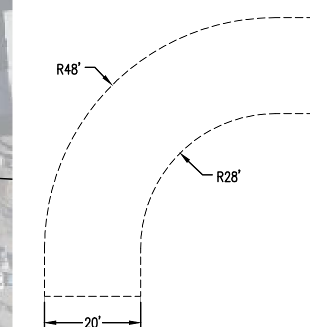
N

SCALE: 1"= 80 FEET

80 0 16 40 80

ORIGINAL PAGE SIZE: 22" x 34"



TVF&R MINIMUM FIRE APPARATUS ACCESS REQUIREMENTS DETAIL

1"=20'

LEGEND

VEHICLE CIRCULATION	
TRANSIT ROUTE	
CURRENT LAND USE	CURRENT LAND USE ZONING

AKS

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

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FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON

TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY SITE CIRCULATION PLAN AND SURROUNDING LAND USES

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

PRELIMINARY NOT FOR CONSTRUCTION

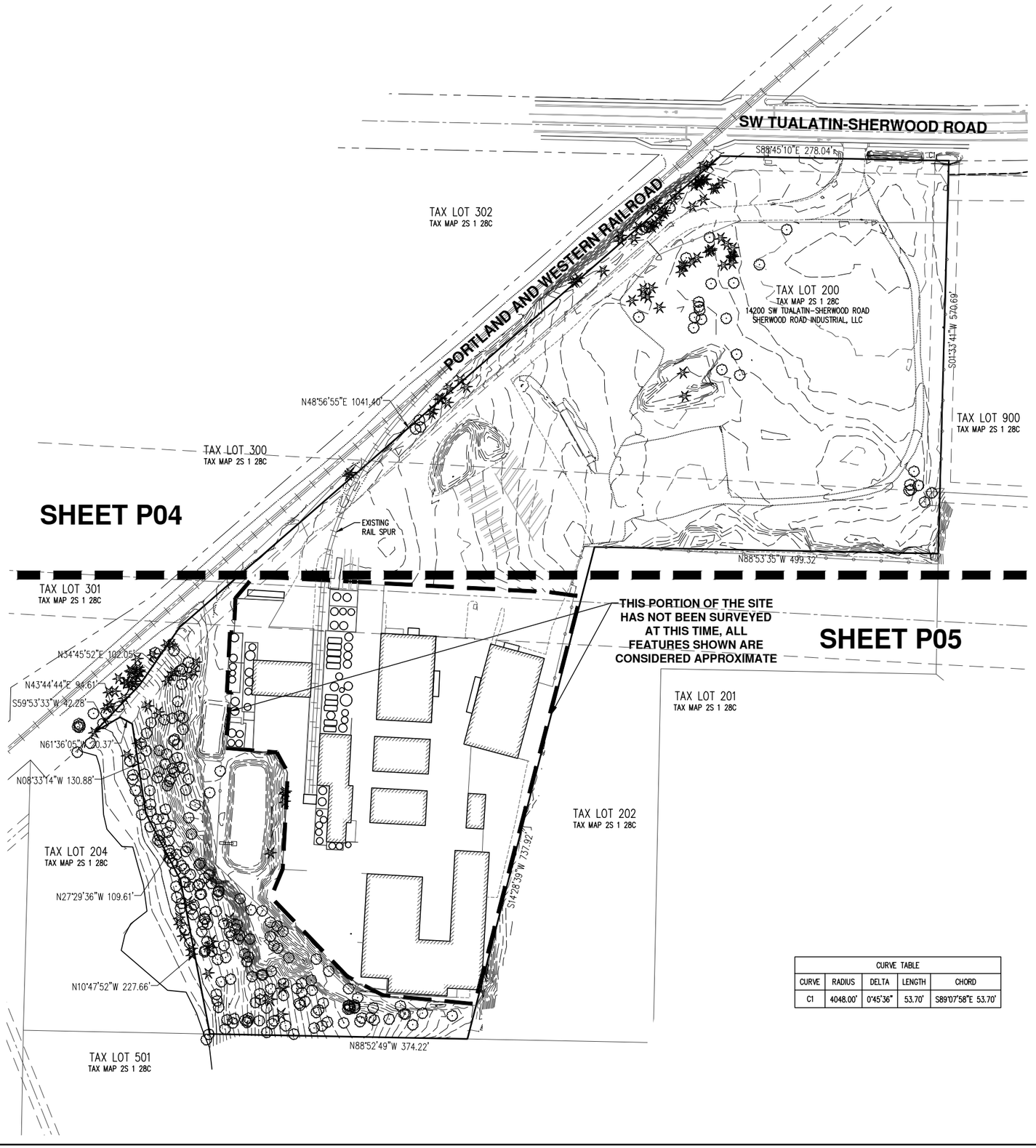
RENEWAL DATE: 12/31/22

REVISIONS

JOB NUMBER
7431

SHEET
P02

AKS DRAWING FILE: 7431 PRELIM CIRCULATION AND USES.DWG | LAYOUT: P02



CURVE TABLE				
CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	4048.00'	0°45'36"	53.70'	S89°07'58"E 53.70'

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12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

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CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON

TAX LOT: 200 WASHINGTON COUNTY TAX MAP: 2S 1 28C

PRELIMINARY EXISTING CONDITIONS PLAN - OVERALL

DESIGNED BY: --
DRAWN BY: CTH
MANAGED BY: NSW
CHECKED BY: CC
DATE: 09/08/2021

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON JANUARY 17, 2007 NOAH W. WHITE 70652LS
RENEWS: 6/30/24

REVIEW COPY

REVISIONS

JOB NUMBER 7431

SHEET P03

AKS DRAWING FILE: 7431 PRELIM EXCOND.DWG | LAYOUT: P03

NOTES:

1. UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE INFORMATION PER GIS AND AS-BUILTS. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
2. FIELD WORK WAS CONDUCTED MAY 1-18, 2021.
3. VERTICAL DATUM: ELEVATIONS ARE BASED ON WASHINGTON COUNTY BENCHMARK NO. 103. LOCATED AT THE SW CORNER OF INTERSECTION OF SW TUALATIN-SHERWOOD ROAD AND PORTLAND AND WESTERN RAILROAD. ELEVATION = 171.38 FEET (NGVD 29).
4. HORIZONTAL DATUM: A LOCAL DATUM PLANE SCALED FROM OREGON STATE PLANE NORTH 3601 NAD83(2011) EPOCH 2010.0000 BY HOLDING A PROJECT MEAN GROUND COMBINED SCALE FACTOR OF 1.0001036685 AT A CALCULATED CENTRAL PROJECT POINT WITH GRID VALUES OF (NORTH 627763.123, EAST 7604628.335). THE MERIDIAN CONVERGENCE ANGLE AT THE CALCULATED CENTRAL POINT IS -1°38'56". THE STATE PLANE COORDINATES WERE DERIVED FROM THE TRIMBLE VRS NOW NETWORK.
5. THIS IS NOT A PROPERTY BOUNDARY SURVEY TO BE RECORDED WITH THE COUNTY SURVEYOR. BOUNDARIES MAY BE PRELIMINARY AND SHOULD BE CONFIRMED WITH THE STAMPING SURVEYOR PRIOR TO RELYING ON FOR DETAILED DESIGN OR CONSTRUCTION.
6. BUILDING FOOTPRINTS ARE DRAWN FROM AERIAL 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 MEASURED UTILIZING A DIAMETER TAPE AT BREAST HEIGHT. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.
9. WETLAND BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC. ON APRIL 9, 2021 AND WERE PROFESSIONALLY SURVEYED BY AKS ON MAY 5, 2021.
10. REFERENCE AS-BUILT DATA WAS UTILIZED FOR MOST OF THE UTILITY LINE PLACEMENT. CONTACT THE SURVEYOR WITH QUESTIONS REGARDING UTILITY INFORMATION.
11. FEMA FLOOD PLAINS SHOWN PER FLOOD INSURANCE RATE MAP PANEL 602 OF 650. THE BASE FLOOD ELEVATION (BFE) WAS DETERMINED TO BE 133.04' (NGVD 29) ALSO BEING 136.50' (NAVD 88). A VERTICAL CONVERSION FACTOR OF -3.458' WAS USED TO CONVERT PUBLISHED FEMA VALUES FROM NAVD88 TO NGVD29.
12. NON-MAPPABLE EASEMENT PER DOC. NO. 79-025572, A 10' SEWER EASEMENT EXISTS WITHIN THE 250' TRANSMISSION LINE EASEMENT, BEGINNING ON THE EASTERLY RIGHT-OF-WAY LINE OF THE SOUTHERN PACIFIC RAILROAD AND RUNNING EASTERLY TO TAX LOT 202, FOR THE BENEFIT OF TAX LOT 202.

CURVE TABLE				
CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	4048.00'	0°45'36"	53.70'	S89°07'58"E 53.70'

N

SCALE: 1"= 40 FEET

40 0 8 20 40

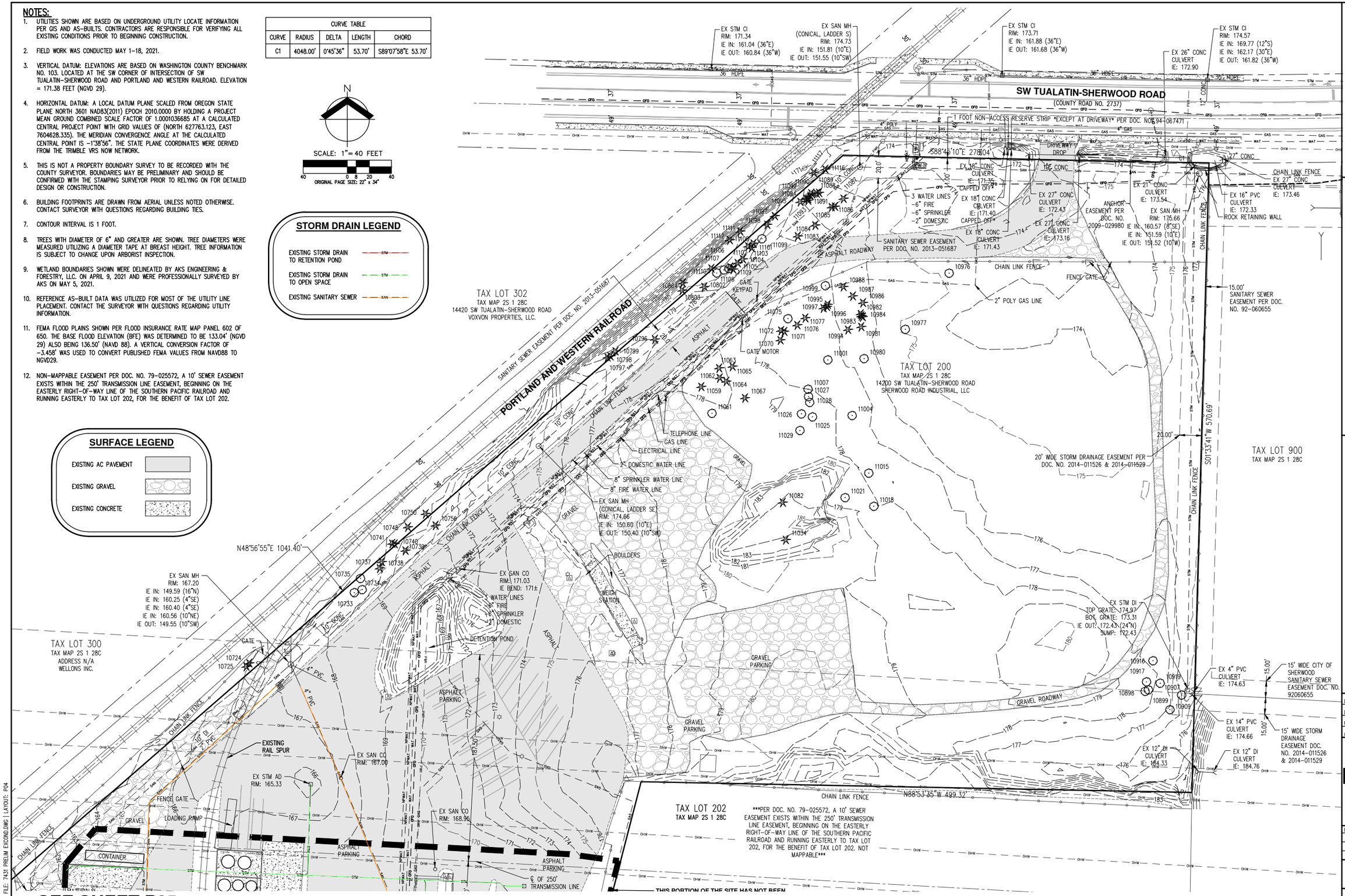
ORIGINAL PAGE SIZE: 22" x 34"

STORM DRAIN LEGEND

- EXISTING STORM DRAIN TO RETENTION POND
- EXISTING STORM DRAIN TO OPEN SPACE
- EXISTING SANITARY SEWER

SURFACE LEGEND

- EXISTING AC PAVEMENT
- EXISTING GRAVEL
- EXISTING CONCRETE



SEE SHEET P05

SEE SHEET P05

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TUALATIN, OR 97062
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FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

CASCADE COLUMBIA DISTRIBUTION COMPANY
SHERWOOD
TAX LOT: 200
OREGON
WASHINGTON COUNTY TAX MAP: 2S 1 28C

PRELIMINARY EXISTING CONDITIONS PLAN - NORTH

DESIGNED BY:	--
DRAWN BY:	CTH
MANAGED BY:	NSW
CHECKED BY:	CC

DATE: 09/08/2021

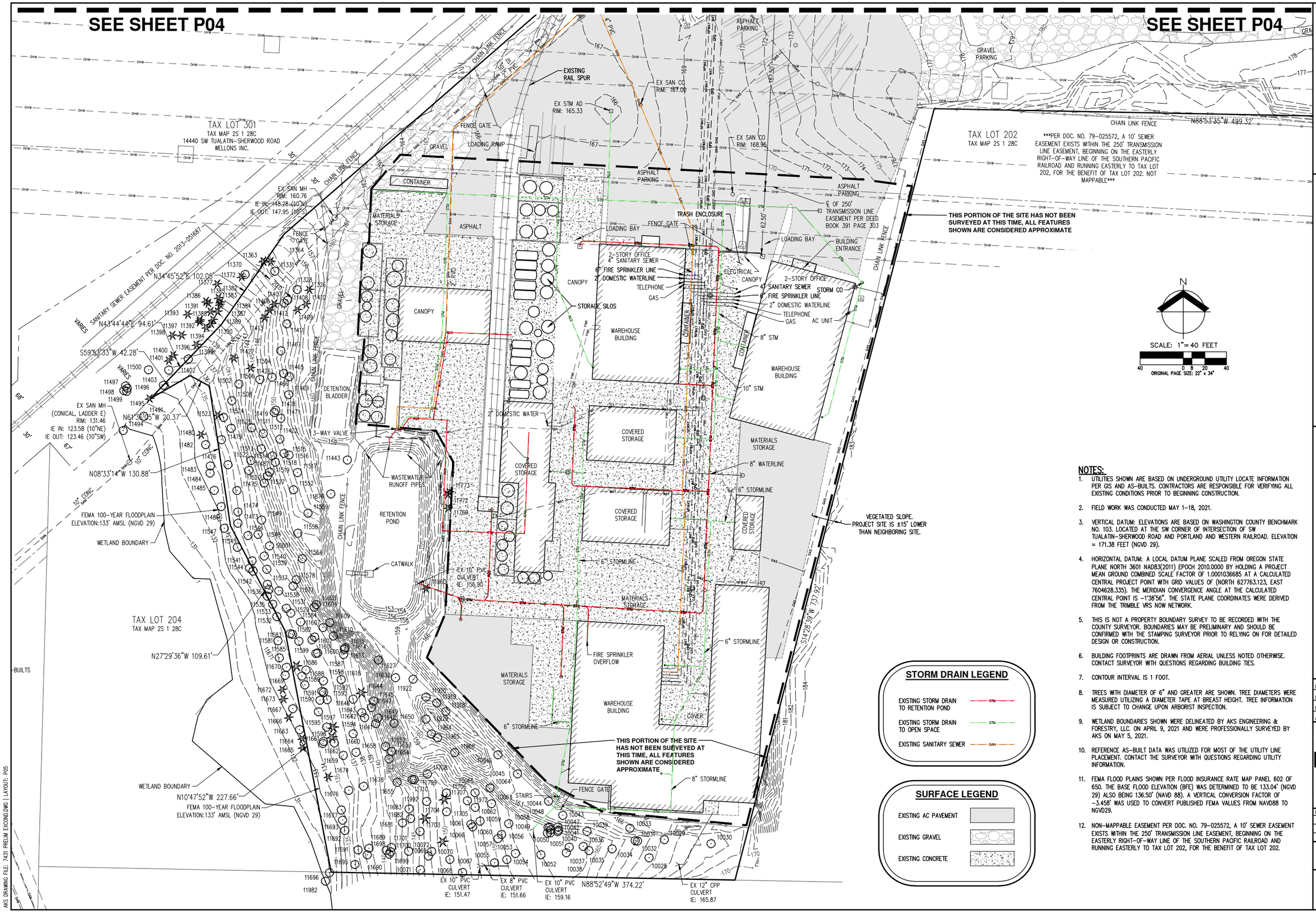
REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON JANUARY 19, 2007 NOAH W. WHITE 70652LS
RENEWS: 6/30/24

REVISIONS

JOB NUMBER 7431

SHEET P04

AKS DRAWING FILE: 7431 PRELIM EXCOND.DWG | LAYOUT: P04



STORM DRAIN LEGEND

- EXISTING STORM DRAIN TO RETENTION POND — STM
- EXISTING STORM DRAIN TO OPEN SPACE — STM
- EXISTING SANITARY SEWER — SAN

SURFACE LEGEND

- EXISTING AC PAVEMENT
- EXISTING GRAVEL
- EXISTING CONCRETE

NOTES:

1. UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE INFORMATION PER GIS AND AS-BUILTS. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
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FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

CASCADE COLUMBIA DISTRIBUTION COMPANY
SHERWOOD OREGON
TAX LOT: 200 WASHINGTON COUNTY TAX MAP: 2S 1 28C

PRELIMINARY EXISTING CONDITIONS PLAN - SOUTH

DESIGNED BY:	--
DRAWN BY:	CTH
MANAGED BY:	NSW
CHECKED BY:	CC

DATE: 09/08/2021

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 9, 2007
NOAH W. WHITE
79652LS
RENEWS: 6/30/24

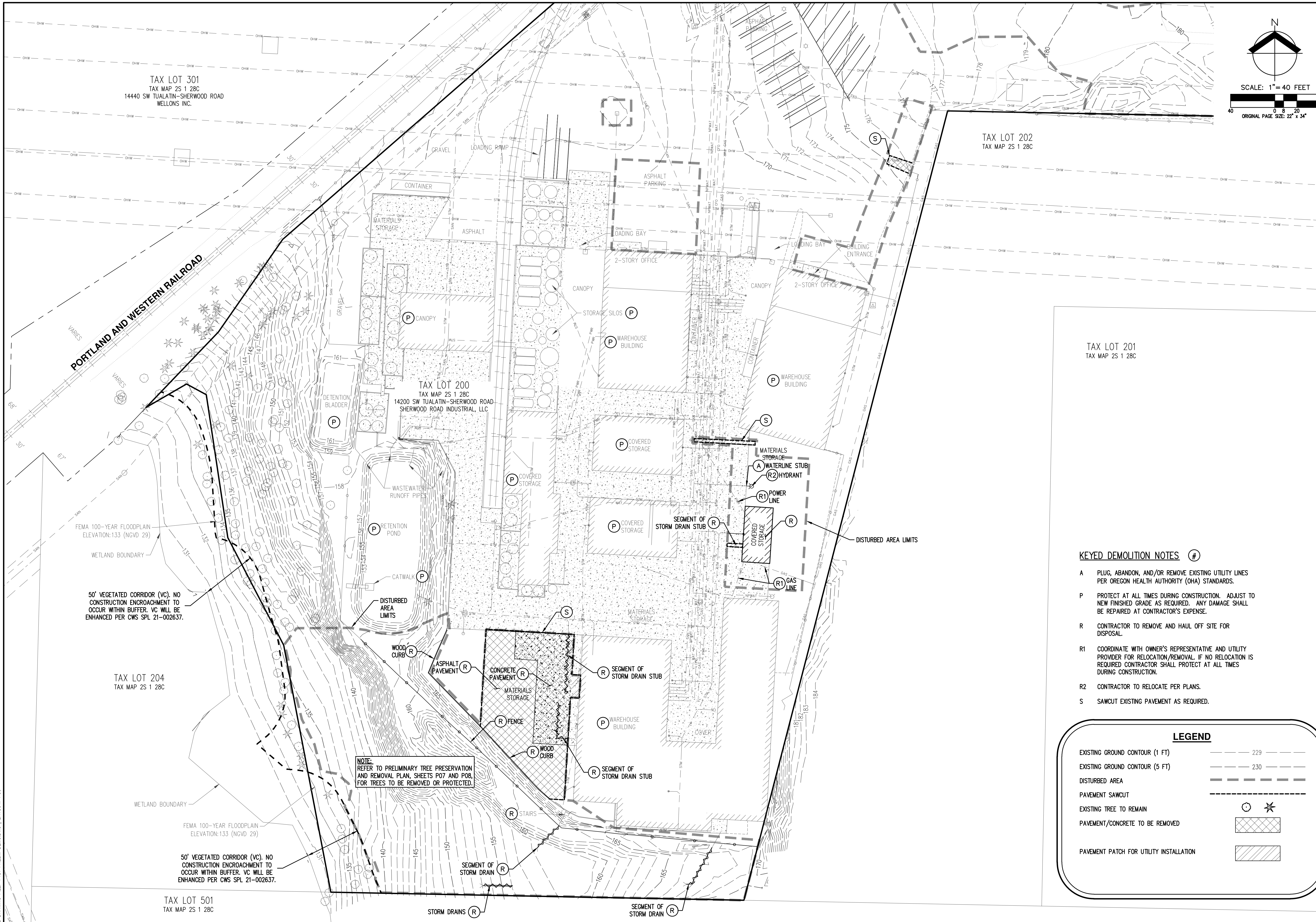
REVIEW COPY

REVISIONS

JOB NUMBER 7431

SHEET P05

AKS DRAWING FILE: 7431 PRELIM EXCOND.DWG | LAYOUT: P05



KEYED DEMOLITION NOTES (#)

- A — PLUG, ABANDON, AND/OR REMOVE EXISTING UTILITY LINES PER OREGON HEALTH AUTHORITY (OHA) STANDARDS.
- P — PROTECT AT ALL TIMES DURING CONSTRUCTION. ADJUST TO NEW FINISHED GRADE AS REQUIRED. ANY DAMAGE SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
- R — CONTRACTOR TO REMOVE AND HAUL OFF SITE FOR DISPOSAL.
- R1 — COORDINATE WITH OWNER'S REPRESENTATIVE AND UTILITY PROVIDER FOR RELOCATION/REMOVAL. IF NO RELOCATION IS REQUIRED CONTRACTOR SHALL PROTECT AT ALL TIMES DURING CONSTRUCTION.
- R2 — CONTRACTOR TO RELOCATE PER PLANS.
- S — SAWCUT EXISTING PAVEMENT AS REQUIRED.

LEGEND

EXISTING GROUND CONTOUR (1 FT)	229
EXISTING GROUND CONTOUR (5 FT)	230
DISTURBED AREA	
PAVEMENT SAWCUT	
EXISTING TREE TO REMAIN	
PAVEMENT/CONCRETE TO BE REMOVED	
PAVEMENT PATCH FOR UTILITY INSTALLATION	

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CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY DEMOLITION PLAN

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

REGISTERED PROFESSIONAL ENGINEER 62432PE OREGON SEPT. 14, 1999 STEVEN C. ROPER
PRELIMINARY NOT FOR CONSTRUCTION
RENEWAL DATE: 12/31/22

REVISIONS

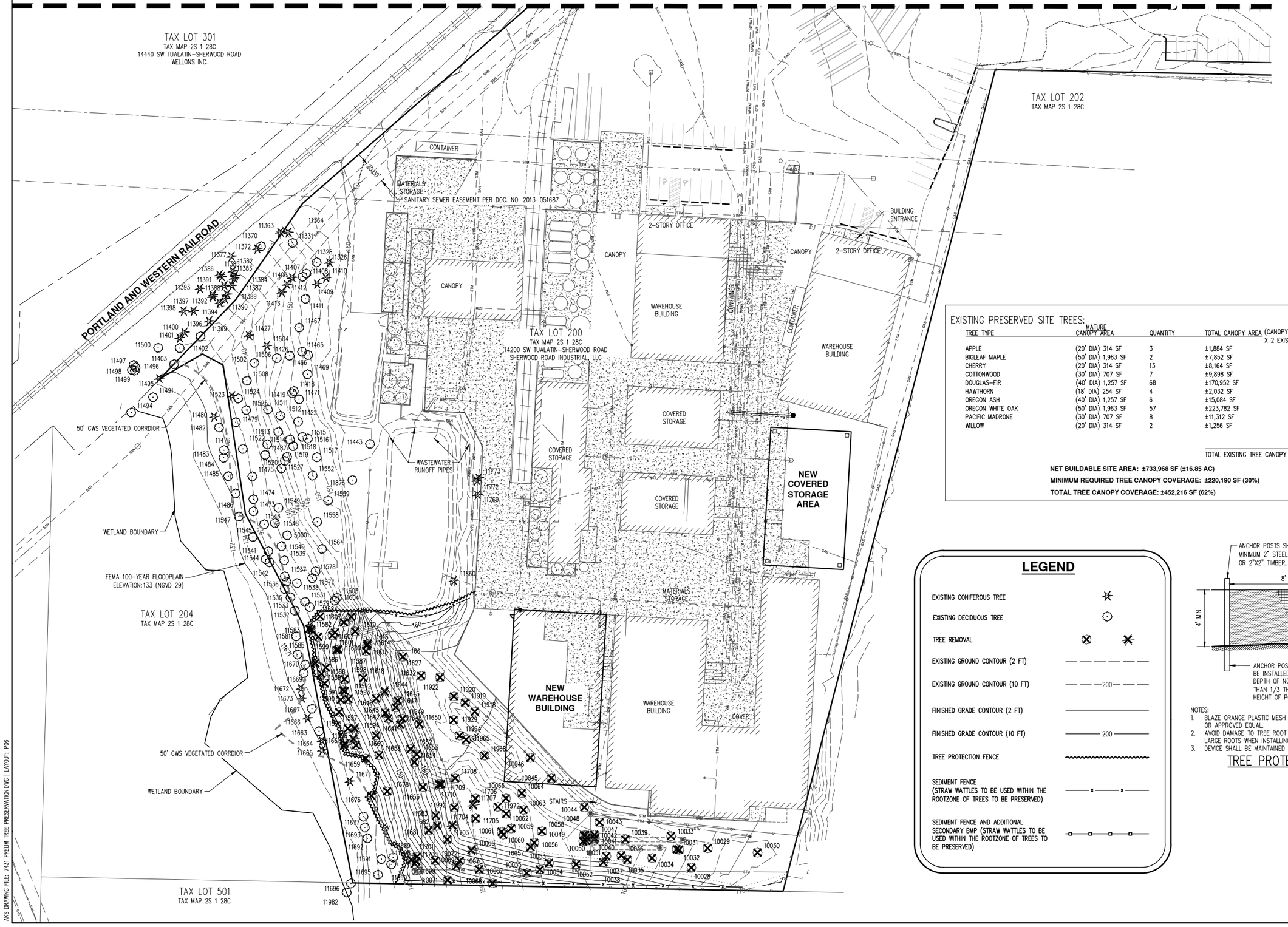
JOB NUMBER 7431

SHEET P06

AKS DRAWING FILE: 7431 PRELIM DEMO.DWG | LAYOUT: P06

SEE SHEET P08

SEE SHEET P08



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SCALE: 1" = 40 FEET

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ORIGINAL PAGE SIZE: 22" x 34"

EXISTING PRESERVED SITE TREES:

TREE TYPE	MATURE CANOPY AREA	QUANTITY	TOTAL CANOPY AREA (CANOPY AREA X QUANTITY X 2 EXISTING TREE CREDIT)
APPLE	(20' DIA) 314 SF	3	±1,884 SF
BIGLEAF MAPLE	(50' DIA) 1,963 SF	2	±7,852 SF
CHERRY	(20' DIA) 314 SF	13	±8,164 SF
COTTONWOOD	(30' DIA) 707 SF	7	±9,898 SF
DOUGLAS-FIR	(40' DIA) 1,257 SF	68	±170,952 SF
HAWTHORN	(18' DIA) 254 SF	4	±2,032 SF
OREGON ASH	(40' DIA) 1,257 SF	6	±15,084 SF
OREGON WHITE OAK	(50' DIA) 1,963 SF	57	±223,782 SF
PACIFIC MADRONE	(30' DIA) 707 SF	8	±11,312 SF
WILLOW	(20' DIA) 314 SF	2	±1,256 SF

TOTAL EXISTING TREE CANOPY AREA: ±452,216 SF

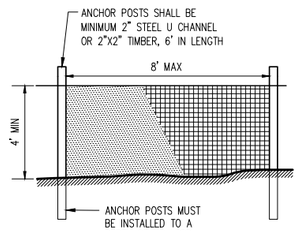
NET BUILDABLE SITE AREA: ±733,968 SF (±16.85 AC)

MINIMUM REQUIRED TREE CANOPY COVERAGE: ±220,190 SF (30%)

TOTAL TREE CANOPY COVERAGE: ±452,216 SF (62%)

LEGEND

- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- TREE REMOVAL
- EXISTING GROUND CONTOUR (2 FT)
- EXISTING GROUND CONTOUR (10 FT) — 200
- FINISHED GRADE CONTOUR (2 FT)
- FINISHED GRADE CONTOUR (10 FT) — 200
- TREE PROTECTION FENCE
- SEDIMENT FENCE (STRAW WATTLES TO BE USED WITHIN THE ROOTZONE OF TREES TO BE PRESERVED)
- SEDIMENT FENCE AND ADDITIONAL SECONDARY BMP (STRAW WATTLES TO BE USED WITHIN THE ROOTZONE OF TREES TO BE PRESERVED)



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

TREE PROTECTION FENCE

PRELIMINARY NOT FOR CONSTRUCTION

BRUCE R. BALDWIN
CERTIFICATE NUMBER: PN-9668A
EXPIRATION DATE: 12/31/23

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503.563.6151
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CASCADE COLUMBIA DISTRIBUTION COMPANY
SHERWOOD
TAX LOT 200
OREGON
TAX MAP 2S 1 28C

PRELIMINARY TREE PRESERVATION AND REMOVAL PLAN

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER 7431

SHEET **P07**

AKS (DRAWING FILE: 7431 PRELIM TREE PRESERVATION.DWG | LAYOUT: P06

PRUNING/TREE REMOVAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE CREW OF PERSONNEL, EQUIPMENT, AND MATERIALS TO SAFELY AND EFFICIENTLY COMPLETE THE ASSIGNED WORK. EACH SUCH CREW SHALL INCLUDE AN INDIVIDUAL WHO SHALL BE DESIGNATED AS THE CREW SUPERVISOR, BE RESPONSIBLE FOR THE CREW'S ACTIVITIES, RECEIVE INSTRUCTION FROM THE OWNER OR THE OWNER'S REPRESENTATIVE, AND DIRECT THE CREW TO ACCOMPLISH SUCH WORK.

2. WHENEVER A TREE, WHICH IS NOT SCHEDULED TO BE REMOVED, MUST BE TRIMMED OR PRUNED, THE CONTRACTOR SHALL ENSURE THAT SUCH TRIMMING AND PRUNING IS CARRIED OUT UNDER THE DIRECT SUPERVISION OF A CERTIFIED ARBORIST. ALL PRUNING AND TRIMMING SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF ANSI A300 "STANDARD PRACTICES FOR TREE, SHRUB AND OTHER WOODY PLANT MAINTENANCE".

3. UNLESS AS OTHERWISE DIRECTED BY THE OWNER, ROOT BALLS FROM TREES BEING REMOVED SHALL BE COMPLETELY REMOVED UNLESS THE ROOT REMOVAL CROSSES ONTO ADJACENT PROPERTIES OR WOULD COMPROMISE TREES BEING PRESERVED. IN THOSE CASES, THE STUMPS SHALL BE GROUND AS NECESSARY SO AS NOT TO CAUSE DAMAGE TO THE ROOT ZONES OF ADJACENT TREES TO BE PRESERVED ON THE SUBJECT PARCEL OR ABUTTING PARCELS. STUMPS NEAR PROPERTY LINES SHALL ALSO BE GROUND AS NECESSARY SO AS NOT TO CAUSE DISTURBANCE TO ADJACENT PARCELS.

4. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST GOVERNMENTAL SAFETY REGULATIONS. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ANSI Z133.1 "PRUNING, TRIMMING, REPAIRING, MAINTAINING AND REMOVING TREES AND CUTTING BRUSH–SAFETY REQUIREMENTS" WITH SPECIAL EMPHASIS GIVEN TO THE REQUIREMENT THAT ONLY QUALIFIED LINE–CLEARANCE TREE TRIMMERS BE ASSIGNED TO WORK WHERE A POTENTIAL ELECTRICAL HAZARD EXISTS.

5. THE CONTRACTOR SHALL MAKE ALL THE NECESSARY ARRANGEMENTS WITH ANY UTILITY THAT MUST BE PROTECTED OR RELOCATED IN ORDER TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROTECTION OF THE OPERATING CONDITION OF ALL ACTIVE UTILITIES WITHIN THE AREA OF CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING UTILITIES.

6. ANY MATERIAL RESULTING FROM THE TRIMMING OR REMOVAL OF ANY TREES SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR TO DISPOSE OF.

7. HAZARDOUS TREE REPORTING: ANY PERSON ENGAGED IN TRIMMING OR PRUNING WHO BECOMES AWARE OF A TREE OF DOUBTFUL STRENGTH, THAT COULD BE DANGEROUS TO PERSONS AND PROPERTY, SHALL REPORT SUCH TREE(S) TO THE OWNER OR THE OWNER'S REPRESENTATIVE. SUCH TREES SHALL INCLUDE THOSE THAT ARE OVER MATURE, DISEASED, OR SHOWING SIGNS OF DECAY OR OTHER STRUCTURAL WEAKNESS.

8. TREES DETERMINED TO BE A HAZARD SHALL BE REMOVED AS SOON AS POSSIBLE.

9. DAMAGES: ANY DAMAGE CAUSED BY THE CONTRACTOR, INCLUDING, BUT NOT LIMITED TO, BROKEN SIDEWALK, CURB, RUTTED LAWN, BROKEN WATER SHUT–OFFS, WIRE DAMAGE, BUILDING DAMAGE, STREET DAMAGE, ETC., WILL BE REPAIRED OR REPLACED IN A TIMELY MANNER, TO THE OWNER'S SATISFACTION, AND ALL COSTS PAID BY THE CONTRACTOR.

10. ANY BRUSH CLEARING REQUIRED WITHIN THE TREE PROTECTION AREA SHALL BE ACCOMPLISHED WITH HAND OPERATED EQUIPMENT.

11. TREES TO BE REMOVED SHALL BE FELLED SO AS TO FALL AWAY FROM ASSUMED TREE ROOT ZONES AND TO AVOID PULLING AND BREAKING OF ROOTS TO REMAIN. DIRECTIONAL FELLING OF TREES SHALL BE USED TO AVOID DAMAGE TO TREES DESIGNATED FOR RETENTION.

12. ALL DOWNED BRUSH AND TREES SHALL BE REMOVED FROM THE TREE PROTECTION AREA EITHER BY HAND OR WITH EQUIPMENT STAGED OUTSIDE OF THE TREE PROTECTION AREA. EXTRACTION SHALL OCCUR BY LIFTING THE MATERIAL OUT, NOT BY SKIDDING IT ACROSS THE GROUND.

13. IF TEMPORARY HAUL OR ACCESS ROADS MUST PASS OVER TREE PROTECTION AREA, A ROADBED OF STEEL PLATES, OR 6 INCHES OF MULCH, OR 6 INCHES OF GRAVEL SHALL BE PLACED TO PREVENT SOIL COMPACTION IF DETERMINED NECESSARY BY THE PROJECT ARBORIST. THE ROADBED MATERIAL SHALL BE REPLENISHED AS NECESSARY TO MAINTAIN A 6–INCH DEPTH.

14. PRUNING: THE CONTRACTOR SHALL CONSULT WITH THE PROJECT ARBORIST PRIOR TO ANY PRUNING ACTIVITIES NECESSARY FOR CONSTRUCTION ACTIVITIES. ALL PRUNING ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH ANSI A300 PRUNING STANDARDS. PRUNING SHALL BE COMPLETED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

15. CUT BRANCHES AND ROOTS WITH SHARP PRUNING INSTRUMENTS THAT DO NOT CHOP OR TEAR.

16. FENCING SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITIES, INCLUDING, BUT NOT LIMITED TO CLEARING, GRADING, EXCAVATION, OR DEMOLITION WORK, AND SHALL BE REMOVED ONLY AFTER THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES, INCLUDING LANDSCAPING AND IRRIGATION INSTALLATION.

17. TREE PROTECTION FENCING SHALL BE FLUSH WITH THE INITIAL UNDISTURBED GRADE.

TREE PRESERVATION NOTES:

PLACING MATERIALS NEAR TREES:

1. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE TREE PROTECTION AREA OF ANY TREE DESIGNATED TO REMAIN, INCLUDING, BUT NOT LIMITED TO, PARKING EQUIPMENT, PLACING SOLVENTS, STORING BUILDING MATERIAL AND SOIL DEPOSITS, DUMPING CONCRETE WASHOUT.

ATTACHMENTS TO TREES:

1. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY OBJECT TO ANY TREE DESIGNATED FOR PROTECTION.

GRADING NEAR TREES:

1. THE GRADE SHALL NOT BE ELEVATED OR REDUCED WITHIN THE TREE PROTECTION AREA OF TREES TO BE PRESERVED WITHOUT THE PROJECT ARBORIST'S AUTHORIZATION. THE PROJECT ARBORIST MAY ALLOW COVERAGE OF UP TO ONE HALF OF THE AREA OF THE TREE'S ASSUMED ROOT ZONE WITH LIGHT SOILS (NO CLAY) TO THE MINIMUM DEPTH NECESSARY TO CARRY OUT GRADING OR LANDSCAPING PLANS, IF IT WILL NOT IMPERIL THE SURVIVAL OF THE TREE. AERATION DEVICES MAY BE REQUIRED TO ENSURE THE TREE'S SURVIVAL.
2. IF THE GRADE ADJACENT TO A PRESERVED TREE IS RAISED SUCH THAT IT COULD SLOUGH OR ERODE INTO THE TREE PROTECTION AREA, IT SHALL BE PERMANENTLY STABILIZED TO PREVENT SUFFOCATION OF THE ROOTS.
3. THE APPLICANT SHALL NOT INSTALL AN IMPERVIOUS SURFACE WITHIN THE TREE PROTECTION AREA WITHOUT THE AUTHORIZATION OF THE PROJECT ARBORIST. THE PROJECT ARBORIST MAY REQUIRE SPECIFIC CONSTRUCTION METHODS AND/OR USE OF AERATION DEVICES TO ENSURE THE TREE'S SURVIVAL AND TO MINIMIZE THE POTENTIAL FOR ROOT INDUCED DAMAGE TO THE IMPERVIOUS SURFACE.
4. TO THE GREATEST EXTENT PRACTICAL, UTILITY TRENCHES SHALL BE LOCATED OUTSIDE OF THE TREE PROTECTION AREA. THE PROJECT ARBORIST MAY REQUIRE THAT UTILITIES BE TUNNELED UNDER THE ROOTS OF TREES TO BE RETAINED IF THE PROJECT ARBORIST DETERMINES THAT TRENCHING WOULD SIGNIFICANTLY REDUCE THE CHANCES OF THE TREE'S SURVIVAL.
5. TREES AND OTHER VEGETATION TO BE RETAINED SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. CLEARING OPERATIONS SHALL BE CONDUCTED SO AS TO EXPOSE THE SMALLEST PRACTICAL AREA OF SOIL FOR THE LEAST POSSIBLE AMOUNT OF TIME. SHRUBS, GROUND COVER, AND STUMPS SHALL BE MAINTAINED TO CONTROL EROSION, WHERE FEASIBLE. WHERE NOT FEASIBLE, APPROPRIATE EROSION CONTROL PRACTICES SHALL BE IMPLEMENTED.

ADDITIONAL REQUIREMENTS:

1. THE PROJECT ARBORIST MAY REQUIRE ADDITIONAL TREE PROTECTION MEASURES WHICH ARE CONSISTENT WITH ACCEPTED URBAN FORESTRY PRACTICES.

EXCAVATION WITHIN ASSUMED TREE ROOT ZONES:

1. EXCAVATION IN THE TOP 24 INCHES OF SOIL IN THE ASSUMED TREE ROOT ZONE SHOULD BEGIN AT THE EXCAVATION LINE THAT IS CLOSEST TO THE TREE.
2. THE EXCAVATION SHOULD BE DONE BY HAND/SHOVEL OR WITH AN EXCAVATOR AND A PERSON WITH A SHOVEL, PRUNING SHEARS, AND A PRUNING SAW.
3. IF DONE BY HAND, ALL ROOTS 1–INCH DIAMETER OR LARGER SHOULD BE PRUNED AT THE EXCAVATION LINE.
4. IF DONE WITH AN EXCAVATOR (MOST LIKELY SCENARIO), THEN THE OPERATOR SHALL START THE CUT AT THE EXCAVATION LINE AND CAREFULLY "FEEL" FOR ROOTS/RESISTANCE. WHEN THERE IS RESISTANCE, THE PERSON WITH THE SHOVEL HAND DIGS AROUND THE ROOTS AND PRUNES THE ROOTS 1–INCH DIAMETER OR LARGER.
5. THE EXCAVATOR IS TO REMAIN OFF OF THE TREE ROOTS TO BE PRESERVED AT ALL TIMES.
6. ALL ROOTS SHALL BE CUT CLEANLY WITH PRUNING SHEARS OR A PRUNING SAW.
7. THE PROJECT ARBORIST MUST BE ON SITE DURING ANY WORK WITHIN THE TREE PROTECTION AREA.

N

SCALE: 1"= 40 FEET

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ORIGINAL PAGE SIZE: 22" x 34"

BRUCE R. BALDWIN
CERTIFICATE NUMBER: PN–6666A
EXPIRATION DATE: 12/31/23

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CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY TREE PRESERVATION AND REMOVAL PLAN

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

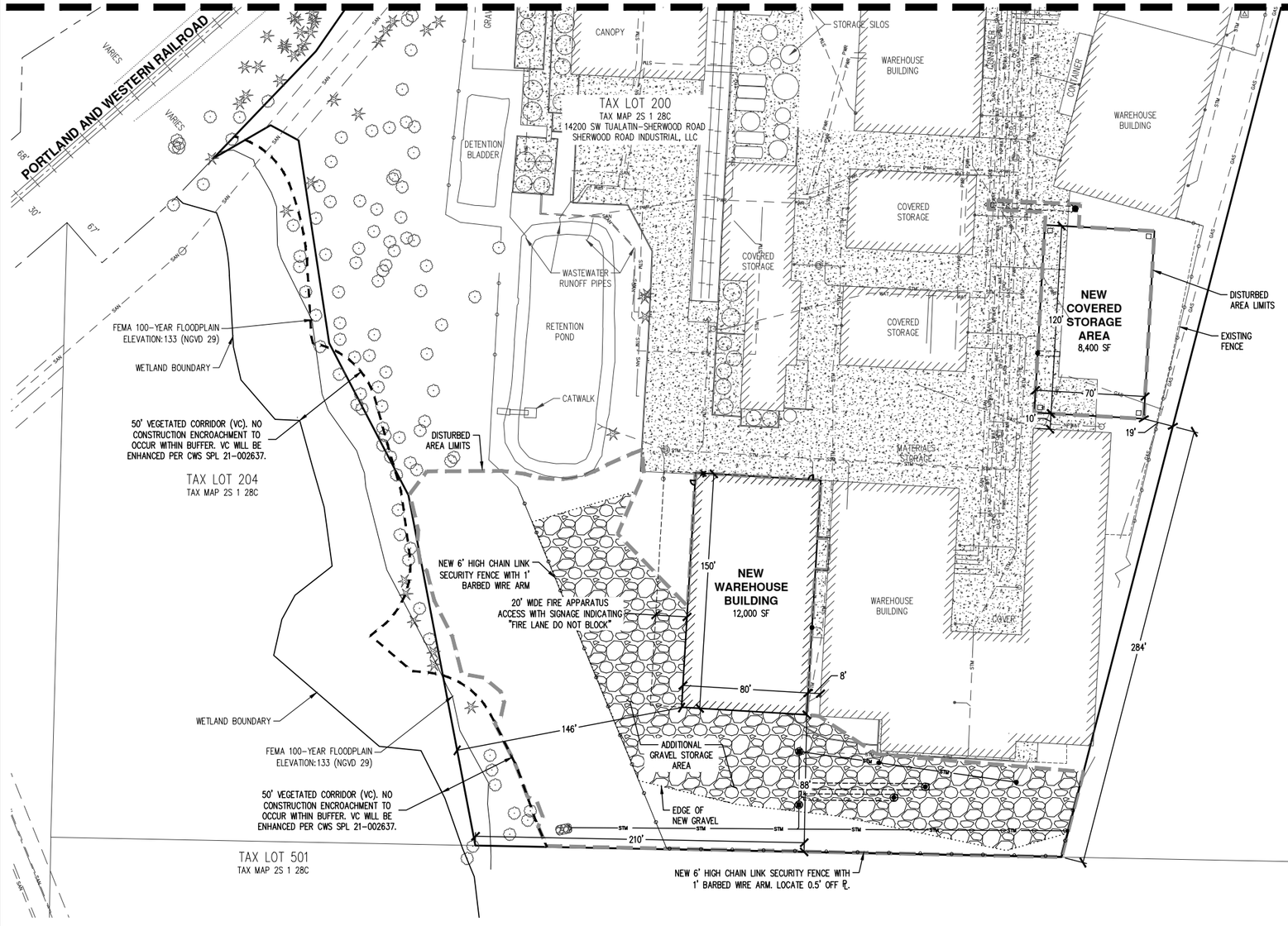
JOB NUMBER 7431

SHEET P08

AKS DRAWING FILE: 7431 PRELIM TREE PRESERVATION.DWG | LAYOUT: P08

SEE SHEET P10

SEE SHEET P10



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ORIGINAL PAGE SIZE: 22" x 34"

SURFACE LEGEND

NEW GRAVEL

IMPERVIOUS AREA SUMMARY

EXISTING IMPERVIOUS AREA: ±398,444 SF

NEW IMPERVIOUS AREA: ±25,480 SF

TOTAL IMPERVIOUS AREA: ±423,924 SF

NET BUILDABLE AREA

TOTAL SITE AREA: ±733,968 SF = ±16.85 AC

UNBUILDABLE AREA (WITHIN FLOODPLAIN): ±944 SF = ±0.02 AC

NET BUILDABLE AREA: ±733,024 SF = ±16.83 AC

NEW STRUCTURES

NEW STORAGE BUILDING: ±12,000 SF

NEW COVERED STORAGE AREA: ±8,400 SF

PARKING CALCULATIONS

EXISTING WAREHOUSE AREA: ±67,273
NEW WAREHOUSE AREA: ±20,400 SF
TOTAL WAREHOUSE AREA: ±87,673 SF

EXISTING OFFICE AREA: ±11,333 SF

MINIMUM PARKING REQUIRED: 57 SPACES (([0.3 SPACES/1000 SF] X 87,673 SF)+([2.7 SPACES/1000 SF] X 11,333 SF)) = 56.9 SPACES BASED ON WAREHOUSE BUILDING AND GENERAL OFFICE DESIGNATIONS)

PARKING PROVIDED: 60 SPACES

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CASCADE COLUMBIA DISTRIBUTION COMPANY
SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY SITE PLAN (SOUTH)

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1989
COREN C. ROPER
PRELIMINARY NOT FOR CONSTRUCTION
RENEWAL DATE: 12/31/22

REVISIONS

JOB NUMBER
7431

SHEET
P09

AKS DRAWING FILE: 7431 PRELIM SITE.DWG | LAYOUT: P09

SURFACE LEGEND

NEW GRAVEL

NEW AC PAVEMENT

N

SCALE: 1" = 40 FEET

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ORIGINAL PAGE SIZE: 22" x 34"

IMPERVIOUS AREA SUMMARY

EXISTING IMPERVIOUS AREA: ±398,444 SF

NEW IMPERVIOUS AREA: ±25,480 SF

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PARKING PROVIDED: 60 SPACES

TAX LOT 301
TAX MAP 2S 1 28C
14440 SW TUALATIN-SHERWOOD ROAD
WELLONS INC.

SW TUALATIN-SHERWOOD ROAD
(COUNTY ROAD NO. 2737)

PORTLAND AND WESTERN RAILROAD

ASPHALT ROADWAY

DRIVEWAY DROP

ASPHALT

GRAVEL

BOULDERS

WEIGH STATION

DETENTION POND

ASPHALT PARKING

GRAVEL PARKING

NEW ASPHALT PARKING AREA

27 SPACES

50' MIN SEPARATION FROM EXISTING BPA TOWER

GRAVEL ROADWAY

TAX LOT 202
TAX MAP 2S 1 28C

GRAVEL

LOADING RAMP

CONTAINER

MATERIALS STORAGE

RETROFIT ADA PARKING AREAS AS NECESSARY

NEW STRIPING AND WHEEL STOPS FOR PARKING AREAS

15 SPACES

18 SPACES

LOADING BAY

BUILDING ENTRANCE

2-STORY OFFICE

CANOPY

SEE SHEET P09

SEE SHEET P09

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CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY SITE PLAN (NORTH)

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 14, 1989 COREN C. ROPER

PRELIMINARY NOT FOR CONSTRUCTION

RENEWAL DATE: 12/31/22

REVISIONS

JOB NUMBER 7431

SHEET P10

AKS DRAWING FILE: 7431 PRELIM SITE.DWG | LAYOUT: P10

SEE SHEET P12

SEE SHEET P12

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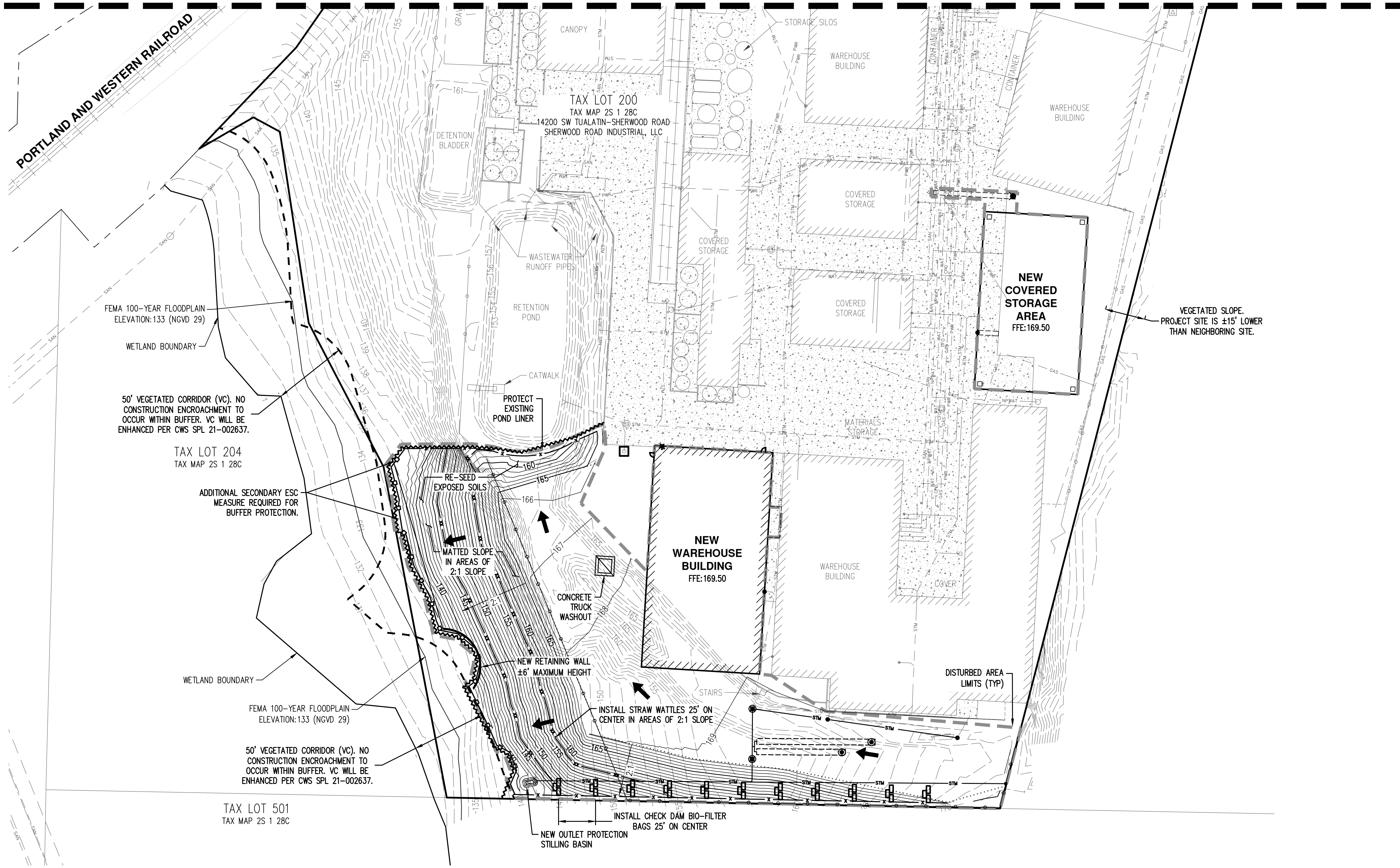
ORIGINAL PAGE SIZE: 22" x 34"



EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL SITE INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. LONG TERM STABILIZATION MEASURES, INCLUDING SLOPE MATTING AND PERMANENT SEEDING SHALL BE IN PLACE OVER ALL EXPOSED SOILS IMMEDIATELY AFTER SITE FINISH GRADE IS ESTABLISHED. CONTRACTOR MAY PHASE LONG TERM STABILIZATION MEASURES BASED ON TIMING AND COMPLETION OF FINISH GRADE.
3. SLOPE STABILIZATION (TRACK WALKING) TO BE USED ON ALL PERVIOUS AREAS WITHIN DISTURBED AREA BOUNDARY THAT ARE NOT TO BE COVERED WITH SLOPE MATTING.

LEGEND

Item	Symbol
EXISTING GROUND CONTOUR (1FT)	164
EXISTING GROUND CONTOUR (5FT)	165
FINISHED GRADE CONTOUR (1FT)	164
FINISHED GRADE CONTOUR (5FT)	165
DISTURBED AREA LIMITS	
CONCRETE TRUCK WASHOUT INSTALL PER CLEAN WATER SERVICES DETAIL DRAWING 900	
FLOW ARROW	
SEDIMENT FENCE (TO BE INSTALLED PRIOR TO GRADING) INSTALL PER CLEAN WATER SERVICES DETAIL DRAWING 875	x x
SEDIMENT FENCE AND ADDITIONAL SECONDARY BMP MEASURE – COMPOST SOCK/BERM OR STRAW WATTLES (TO BE INSTALLED PRIOR TO GRADING) INSTALL PER CLEAN WATER SERVICES DETAIL DRAWINGS 875, 880, OR 890 AS APPLICABLE	
TREE PROTECTION FENCE	
INLET PROTECTION (TYPE 5) INSTALL PER CLEAN WATER SERVICES DETAIL DRAWING 920	
CHECK DAM BIO-FILTER BAG (TO BE INSTALLED POST GRADING) INSTALL PER CLEAN WATER SERVICES DETAIL DRAWING 845	
STRAW WATTLES (TO BE INSTALLED POST GRADING) INSTALL PER CLEAN WATER SERVICES DETAIL DRAWINGS 880 AND 940	xx xx

AKS

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CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON

TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY GRADING AND EROSION-SEDIMENT CONTROL PLAN (SOUTH)

DESIGNED BY: KNU
DRAWN BY: KNU
MANAGED BY: SR
CHECKED BY: SR
DATE: 5/26/2022

REGISTERED PROFESSIONAL ENGINEER — STEVEN C. ROPER — PRELIMINARY NOT FOR CONSTRUCTION

RENEWAL DATE: 12/31/22

REVISIONS

JOB NUMBER
7431

SHEET
P11

AKS DRAWING FILE: 7431 PRELIM GRADING.DWG | LAYOUT: P11

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL SITE INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. LONG TERM STABILIZATION MEASURES, INCLUDING SLOPE MATTING AND PERMANENT SEEDING SHALL BE IN PLACE OVER ALL EXPOSED SOILS IMMEDIATELY AFTER SITE FINISH GRADE IS ESTABLISHED. CONTRACTOR MAY PHASE LONG TERM STABILIZATION MEASURES BASED ON TIMING AND COMPLETION OF FINISH GRADE.
3. SLOPE STABILIZATION (TRACK WALKING) TO BE USED ON ALL PERVIOUS AREAS WITHIN DISTURBED AREA BOUNDARY THAT ARE NOT TO BE COVERED WITH SLOPE MATTING.

LEGEND

- EXISTING GROUND CONTOUR (1FT) — 164
- EXISTING GROUND CONTOUR (5FT) — 165
- FINISHED GRADE CONTOUR (1FT) — 164
- FINISHED GRADE CONTOUR (5FT) — 165
- DISTURBED AREA LIMITS
- CONCRETE TRUCK WASHOUT INSTALL PER CLEAN WATER SERVICES DETAIL DRAWING 900
- FLOW ARROW
- TREE PROTECTION FENCE
- INLET PROTECTION (TYPE 5) INSTALL PER CLEAN WATER SERVICES DETAIL DRAWING 920
- STRAW WATTLES (TO BE INSTALLED POST GRADING) INSTALL PER CLEAN WATER SERVICES DETAIL DRAWINGS 880 AND 940

N

SCALE: 1"= 40 FEET

40 0 8 20 40

ORIGINAL PAGE SIZE: 22" x 34"

PORTLAND AND WESTERN RAILROAD

TAX LOT 301
TAX MAP 2S 1 28C
14440 SW TUALATIN-SHERWOOD ROAD
WELLONS INC.

TAX LOT 202
TAX MAP 2S 1 28C

ASPHALT ROADWAY
DRIVE WAY DROP
ASPHALT
GRAVEL
BOULDERS
UNION STATION
DETENTION POND
ASPHALT PARKING
GRAVEL PARKING
GRAVEL ROADWAY
CONCRETE TRUCK WASHOUT
STRAW WATTLES (TYP.)
DISTURBED AREA LIMITS (TYP)
INLET PROTECTION (TYP.)
LOADING RAMP
CONTAINER
MATERIAL STORAGE
ASPHALT
2-STORY OFFICE
CANOPY
LOADING BAY
BUILDING ENTRANCE

SEE SHEET P11

SEE SHEET P11

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY GRADING AND EROSION-SEDIMENT CONTROL PLAN (NORTH)

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1998
COREN C. ROPER
RENEWAL DATE: 12/31/22

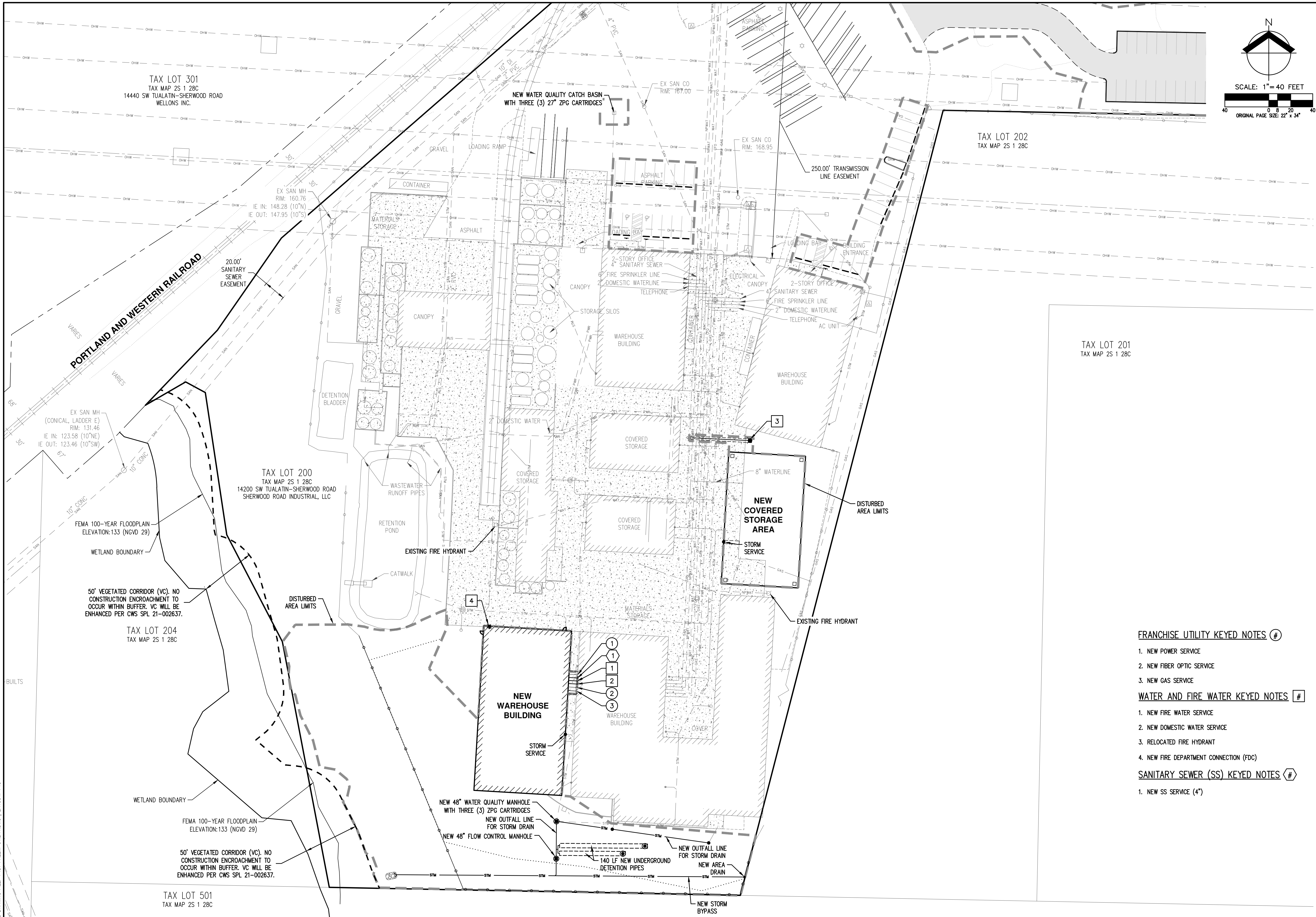
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER 7431

SHEET P12

AKS DRAWING FILE: 7431 PRELIM GRADING.DWG | LAYOUT: P12



FRANCHISE UTILITY KEYED NOTES (#)

1. NEW POWER SERVICE
2. NEW FIBER OPTIC SERVICE
3. NEW GAS SERVICE

WATER AND FIRE WATER KEYED NOTES [#]

1. NEW FIRE WATER SERVICE
2. NEW DOMESTIC WATER SERVICE
3. RELOCATED FIRE HYDRANT
4. NEW FIRE DEPARTMENT CONNECTION (FDC)

SANITARY SEWER (SS) KEYED NOTES ⟨#⟩

1. NEW SS SERVICE (4")

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CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY COMPOSITE UTILITY PLAN

DESIGNED BY: KNU
DRAWN BY: KNU
MANAGED BY: SR
CHECKED BY: SR
DATE: 5/26/2022

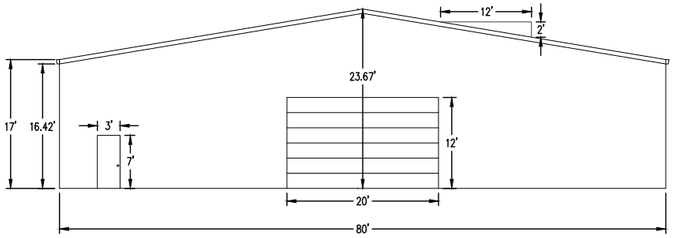
PRELIMINARY NOT FOR CONSTRUCTION
RENEWAL DATE: 12/31/22

REVISIONS

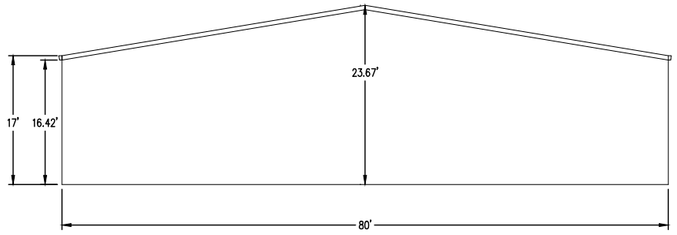
JOB NUMBER 7431

SHEET P13

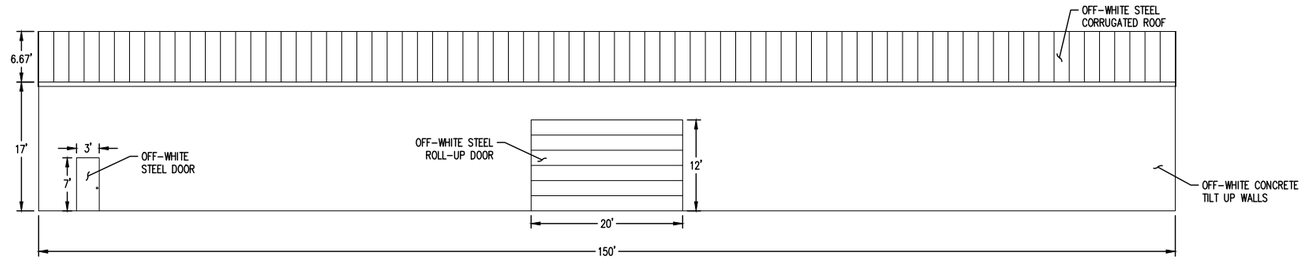
AKS DRAWING FILE: 7431 PRELIM UTILITY.DWG | LAYOUT: P13



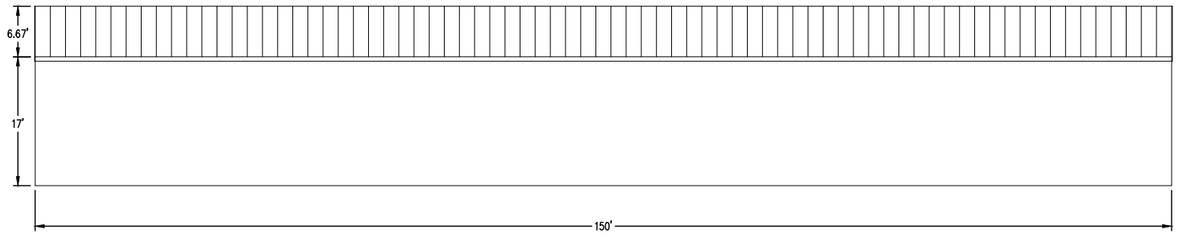
NEW WAREHOUSE BUILDING - NORTH ELEVATION
1"=10'



NEW WAREHOUSE BUILDING - SOUTH ELEVATION
1"=10'



NEW WAREHOUSE BUILDING - WEST ELEVATION
1"=10'



NEW WAREHOUSE BUILDING - EAST ELEVATION
1"=10'

NEW WAREHOUSE BUILDING - ROOF
1"=10'

SCALE: 1"=10 FEET
10 0 2 5 10
ORIGINAL PAGE SIZE: 22" x 34"

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CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY WAREHOUSE BUILDING ELEVATIONS

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1989
COLLEN C. ROPER
PRELIMINARY NOT FOR CONSTRUCTION
RENEWAL DATE: 12/31/22

REVISIONS

JOB NUMBER
7431

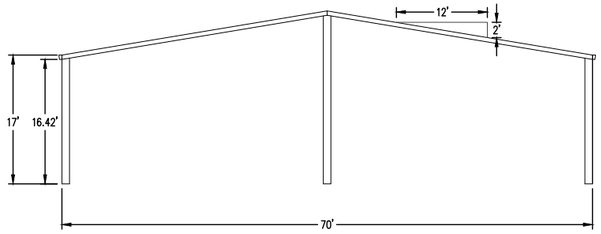
SHEET
P14

AKS DRAWING FILE: 7431 PRELIM BUILDING ELEVATIONS.DWG | LAYOUT: P14

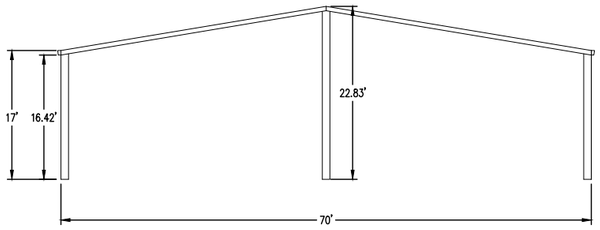
SCALE: 1"=10 FEET

10 0 2 5 10

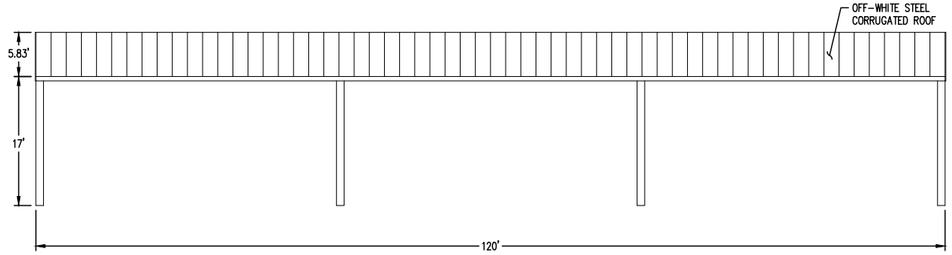
ORIGINAL PAGE SIZE: 22" x 34"



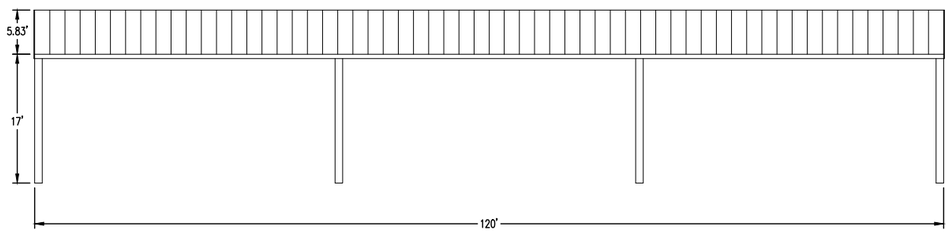
NEW COVERED STORAGE AREA - NORTH ELEVATION
1"=10'



NEW COVERED STORAGE AREA - SOUTH ELEVATION
1"=10'



NEW COVERED STORAGE AREA - WEST ELEVATION
1"=10'



NEW COVERED STORAGE AREA - EAST ELEVATION
1"=10'

NEW COVERED STORAGE AREA - ROOF
1"=10'

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CASCADE COLUMBIA DISTRIBUTION COMPANY

SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY COVERED STORAGE AREA ELEVATIONS

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 14, 1998 COLLEEN C. ROPER

PRELIMINARY NOT FOR CONSTRUCTION

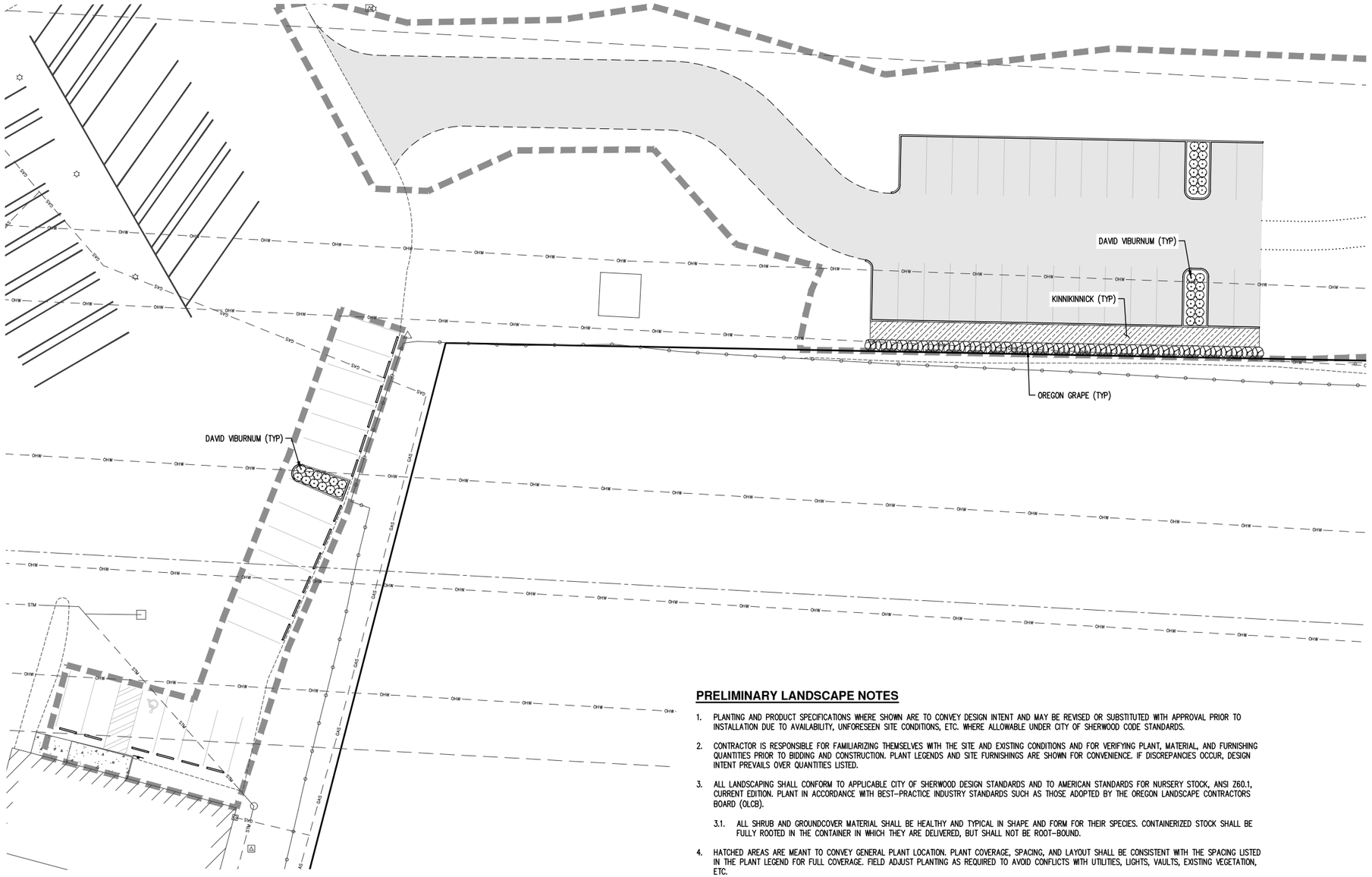
RENEWAL DATE: 12/31/22

REVISIONS

JOB NUMBER
7431

SHEET
P15

AKS DRAWING FILE: 7431 PRELIM BUILDING ELEVATIONS.DWG | LAYOUT: P15



PRELIMINARY PLANT SCHEDULE

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE/CONTAINER	SPACING
	38	MAHONIA AQUIFOLIUM	OREGON GRAPE	2 GAL CONT.	48" o.c.
	36	VIBURNUM DAVIDII	DAVID VIBURNUM	1 GAL CONT.	36" o.c.
GROUND COVERS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE/CONTAINER**	**SPACING**
	146	ARCTOSTAPHYLOS UVA-URSI	KINNIKINNICK	1 GAL CONT.	30" o.c.

PRELIMINARY LANDSCAPE NOTES

1. PLANTING AND PRODUCT SPECIFICATIONS WHERE SHOWN ARE TO CONVEY DESIGN INTENT AND MAY BE REVISED OR SUBSTITUTED WITH APPROVAL PRIOR TO INSTALLATION DUE TO AVAILABILITY, UNFORESEEN SITE CONDITIONS, ETC. WHERE ALLOWABLE UNDER CITY OF SHERWOOD CODE STANDARDS.
2. CONTRACTOR IS RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE SITE AND EXISTING CONDITIONS AND FOR VERIFYING PLANT, MATERIAL, AND FURNISHING QUANTITIES PRIOR TO BIDDING AND CONSTRUCTION. PLANT LEGENDS AND SITE FURNISHINGS ARE SHOWN FOR CONVENIENCE. IF DISCREPANCIES OCCUR, DESIGN INTENT PREVAILS OVER QUANTITIES LISTED.
3. ALL LANDSCAPING SHALL CONFORM TO APPLICABLE CITY OF SHERWOOD DESIGN STANDARDS AND TO AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1, CURRENT EDITION. PLANT IN ACCORDANCE WITH BEST-PRACTICE INDUSTRY STANDARDS SUCH AS THOSE ADOPTED BY THE OREGON LANDSCAPE CONTRACTORS BOARD (OLCB).
   - 3.1. ALL SHRUB AND GROUNDCOVER MATERIAL SHALL BE HEALTHY AND TYPICAL IN SHAPE AND FORM FOR THEIR SPECIES. CONTAINERIZED STOCK SHALL BE FULLY ROOTED IN THE CONTAINER IN WHICH THEY ARE DELIVERED, BUT SHALL NOT BE ROOT-BOUND.
4. HATCHED AREAS ARE MEANT TO CONVEY GENERAL PLANT LOCATION. PLANT COVERAGE, SPACING, AND LAYOUT SHALL BE CONSISTENT WITH THE SPACING LISTED IN THE PLANT LEGEND FOR FULL COVERAGE. FIELD ADJUST PLANTING AS REQUIRED TO AVOID CONFLICTS WITH UTILITIES, LIGHTS, VAULTS, EXISTING VEGETATION, ETC.
5. ALL PLANTING BEDS SHALL BE BROUGHT TO GRADE SHOWN ON THE GRADING PLANS AND BE SMOOTH, AND FREE OF DEBRIS, CLODS, ROOTS, ROCKS OVER 3/4" DIAMETER, ETC. AND HIGH/LOW SPOTS WHERE WATER MAY COLLECT PRIOR TO PLANT INSTALLATION OR SEEDING. NATIVE TOPSOIL, ON-SITE STOCKPILED TOPSOIL, OR IMPORTED TOPSOIL MAY BE USED TO MAKE UP REQUIRED AMOUNTS.
6. SOIL PREPARATION: GROWING MEDIUM IN ALL NEW PLANTING BEDS SHALL BE OF SUFFICIENT DEPTH AND QUALITY TO ENSURE PLANT ESTABLISHMENT AND HEALTHY GROWTH. EXISTING, NON-COMPACTED NATIVE TOPSOIL,TOPSOIL STORED ON SITE, OR IMPORTED TOPSOIL WHERE NECESSARY MAY BE USED. TOPSOIL SHALL BE FREE OF ROOTS, PLANTS, SOD, STONES, CLAY LUMPS, DEBRIS, ALKALI SALTS, WEED SEEDS, AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH. SOIL PLACEMENT AND PLANTING SHALL OCCUR IN CONDITIONS THAT DO NOT RESULT IN OVER-COMPACTION OR EROSION, SATURATED SOILS OR OTHER CONDITIONS SUCH AS FREEZING OR ABOVE AVERAGE TEMPERATURES. SOILS SHALL BE IN FRIABLE (WORKABLE) CONDITION WHEN PLACED. FINISH GRADE OF NEW PLANTING AREAS SHALL SEAMLESSLY MEET FINISH GRADE SHOWN ON GRADING PLANS AND ACCOMMODATE MULCH APPLICATION WHERE APPLICABLE.
7. IRRIGATION: IRRIGATION SHALL BE DONE BY HAND WATERING, WATER TRUCK, ETC. ALL NEW LANDSCAPING SHALL BE WATERED AT A RATE TO MAINTAIN ALL PLANTINGS IN A HEALTHY, THRIVING CONDITION DURING ESTABLISHMENT (A MINIMUM OF 1-INCH PER WEEK, INCLUDING NATURAL RAINFALL TOTALS, DURING DRY MONTHS – BETWEEN JUNE 15 AND OCTOBER 15) FOR AT LEAST THE FIRST 2-YEARS, UNLESS OTHERWISE APPROVED.
8. MULCH: APPLY 3" DEEP WELL-AGED MEDIUM GRIND OR SHREDDED DARK HEMLOCK BARK MULCH UNDER AND AROUND ALL PLANTINGS. DO NOT COVER FOLIAGE OR ROOT CROWNS OF PLANTS WITH BARK MULCH. PLANTS SHALL BE SET TO ACCOMMODATE MULCH APPLICATION WITHOUT BURYING ROOT CROWNS.
9. ALL LANDSCAPE MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED BY THE LANDSCAPE CONTRACTOR FOR A PERIOD OF ONE-YEAR TO SURVIVE IN GOOD CONDITION. LANDSCAPE CONTRACTOR SHALL GUARANTEE REPLACEMENT OF DEAD OR DYING PLANT MATERIALS, AT NO ADDITIONAL COST TO THE OWNER, EXCEPT IN CASES OF GROSS NEGLECT OR VANDALISM DURING THE ONE-YEAR WARRANTY.
10. LANDSCAPING WORK SHALL BE PERFORMED BY A LANDSCAPE CONTRACTOR LICENSED AND BONDED IN THE STATE OF OREGON. COORDINATE LANDSCAPE WORK WITH GENERAL CONTRACTOR AND OWNER/DEVELOPER.

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TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

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FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

CASCADE COLUMBIA DISTRIBUTION COMPANY
SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY LANDSCAPE PLAN

DESIGNED BY:	TEB
DRAWN BY:	TEB
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 5/26/2022

REGISTERED LANDSCAPE ARCHITECT OREGON 12/31/19 PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER
7431

SHEET
P16

AKS DRAWING FILE: 7431 PRELIM LANDSCAPE.DWG | LAYOUT: P16

Exhibit B: Application Forms

City of Sherwood Oregon

Home of the Tualatin River National Wildlife Refuge

Case No. _____
Fee _____
Receipt # _____
Date _____
TYPE _____

City of Sherwood
Application for Land Use Action

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

- ☐ Annexation
- ☐ Plan Amendment (Proposed Zone _____)
- ☐ Planned Unit Development
- ☐ Site Plan (square footage of building and parking area)
- ☐ Variance (list standards to be varied in description)
- ■ Conditional Use
- ☐ Partition (# of lots _____)
- ☐ Subdivision (# of lots _____)
- ■ Other: Major Modification to Approved Site Plan

By submitting this form the Owner, or Owner's authorized agent/ representative, acknowledges and agrees that City of Sherwood employees, and appointed or elected City Officials, have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related specifically to the project site.

Note: See City of Sherwood current Fee Schedule, which includes the "Publication/Distribution of Notice" fee, at **www.sherwoodoregon.gov.** Click on Government/Finance/Fee Schedule.

Owner/Applicant Information:

Applicant: Cascade Columbia Distribution — Phone: Please contact Applicant's Consultant
Applicant Address: 14200 SW Tualatin-Sherwood Rd., Sherwood, OR — Email: Please contact Applicant's Consultant
Owner: Sherwood Road Industrial, LLC — Phone: _____
Owner Address: 6900 Fox Ave S., Seattle, WA 98108 — Email: _____
Contact for Additional Information: Applicant's Consultant: AKS Engineering & Forestry, LLC
Chris Goodell, AICP, LEED, 503.563.6151, ChrisG@aks-eng.com
12965 SW Herman Road, Suite 100, Tualatin, OR 97062

Property Information:

Street Location: 14200 SW Tualatin-Sherwood Rd.
Tax Lot and Map No: 200; 2S 1 28C
Existing Structures/Use: Chemical Warehouse and Distribution Facility/Industrial
Existing Plan/Zone Designation: General Industrial
Size of Property(ies) 16.93

Proposed Action:

Purpose and Description of Proposed Action:

Modification to an approved site plan for the Cascade Columbia Distribution facility, which consists of the addition of a warehouse building and covered outdoor storage area in the southern portion of the site

Proposed Use: Warehousing/storage/distribution

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

Continued on Reverse

LAND USE APPLICATION FORM

Authorizing Signatures:

I am the owner/authorized agent of the owner empowered to submit this application and affirm that the information submitted with this application is correct to the best of my knowledge.

I further acknowledge that I have read the applicable standards for review of the land use action I am requesting and understand that I must demonstrate to the City review authorities compliance with these standards prior to approval of my request.

Cascade Columbia Dist. by LR Cook president — 11/17/21

Applicant's Signature — Date

Sherwood Rd IND LLC by LR Cook member — 11/17/21

Owner's Signature — Date

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

☑ **3 Copies of Application Form*** completely filled out and signed by the property owner (or person with authority to make decisions on the property.

☑ **Copy of Deed** to verify ownership, easements, etc.

☑ **At least 3 folded** sets of plans*

☑ **At least 3 copies** of narrative addressing application criteria*

☑ **Fee** (along with calculations utilized to determine fee if applicable)

☑ **Neighborhood Meeting Verification** including affidavit, sign-in sheet and meeting summary (required for Type III, IV and V projects)

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

Reference Number	Reference Date	Voucher Number	Gross	Discount	Net
INLAND USE FE	11/16/2021	260027	3,133.12	0.00	3,133.12

Check No. 87861		3,133.12	0.00	3,133.12

CASCADE COLUMBIA DISTRIBUTION COMPANY 6900 Fox Avenue S. • Seattle, WA 98108 (206) 282-6334 id128779-20

THE FACE OF THIS DOCUMENT HAS A COLORED BACKGROUND • FLUORESCENT FIBERS AND OTHER SECURITY FEATURES

WELLS FARGO BANK, NA 19-854/1250 87861

CASCADE COLUMBIA DISTRIBUTION COMPANY
6900 Fox Avenue S. • Seattle, WA 98108
(206) 282-6334 • ap_invoice@cascadecolumbia.com

VENDOR NO	CHECK NO	DATE
20243	87861	11/17/2021

$3,133.12

PAY SUM OF

Three thousand one hundred thirty three and 12/100 dollars

PAY TO THE ORDER OF
CITY OF SHERWOOD
LAND USE PERMITS
SHERWOOD, OR 97140

MP

⑈087861⑈ ⑆125008547⑆ 00200001216⑈

Reference Number	Reference Date	Voucher Number	Gross	Discount	Net
INCONDITIONAL	12/10/2021	260765	2,233.84	0.00	2,233.84

RE: 7431 - LAND USE APPLICATION

Check No. 88041		2,233.84	0.00	2,233.84

CASCADE COLUMBIA DISTRIBUTION COMPANY 6900 Fox Avenue S. • Seattle, WA 98108 (206) 282-6334 id128779-20

THE FACE OF THIS DOCUMENT HAS A COLORED BACKGROUND • FLUORESCENT FIBERS AND OTHER SECURITY FEATURES

WELLS FARGO BANK, NA 19-854/1250 88041

CASCADE COLUMBIA DISTRIBUTION COMPANY
6900 Fox Avenue S. • Seattle, WA 98108
(206) 282-6334 • ap_invoice@cascadecolumbia.com

VENDOR NO	CHECK NO	DATE
20243	88041	12/10/2021

$2,233.84

PAY SUM OF

Two thousand two hundred thirty three and 84/100 dollars

PAY TO THE ORDER OF
CITY OF SHERWOOD
LAND USE PERMITS
SHERWOOD, OR 97140

MP

⑈088041⑈ ⑆125008547⑆ 00 20000121⑈

Exhibit C: Ownership Information

Washington County, Oregon 2003-036657
03/12/2003 02:49:13 PM
D-DW Cnt=1 Stn=16 D HOFFMAN
$20.00 $6.00 $11.00 - Total = $37.00

00282263200300366570040049

I, Jerry Hanson, Director of Assessment and Taxation and Ex-Officio County Clerk for Washington County, Oregon, do hereby certify that the within instrument of writing was received and recorded in the book of records of said county.

Jerry Hanson

Jerry R. Hanson, Director of Assessment and Taxation, Ex-Officio County Clerk

20-6
11

15

AFTER RECORDING RETURN TO:
Sherwood Road Industrial LLC
Robert Code, Member
c/o Cascade Pacific
3231 17th Ave West

Seattle, WA. 98119

Until a change is requested all tax statements shall be sent to the following address: Sherwood Road Industrial LLC
Robert Code
3231 17th Ave. W.

Seattle WA. 98119

Escrow No: 3400-221676-JG
Order No: 220113

STATE OF OREGON
County of Washington } SS

I, Jerry R. Hanson, Director of Assessment and Taxation, and Ex-Officio County Clerk for said county, do hereby certify that the within instrument of writing was received and recorded in book of records of said county.

Jerry R. Hanson, Director of Assessment and Taxation, Ex-Officio County Clerk

Doc : 2000086504
Rect: 265579 387.00
10/24/2000 01:34:45pm

Pacific NW Title 0322 7907-W T.O.

THIS WARRANTY DEED IS BEING RE-RECORDED TO CORRECT THE GRANTEE'S NAME. THIS DOCUMENT PREVIOUSLY RECORDED ON 10-24-2000 AS 2000086504.

WARRANTY DEED - STATUTORY FORM
(INDIVIDUAL or CORPORATION)

CODE FAMILY LLC, a Washington Limited Liability Company

Grantor, conveys and warrants to SHERWOOD ROAD *INDUSTRIAL LLC

WASHINGTON COUNTY
REAL PROPERTY TRANSFER TAX
$355.00 10-24-00
FEE PAID DATE

Grantee, the following described real property free of encumbrances except as specifically set forth herein:

(Continued)

This instrument will not allow use of the property described in this instrument in violation of applicable land use laws and regulations. Before signing or accepting this instrument, the person acquiring fee title to the property should check with the appropriate city or county planning department to verify approved uses and to determine any limits on lawsuits against farming or forest practices as defined in ORS 30.930.

ENCUMBRANCES:

Power of assessment of Unified Sewerage Agency; Easement recorded 2/28/57 in favor of United States of America; Easement recorded 6/29/79 in favor of Easterly adjacent property owners; Waiver of Remonstrance recorded 6/29/79, Fee 79025573; Restrictive covenants recorded 7/18/94, Fee 94067470; Restrictive Covenant for non-access reserve strip recorded 7/18/94, Fee 94067471; Line of Credit Trust Deed (Continued)

The true consideration for this conveyance is $355,000.00 as part of an IRC Tax Deferred Exchange

Dated October 20, 2000 ; if a corporate grantor, it has caused its name to be signed by order of its board of directors.

Code Family LLC
Betty Code
Betty Code, Member

William J. Code
William Code, Member

STATE OF ~~OREGON~~ Washington, County of King)ss.
This instrument was acknowledged before me on October 20, 2000
by William Code & Betty Code
This instrument was acknowledged before me on ____________, ______
by ____________ as Members
of the Code Family LLC

Notary Public for ~~Oregon~~ Washington
My commission expires: 6-15-04

GREGORY J. LAWLESS
STATE OF WASHINGTON
NOTARY PUBLIC
MY COMMISSION EXPIRES 6-15-04

1-3

2003-36657

2003-36657

Order No: 220113

LEGAL DESCRIPTION

A tract of land in the Northwest quarter of the Southwest quarter of Section 28, Township 2 South, Range 1 West of the Willamette Meridian, County of Washington and State of Oregon, more particularly described as follows:

Beginning at the Southeast corner of the Northwest quarter of the Southwest quarter of said Section 28; thence South 89°53'02" West, along the South line of said Northwest quarter of the Southwest quarter, 500 feet to the Southwest corner of that tract of land conveyed to Howard E. Brune by Deed recorded June 29, 1979, Recorder's Fee No. 79-25571, Records of Washington County, said point being the true point of beginning; thence continuing West along the South line of the Northwest quarter of the Southwest quarter of said Section 28 to a point on the West line thereof; thence North, along the West line of said Section 28 to a point on the Southerly boundary of the Southern Pacific Railroad right of way; thence Northeasterly along said Southerly railroad right of way, to a point on the South line of S.W. Edy Road (County Road No. 2291 and No. 1070); thence Easterly, following the South line of said S.W. Edy Road to a point on the East line of the Northwest quarter of the Southwest quarter of said Section 28; thence South, along said East line 591.8 feet, more or less, to the Northeast corner of the aforementioned Brune Tract; thence South 89°53'02" West, along the North line of said Brune Tract, 500 feet to the Northwest corner thereof; thence South 0°02'19" East, along the West line of said Brune Tract, 718 feet to the Southwest corner thereof and the true point of beginning.

EXCEPTING THEREFROM that portion conveyed to Brune Investment Company by instrument recorded as Recorder's Fee No. 89-32751, Washington County Deed Records.

FURTHER EXCEPTING THEREFROM that portion conveyed to the City of Sherwood by instrument recorded as Recorder's Fee No. 92066602, Washington County Deed Records.

ALSO EXCEPTING THEREFROM that portion granted to the City of Sherwood by Dedication Deed recorded as Recorder's Fee No. 94067469, Washington County, Oregon.

Encumbrances, continued

recorded 12/7/94, Fee 94109346 in favor of Pacific Northwest Bank; Restrictive covenant recorded 5/19/95, Fee 95034688; Line of Credit Trust Deed recorded 9/20/99, Fee 99108283 and modified 8/15/00, Fee 2000065346

I, ***Jerry R. Hanson***, Director of Assessment and Taxation and Ex-Officio County Clerk for Washington County, do hereby certify this to be a true and correct copy of the original.

Date: March 6, 2003

By: R Hobson

Title: Deputy Clerk

2003-36657

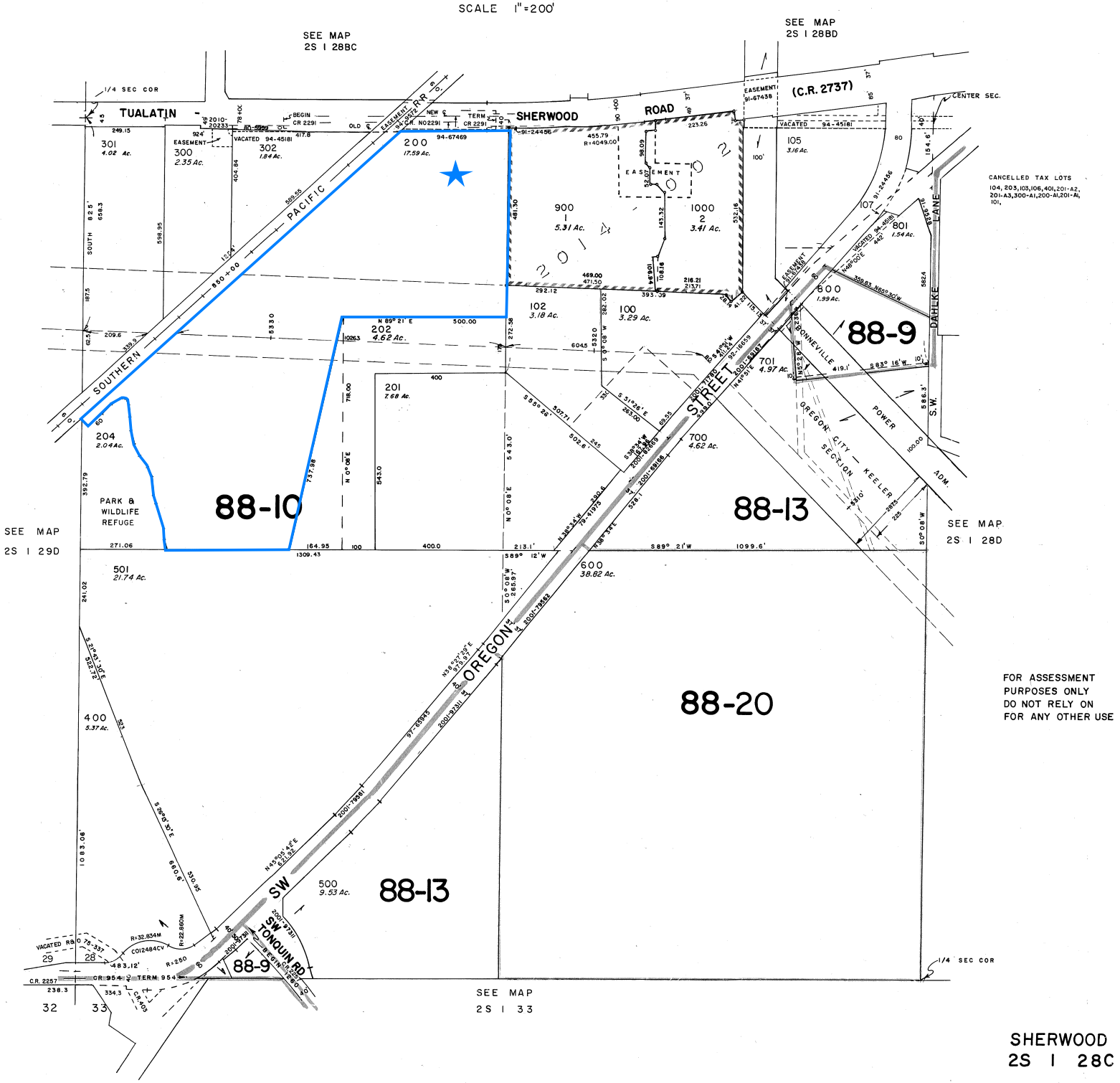
Exhibit D: Assessor's Map

SW1/4 SECTION 28 T2S R1W W.M.

WASHINGTON COUNTY OREGON

SCALE 1"=200'

2S 1 28C



SHERWOOD
2S 1 28C

Exhibit E: Documentation of Neighborhood Meeting

November 5, 2021

Neighborhood Meeting Summary: Cascade Columbia Distribution Warehouse Project

Meeting Date: November 4, 2021
Time: 6:00 PM
Location: Virtual Meeting via Zoom Webinar

The following serves as a summary of the Neighborhood Meeting process in accordance with the applicable City regulations. On October 21, 2021, property owners within 1,000 feet of the project site were sent notification of the planned land use application. This notification included the project description, the neighborhood meeting date and time, and a map of the project location and vicinity area. Information on how to join the meeting remotely was provided in the notification letter.

On November 4, 2021, Chris Goodell, Maria Miller, Mimi Doukas, and Nye Underwood from AKS Engineering & Forestry, LLC and Steve Durrell from Cascade Columbia Distribution (the Applicant) were prepared to make a presentation to attendees. No members of the public had registered to attend the meeting, and no one joined the meeting within 15 minutes of the scheduled start time. At 6:16 PM, the meeting concluded. Materials planned to be presented at the meeting were available on the AKS Engineering & Forestry website 2 days prior to the meeting and until November 14, 2021.

Sincerely,
AKS ENGINEERING & FORESTRY, LLC

Maria Miller

Maria Miller, AICP
12965 SW Herman Road, Suite 100 | Tualatin, OR 97062
P: 503.563.6151 | www.aks-eng.com |MariaM@aks-eng.com

Affidavit of Mailing

DATE:

STATE OF OREGON)
)
Washington County)

I, Mitchell Godwin, representative for the 14200 SW Tualatin Sherwood Rd proposed development project do hereby certify that the attached notice to adjacent property owners and recognized neighborhood organizations that are within 1,000 feet of the subject project, was placed in a U.S. Postal receptacle on Oct 21, 2021.

Representatives Name: Mitchell Godwin
Name of the Organization: AKS Engineering & Forestry, LLC

October 21, 2021

RE: VIRTUAL NEIGHBORHOOD MEETING NOTICE
MODIFICATION TO AN APPROVED SITE PLAN FOR CASCADE COLUMBIA DISTRIBUTION
LOCATED AT 14200 SW TUALATIN-SHERWOOD ROAD

Dear Neighbor:

A virtual neighborhood meeting will be held on November 4, 2021, to meet with interested community members and discuss a potential land use application submitted to the City of Sherwood for a project located at 14200 SW Tualatin-Sherwood Road (Washington County Assessor's Map 2S128C Tax Lot 200). The property is zoned General Industrial (GI).

The project applicant is Cascade Columbia Distribution, a locally owned chemical distribution business, who has been operating their facility on this site since 1994. To accommodate their growing warehousing and distribution business supporting the food industry, Cascade Columbia Distribution plans to add a new warehouse building and an additional covered storage area for food-grade chemicals within their existing facility. This requires approval of a modification by the City of Sherwood.

The purpose of this virtual meeting is to provide a forum for the Applicant and surrounding property owners to discuss the planned project in more detail before a land use application is submitted to the City of Sherwood. If you would like to attend the meeting, you will need to register with Zoom in advance.

Please join us on:

THURSDAY, NOVEMBER 4, 2021 AT 6:00 PM

To register, please sign up for your individual Zoom link on the following website:

https://www.aks-eng.com/cascade_columbia_distribution/

Please type in the web address exactly as appears above, including https:// and the forward slash at the end. See enclosed instructions for joining and participating in the meeting.

Please note that this is an informational meeting to discuss preliminary plans. These plans may be modified before the application is finalized and submitted to the City of Sherwood. After the project is submitted to the City, you may receive an official notice from the City of Sherwood of your opportunity to submit written comments to the City Planning Division, and/or attend a public hearing before the decision on the application is made.

We look forward to discussing this project with you. If you have comments or questions about the project but are unable to join the Zoom webinar on November 4th, please contact Maria Miller at 503-563-6151 or mariam@aks-eng.com to request information or to submit your comments.

Sincerely,

AKS ENGINEERING & FORESTRY, LLC

Maria Miller, AICP
12965 SW Herman Road, Suite 100, Tualatin, OR 97062
(503) 563-6151 | mariam@aks-eng.com

Enclosed:

Preliminary Site Plan
Instructions for Joining and Participating in the Neighborhood Meeting

Instructions for Joining & Participating in the Public Neighborhood Meeting for the Modification to an Approved Site Plan for Cascade Columbia Distribution

Virtual Meeting provided via Zoom Webinar

Thursday November 4, 2021, at 6:00 PM

Please Register in Advance (a list of attendees must be submitted to the City):

- Go to **https://www.aks-eng.com/cascade_columbia_distribution/** and follow the link to register.
  - Please type the full web address as it appears above
- Complete the online registration form.
- You will receive a confirmation email containing your personal link to join the Zoom webinar at the scheduled time as well as additional instructions.
- Meeting materials will be available on **https://www.aks-eng.com/cascade_columbia_distribution/ 2 days prior to** the meeting and at least **10 days after the meeting** concludes.

How to Join the Meeting:

Join by computer, tablet, or smartphone

- **This is the preferred method as it allows you to see the Presenter's materials on screen.**
- Click on the "Click Here to Join" link provided in your registration confirmation email.
- If you registered at **https://www.aks-eng.com/cascade_columbia_distribution/** but did not receive a confirmation email, please check your junk/spam folder before contacting the Meeting Administrator.
- You may be prompted to "download and run Zoom" or to install the App (ZOOM cloud meetings). Follow the prompts or bypass this process by clicking "join from your browser".
- You should automatically be connected to the virtual neighborhood meeting.

Join by telephone

- If you cannot join by the computer or smartphone, you can dial any of the toll-free Zoom numbers below to connect to the neighborhood meeting and listen in:

+1-669-900-6833	+1-346-248-7799
+1-929-205-6099	+1-253-215-8782
+1-301-715-8592	+1-312-626-6799

- If you experience trouble connecting, please pick another number and try again.
- After dialing in, enter this Zoom ID when prompted: **823 9190 1035**
- The Password if needed is: **6151**

MEETING ADMINISTRATOR:
For technical assistance or to submit a question for the meeting:
Email mariam@aks-eng.com

During the Meeting

Audio Help

- Meeting attendees will be muted throughout the presentation. This will allow everyone to hear the presentation clearly without added distractions.
- Make sure that the speakers on your device are turned on and not muted.
- If you do not have speakers on your computer, you can join by phone (using the "Join by telephone" instructions) to hear the presentation while watching the presentation on your computer monitor.

Submitting Comments and Asking Questions

Your questions are important to us. There will be time reserved during the meeting to take questions, using one of the submission options below. Our presentation team will make their best effort to answer all question(s) during the meeting.

Prior to the Meeting:

- You can Email your question(s) in advance to the Meeting Administrator.

Email mariam@aks-eng.com

During the Meeting:

- ***Preferred Method:*** Use the "Q&A" button on the bottom of the presentation screen to submit a question in real time.
- Email your question to the Meeting Administrator:

Email mariam@aks-eng.com

After the Meeting:

- We will continue to take questions after the meeting has ended. Please submit your question(s) to the Meeting Administrator:

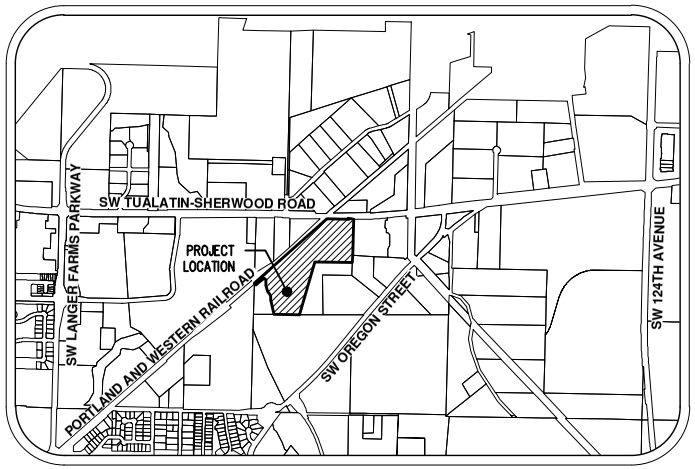
Email mariam@aks-eng.com

- All questions received after the meeting and prior to November 14, 2021 will be answered in an email to all registered meeting participants by end of business the following day.

Helpful Hints/Troubleshooting

We want to start on time! Please join the meeting 5-10 minutes prior to the 6:00 PM start time to ensure successful connection.

- You do not need a paid Zoom account to join the meeting.
- You will need a valid email address at the time of registration to receive the confirmation email and link to join the webinar or receive answers to any questions submitted after the meeting.
- For first-time Zoom users, we recommend downloading and installing the Zoom App **well in advance**, by clicking on the "Click Here to Join" link in your confirmation email.
- For technical assistance, please contact the Meeting Administrator (contact above).
- If you have difficulties connecting by computer, tablet, or smartphone, we suggest disconnecting and instead use the "Join by telephone" instructions to listen in.



VICINITY MAP
NOT TO SCALE

N

SCALE: 1"= 200 FEET

200 0 40 100 200

ORIGINAL PAGE SIZE: 8.5" x 11"

SW TUALATIN-SHERWOOD ROAD

PORTLAND AND WESTERN RAILROAD

TAX LOT 302
TAX MAP 2S 1 28C
14420 SW TUALATIN-SHERWOOD ROAD

TAX LOT 200
TAX MAP 2S 1 28C
14200 SW TUALATIN-SHERWOOD ROAD

TAX LOT 900
TAX MAP 2S 1 28C
13980 SW TUALATIN-SHERWOOD ROAD

TAX LOT 300
TAX MAP 2S 1 28C
ADDRESS N/A

TAX LOT 301
TAX MAP 2S 1 28C
14440 SW TUALATIN-SHERWOOD ROAD

TAX LOT 202
TAX MAP 2S 1 28C
21433 SW OREGON STREET

TAX LOT 201
TAX MAP 2S 1 28C

TAX LOT 204
TAX MAP 2S 1 28C

TAX LOT 501
TAX MAP 2S 1 28C

DRIVEWAY
DETENTION POND
EXISTING GRAVEL
TRUCK PARKING
EXISTING ASPHALT
OFFICE
WAREHOUSE BUILDING
CANOPY
COVERED STORAGE
NEW COVERED STORAGE AREA ±8,400 SF
NEW STORAGE BUILDING ±12,000 SF
50' WIDE VEGETATED COORIDOR
LIMITS OF GRADING
WETLAND BOUNDARY
FEMA 100-YEAR FLOODPLAIN ELEVATION: 133' (NGVD 29) ABOVE MEAN SEA LEVEL
EDGE OF NEW GRAVEL
±70'
±120'
±19'
±8'
±150'
±284'
±80'
±91'
±130'

SURFACING LEGEND

- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING GRAVEL
- NEW GRAVEL

DATE: 10/20/2021

PRELIMINARY SITE PLAN

EXHIBIT **A**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: KNU
CHKD: SR
AKS JOB: 7431

DWG: 7431 PRELIM SITE – NEIGHBORHOOD | P07

Meeting Attendee Report

Topic	14200 SW Tualatin-Sherwood Road Neighborhood Meeting
Webinar ID	823 9190 1035
Report Generated:	11/5/2021 8:31
Actual Start Time	11/5/2021 0:59
Actual Duration (minutes)	16
# Registered	0
# Cancelled	0
Enable Registration	Yes

Panelist Details

Attended	User Name (Original Name)	Email	Join Time	Leave Time
Yes	Mimi Doukas	mimid@aks-eng.com	11/4/2021 17:59	11/4/2021 18:15
Yes	Nye Underwood	underwoodn@aks-eng.com	11/4/2021 18:00	11/4/2021 18:15
Yes	Chris Goodell	ChrisG@aks-eng.com	11/4/2021 18:00	11/4/2021 18:15
Yes	Maria Miller	MariaM@aks-eng.com	11/4/2021 17:59	11/4/2021 18:15
Yes	Steve Durrell	steved@cascadecolumbia.com	11/4/2021 18:00	11/4/2021 18:15

Attendee Details

Attended	User Name (Original Name)	First Name	Last Name	Email

Exhibit F: Mailing Labels

2S128BC-00700
Treske Precision Machining Inc
14140 SW Galbreath Dr
Sherwood, OR 97140

2S128BC-01000
Glen Wetzel
Po Box 3451
Tualatin, OR 97062

2S128C0-00301
Wellons Inc
2525 W Firestone Ln
Vancouver, WA 98660

2S128C0-00400
Washington County Facilities Mgmt
169 N 1st Ave # 42
Hillsboro, OR 97124

2S129D0-00600
Washington County Facilities Mgmt
169 N 1st Ave # 42
Hillsboro, OR 97124

2S128C0-00302
Voxvon Properties Llc
14420 SW Tualatin Sherwood Rd
Sherwood, OR 97140

2S128C0-00700
Vandomelen Joint Trust
4825 SW Evans St
Portland, OR 97219

2S128B0-00103
United States Of America
911 NE 11th Ave
Portland, OR 97232

2S129A0-00100
United States Of America Dept Of Interior
911 NE 11th Ave
Portland, OR 97232

2S128BC-01100
Treske Family Llc
3860 Rosepark Dr
West Linn, OR 97068

2S128BD-00700
Lanz Properties Llc
3025 W 7th Pl
Eugene, OR 97402

2S128BD-00800
Sherwood Park Business Center Llc
12965 SW Herman Rd STE 100
Tualatin, OR 97062

2S128BD-00900
Sherwood Park Business Center Llc
12965 SW Herman Rd STE 100
Tualatin, OR 97062

2S128BD-01000
Sherwood City Of
22560 SW Pine St
Sherwood, OR 97140

2S128C0-00204
Sherwood City Of
22560 SW Pine St
Sherwood, OR 97140

2S128C0-00600
Sherwood Commerce Center Llc
1121 SW Salmon St STE 500
Portland, OR 97205

2S128C0-00300
Salem Equipment Inc
2525 W Firestone Ln
Vancouver, WA 98660

2S128C0-00100
Pride Properties Investments Llc
Po Box 820
Sherwood, OR 97140

2S128C0-00105
Pride West Llc
Po Box 820
Sherwood, OR 97140

2S128C0-00900
Pride West Llc
Po Box 820
Sherwood, OR 97140

2S128C0-01000
Pride East Llc
Po Box 820
Sherwood, OR 97140

2S128C0-00500
Bruce & Karen Polley
Po Box 1489
Sherwood, OR 97140

2S128C0-00102
Orwa Sherwood Llc
8320 NE Highway 99
Vancouver, WA 98665

2S129D0-00150
Orwa Sherwood Llc
8320 NE Highway 99
Vancouver, WA 98665

2S128C0-00200
Sherwood Road Industrial Llc & Bldg B
6900 Fox Ave S
Seattle, WA 98108

2S129A0-00101
Misty Mountain Enterprises Llc
1741 Woodbend Dr
Claremont, CA 91711

2S129A0-02900
Misty Mountain Enterprises Llc
1741 Woodbend Dr
Claremont, CA 91711

2S129A0-03000
Misty Mountain Enterprises Llc
1741 Woodbend Dr
Claremont, CA 91711

2S129A0-03100
Misty Mountain Enterprises Llc
1741 Woodbend Dr
Claremont, CA 91711

2S128BD-00400
Mclellan Estate Co
707 Old County Rd
Belmont, CA 94002

2S128BC-00100
Jjb Properties Llc
14255 SW Galbreath Dr STE C
Sherwood, OR 97140

2S128BC-00900
J & M Properties Llc
14270 SW Galbreath Dr
Sherwood, OR 97140

2S128C0-00202
J & L Rink Llc
21433 SW Oregon St
Sherwood, OR 97140

2S128BC-00300
Hundred Fold Llc
14145 SW Galbreath Dr
Sherwood, OR 97140

2S128BD-00300
Hammerschmidt Terry 2012 Trust &
Po Box 1600
Victor, MT 59875

2S128BC-00500
Gamroth Properties Llc
21380 SW Chapman Rd
Sherwood, OR 97140

2S128C0-00800
Fitch Properties Llc
Po Box 701
Sherwood, OR 97140

2S129D0-00103
Dld Llc
14450 SW Tualatin Sherwood Rd
Sherwood, OR 97140

2S128C0-00701
Dahlke Lane Properties Llc
4677 SE Concord Rd
Portland, OR 97267

2S128BC-00200
Cat Adoption Team
14175 SW Galbreath Dr
Sherwood, OR 97140

2S128BD-00600
Bullock J L Rev Trust & Bullock G L Rev
15975 SW Springtooth Ln
Sherwood, OR 97140

2S128BC-00800
Bueno Trust
21661 Dorothy Way
Los Gatos, CA 95033

2S128BC-00400
Bond Properties Llc
14085 SW Galbreath Dr
Sherwood, OR 97140

2S128BD-00500
Arec 24 Llc
Po Box 29046
Phoenix, AZ 85038

2S128C0-00201
J & L Rink Llc
21433 SW Oregon St
Sherwood, OR 97140

2S128C0-00501
Key Equipment Finance Inc
66 S Pearl St FL 8
Albany, NY 12207

2S128C0-00301
Wellons Inc
2525 W Firestone Ln
Vancouver, WA 98660

2S128C0-00400
Washington County Facilites Mgmt
169 N 1st Ave # 42
Hillsboro, OR 97124

2S128B0-00103
United States Of America
911 NE 11th Ave
Portland, OR 97232

2S129A0-00100
United States Of America
911 NE 11th Ave
Portland, OR 97232

2S128BC-01100
Treske Family Llc
3860 Rosepark Dr
West Linn, OR 97068

2S128BD-00700
Lanz Properties Llc
3025 W 7th Pl
Eugene, OR 97402

2S128C0-00300
Salem Equipment Inc
2525 W Firestone Ln
Vancouver, WA 98660

2S128C0-00300
Macro Manufacturing Inc
2525 W Firestone Ln
Vancouver, WA 98660

2S128C0-00300
Wellons Inc
2525 W Firestone Ln
Vancouver, WA 98660

2S128C0-00500
Bruce & Karen Polley
Po Box 1489
Sherwood, OR 97140

2S128C0-00200
Sherwood Road Industrial Llc
6900 Fox Ave S
Seattle, WA 98108

2S128BC-00100
Tamara Green & John Galbreath
415 N Main St
Pendleton, OR 97801

2S128C0-00201
J & L Rink Llc
21433 SW Oregon St
Sherwood, OR 97140

2S128C0-00201
J & L Rink Llc
21433 SW Oregon St
Sherwood, OR 97140

2S128C0-00201
J & L Rink Llc
21433 SW Oregon St
Sherwood, OR 97140

2S128C0-00501
Keybank National Assoc
Po Box 22055
Albany, NY 12201

2S128C0-00501
Allied Systems Company
21433 SW Oregon St
Sherwood, OR 97140

First American Title™

1000 ft Buffer

No Site Address, Sherwood, OR 97140

Report Generated: 10/4/2021

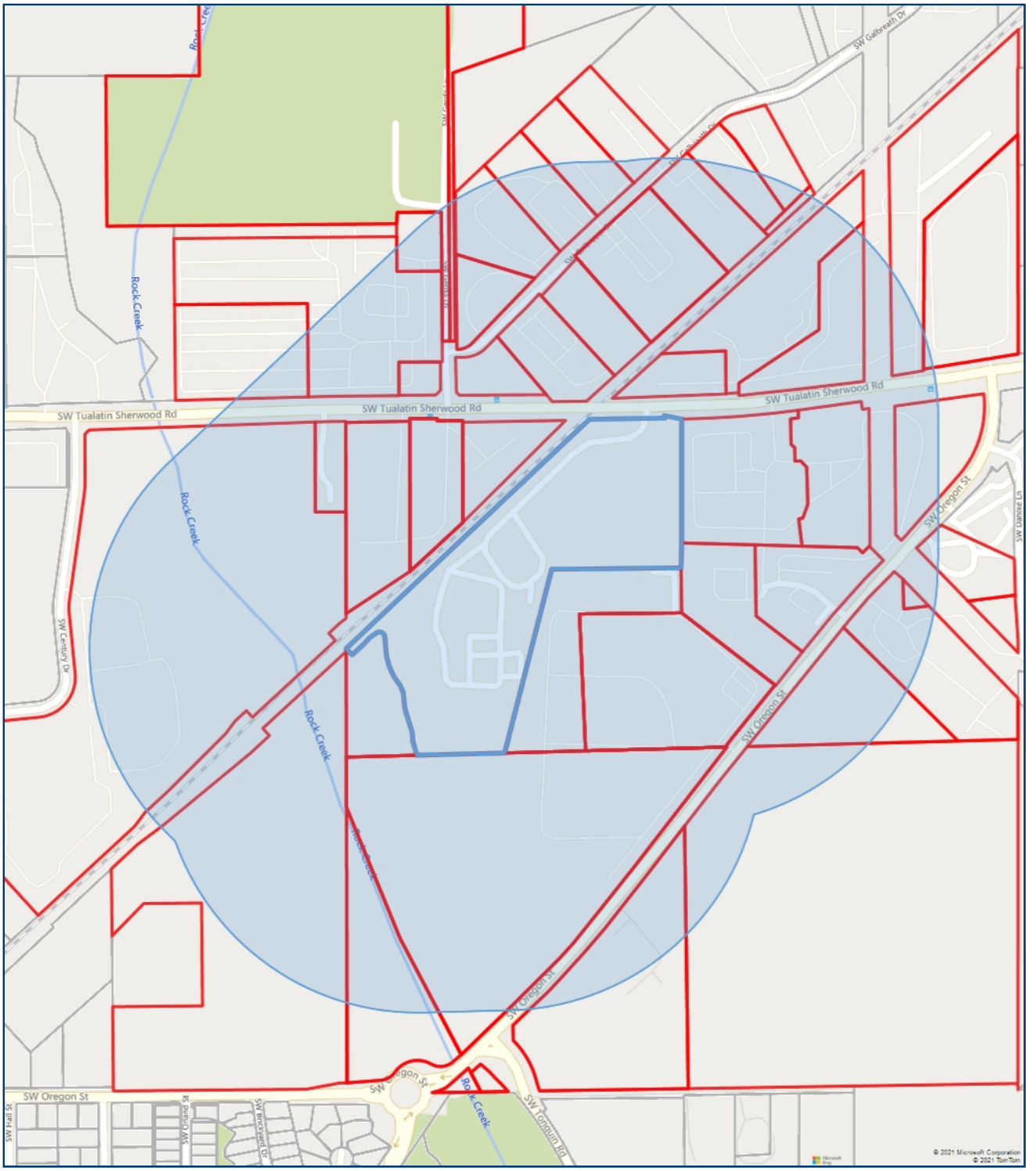


Exhibit G: TVF&R Service Provider Letter

FIRE CODE / LAND USE / BUILDING REVIEW APPLICATION

Tualatin Valley Fire & Rescue

North Operating Center
11945 SW 70th Avenue
Tigard, OR 97223
Phone: 503-649-8577

South Operating Center
8445 SW Elligsen Rd
Wilsonville, OR 97070
Phone: 503-649-8577

REV 6-30-20

Project Information

Applicant Name: Cascade Columbia Distribution
Address: 14200 SW Tualatin-Sherwood Rd, Sherwood
Phone: 503-563-6151
Email: mariam@aks-eng.com
Site Address: 14200 SW Tualatin-Sherwood Rd
City: Sherwood
Map & Tax Lot #: 2S 1 28C, Tax Lot 200
Business Name: Cascade Columbia Distribution
Land Use/Building Jurisdiction: City of Sherwood
Land Use/ Building Permit # _____

Choose from: Beaverton, Tigard, Newberg, Tualatin, North Plains, West Linn, Wilsonville, Sherwood, Rivergrove, Durham, King City, Washington County, Clackamas County, Multnomah County, Yamhill County

Project Description

A new 12,000-sq. ft. warehouse and an 8,400-sq. ft. outdoor covered storage area at Cascade's existing distribution facility

Permit/Review Type (check one):

- ☒ Land Use / Building Review - Service Provider Permit
- ☐ Emergency Radio Responder Coverage Install/Test
- ☐ LPG Tank (Greater than 2,000 gallons)
- ☐ Flammable or Combustible Liquid Tank Installation (Greater than 1,000 gallons)
  - * Exception: Underground Storage Tanks (UST) are deferred to DEQ for regulation.
- ☐ Explosives Blasting (Blasting plan is required)
- ☐ Exterior Toxic, Pyrophoric or Corrosive Gas Installation (in excess of 810 cu.ft.)
- ☐ Tents or Temporary Membrane Structures (in excess of 10,000 square feet)
- ☐ Temporary Haunted House or similar
- ☐ OLCC Cannabis Extraction License Review
- ☐ Ceremonial Fire or Bonfire (For gathering, ceremony or other assembly)

For Fire Marshal's Office Use Only

TVFR Permit # 2021 – 0128
Permit Type: SPP
Submittal Date: 11/19/21
Assigned To: DARBY
Due Date: _____
Fees Due: n/a
Fees Paid: _____

Approval/Inspection Conditions

(For Fire Marshal's Office Use Only)

This section is for application approval only

0806 — 12/2/21
Fire Marshal or Designee — Date

Conditions:

See Attached Conditions: ☐ Yes ☑ No

Site Inspection Required: ☐ Yes ☑ No

This section used when site inspection is required

Inspection Comments:

Final TVFR Approval Signature & Emp ID — Date

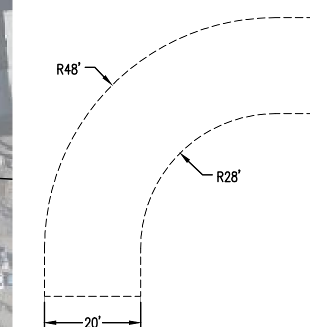
INDUSTRIAL/COMMERCIAL GI
RETAIL/COMMERCIAL GI
GOVERNMENT GI
INDUSTRIAL/REPAIR GI
TRIMET 97–TUALATIN–SHERWOOD RD TRANSIT ROUTE
SW TUALATIN-SHERWOOD ROAD
TRIMET 97–TUALATIN–SHERWOOD RD TRANSIT ROUTE
EXISTING FIRE HYDRANT
EXISTING FIRE HYDRANT
EXISTING ±20' SECONDARY ACCESS GATE
EXISTING ±26' ACCESS GATE
INDUSTRIAL/MANUFACTURING GI
PORTLAND AND WESTERN RAILROAD
INDUSTRIAL/DISPOSAL GI
TVF&R MINIMUM FIRE APPARATUS ACCESS REQUIREMENTS (TYP) PER DETAIL (THIS SHEET)
INDUSTRIAL/DISTRIBUTION GI
EXISTING TRASH ENCLOSURE
INDUSTRIAL/MANUFACTURING GI
INDUSTRIAL/DISPOSAL GI
INDUSTRIAL/DISPOSAL GI
RELOCATED FIRE HYDRANT
40'
26'
COVERED STORAGE AREA
EXISTING FIRE HYDRANT
40'
26'
40'
FDC MOUNTED ON BUILDING
26'
EXISTING FIRE HYDRANT
INDUSTRIAL/MANUFACTURING GI
20' SANITARY SEWER EASEMENT
20' SANITARY SEWER EASEMENT
WAREHOUSE BUILDING
ROCK CREEK GI
20' WIDE FIRE APPARATUS ACCESS ALONG WEST SIDE OF NEW WAREHOUSE BUILDING WITH SIGNAGE INDICATING "FIRE LANE DO NOT BLOCK"
20'
SW OREGON STREET
INDUSTRIAL/MANUFACTURING GI
© 2021 Microsoft Corporation © 2021 Maxar ©CNES (2021) Distribution Airbus DS

N

SCALE: 1"= 80 FEET

80 0 16 40 80

ORIGINAL PAGE SIZE: 22" x 34"



TVF&R MINIMUM FIRE APPARATUS ACCESS REQUIREMENTS DETAIL

1"=20'

LEGEND

CIRCULATION	- - - - - - -
CURRENT LAND USE	CURRENT LAND USE ZONING

AKS DRAWING FILE: 7431 PRELIM CIRCULATION AND USES.DWG | LAYOUT: P02

AKS

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

14200 SW TUALATIN-SHERWOOD ROAD

SHERWOOD OREGON

TAX LOT 200 TAX MAP 2S 1 28C

CIRCULATION PLAN AND SURROUNDING LAND USES

DESIGNED BY:	KNU
DRAWN BY:	KNU
MANAGED BY:	SR
CHECKED BY:	SR

DATE: 11/16/2021

REGISTERED PROFESSIONAL ENGINEER — STEPHEN C. ROPER

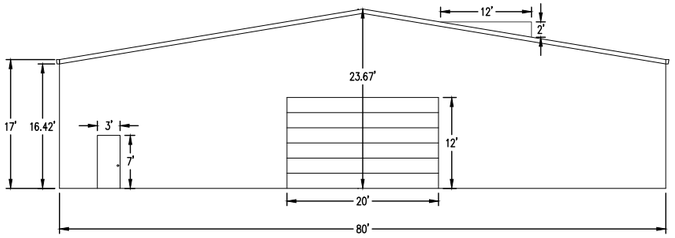
PRELIMINARY NOT FOR CONSTRUCTION

RENEWAL DATE: 12/31/22

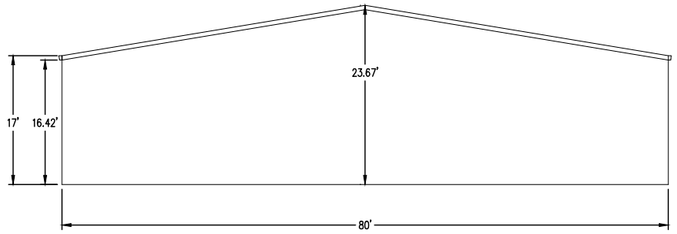
REVISIONS

JOB NUMBER 7431

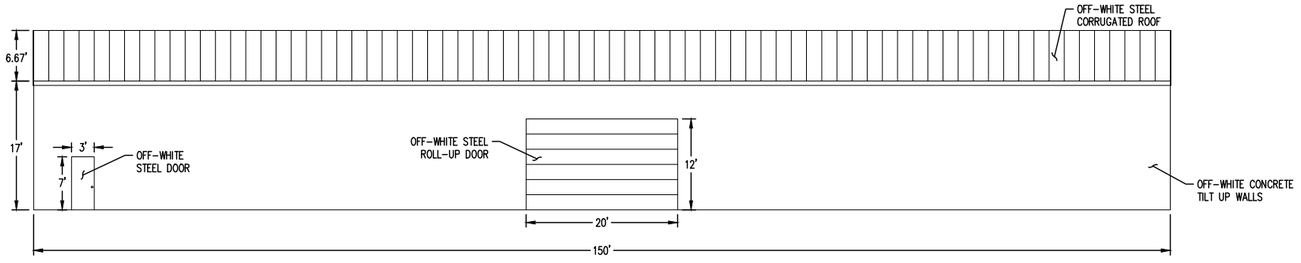
SHEET P02



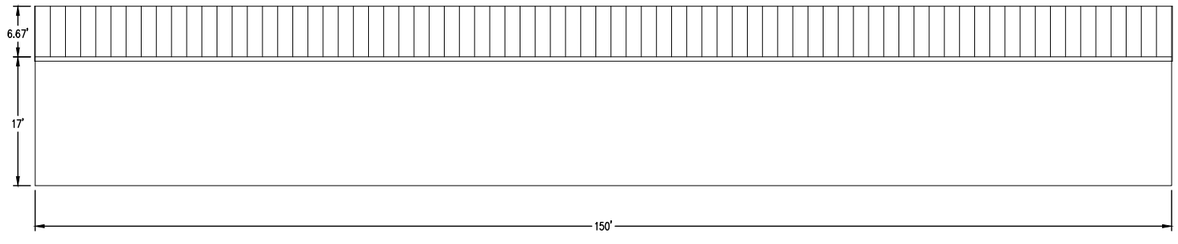
NEW WAREHOUSE BUILDING - NORTH ELEVATION
1"=10'



NEW WAREHOUSE BUILDING - SOUTH ELEVATION
1"=10'



NEW WAREHOUSE BUILDING - WEST ELEVATION
1"=10'



NEW WAREHOUSE BUILDING - EAST ELEVATION
1"=10'

NEW WAREHOUSE BUILDING - ROOF
1"=10'

SCALE: 1"=10 FEET
10 0 2 5 10
ORIGINAL PAGE SIZE: 22" x 34"

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

14200 SW TUALATIN-SHERWOOD ROAD
SHERWOOD OREGON
TAX LOT 200 TAX MAP 2S 1 28C

PRELIMINARY BUILDING ELEVATIONS

DESIGNED BY: KNU
DRAWN BY: KNU
MANAGED BY: SR
CHECKED BY: SR
DATE: 11/16/2021

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 14, 1998 COLLEEN C. ROPER
PRELIMINARY NOT FOR CONSTRUCTION
RENEWAL DATE: 12/31/22

REVISIONS

JOB NUMBER 7431

SHEET P12

AKS DRAWING FILE: 7431 PRELIM BUILDING ELEVATIONS.DWG | LAYOUT: P12

Exhibit H: CWS Service Provider Letter

Clean Water Services
Our commitment is clear.

CWS File Number
21-002637

Service Provider Letter

This form and the attached conditions will serve as your Service Provider Letter in accordance with Clean Water Services Design and Construction Standards (R&O 19-5, as amended by R&O 19-22).

Jurisdiction:	City of Sherwood	**Review Type:**	No Impact
Site Address / Location:	14200 SW TUALATIN SHERWOOD RD SHERWOOD OR 97140	**SPL Issue Date:**	November 09, 2021
		SPL Expiration Date:	November 09, 2023

Applicant Information:		**Owner Information:**	
Name	SONYA TEMPLETON	Name	ROBERT CODE
Company	AKS ENGINEERING & FORESTRY LLC	Company	SHERWOOD ROAD LLC
Address	12965 SW HERMAN RD SUITE 100 TUALATIN OR 97062	Address	6900 FOX AVE S SEATTLE WA 98108
Phone/Fax	(503) 867-2613	Phone/Fax	(206) 282-6334
E-mail:	templetons@aks-eng.com	E-mail:	bobc@cascadecolumbia.com

Tax lot ID	**Development Activity**
2S128C000200	Storage Buildings

Pre-Development Site Conditions:		**Post Development Site Conditions:**	
Sensitive Area Present:	[X] On-Site [X] Off-Site	Sensitive Area Present:	[X] On-Site [X] Off-Site
Vegetated Corridor Width:	50	Vegetated Corridor Width:	50
Vegetated Corridor Condition:	Good/Marginal		

Enhancement of Remaining Vegetated Corridor Required: [X]

Square Footage to be enhanced: 3,510

Encroachments into Pre-Development Vegetated Corridor:

Type and location of Encroachment:	Square Footage:
No Encroachment	

Mitigation Requirements:

Type/Location	Sq. Ft./Ratio/Cost
No Mitigation	

[X] Conditions Attached [X] Development Figures Attached (4) [X] Planting Plan Attached [ ] Geotech Report Required

This Service Provider Letter does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered on your property.

In order to comply with Clean Water Services water quality protection requirements the project must comply with the following conditions:

1. No structures, development, construction activities, gardens, lawns, application of chemicals, uncontained areas of hazardous materials as defined by Oregon Department of Environmental Quality, pet wastes, dumping of materials of any kind, or other activities shall be permitted within the sensitive area or Vegetated Corridor which may negatively impact water quality, except those allowed in R&O 19-5, Chapter 3, as amended by R&O 19-22.
2. Prior to any site clearing, grading or construction the Vegetated Corridor and water quality sensitive areas shall be surveyed, staked, and temporarily fenced per approved plan. During construction the Vegetated Corridor shall remain fenced and undisturbed except as allowed by R&O 19-5, Section 3.06.1, as amended by R&O 19-22 and per approved plans.
3. **If there is any activity within the sensitive area, the applicant shall gain authorization for the project from the Oregon Department of State Lands (DSL) and US Army Corps of Engineers (USACE). The applicant shall provide Clean Water Services or its designee (appropriate city) with copies of all DSL and USACE project authorization permits. No wetland impacts proposed for this project.**
4. An approved Oregon Department of Forestry Notification is required for one or more trees harvested for sale, trade, or barter, on any non-federal lands within the State of Oregon.
5. Prior to any ground disturbing activities, an erosion control permit is required. Appropriate Best Management Practices (BMP's) for Erosion Control, in accordance with Clean Water Services' Erosion Prevention and Sediment Control Planning and Design Manual, shall be used prior to, during, and following earth disturbing activities.
6. Prior to construction, a Stormwater Connection Permit from Clean Water Services or its designee is required pursuant to Ordinance 27, Section 4.B.
7. Activities located within the 100-year floodplain shall comply with R&O 19-5, Section 5.10, as amended by R&O 19-22.
8. Removal of native, woody vegetation shall be limited to the greatest extent practicable.
9. The water quality swale and detention pond shall be planted with Clean Water Services approved native species, and designed to blend into the natural surroundings.
10. **Should final development plans differ significantly from those submitted for review by Clean Water Services, the applicant shall provide updated drawings, and if necessary, obtain a revised Service Provider Letter.**
11. The Vegetated Corridor width for sensitive areas within the project site shall be a minimum of 50 feet wide, as measured horizontally from the delineated boundary of the sensitive area.
12. **For Vegetated Corridors up to 50 feet wide, the applicant shall enhance the entire Vegetated Corridor to meet or exceed good corridor condition as defined in R&O 19-5, Section 3.14.2, Table 3-3, as amended by R&O 19-22.**
13. **Removal of invasive non-native species by hand is required in all Vegetated Corridors rated ""good."" Replanting is required in any cleared areas larger than 25 square feet using low impact methods. The applicant shall calculate all cleared areas larger than 25 square feet prior to the preparation of the required Vegetated Corridor enhancement/restoration plan.**
14. Prior to any site clearing, grading or construction, the applicant shall provide Clean Water Services with a Vegetated Corridor enhancement/restoration plan. Enhancement/restoration of the Vegetated Corridor shall be provided in accordance with R&O 19-5, Appendix A, as amended by R&O 19-22, and shall include planting specifications for all Vegetated Corridor, including any cleared areas larger than 25 square feet in Vegetated Corridor rated ""good.""
15. Prior to installation of plant materials, all invasive vegetation within the Vegetated Corridor shall be removed per methods described in Clean Water Services' Integrated Pest Management Plan, 2019. During removal of invasive vegetation care shall be taken to minimize impacts to existing native tree and shrub species.

16. Clean Water Services and/or City shall be notified 72 hours prior to the start and completion of enhancement/restoration activities. Enhancement/restoration activities shall comply with the guidelines provided in Planting Requirements (R&0 19-5, Appendix A, as amended by R&O 19-22).
17. **Maintenance and monitoring requirements shall comply with R&O 19-5, Section 2.12.2, as amended by R&O 19-22. If at any time during the warranty period the landscaping falls below the 80% survival level, the owner shall reinstall all deficient planting at the next appropriate planting opportunity and the two year maintenance period shall begin again from the date of replanting.**
18. **Performance assurances for the Vegetated Corridor shall comply with R&O 19-5, Section 2.07.2, Table 2-1 and Section 2.11, Table 2-2, as amended by R&O 19-22.**
19. **Clean Water Services shall require an easement over the Sensitive Area and Vegetated Corridor conveying storm and surface water management to Clean Water Services or the City that would prevent the owner of the Vegetated Corridor from activities and uses inconsistent with the purpose of the corridor and any easements therein.**
20. **Final construction plans shall include landscape plans**. In the details section of the plans, a description of the methods for removal and control of exotic species, location, distribution, condition and size of plantings, existing plants and trees to be preserved, and installation methods for plant materials is required. Plantings shall be tagged for dormant season identification and shall remain on plant material after planting for monitoring purposes.
21. **A Maintenance Plan shall be included on final plans** including methods, responsible party contact information, and dates (minimum two times per year, by June 1 and September 30).
22. **Final construction plans shall clearly depict the location and dimensions of the sensitive area and the Vegetated Corridor** (indicating good, marginal, or degraded condition). Sensitive area boundaries shall be marked in the field.
23. Protection of the Vegetated Corridors and associated sensitive areas shall be provided by the installation of permanent fencing and signage between the development and the outer limits of the Vegetated Corridors. **Fencing and signage details to be included on final construction plans.**

This Service Provider Letter is not valid unless CWS-approved site plan is attached.

Please call (503) 681-3667 with any questions.

Stacy Benjamin

Stacy Benjamin
Environmental Plan Review

Attachments (5)

CWS FILE NO. 21-002637
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By SNB Date 11/9/2021
SPL ATTACHMENT 1 OF 5

SW TUALATIN-SHERWOOD ROAD

PORTLAND AND WESTERN RAILROAD

TAX LOT 302
TAX MAP 2S 1 28C

TAX LOT 300
TAX MAP 2S 1 28C

TAX LOT 200
TAX MAP 2S 1 28C

TAX LOT 202
TAX MAP 2S 1 28C

TAX LOT 201
TAX MAP 2S 1 28C

TAX LOT 204
TAX MAP 2S 1 28C

TAX LOT 501
TAX MAP 2S 1 28C

5B INSERT

SEE 5B

ASPHALT DRIVEWAY
GRAVEL DRIVEWAY
ASPHALT ROAD
ASPHALT PARKING
GRAVEL
GATE KEEPER
GATE MOTOR
FENCE GATE
CHAIN LINK FENCE
ROCK RETAINING WALL
BOULDERS
WEIGH STATION
RETAINING POND
CONTAINER
MATERIALS STORAGE
LOADING RAMP
LOADING BAY
2-STORY OFFICE
CANOPY
STORAGE BLDG
WAREHOUSE BUILDING
COVERED STORAGE
DETENTION BLADDER
DETENTION POND
CATCH BASIN
COVER

50' CWS VEGETATED CORRIDOR

STUDY AREA BOUNDARY

OFF-SITE WETLAND BOUNDARY

LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR: 598 SF± (0.01 ACRES)

ON-SITE MARGINAL CONDITION VEGETATED CORRIDOR: 3,510 SF± (0.08 A

TOTAL ON-SITE VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

(A) PHOTO LOCATION & ORIENTATION

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

N

SCALE: 1"=140 FEET

140 0 28 70 140

ORIGINAL PAGE SIZE: 17"X11"

DATE: 10/28/2021

NATURAL RESOURCES EXISTING CONDITIONS

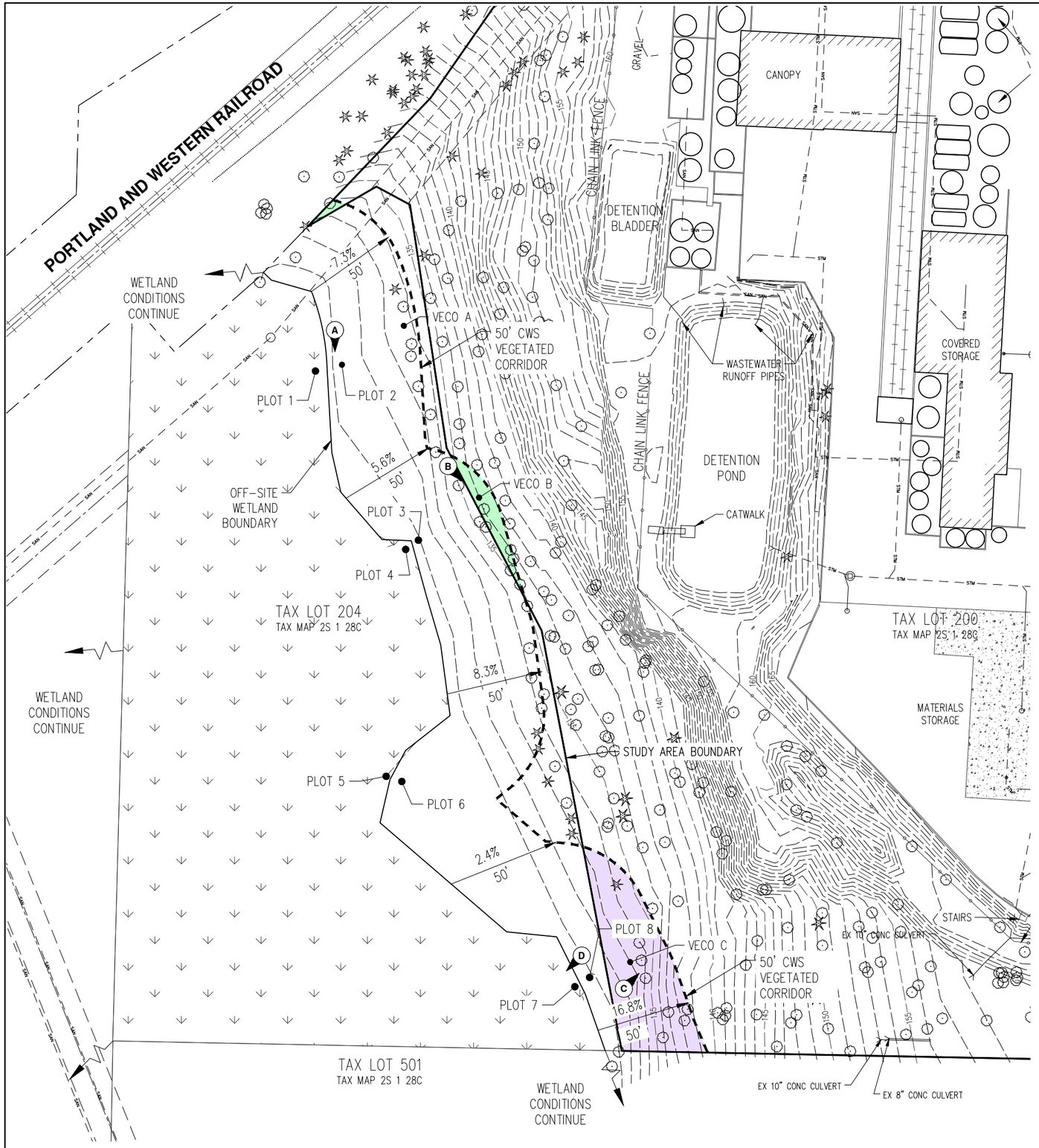
14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE **5A**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

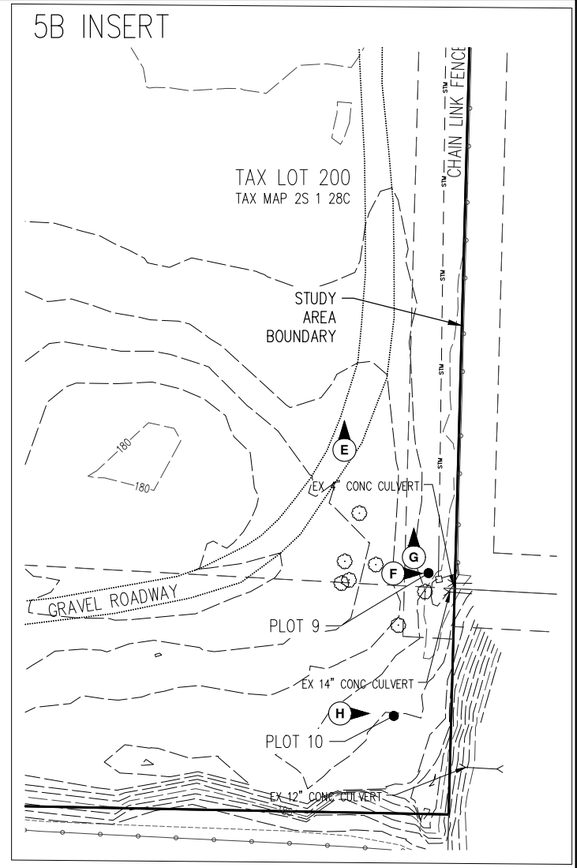
DRWN: SKT
CHKD: SAR
AKS JOB: 7431

DWG: 7431 NRA EXCOND | FIGURE 5A



CWS FILE NO. 21-002637
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By SNB Date 11/9/2021
SPL ATTACHMENT 2 OF 5

5B INSERT



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N

SCALE: 1"=60 FEET

60 0 12 30 60

ORIGINAL PAGE SIZE: 17" x 11"

DATE: 10/28/2021

NATURAL RESOURCES EXISTING CONDITIONS

14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE **5B**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

CWS FILE NO. 21-002637
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By SNB Date 11/9/2021
SPL ATTACHMENT 3 OF 5

SW TUALATIN-SHERWOOD ROAD
PORTLAND AND WESTERN RAILROAD
TAX LOT 302
TAX MAP 2S 1 28C
TAX LOT 200
TAX MAP 2S 1 28C
TAX LOT 300
TAX MAP 2S 1 28C
TAX LOT 202
TAX MAP 2S 1 28C
TAX LOT 201
TAX MAP 2S 1 28C
TAX LOT 501
TAX MAP 2S 1 28C
TAX LOT 204
TAX MAP 2S 1 28C
ASPHALT DRIVEWAY
ASPHALT ROAD
ASPHALT PARKING
GRAVEL
GRAVEL DRIVEWAY
ROCK RETAINING WALL
BOULDERS
MERRY STATION
RETENTION POND
LOADING BAY
CONTAINERS
MATERIALS STORAGE
2-STORY OFFICE
CANOPY
STORAGE SILOS
WAREHOUSE BUILDING
DETENTION BLADDER
50' CWS VEGETATED CORRIDOR
COVERED STORAGE
PROPOSED COVERED STORAGE
DETENTION POND
CATWALK
PROPOSED STORAGE BUILDING
COVER
STAIRS
STUDY AREA BOUNDARY
OFF-SITE WETLAND BOUNDARY
SEE 6B

LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR AREA TO REMAIN: 598 SF± (0.01 ACRES)

ON-SITE MARGINAL CONDITION VEGETATED CORRIDOR TO BE ENHANCED TO GOOD CONDITION STANDARDS: 3,510 SF± (0.08 ACRES)

TOTAL ON-SITE VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

TREES >6" DBH ARE SHOWN TO BE REMOVED.

N

SCALE: 1"=140 FEET

140 0 28 70 140

ORIGINAL PAGE SIZE: 17"X11"

DATE: 10/28/2021

NATURAL RESOURCES SITE PLAN

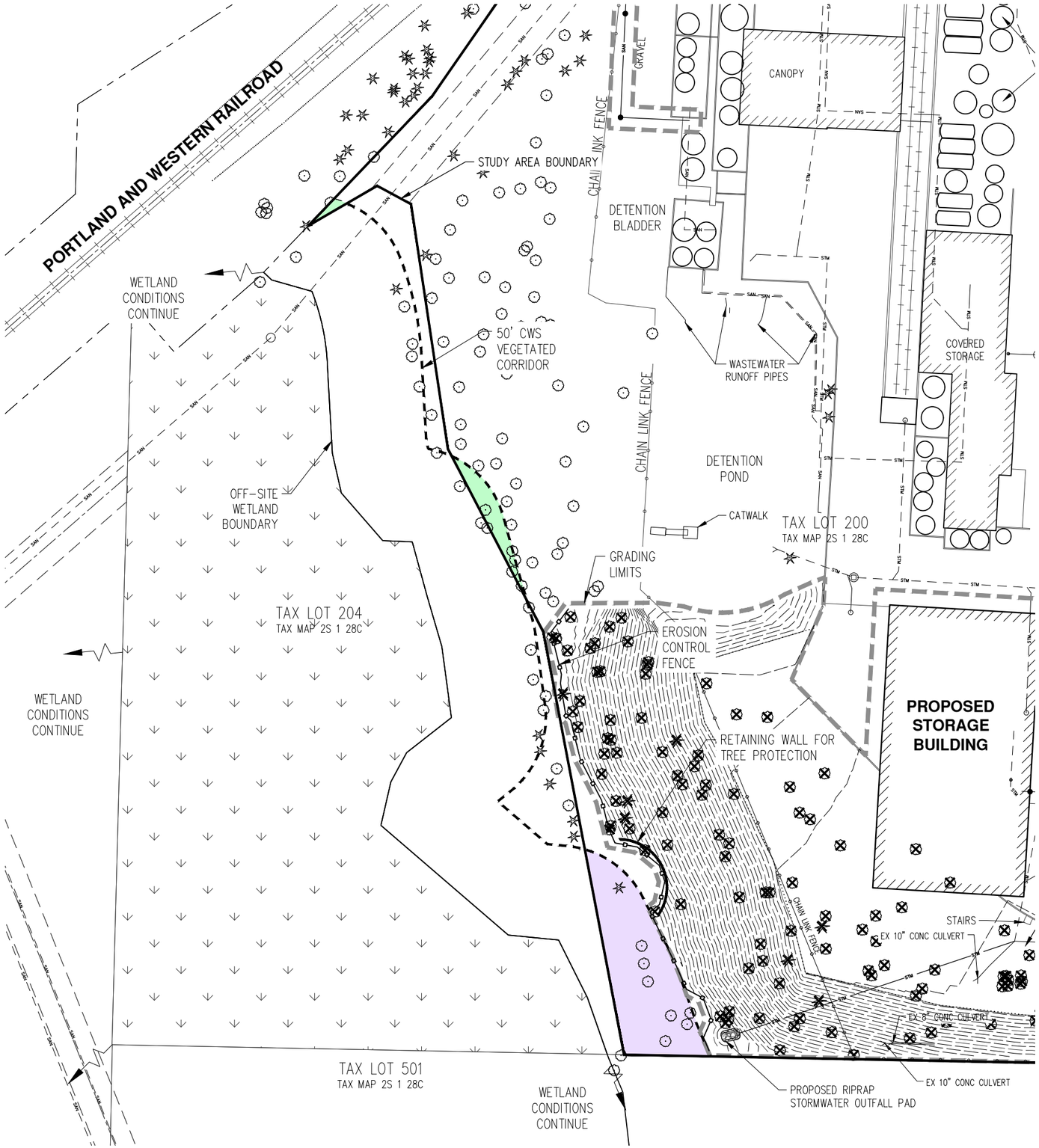
14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE 6A

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

DWG: 7431 NRA SITE PLAN | FIGURE 6A



CWS FILE NO. 21-002637
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By SNB Date 11/9/2021
SPL ATTACHMENT 4 OF 5

LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR AREA TO REMAIN: 598 SF± (0.01 ACRES)

ON-SITE MARGINAL CONDITION VEGETATED CORRIDOR TO BE ENHANCED TO GOOD CONDITION STANDARDS: 3,510 SF± (0.08 ACRES)

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WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

TREES >6" DBH ARE SHOWN TO BE REMOVED.

N

SCALE: 1"=60 FEET

60 0 12 30 60

ORIGINAL PAGE SIZE: 17" x 11"

DATE: 10/28/2021

NATURAL RESOURCES SITE PLAN

14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE **6B**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

-Sherwood Road – Vegetated Corridor Enhancement Planting Specifications

Planting specifications for the enhancement of ±3,510 square feet of *marginal* condition vegetated corridor enhancement to *good* condition.

Total planting area 3,510 square feet

Scientific Name	Common Name	Size*	Spacing/Seeding Rate	Quantity
Trees (total 36)**				
Acer macrophyllum	bigleaf maple	2 gallon	10 feet on center	20
Acer circirnatum	Vine maple	2 gallon	10 feet on center	16
Shrubs (total 176)**				
Symphoricarpus albus	snowberry	1 gallon	4-5 feet on center	46
Mahonia aquifolium	tall Oregon grape	1 gallon	4-5 feet on center	35
Polystichum munitum	Pineland sword fern	1 gallon	4-5 feet on center	35
Rosa gymnocarpa	Baldhip rose	1 gallon	4-5 feet on center	30
Ribes sanguineum	red flowering currant	1 gallon	4-5 feet on center	30
Seed Mix/Plug				
Agrostis exarate	Spike bentgrass	seed	2 lb pls/acre	As needed for bare soil areas >25 square feet
Bromus carinatus	Native California brome	seed	2 lb pls/acre	

**Bare root plants may be substituted for container plants based on availability. If bare root plants are used, they must be planted during the late winter/early spring dormancy period.*
*** Minimum plant quantities ordered.*

Planting Notes (per CWS Design & Construction Standards R&O 19-5, amended by R&O 19-22, December 2019 Appendix A Planting Requirements):

1) Container stock shall be installed only from February 1 through May 1 and October 1 through November 15. Bare root stock shall be installed only from December 15 through April 15. Plantings outside these times may require additional measures to ensure survival which shall be specified on the plans.

2) All non-native invasive vegetation shall be removed from planting areas prior to installing native enhancement plantings. Invasive species control shall be consistent with Clean Water Services' June 2019 *Integrated Pest Management (IPM) Plan*.

3) Appropriate plant selection, along with adequate site preparation and maintenance, reduces the need for irrigation. However, unless site hydrology is currently adequate, a District/City approved irrigation system or equivalent (i.e., polymer, plus watering) shall be used during the two-year plant establishment period. Watering shall be at a minimum rate of at least one inch per week from June 15 through October 15. Other irrigation techniques, such as deep watering, may be allowed with prior approval by District staff.

4) Trees, shrubs, and groundcovers planted shall be mulched at a minimum of three inches in depth and 18 inches in diameter, to retain moisture and discourage weed growth around newly installed plant material. Appropriate mulches are made from composted bark or leaves that have not been chemically treated.

Exhibit I: Natural Resource Assessment Report

14200 SW Tualatin-Sherwood Road
Sherwood, Washington County
Chapter 16.144 Compliance Memo

Date: November 2021

Prepared for:
Cascade Columbia Distribution
14200 SW Tualatin-Sherwood Road
Sherwood, OR 97140

Prepared by:
AKS Engineering & Forestry, LLC
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
Sonya Templeton, Natural Resource Specialist
Lex Francis, Natural Resource Specialist
(503) 563-6151 | francisl@aks-eng.com

Site Information:
14200 Tualatin-Sherwood Road
Sherwood, OR
Washington County Assessor's Map 2S 1 28C
Tax Lot 200

CWS Service Provider Letter: 21-002637

AKS Job Number: 7431

12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151

Table of Contents

Appendices

Introduction

AKS Engineering & Forestry, LLC (AKS) was contracted by Cascade Columbia Distribution (Applicant) to conduct a natural resource site assessment for industrial redevelopment, which received a Clean Water Services (CWS) Service Provider Letter (SPL) on November 10, 2021, under CWS file number 21-002637. The study area is located south of SW Tualatin-Sherwood Road and west of SW Oregon Street and consists of Tax Lot 200 of Washington County Assessor's Map 2S 1 28C in Sherwood, Washington County, Oregon (Appendix A, Figures 1 and 2).

Under the 2021 SPL, the boundary of a palustrine emergent/scrub-shrub (PEM/PSS) wetland associated with the Rock Creek floodplain was delineated off-site to the southwest on adjacent Tax Lot 204, which is a portion of the Tualatin River National Wildlife Refuge. The 50-foot-wide vegetated corridor (VC) associated with the off-site wetland extends onto the study area and was determined, under the 2021 SPL, to be in both *good* and *marginal* conditions. Metro Regional Services' (Metro's) Regionally Significant Fish and Wildlife Habitat Area Map (Metro Map) indicates both Class I Riparian and Upland Habitats as present on-site, with the Upland Habitat extending beyond the CWS VC (Appendix A, Figure 4).

The project consists of the redevelopment of Cascade Columbia Distribution. The redesign of the existing development allows for one additional material storage building and a covered area. The project will not impact the Class I Riparian Habitat (CWS 50-foot-wide VC). Encroachments within the City's Goal 5 Upland habitat area are necessary for the required site improvements (Site Plan, Figure 6A and 6B in Appendix A).

This memorandum has been prepared to meet the Sherwood Municipal Code, Chapter 16.144: *Wetland, Habitat, and Natural Areas*.

Existing Conditions and Background Mapping

The site consists of a chemical distribution company and is currently zoned as General Industrial (GI). The vegetation in the study area is dominated by Oregon white oak (*Quercus garryana*), Pacific poison oak (*Toxicodendron diversilobum*), Himalayan blackberry (*Rubus armeniacus*), and dovefoot geranium (*Geranium molle*). Off-site, Rock Creek is identified in the *Sherwood Comprehensive Plan, Part 2* as having an associated Federal Emergency Management Agency (FEMA) 100-Year Floodplain that extends within the on-site VC.

According to the City of Sherwood Local Wetland Inventory (LWI) map (Appendix A, Figure 3) the southern portion of the study area is within the Rock Creek floodplain contiguous with the PEM/PSS wetland on Tax Lot 204. AKS does not concur with the LWI map and has set the boundary further back into Tax Lot 204.

According to the Metro Map, the extent of the CWS VC associated with the off-site wetland falls under Class I Riparian Habitat. Class I Upland Habitat is also mapped on-site.

Delineation of Goal 5 Resources

AKS Natural Resource Specialist Sonya Templeton and Senior Wetland Scientist Stacey Reed, PWS conducted a site visit on April 9, 2021, to delineate the off-site wetland and determine the extent and condition of the on-site Regionally Significant Fish and Wildlife Habitat Areas. A CWS SPL was issued for the site under file number 21-002637 on November 10, 2021. Copies of the SPL and the CWS Simplified

Site Assessment Report, which includes the vegetated corridor and wetland determination data sheets, are provided in Appendix B.

The extent and value of the on-site Regionally Significant Fish and Wildlife Habitat Area was determined based on the Sherwood Municipal Code, Chapter 16.144.020.C and are shown in the Natural Resources Existing Conditions Plans (Figures 5A and 5B, Appendix A).

Wetlands and Non-Wetland Waters

Off-Site PEM/PSS Wetland

No wetlands or waters were observed on-site.

The off-site PEM/PSS wetland was dominated by Oregon ash (*Fraxinus latifolia*), black hawthorn (*Crataegus douglasii*), Himalayan blackberry, and reed canary grass (*Phalaris arundinacea*). The wetland boundary was delineated based on a change in the topography and landform from a low-elevation floodplain terrace in the wetland to a higher-elevation hillslope in the upland. The elevation change coincided with a change in vegetation from hydrophytic-dominated species in the wetland (reed canary grass, Oregon Ash) to non-hydrophytic (Oregon white oak, beaked hazelnut) species in the upland.

Regionally Significant Fish and Wildlife Habitat Areas

Riparian Habitat

The CWS 50-foot-wide VC associated with the off-site wetland extends onto the project area and is in the vicinity of the Metro-mapped Class I Riparian Habitat. Based on Section 16.144.020, Table 8-1 the Riparian Habitat was determined to be Forest Canopy Class I due to its proximity to the off-site wetland being less than 100 feet. The Riparian Habitat is confined to the CWS VC. The extent of the VC was determined based on the CWS *Design and Construction Standards* (R&O 19-5 as Amended by R&O 19-22), Chapter 3.03.3, Table 3-1.

The existing condition of the on-site Riparian Habitat (CWS VC) was determined according to Chapter 3.03.3, Table 3-3 (R&O 19-5 as Amended by R&O 19-22). The CWS VC standards are based on the presence of tree canopy and percent cover of native trees, shrubs, and groundcover. The vegetated corridor was determined to be in both *marginal* and *good* conditions; the *marginal* condition area had less than 80 percent combined cover by native vegetation species and was dominated by Himalayan blackberry. The *marginal* condition vegetated corridor will be enhanced to *good* condition per SPL 21-002637.

The Vegetated Corridor (VECO) Data Sheets and Planting Specification Table are included with the CWS Site Assessment Report in Appendix B.

Upland Habitat

Upland Habitat extends beyond the Riparian Habitat (CWS VC). It is classified as Forest Canopy Class I based on being part of a contiguous grove of trees with limited canopy openings, greater than 1 acre in size, and having approximately 60 percent or greater crown closure. Vegetation is dominated by Douglas fir (*Pseudotsuga menziesii*), Oregon white oak, and balsam poplar (*Populus balsamifera*).

The forest canopy was assessed by a certified AKS Arborist on October 13, 2021. A 2002 aerial photograph is included as Appendix C, showing no alterations to the existing on-site conditions.

Project Overview

The project consists of the construction of one new warehouse building and addition of a covered outdoor storage area in the southern portion of the site. No impacts are proposed to the off-site wetland or Riparian Habitat (CWS VC) for this project and *marginal* condition VC will be enhanced to *good* condition standards per CWS SPL 21-002637. The Site Plan is included in Appendix A, Figures 6A and 6B.

The project will retain well above the minimum required 30 percent of the tree canopy and is therefore under compliance with City of Sherwood's Tree Code 16.142.070 (D)(1) and 16.142.070 (D)(3).

This project meets the standards pursuant to Sherwood Municipal Code, Chapter 16.144.010, as this project does not reduce the area of wetlands on-site and an established buffer was determined in conformance to CWS standards. Enhancement to the CWS Riparian Habitat includes a planting plan and monitoring to protect the values and functions of the off-site wetland and Rock Creek.

List of Preparers

Lex Francis
Natural Resource Specialist
Report preparation

Sonya Templeton
Natural Resource Specialist
Fieldwork and Report QA/QC

Literature Cited and Referenced

City of Sherwood, 2021. Sherwood Municipal Code. Covering Ordinances through 2021-007, passed August 3, 2021 (Supp. No. 20, Update 3). Sherwood (Oregon): City of Sherwood. Available at: https://library.municode.com/or/sherwood/codes/code_of_ordinances [Accessed September 2021].

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Oregon Map, 2018. Washington County Assessor's Map 2S 1 28C. Oregon: State of Oregon. Available at: http://www.ormap.net/. [Accessed September 2021].

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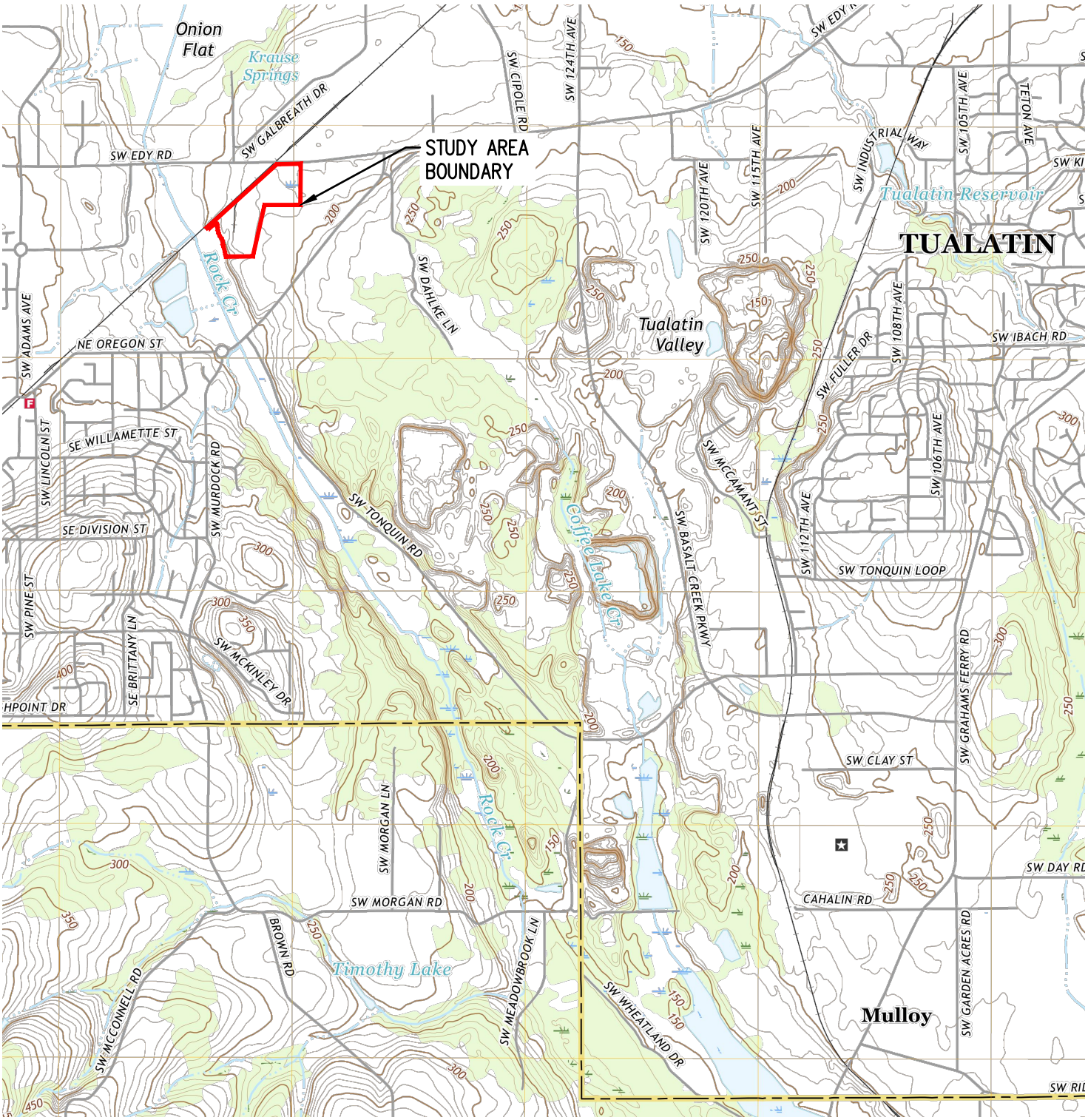
Appendix A: Figures



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SCALE: 1"= 2000 FEET

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ORIGINAL PAGE SIZE: 8.5" x 11"

USGS 7.5' TOPOGRAPHIC SERIES
QUADRANGLE: SHERWOOD, OR (2020)

DATE: 10/22/2021

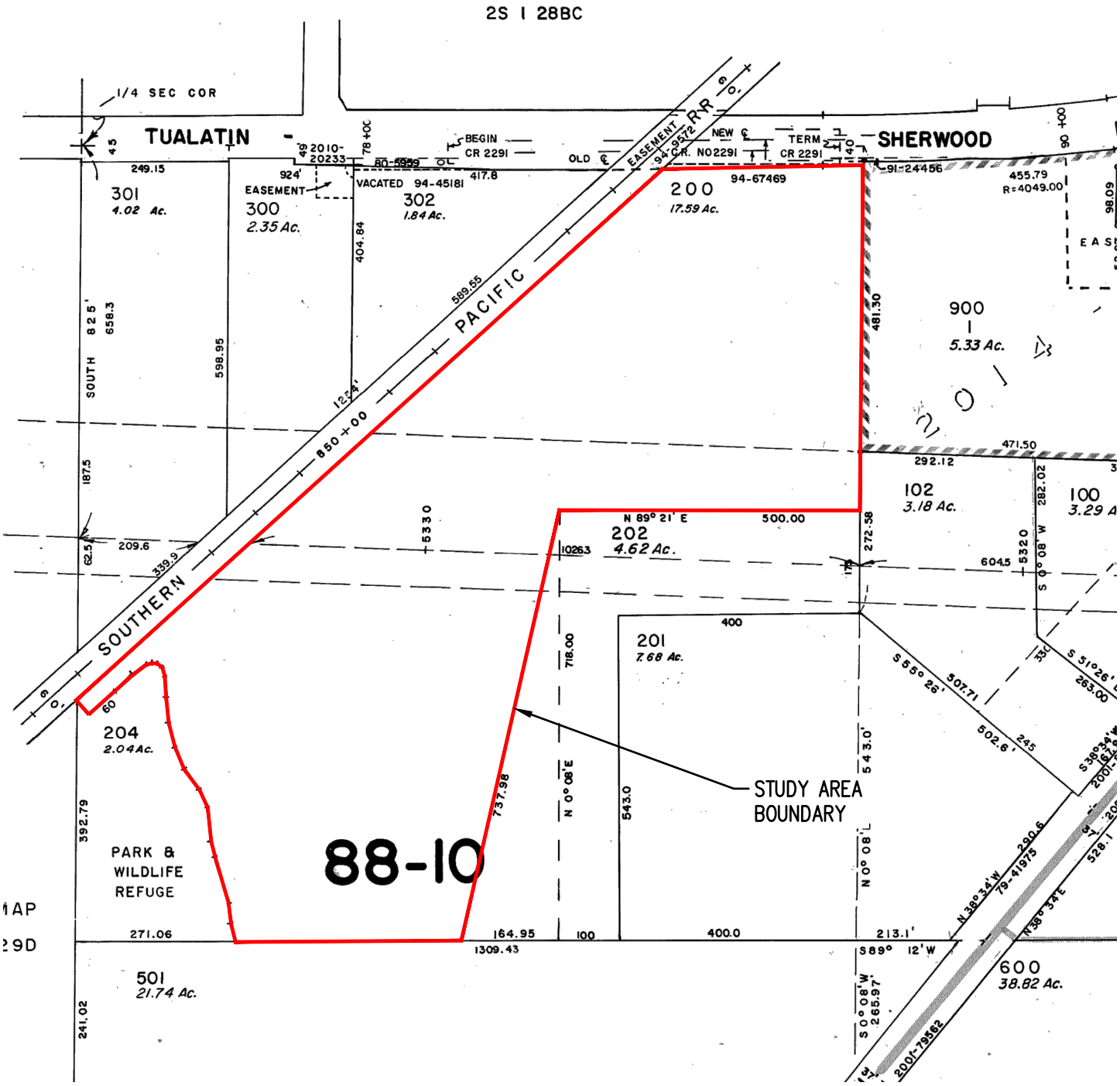
USGS VICINITY MAP
14200 SW TUALATIN-SHERWOOD ROAD CHAPTER 16.144 COMPLIANCE MEMO

FIGURE 1

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: LMF
CHKD: SAR
AKS JOB: 7431

DWG: 7431 SHERWOOD BACKGROUND FIGURES | FIGURE 1



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WASHINGTON COUNTY
TAX LOT 200
TAX MAP 2S 1 28C

DATE: 10/22/2021

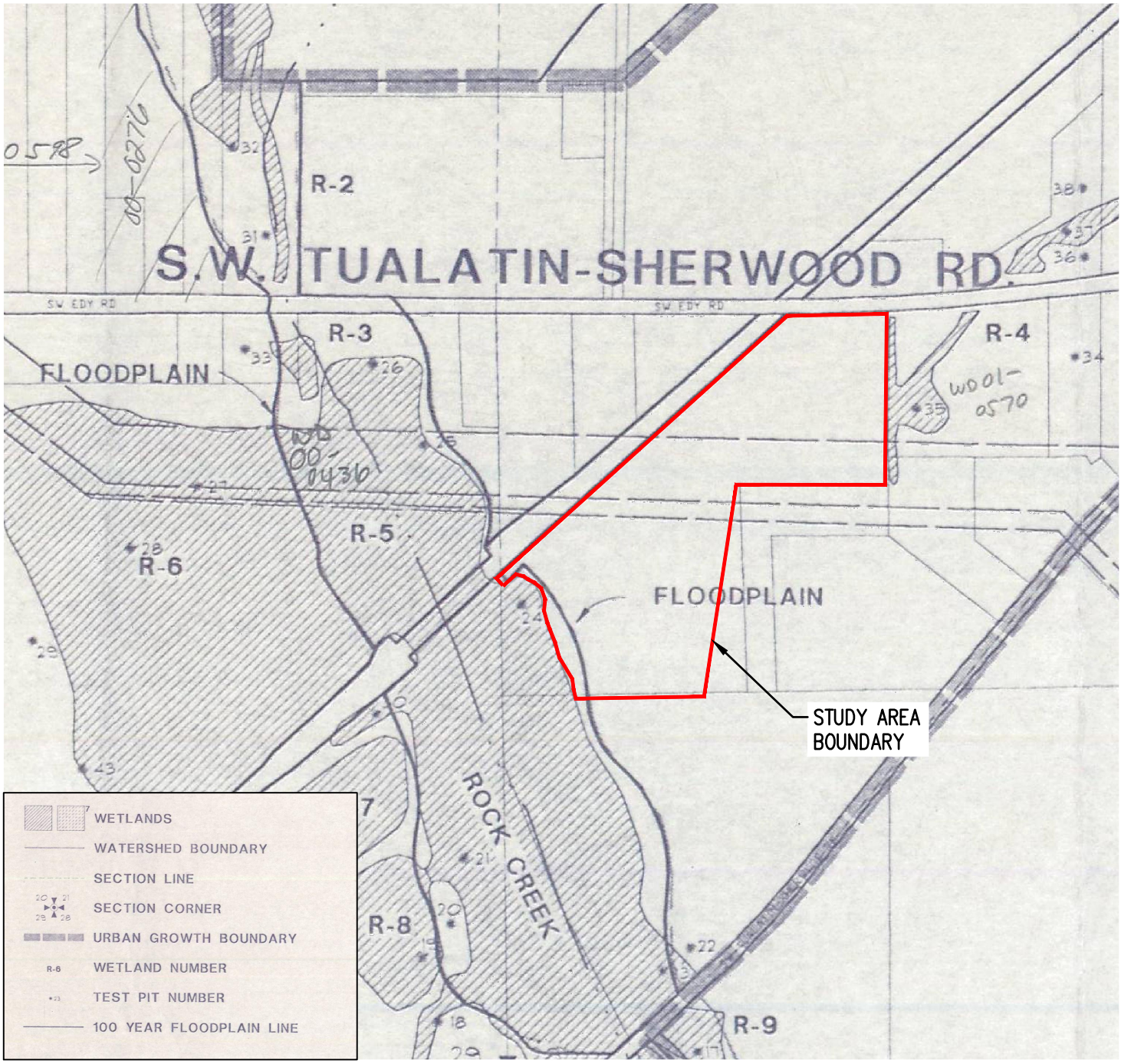
SCALE: 1"= 250 FEET

250 0 50 125 250

ORIGINAL PAGE SIZE: 8.5" x 11"

TAX MAP (MAP 2S 1 28C) 14200 SW TUALATIN-SHERWOOD ROAD CHAPTER 16.144 COMPLIANCE MEMO	FIGURE 2
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: LMF CHKD: SAR AKS JOB: 7431

DWG: 7431 SHERWOOD BACKGROUND FIGURES | FIGURE 2



CITY OF SHERWOOD
LOCAL WETLAND INVENTORY (1992)

N

SCALE: 1"=150 FEET

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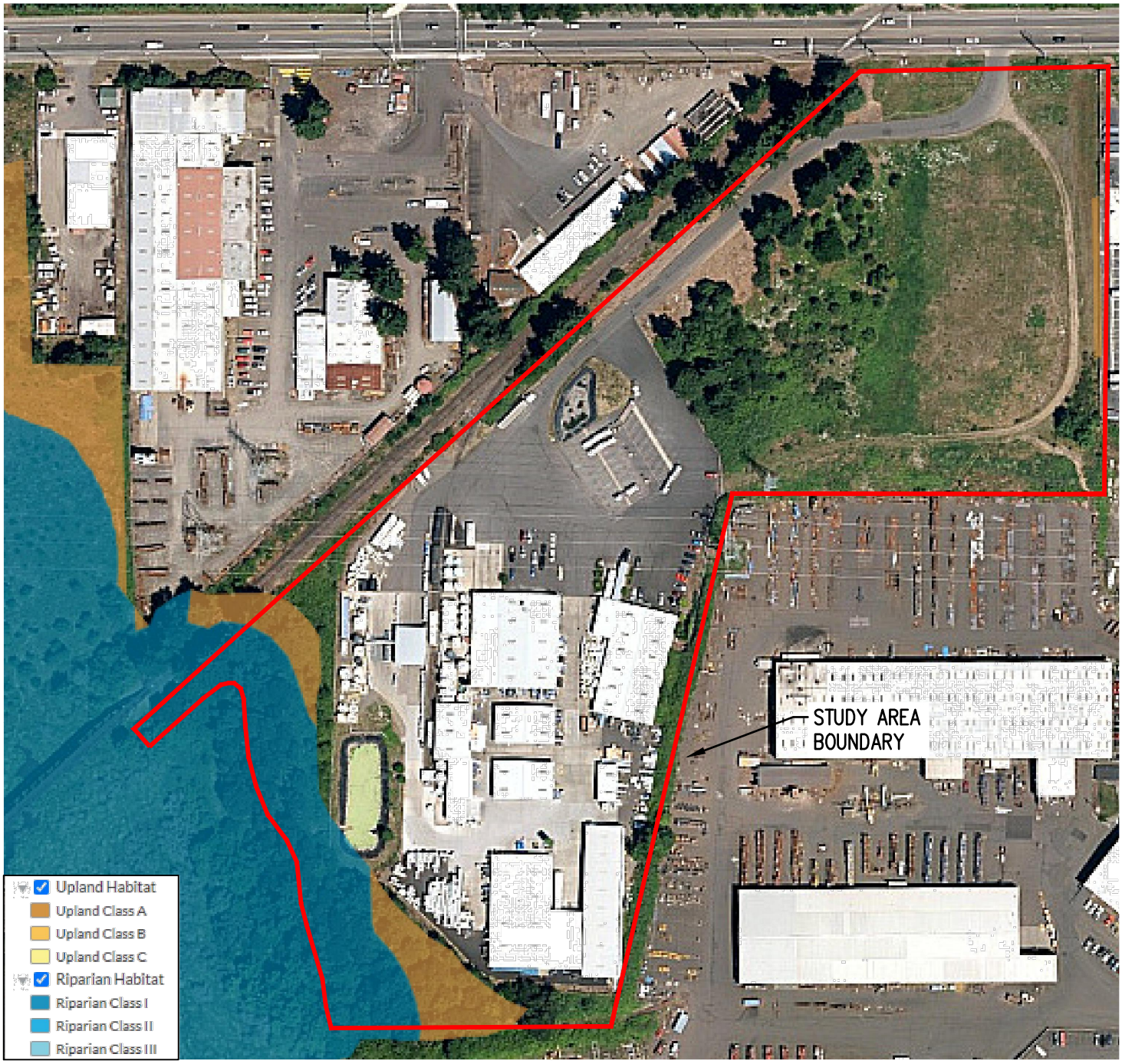
ORIGINAL PAGE SIZE: 8.5" x 11"

DATE: 10/22/2021

LOCAL WETLAND INVENTORY MAP 14200 SW TUALATIN-SHERWOOD ROAD CHAPTER 16.144 COMPLIANCE MEMO	FIGURE 3
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: LMF CHKD: SAR AKS JOB: 7431

DWG: 7431 SHERWOOD BACKGROUND FIGURES | FIGURE 3



METRO MAP
REGIONALLY SIGNIFICANT FISH &
WILDLIFE HABITAT

N

SCALE: 1"= 200 FEET

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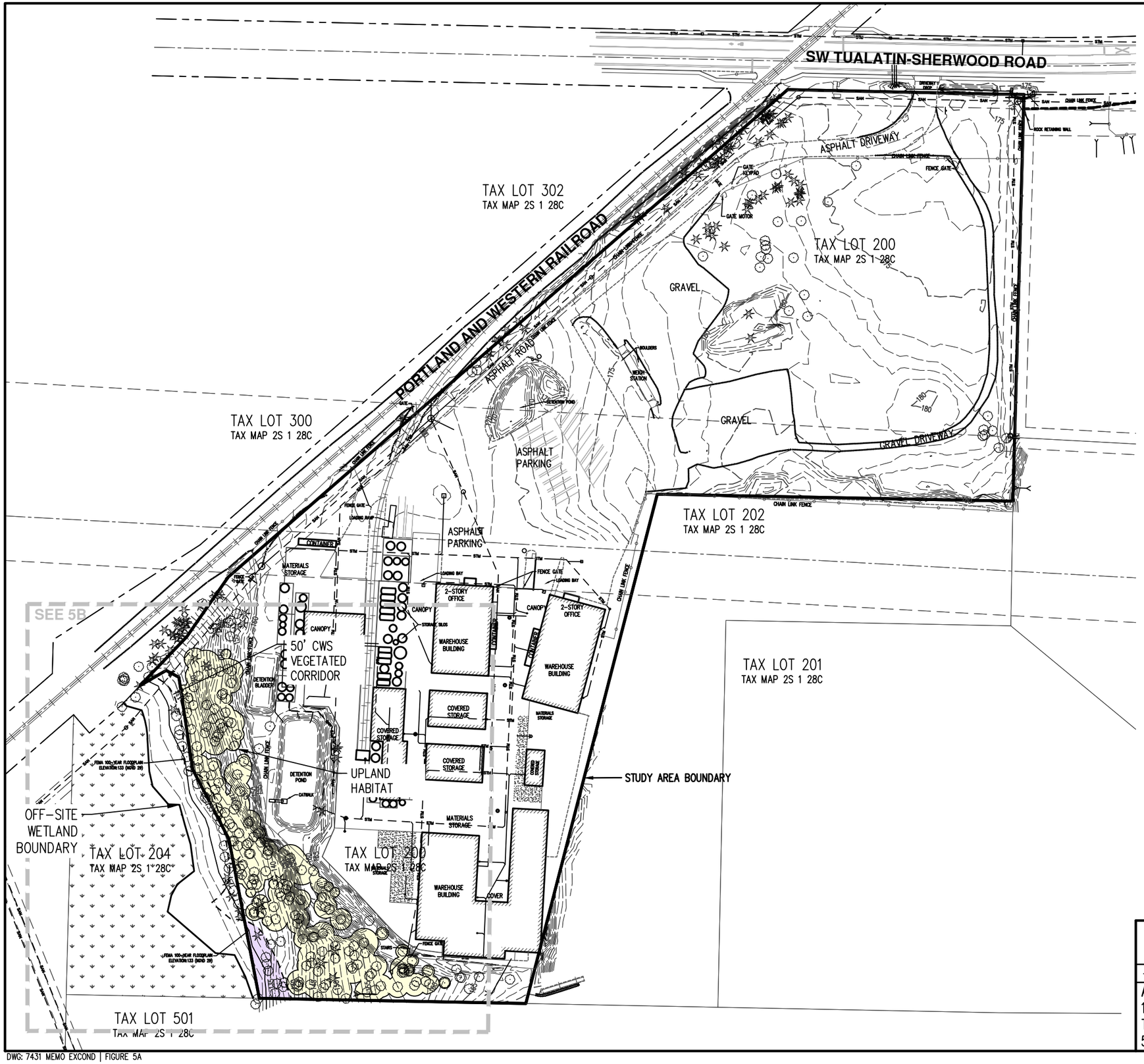
ORIGINAL PAGE SIZE: 8.5" x 11"

DATE: 10/22/2021

METRO MAP 14200 SW TUALATIN-SHERWOOD ROAD CHAPTER 16.144 COMPLIANCE MEMO	FIGURE 4
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: LMF CHKD: SAR AKS JOB: 7431

DWG: 7431 SHERWOOD BACKGROUND FIGURES | FIGURE 4



LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION CWS VEGETATED CORRIDOR: 598 SF± (0.01 ACRES)

ON-SITE MARGINAL CONDITION CWS VEGETATED CORRIDOR: 3,510 SF± (0.08 ACRES)

TOTAL ON-SITE CWS VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

UPLAND HABITAT (FOREST CANOPY CLASS 1): 46,598 SF± (1.07 ACRES)

UPLAND HABITAT AREA SHOWN WAS ASSESSED AND DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON OCTOBER 13, 2021.

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

N

SCALE: 1"=140 FEET

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ORIGINAL PAGE SIZE: 17"X11"

DATE: 11/03/2021

NATURAL RESOURCES EXISTING CONDITIONS

14200 SW TUALATIN-SHERWOOD ROAD CHAPTER 16.144 COMPLIANCE MEMO

FIGURE 5A

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

DWG: 7431 MEMO EXCOND | FIGURE 5A

PORTLAND AND WESTERN RAILROAD

WETLAND CONDITIONS CONTINUE

50' CWS VEGETATED CORRIDOR

FEMA 100-YEAR FLOODPLAIN ELEVATION: 133 (NGVD 29)

OFF-SITE WETLAND BOUNDARY

TAX LOT 204
TAX MAP 2S 1 28C

WETLAND CONDITIONS CONTINUE

UPLAND HABITAT (FOREST CANOPY CLASS 1)

CHAIN LINK FENCE

TAX LOT 200
TAX MAP 2S 1 28C

DETENTION BLADDER

CANOPY

UPLAND HABITAT (FOREST CANOPY CLASS 1)

CANOPY

STORAGE SILOS

WAREHOUSE BUILDING

WASTEWATER RUNOFF PIPES

CHAIN LINK FENCE

DETENTION POND

CATWALK

COVERED STORAGE

COVERED STORAGE

COVERED STORAGE

MATERIALS STORAGE

TAX LOT 200
TAX MAP 2S 1 28C

MATERIALS STORAGE

WAREHOUSE BUILDING

STUDY AREA BOUNDARY

UPLAND HABITAT (FOREST CANOPY CLASS 1)

FEMA 100-YEAR FLOODPLAIN ELEVATION: 133 (NGVD 29)

50' CWS VEGETATED CORRIDOR

STAIRS

FENCE GATE

EX 10" CONC CULVERT

TAX LOT 501
TAX MAP 2S 1 28C

WETLAND CONDITIONS CONTINUE

EX 10" CONC CULVERT

EX 8" CONC CULVERT

LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION CWS VEGETATED CORRIDOR: 598 SF± (0.01 ACRES)

ON-SITE MARGINAL CONDITION CWS VEGETATED CORRIDOR: 3,510 SF± (0.08 ACRES)

TOTAL ON-SITE CWS VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

UPLAND HABITAT (FOREST CANOPY CLASS 1): 46,598 SF± (1.07 ACRES)

UPLAND HABITAT AREA SHOWN WAS ASSESSED AND DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON OCTOBER 13, 2021.

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

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SCALE: 1"= 60 FEET

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ORIGINAL PAGE SIZE: 17" x 11"

DATE: 11/03/2021

NATURAL RESOURCES EXISTING CONDITIONS

14200 SW TUALATIN-SHERWOOD ROAD CHAPTER 16.144 COMPLIANCE MEMO

FIGURE **5B**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

SW TUALATIN-SHERWOOD ROAD

TAX LOT 302
TAX MAP 2S 1 28C

PORTLAND AND WESTERN RAILROAD

TAX LOT 200
TAX MAP 2S 1 28C

TAX LOT 300
TAX MAP 2S 1 28C

TAX LOT 202
TAX MAP 2S 1 28C

TAX LOT 201
TAX MAP 2S 1 28C

TAX LOT 204
TAX MAP 2S 1 28C

TAX LOT 501
TAX MAP 2S 1 28C

ASPHALT DRIVEWAY
ASPHALT ROAD
GRAVEL
GRAVEL DRIVEWAY
ASPHALT PARKING
ROCK RETAINING WALL
BOULDERS
MERRY STATION
RETENTION POND
LOADING RAMP
CONTAINERS
MATERIALS STORAGE
LOADING BAY
2-STORY OFFICE
CANOPY
STORAGE SILOS
WAREHOUSE BUILDING
LOW WALL
DETENTION BLADDER
50' CWS VEGETATED CORRIDOR
UPLAND HABITAT
COVERED STORAGE
PROPOSED COVERED STORAGE
DETENTION POND
CATWALK
PROPOSED STORAGE BUILDING
STAIRS
COVER
SEE 6B
OFF-SITE WETLAND BOUNDARY
STUDY AREA BOUNDARY

LEGEND (COLOR COPY):

- ON-SITE GOOD CONDITION CWS VEGETATED CORRIDOR AREA TO REMAIN: 598 SF± (0.01 ACRES)
- ON-SITE MARGINAL CONDITION CWS VEGETATED CORRIDOR TO BE ENHANCED TO GOOD CONDITION PER CWS STANDARDS: 3,510 SF± (0.08 ACRES)
- PERMANENT UPLAND HABITAT (FOREST CANOPY CLASS 1) IMPACT AREA: 29,632 SF± (0.68 ACRES)
- UPLAND HABITAT (FOREST CANOPY CLASS 1) TO REMAIN: 16,966 SF± (0.39 ACRES)
- TREES >6" DBH TO BE REMOVED

UPLAND HABITAT AREA SHOWN WAS ASSESSED AND DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON OCTOBER 13, 2021.

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

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SCALE: 1"=140 FEET

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ORIGINAL PAGE SIZE: 17"X11"

DATE: 11/03/2021

NATURAL RESOURCES SITE PLAN

14200 SW TUALATIN-SHERWOOD ROAD CHAPTER 16.144 COMPLIANCE MEMO

FIGURE 6A

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

LEGEND (COLOR COPY):

- ON-SITE GOOD CONDITION CWS VEGETATED CORRIDOR AREA TO REMAIN: 598 SF± (0.01 ACRES)
- ON-SITE MARGINAL CONDITION CWS VEGETATED CORRIDOR TO BE ENHANCED TO GOOD CONDITION PER CWS STANDARDS: 3,510 SF± (0.08 ACRES)
- PERMANENT UPLAND HABITAT (FOREST CANOPY CLASS 1) IMPACT AREA: 29,632 SF± (0.68 ACRES)
- UPLAND HABITAT (FOREST CANOPY CLASS 1) TO REMAIN: 16,966 SF± (0.39 ACRES)
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1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND

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SCALE: 1"=60 FEET

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ORIGINAL PAGE SIZE: 17" x 11"

DATE: 11/03/2021

NATURAL RESOURCES SITE PLAN

14200 SW TUALATIN-SHERWOOD ROAD CHAPTER 16.144 COMPLIANCE MEMO

FIGURE **6B**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

Appendix B: Clean Water Services Service Provider Letter (File No. 21-002637) & Simplified Site Assessment Report

Clean Water Services
Our commitment is clear.

CWS File Number
21-002637

Service Provider Letter

This form and the attached conditions will serve as your Service Provider Letter in accordance with Clean Water Services Design and Construction Standards (R&O 19-5, as amended by R&O 19-22).

Jurisdiction:	City of Sherwood	**Review Type:**	No Impact
Site Address / Location:	14200 SW TUALATIN SHERWOOD RD SHERWOOD OR 97140	**SPL Issue Date:**	November 09, 2021
		SPL Expiration Date:	November 09, 2023

Applicant Information:		**Owner Information:**	
Name	SONYA TEMPLETON	Name	ROBERT CODE
Company	AKS ENGINEERING & FORESTRY LLC	Company	SHERWOOD ROAD LLC
Address	12965 SW HERMAN RD SUITE 100 TUALATIN OR 97062	Address	6900 FOX AVE S SEATTLE WA 98108
Phone/Fax	(503) 867-2613	Phone/Fax	(206) 282-6334
E-mail:	templetons@aks-eng.com	E-mail:	bobc@cascadecolumbia.com

Tax lot ID	**Development Activity**
2S128C000200	Storage Buildings

Pre-Development Site Conditions:		**Post Development Site Conditions:**	
Sensitive Area Present:	[X] On-Site [X] Off-Site	Sensitive Area Present:	[X] On-Site [X] Off-Site
Vegetated Corridor Width:	50	Vegetated Corridor Width:	50
Vegetated Corridor Condition:	Good/Marginal		

Enhancement of Remaining Vegetated Corridor Required: [X]

Square Footage to be enhanced: 3,510

Encroachments into Pre-Development Vegetated Corridor:

Type and location of Encroachment:	Square Footage:
No Encroachment	

Mitigation Requirements:

Type/Location	Sq. Ft./Ratio/Cost
No Mitigation	

[X] Conditions Attached [X] Development Figures Attached (4) [X] Planting Plan Attached [ ] Geotech Report Required

This Service Provider Letter does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered on your property.

In order to comply with Clean Water Services water quality protection requirements the project must comply with the following conditions:

1. No structures, development, construction activities, gardens, lawns, application of chemicals, uncontained areas of hazardous materials as defined by Oregon Department of Environmental Quality, pet wastes, dumping of materials of any kind, or other activities shall be permitted within the sensitive area or Vegetated Corridor which may negatively impact water quality, except those allowed in R&O 19-5, Chapter 3, as amended by R&O 19-22.
2. Prior to any site clearing, grading or construction the Vegetated Corridor and water quality sensitive areas shall be surveyed, staked, and temporarily fenced per approved plan. During construction the Vegetated Corridor shall remain fenced and undisturbed except as allowed by R&O 19-5, Section 3.06.1, as amended by R&O 19-22 and per approved plans.
3. **If there is any activity within the sensitive area, the applicant shall gain authorization for the project from the Oregon Department of State Lands (DSL) and US Army Corps of Engineers (USACE). The applicant shall provide Clean Water Services or its designee (appropriate city) with copies of all DSL and USACE project authorization permits. No wetland impacts proposed for this project.**
4. An approved Oregon Department of Forestry Notification is required for one or more trees harvested for sale, trade, or barter, on any non-federal lands within the State of Oregon.
5. Prior to any ground disturbing activities, an erosion control permit is required. Appropriate Best Management Practices (BMP's) for Erosion Control, in accordance with Clean Water Services' Erosion Prevention and Sediment Control Planning and Design Manual, shall be used prior to, during, and following earth disturbing activities.
6. Prior to construction, a Stormwater Connection Permit from Clean Water Services or its designee is required pursuant to Ordinance 27, Section 4.B.
7. Activities located within the 100-year floodplain shall comply with R&O 19-5, Section 5.10, as amended by R&O 19-22.
8. Removal of native, woody vegetation shall be limited to the greatest extent practicable.
9. The water quality swale and detention pond shall be planted with Clean Water Services approved native species, and designed to blend into the natural surroundings.
10. **Should final development plans differ significantly from those submitted for review by Clean Water Services, the applicant shall provide updated drawings, and if necessary, obtain a revised Service Provider Letter.**
11. The Vegetated Corridor width for sensitive areas within the project site shall be a minimum of 50 feet wide, as measured horizontally from the delineated boundary of the sensitive area.
12. **For Vegetated Corridors up to 50 feet wide, the applicant shall enhance the entire Vegetated Corridor to meet or exceed good corridor condition as defined in R&O 19-5, Section 3.14.2, Table 3-3, as amended by R&O 19-22.**
13. **Removal of invasive non-native species by hand is required in all Vegetated Corridors rated ""good."" Replanting is required in any cleared areas larger than 25 square feet using low impact methods. The applicant shall calculate all cleared areas larger than 25 square feet prior to the preparation of the required Vegetated Corridor enhancement/restoration plan.**
14. Prior to any site clearing, grading or construction, the applicant shall provide Clean Water Services with a Vegetated Corridor enhancement/restoration plan. Enhancement/restoration of the Vegetated Corridor shall be provided in accordance with R&O 19-5, Appendix A, as amended by R&O 19-22, and shall include planting specifications for all Vegetated Corridor, including any cleared areas larger than 25 square feet in Vegetated Corridor rated ""good.""
15. Prior to installation of plant materials, all invasive vegetation within the Vegetated Corridor shall be removed per methods described in Clean Water Services' Integrated Pest Management Plan, 2019. During removal of invasive vegetation care shall be taken to minimize impacts to existing native tree and shrub species.

16. Clean Water Services and/or City shall be notified 72 hours prior to the start and completion of enhancement/restoration activities. Enhancement/restoration activities shall comply with the guidelines provided in Planting Requirements (R&0 19-5, Appendix A, as amended by R&O 19-22).
17. **Maintenance and monitoring requirements shall comply with R&O 19-5, Section 2.12.2, as amended by R&O 19-22. If at any time during the warranty period the landscaping falls below the 80% survival level, the owner shall reinstall all deficient planting at the next appropriate planting opportunity and the two year maintenance period shall begin again from the date of replanting.**
18. **Performance assurances for the Vegetated Corridor shall comply with R&O 19-5, Section 2.07.2, Table 2-1 and Section 2.11, Table 2-2, as amended by R&O 19-22.**
19. **Clean Water Services shall require an easement over the Sensitive Area and Vegetated Corridor conveying storm and surface water management to Clean Water Services or the City that would prevent the owner of the Vegetated Corridor from activities and uses inconsistent with the purpose of the corridor and any easements therein.**
20. **Final construction plans shall include landscape plans**. In the details section of the plans, a description of the methods for removal and control of exotic species, location, distribution, condition and size of plantings, existing plants and trees to be preserved, and installation methods for plant materials is required. Plantings shall be tagged for dormant season identification and shall remain on plant material after planting for monitoring purposes.
21. **A Maintenance Plan shall be included on final plans** including methods, responsible party contact information, and dates (minimum two times per year, by June 1 and September 30).
22. **Final construction plans shall clearly depict the location and dimensions of the sensitive area and the Vegetated Corridor** (indicating good, marginal, or degraded condition). Sensitive area boundaries shall be marked in the field.
23. Protection of the Vegetated Corridors and associated sensitive areas shall be provided by the installation of permanent fencing and signage between the development and the outer limits of the Vegetated Corridors. **Fencing and signage details to be included on final construction plans.**

This Service Provider Letter is not valid unless CWS-approved site plan is attached.

Please call (503) 681-3667 with any questions.

Stacy Benjamin

Stacy Benjamin
Environmental Plan Review

Attachments (5)

CWS FILE NO. 21-002637
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By SNB Date 11/9/2021
SPL ATTACHMENT 1 OF 5

SW TUALATIN-SHERWOOD ROAD

PORTLAND AND WESTERN RAILROAD

TAX LOT 302
TAX MAP 2S 1 28C

TAX LOT 300
TAX MAP 2S 1 28C

TAX LOT 200
TAX MAP 2S 1 28C

TAX LOT 202
TAX MAP 2S 1 28C

TAX LOT 201
TAX MAP 2S 1 28C

TAX LOT 204
TAX MAP 2S 1 28C

TAX LOT 501
TAX MAP 2S 1 28C

5B INSERT

SEE 5B

ASPHALT DRIVEWAY
GRAVEL DRIVEWAY
ASPHALT ROAD
ASPHALT PARKING
GRAVEL
GATE KEEPER
GATE MOTOR
FENCE GATE
CHAIN LINK FENCE
ROCK RETAINING WALL
BOULDERS
WEIGH STATION
RETAINING POND
CONTAINER
MATERIALS STORAGE
LOADING RAMP
LOADING BAY
2-STORY OFFICE
CANOPY
STORAGE BLDG
WAREHOUSE BUILDING
COVERED STORAGE
DETENTION BLADDER
DETENTION POND
CATCH BASIN
COVER

50' CWS VEGETATED CORRIDOR

STUDY AREA BOUNDARY

OFF-SITE WETLAND BOUNDARY

LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR: 598 SF± (0.01 ACRES)

ON-SITE MARGINAL CONDITION VEGETATED CORRIDOR: 3,510 SF± (0.08 A

TOTAL ON-SITE VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

(A) PHOTO LOCATION & ORIENTATION

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

N

SCALE: 1"=140 FEET

140 0 28 70 140

ORIGINAL PAGE SIZE: 17"X11"

DATE: 10/28/2021

NATURAL RESOURCES EXISTING CONDITIONS

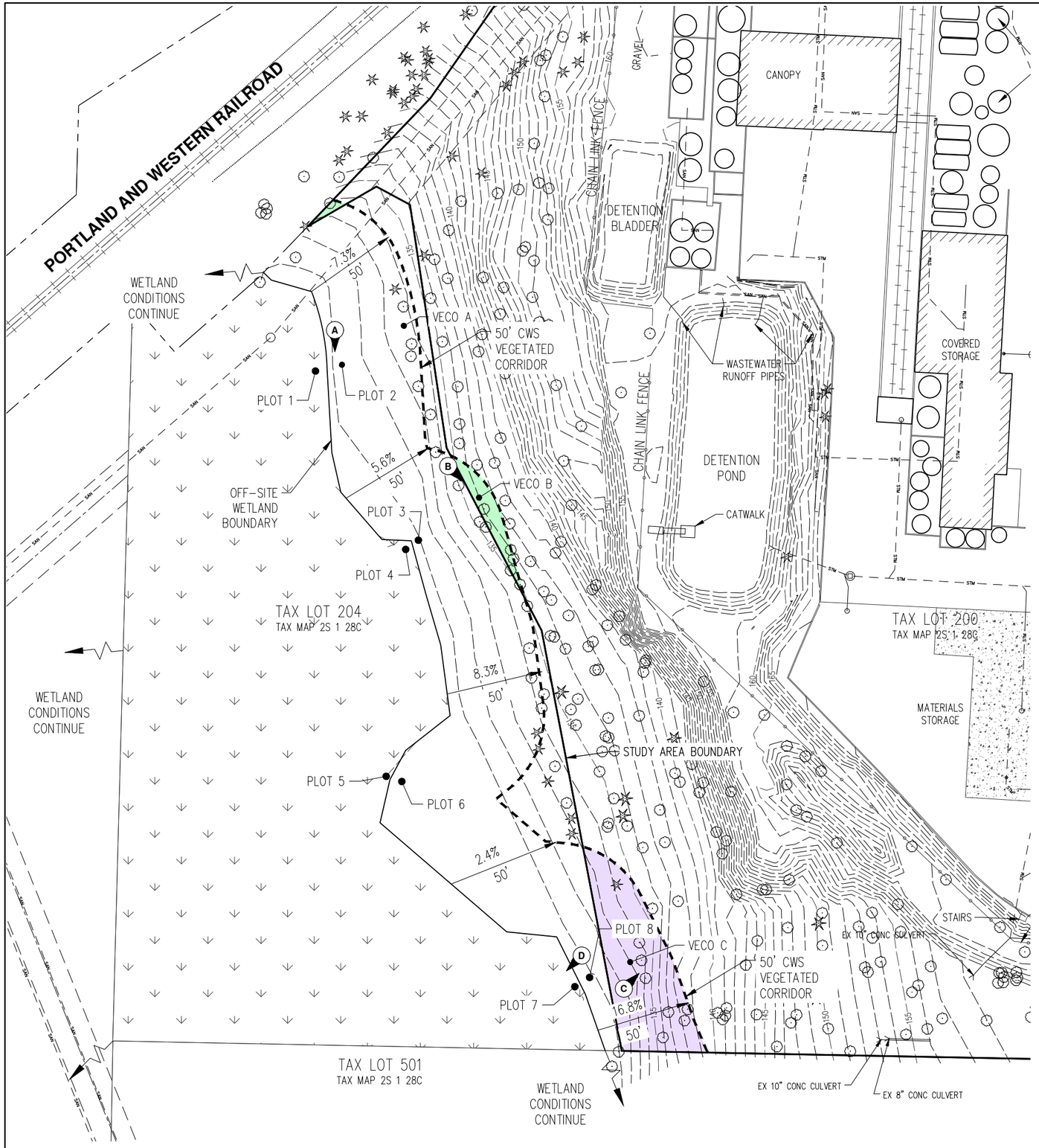
14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE **5A**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

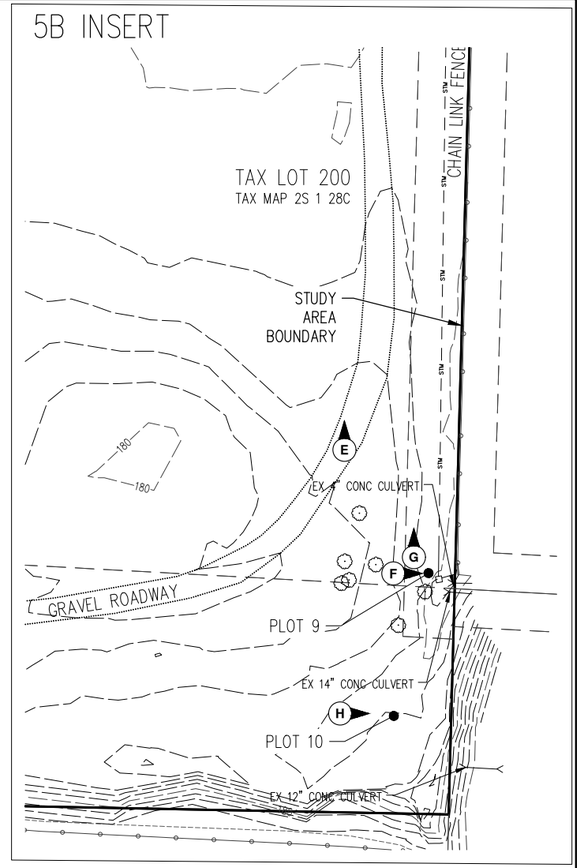
DRWN: SKT
CHKD: SAR
AKS JOB: 7431

DWG: 7431 NRA EXCOND | FIGURE 5A



CWS FILE NO. 21-002637
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By SNB Date 11/9/2021
SPL ATTACHMENT 2 OF 5

5B INSERT



LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR: 598 SF± (0.01 ACRES)

ON-SITE MARGINAL CONDITION VEGETATED CORRIDOR: 3,510 SF± (0.08 AC

TOTAL ON-SITE VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

(A) PHOTO LOCATION & ORIENTATION

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

N

SCALE: 1"=60 FEET

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ORIGINAL PAGE SIZE: 17" x 11"

DATE: 10/28/2021

NATURAL RESOURCES EXISTING CONDITIONS

14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE **5B**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

CWS FILE NO. 21-002637
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By SNB Date 11/9/2021
SPL ATTACHMENT 3 OF 5

SW TUALATIN-SHERWOOD ROAD
PORTLAND AND WESTERN RAILROAD
TAX LOT 302
TAX MAP 2S 1 28C
TAX LOT 200
TAX MAP 2S 1 28C
TAX LOT 300
TAX MAP 2S 1 28C
TAX LOT 202
TAX MAP 2S 1 28C
TAX LOT 201
TAX MAP 2S 1 28C
TAX LOT 501
TAX MAP 2S 1 28C
TAX LOT 204
TAX MAP 2S 1 28C
ASPHALT DRIVEWAY
ASPHALT ROAD
ASPHALT PARKING
GRAVEL
GRAVEL DRIVEWAY
ROCK RETAINING WALL
BOULDERS
MERRY STATION
RETENTION POND
LOADING BAY
CONTAINERS
MATERIALS STORAGE
2-STORY OFFICE
CANOPY
STORAGE SILOS
WAREHOUSE BUILDING
DETENTION BLADDER
50' CWS VEGETATED CORRIDOR
COVERED STORAGE
PROPOSED COVERED STORAGE
DETENTION POND
CATWALK
PROPOSED STORAGE BUILDING
COVER
STAIRS
STUDY AREA BOUNDARY
OFF-SITE WETLAND BOUNDARY
SEE 6B

LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR AREA TO REMAIN: 598 SF± (0.01 ACRES)

ON-SITE MARGINAL CONDITION VEGETATED CORRIDOR TO BE ENHANCED TO GOOD CONDITION STANDARDS: 3,510 SF± (0.08 ACRES)

TOTAL ON-SITE VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

TREES >6" DBH ARE SHOWN TO BE REMOVED.

N

SCALE: 1"=140 FEET

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ORIGINAL PAGE SIZE: 17"X11"

DATE: 10/28/2021

NATURAL RESOURCES SITE PLAN

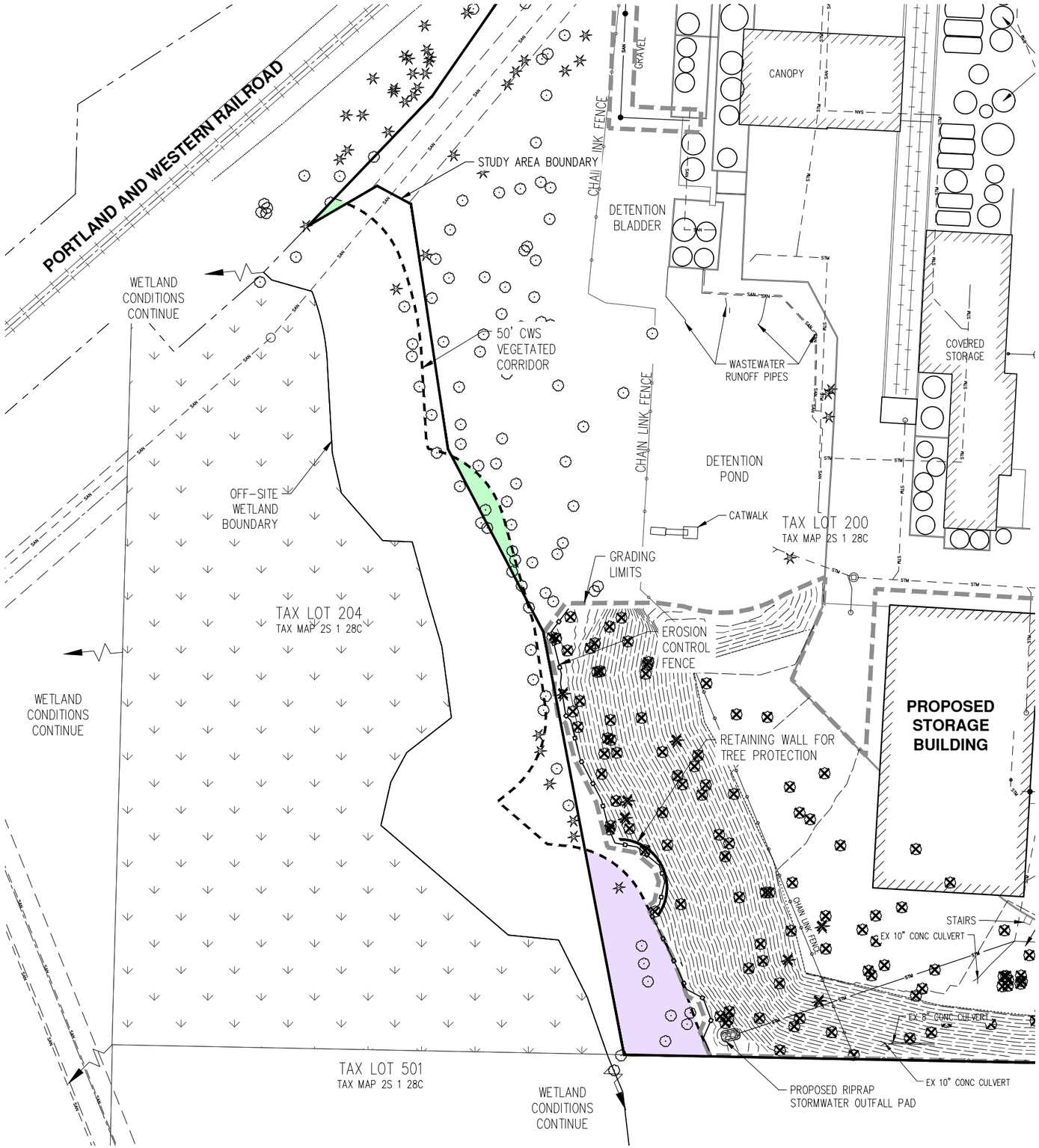
14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE 6A

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

DWG: 7431 NRA SITE PLAN | FIGURE 6A



CWS FILE NO. 21-002637
Approved
Clean Water Services
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By SNB Date 11/9/2021
SPL ATTACHMENT 4 OF 5

LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR AREA TO REMAIN: 598 SF± (0.01 ACRES)

ON-SITE MARGINAL CONDITION VEGETATED CORRIDOR TO BE ENHANCED TO GOOD CONDITION STANDARDS: 3,510 SF± (0.08 ACRES)

TOTAL ON-SITE VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

TREES >6" DBH ARE SHOWN TO BE REMOVED.

N

SCALE: 1"=60 FEET

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ORIGINAL PAGE SIZE: 17" x 11"

DATE: 10/28/2021

NATURAL RESOURCES SITE PLAN

14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE **6B**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

-Sherwood Road – Vegetated Corridor Enhancement Planting Specifications

Planting specifications for the enhancement of ±3,510 square feet of *marginal* condition vegetated corridor enhancement to *good* condition.

Total planting area 3,510 square feet

Scientific Name	Common Name	Size*	Spacing/Seeding Rate	Quantity
Trees (total 36)**				
Acer macrophyllum	bigleaf maple	2 gallon	10 feet on center	20
Acer circirnatum	Vine maple	2 gallon	10 feet on center	16
Shrubs (total 176)**				
Symphoricarpus albus	snowberry	1 gallon	4-5 feet on center	46
Mahonia aquifolium	tall Oregon grape	1 gallon	4-5 feet on center	35
Polystichum munitum	Pineland sword fern	1 gallon	4-5 feet on center	35
Rosa gymnocarpa	Baldhip rose	1 gallon	4-5 feet on center	30
Ribes sanguineum	red flowering currant	1 gallon	4-5 feet on center	30
Seed Mix/Plug				
Agrostis exarate	Spike bentgrass	seed	2 lb pls/acre	As needed for bare soil areas >25 square feet
Bromus carinatus	Native California brome	seed	2 lb pls/acre	

**Bare root plants may be substituted for container plants based on availability. If bare root plants are used, they must be planted during the late winter/early spring dormancy period.*
*** Minimum plant quantities ordered.*

Planting Notes (per CWS Design & Construction Standards R&O 19-5, amended by R&O 19-22, December 2019 Appendix A Planting Requirements):

1) Container stock shall be installed only from February 1 through May 1 and October 1 through November 15. Bare root stock shall be installed only from December 15 through April 15. Plantings outside these times may require additional measures to ensure survival which shall be specified on the plans.

2) All non-native invasive vegetation shall be removed from planting areas prior to installing native enhancement plantings. Invasive species control shall be consistent with Clean Water Services' June 2019 *Integrated Pest Management (IPM) Plan*.

3) Appropriate plant selection, along with adequate site preparation and maintenance, reduces the need for irrigation. However, unless site hydrology is currently adequate, a District/City approved irrigation system or equivalent (i.e., polymer, plus watering) shall be used during the two-year plant establishment period. Watering shall be at a minimum rate of at least one inch per week from June 15 through October 15. Other irrigation techniques, such as deep watering, may be allowed with prior approval by District staff.

4) Trees, shrubs, and groundcovers planted shall be mulched at a minimum of three inches in depth and 18 inches in diameter, to retain moisture and discourage weed growth around newly installed plant material. Appropriate mulches are made from composted bark or leaves that have not been chemically treated.

Clean Water Services

SENSITIVE AREA CERTIFICATION FORM

Clean Water Services File Number _____

1. **Property Information** (example 1S234AB01400)
   Tax lot ID(s): 2S128C00200
   Site Address: 14200 Tualatin Sherwood Road
   City, State, Zip: Sherwood, OR, 97140
   Nearest cross street: SW Oregon St

2. **Owner Information**
   Name: Robert Code
   Company: Sherwood Road LLC
   Address: 6900 Fox Ave S.
   City, State, Zip: Seattle, Wa. 98108
   Phone/Fax: 206-282-6334
   E-Mail: bobc@cascadecolumbia.com

3. **Development Activity** (check **all** that apply)
   - ☐ Addition to single family residence (rooms, deck, garage)
   - ☐ Lot line adjustment
   - ☐ Minor land partition
   - ☐ Residential condominium
   - ☐ Commercial condominium
   - ☐ Residential subdivision
   - ☐ Commercial subdivision
   - ☒ Single lot commercial
   - ☐ Multi lot commercial

   Other _____

4. **Applicant Information**
   Name: Sonya Templeton
   Company: AKS Engineering & Forestry
   Address: 12965 SW Herman Rd UNIT 100
   City, State, Zip: Tualatin OR 97062
   Phone/Fax: 503-563-6151
   E-Mail: templetons@aks-eng.com

5. **Check any of the following that apply to this project**
   - ☐ Adds less than 500 square feet of impervious surface.
   - ☐ Does not encroach closer to the Sensitive Area than existing development on the property.
   - ☐ Is not located on a slope greater than 25%.

6. **Applicant Information**
   Name: Steve Durrell
   Company: Cascade Columbia Distribution
   Address: 14200 SW Tualatin Sherwood Rd
   City, State, Zip: Sherwood, Or. 97140
   Phone/Fax: 503-625-5293
   E-Mail: steved@cascadecolumbia.com

7. **Will the project involve any off-site work?** ☐ Yes ☒ No ☐ Unknown (check appropriate box)
   If yes, location and description of off-site work:

8. **Additional comments or information that may be needed to understand your project:**

9. **An on-site, water quality sensitive area reconnaissance was completed on:**
   Date 04/09/2021 By Sonya Templeton
   Title Natural Resource Specialist Company AKS Engineering & Forestry

Clean Water Services

SENSITIVE AREA CERTIFICATION FORM

Clean Water Services File Number _____

10. Existence of Water Quality Sensitive Areas (check all appropriate boxes)

As defined in the District's Design and Construction Standards:

A. Water Quality Sensitive Areas ☐ do ☒ do not exist on the tax lot.

B. Water Quality Sensitive Areas ☒ do ☐ do not exist within 200' on adjacent properties, or ☐ unable to evaluate adjacent property.

C. Vegetated corridors ☒ do (4,108 SF) ☐ do not exist on the tax lot.

D. Vegetated corridors ☒ do ☐ do not exist within 200' on adjacent properties, or ☐ unable to evaluate adjacent property.

E. Impacts to sensitive areas and/or vegetated corridors will occur ☐ On-site ☐ Off-site ☒ None proposed at this time.

F. If impacts, mitigation is ☐ On-site ☐ Off-site ☐ Other _____

11. Simplified Site Assessment containing the following information: (check only items submitted)

Please refer to Design and Construction Standards 19-5 section 3.02.2, as amended by Resolution and Order 19-22, for application requirements.

☒ Complete Certification Form (2 pages)

☒ Written description of the site and proposed activity.

☒ Site plan of the entire property.

☒ Photographs of the site labeled and keyed to the site plan.

12. Standard Site Assessment containing the following information: (check only items submitted)

Please refer to Design and Construction Standards 19-5 section 3.02.2, as amended by Resolution and Order 19-22, for application requirements.

☐ Complete Certification Form (2 pages)

☐ Written description per Design and Construction Standards 19-5 section 3.13.3.b.1, as amended by Resolution and Order 19-22

☐ Wetland Data sheets

☐ Vegetated Corridor Data sheets

☐ Existing Site Condition Figures

☐ Proposed Development Figures

By signing this form the Owner, or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site.

I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Applicant:

Print/Type Name Steve Durrell Print/Type Title GENERAL MGR

Signature _____ Date 10/6/21

14200 SW Tualatin-Sherwood Road
Sherwood, Washington County
Simplified Site Assessment Report

Date: October 2021

Prepared for:
Cascade Columbia Distributing
14200 SW Tualatin-Sherwood Rd,
Sherwood, OR 97140

Prepared by:
AKS Engineering & Forestry, LLC
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
Lex Francis, Natural Resource Specialist
(503) 563-6151 | francisl@aks-eng.com
Sonya Templeton, Natural Resource Specialist
(503) 563-6151 | Templetons@aks-eng.com

Site Information:
14200 Tualatin-Sherwood Road
Sherwood, OR
Washington County Assessor's Map 2S I 28C
Tax Lot 200

AKS Job Number: 7431

AKS ENGINEERING & FORESTRY
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151

Table of Contents

Appendices

Introduction

AKS Engineering & Forestry, LLC (AKS) was contracted by Cascade Columbia Distribution (Applicant), to conduct a site assessment for industrial site development. The study area consists of Tax Lot 200, south of SW Tualatin Sherwood Road and adjacent to SW Oregon Street of Washington County Assessor's Map 2S I 28C in Sherwood, Washington County, Oregon (Appendix A, Figures 1 & 2). Adjacent Tax Lot 204 is a portion of the Tualatin River National Wildlife Refuge which was accessed during the delineation. The project, referred to as 14200 SW Tualatin-Sherwood Road, consists of industrial redevelopment and expansion of accessibility and parking for Cascade Columbia Distributing.

Pacific Habitat Services (PHS) conducted a wetland delineation off site on Tax Lot 204 and adjacent parcels in 2013. Their delineation received concurrence from DSL under DSL File #WD2013-0108. AKS agrees with their delineation and mapped the wetland boundary similarly to determine the on-site vegetated corridor.

The off-site boundary of a palustrine emergent/scrub-shrub (PEM/PSS) wetland associated with the floodplain of perennial Rock Creek was delineated off-site to the southwest on adjacent Tax Lot 204. Slopes adjacent the wetland were less than 25 percent requiring a 50-foot-wide vegetated corridor (VC). A portion of the VC extends onto the study area. Conditions of the on-site vegetated corridor were determined to be in *good* condition. No VC encroachments are proposed with this project, see Site Plan 6A and 6B in Appendix A.

This report has been prepared to meet CWS simplified site assessment requirements listed under Chapter 3 of R&O 19-5.

Existing Conditions and Background

The site consists of a chemical distribution company and is currently zoned as General Industrial. The vegetation in the study area was dominated by Oregon white oak (*Quercus garryana*; FACU), Pacific poison oak (*Toxicodendron diversilobum*; FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), and dovefoot geranium (*Geranium molle*; NOL). Topography on-site slopes to the southwest towards the off-site wetland and was documented at less than 3 percent overall slope throughout the study area.

The following soil units are mapped within the study area, according to the Natural Resources Conservation Service (NRCS) Washington County Area Soil Survey Map and hydric soil list (Figure 3, Appendix A):

- (Unit 5B) Briedwell stony silt loam, 0% to 7% slopes; Non-hydric
- (Unit 37A) Quatama Loam, 0% to 3% slopes; Non-hydric
- (Unit 37B) Quatama Loam, 3% to 7% slopes; Non-hydric
- (Unit 37D) Quatama Loam, 12% - 20% slopes: Non-hydric
- (Unit 2225A) Huberly Silt loam, 0% - 3% slopes; Hydric
- (Unit 43) Wapato Silty clay loam; Hydric

According to the City of Sherwood Local Wetland Inventory (LWI) map (Appendix A Figure 4) the southern portion of our study area is within the Rock Creek floodplain with a documented palustrine emergent wetland on Tax Lot 204. AKS does not concur with LWI mapping and has set the boundary further back into Tax Lot 204.

Water Quality Sensitive Areas

AKS Natural Resource Specialist Sonya Templeton and Stacey Reed, PWS conducted a site visit on April 9, 2021 to delineate the off-site wetland and determine the extent and condition of the associated VC.

Methodology

The methodology used to determine the presence of wetlands followed the US Army Corps of Engineers' (USACE) *Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (Wakeley et al., 2010). The *National Wetland Plant List: 2018 Wetland Ratings* was used to assign wetland indicator status for the appropriate region.

Data was collected at 10 sample plots to determine the wetland boundary; Wetland Determination Data Sheets are included as Appendix B. The wetland boundary and sample plots were flagged in the field and professionally land surveyed by AKS field staff. The wetland delineation is shown on the Natural Resources Existing Conditions, Figures 5A-5B in Appendix A.

Off-Site PEM/PSS Wetland

The off-site PEM/PSS wetland was dominated by Himalayan blackberry, reed canary grass (*Phalaris arundinacea*; FACW), Oregon ash (*Fraxinus latifolia*; FACW), and black hawthorn (*Crataegus douglasii*; FAC) as documented at Plots 1, 4, 5, and 7. Soils in the wetland are of low chroma (chroma 2 or less) displaying common distinct and prominent redoximorphic features, meeting hydric soil indicator F6 Redox Dark Surface. Soils also displayed a depleted matrix. Primary indicators of wetland hydrology were observed including a high water table (A2) and saturation (A3) within 12 inches of the soil surface.

The wetland boundary was delineated based on a change in the topography and landform from a low elevation, floodplain terrace in the wetland to a higher elevation, hillslope in the upland. The elevation change coincided with a change in vegetation from hydrophytic dominated species in the wetland (reed canary grass, Oregon Ash) to non-hydrophytic (Oregon white oak, beaked hazelnut) species in the upland. The adjacent upland was documented at paired upland Plots 2, 3, 6, and 8.

Upland

Plots 9 and 10 document upland conditions in the northeastern portion of the study area and are dominated by cottonwood (*Populus balsamifera*, FAC), English hawthorn, Himalayan blackberry, and reed canary grass. These plots lacked hydric soils and indicators of wetland hydrology, confirming upland conditions.

Extent and Condition of the Vegetated Corridor

The slopes adjacent to the off-site wetland do not exceed 25 percent requiring a 50-foot-wide vegetated corridor per Section 3.03.1 Table 3-1 of the CWS *Design & Construction Standards*. The total on-site existing VC area is 4,108 square feet (0.09 acres). Representative slope measurements and the extents of the existing on-site VC are shown on Appendix A, Figure 5A & 5B, Existing Conditions.

Existing Condition of Vegetated Corridor

The existing conditions of the on-site VC adjacent the off-site wetland was determined according to CWS vegetated corridor standards, Section 3.03.3, Table 3-1 (R&O 19-5). The CWS VC standards are based on the presence of tree canopy and percent cover of native trees, shrubs, and herbaceous layers.

The Vegetated Corridor (VECO) data sheets are provided in Appendix C. Representative photographs from the April 9, 2021 site visit are included in Appendix D.

VECO Plots A, B, and C were recorded within on-site VC. VECO Plots A, B, and C met *good* condition standards with tree canopy cover ranging from 60 to 90 percent with native cover exceeding 80 percent. The vegetation community was dominated by Oregon white oak, Pacific poison-oak, Himalayan blackberry, common snowberry (*Symphoricarpos albus;* FACU), and dovefoot geranium.

Vegetated Corridor Enhancement
The on-site *good* condition vegetated corridors as shown in the Site Plan (Appendix A, Figure 6A and 6B) do not require enhancement, per CWS standards.

List of Preparers

Lex Francis
Natural Resource Specialist
Report preparation

Sonya Templeton
Natural Resource Specialist
Field work & report QA/QC

Literature Cited and Referenced

Adams, P.R. 2001. *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles.* Salem (OR): Oregon Division of State Lands. Available at: http://www.oregon.gov/dsl/WW/Documents/hydro_guide_class.pdf. [Accessed April 2021].

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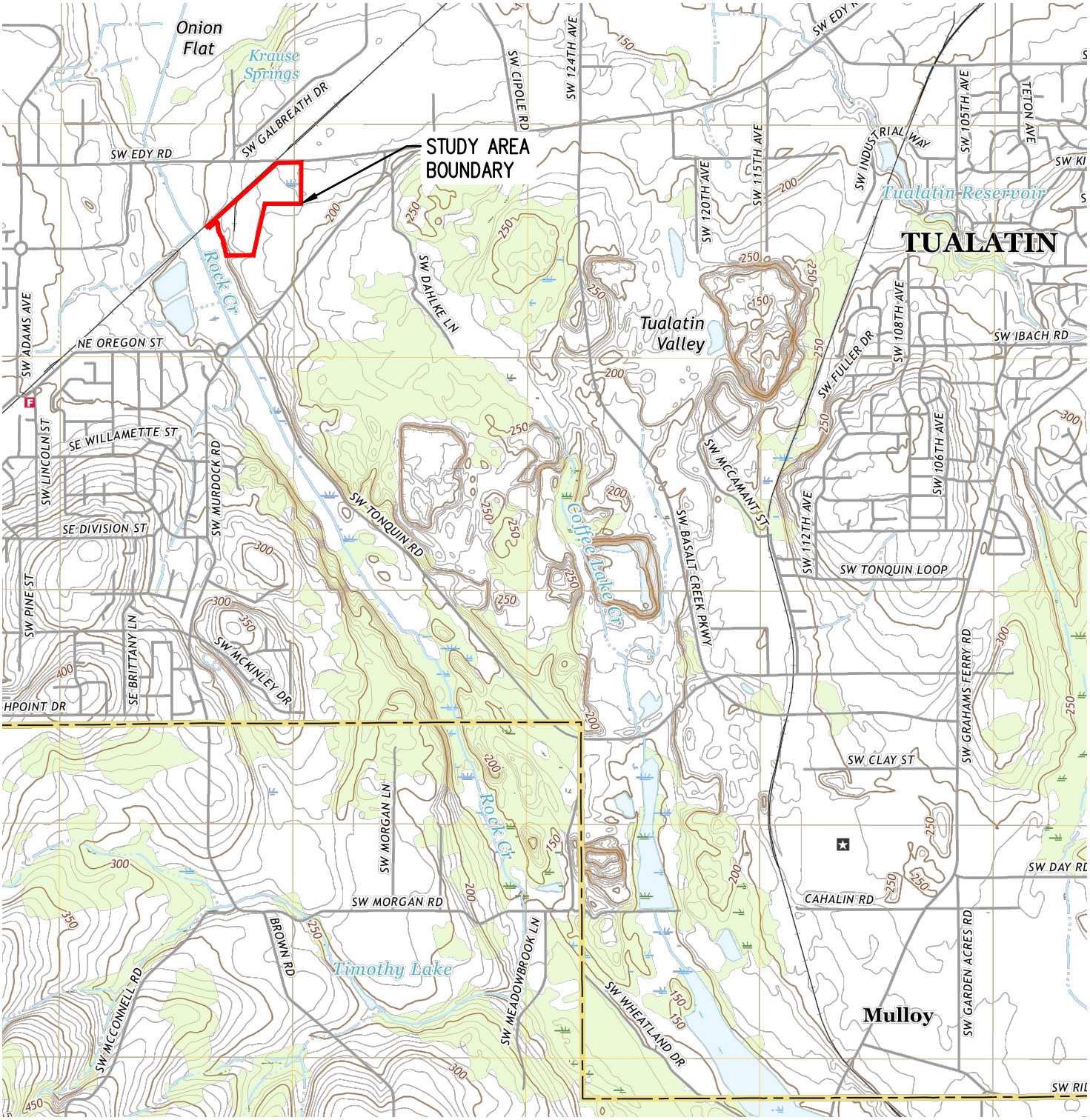
Appendix A: Figures



N

USGS 7.5' TOPOGRAPHIC SERIES
QUADRANGLE: SHERWOOD, OR (2020)

DATE: 09/27/2021

SCALE: 1"= 2000 FEET

2000 0 400 1000 2000

ORIGINAL PAGE SIZE: 8.5" x 11"

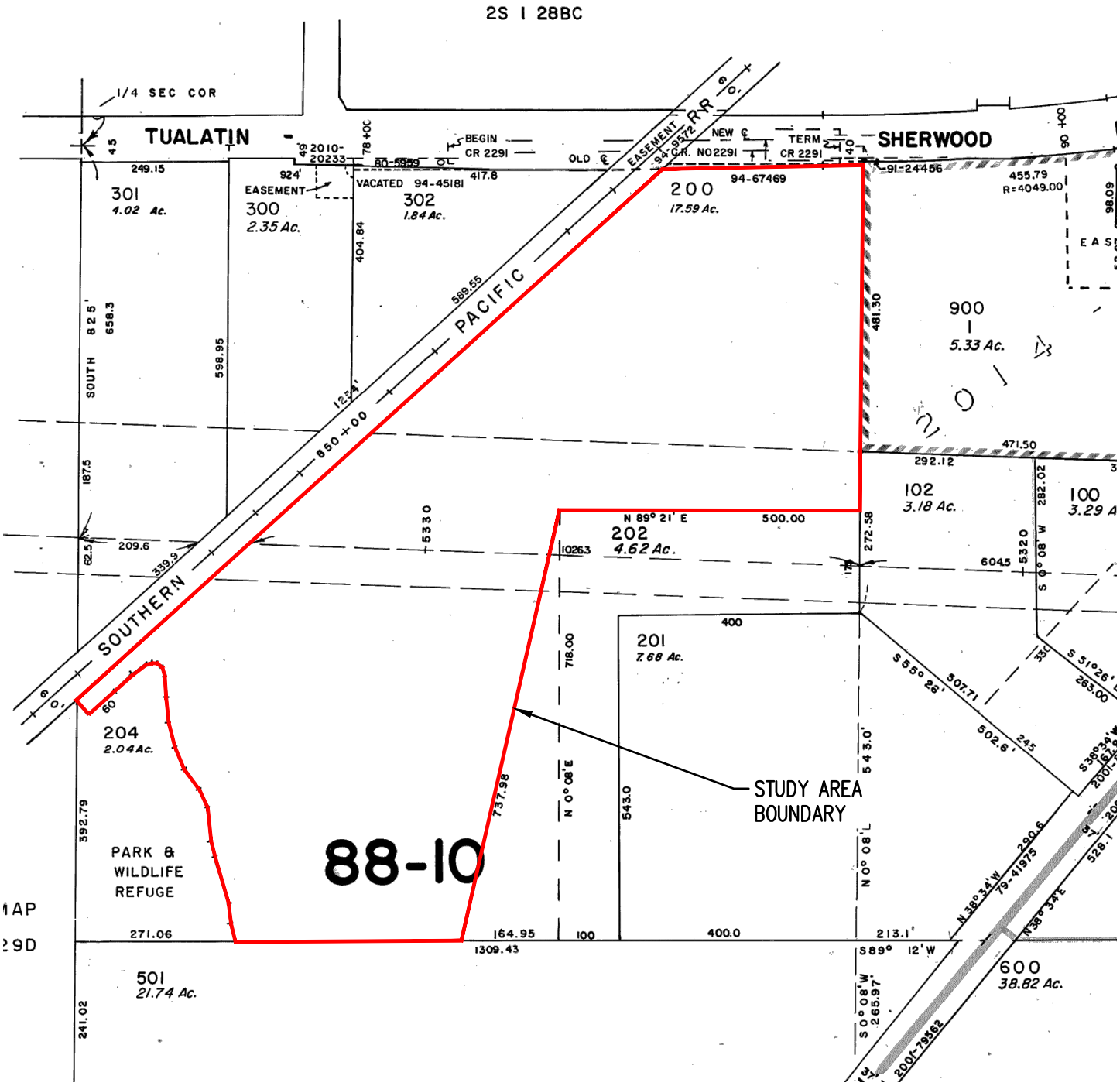
USGS VICINITY MAP
14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE 1

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

DWG: 7431 BACKGROUND FIGURES | FIGURE 1



WASHINGTON COUNTY
TAX LOT 200
TAX MAP 2S 1 28C

SCALE: 1"= 250 FEET

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ORIGINAL PAGE SIZE: 8.5" x 11"

DATE: 09/27/2021

TAX MAP (MAP 2S 1 28C) **14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT**	FIGURE **2**
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: SKT CHKD: SAR AKS JOB: 7431

DWG: 7431 BACKGROUND FIGURES | FIGURE 2

NRCS WEB SOIL SURVEY
FOR WASHINGTON COUNTY

MAP UNIT SYMBOL	MAP UNIT NAME
5B	BRIEDWELL STONY SILT LOAM, 0% TO 7% SLOPES; NON-HYDRIC
37A	QUATAMA LOAM, 0% TO 3% SLOPES; NON-HYDRIC
37B	QUATAMA LOAM, 3% TO 7% SLOPES; NON-HYDRIC
37D	QUATAMA LOAM, 12% TO 20% SLOPES; NON-HYDRIC
2225A	HUBERLY SILT LOAM, 0% TO 3% SLOPES; HYDRIC
43	WAPATO SILTY CLAY LOAM; HYDRIC

N

SCALE: 1"= 250 FEET

250 0 50 125 250

ORIGINAL PAGE SIZE: 8.5" x 11"

DATE: 09/27/2021

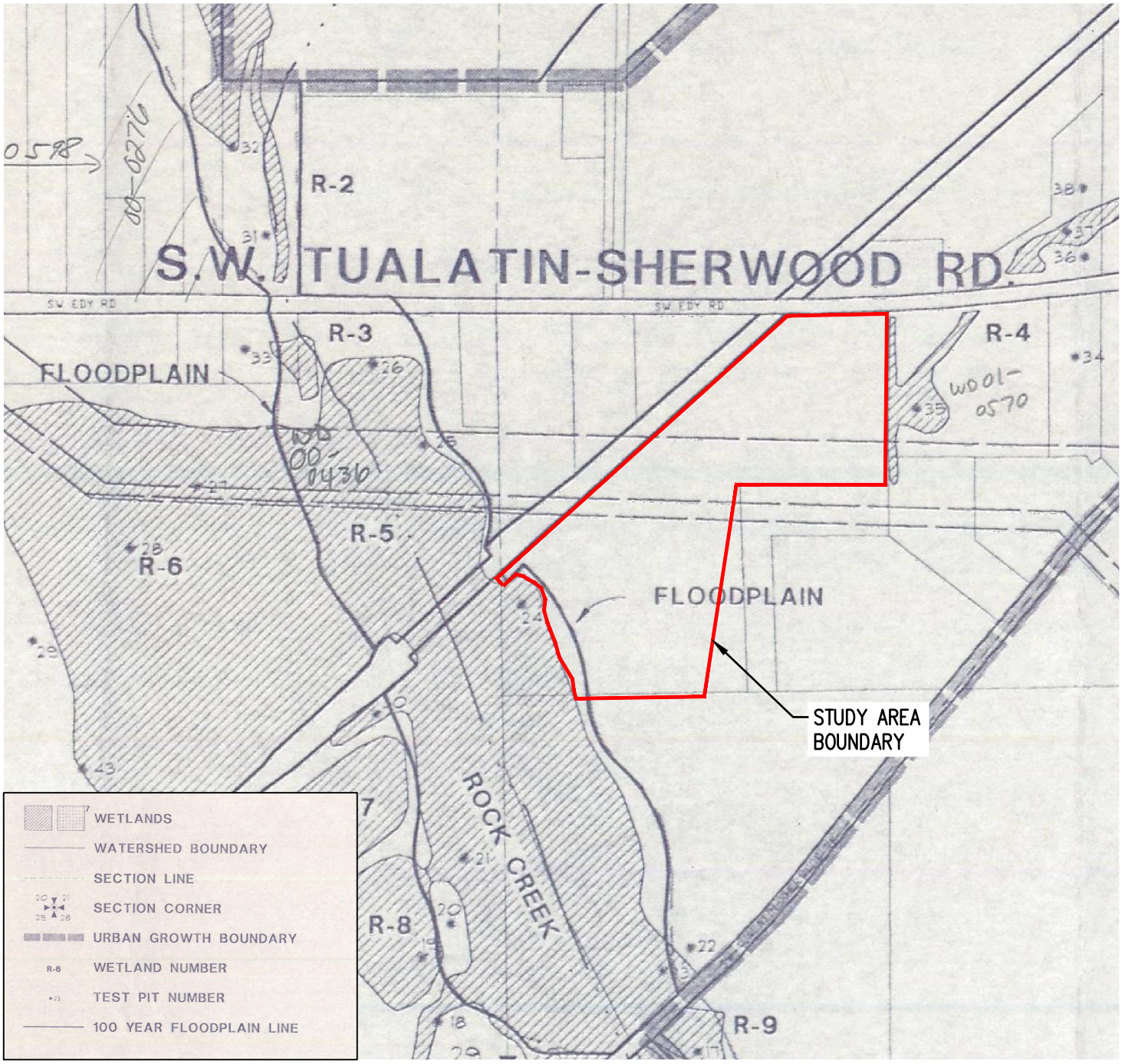
NRCS SOIL SURVEY MAP
14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE 3

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

DWG: 7431 BACKGROUND FIGURES | FIGURE 3



CITY OF SHERWOOD
LOCAL WETLAND INVENTORY (1992)

N

SCALE: 1"=150 FEET

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ORIGINAL PAGE SIZE: 8.5" x 11"

DATE: 09/27/2021

LOCAL WETLAND INVENTORY MAP **14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT**	FIGURE 4
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: SKT CHKD: SAR AKS JOB: 7431

DWG: 7431 BACKGROUND FIGURES | FIGURE 4

SW TUALATIN-SHERWOOD ROAD

PORTLAND AND WESTERN RAILROAD

TAX LOT 302
TAX MAP 2S 1 28C

TAX LOT 300
TAX MAP 2S 1 28C

TAX LOT 200
TAX MAP 2S 1 28C

TAX LOT 202
TAX MAP 2S 1 28C

TAX LOT 201
TAX MAP 2S 1 28C

TAX LOT 204
TAX MAP 2S 1 28C

TAX LOT 501
TAX MAP 2S 1 28C

ASPHALT DRIVEWAY
GRAVEL
GRAVEL DRIVEWAY
ASPHALT ROAD
ASPHALT PARKING
ASPHALT PARKING
5B INSERT
SEE 5B
50' CWS VEGETATED CORRIDOR
OFF-SITE WETLAND BOUNDARY
STUDY AREA BOUNDARY

LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

A — PHOTO LOCATION & ORIENTATION

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

N

SCALE: 1"=140 FEET

140 0 28 70 140

ORIGINAL PAGE SIZE: 17"X11"

DATE: 10/1/2021

NATURAL RESOURCES EXISTING CONDITIONS

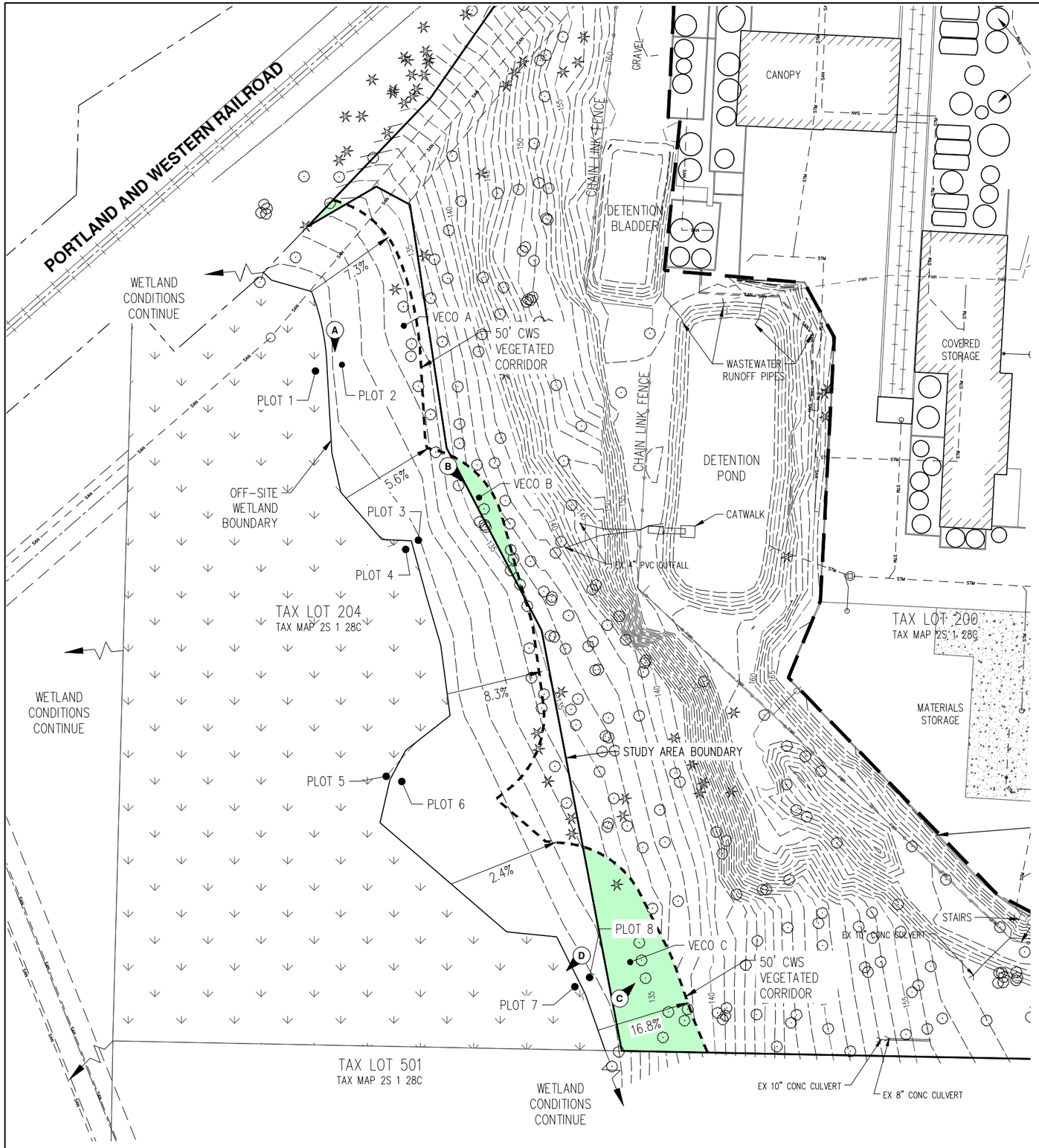
14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

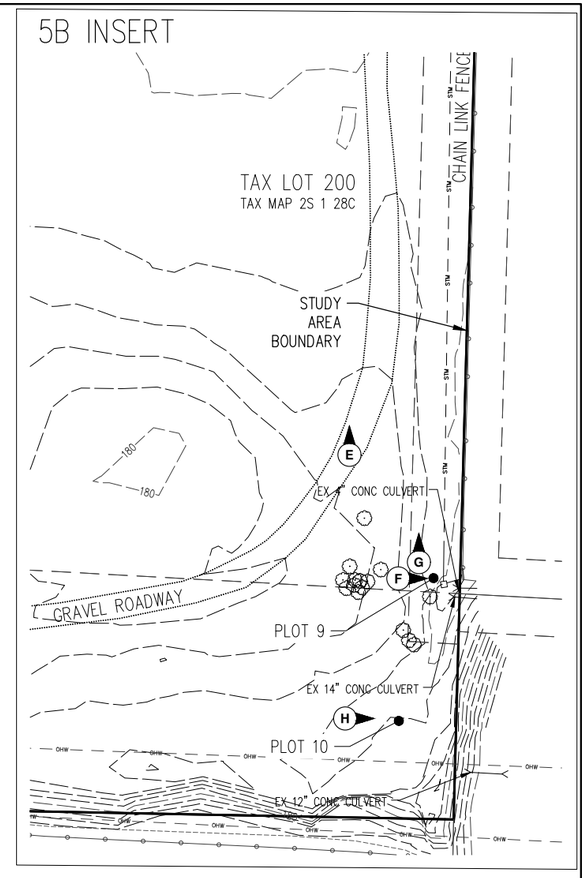
FIGURE 5A

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

DWG: 7431 NRA EXCOND | FIGURE 5A





LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR: 4,108 SF± (0.09 ACRES)

PHOTO LOCATION & ORIENTATION

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

N

SCALE: 1"=60 FEET

60 0 12 30 60

ORIGINAL PAGE SIZE: 17" x 11"

DATE: 10/1/2021

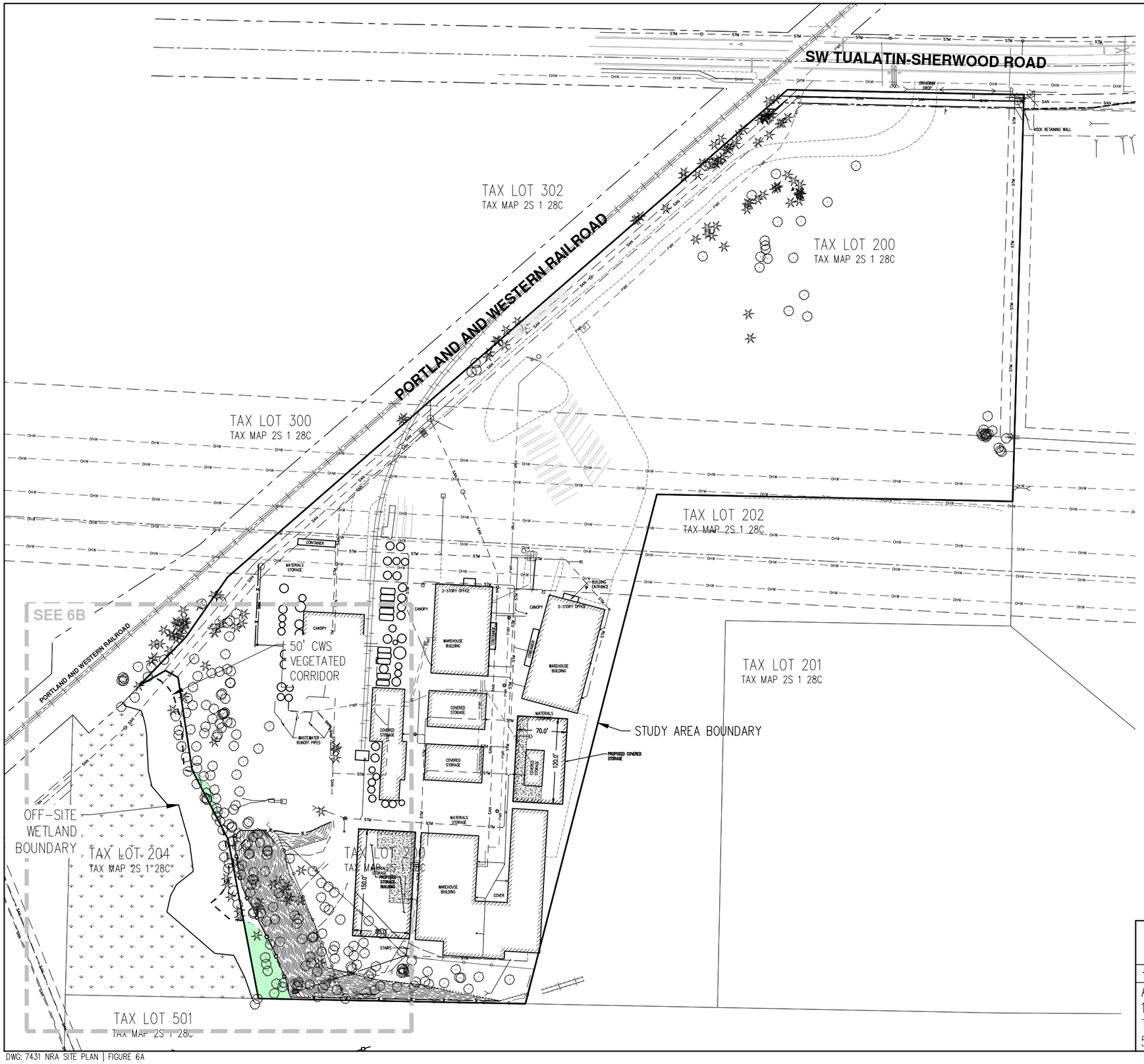
NATURAL RESOURCES EXISTING CONDITIONS

14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE **5B**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431



LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR TO REMAIN: 4,108 SF± (0.09 ACRES)

A — PHOTO LOCATION & ORIENTATION

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

N

SCALE: 1"=140 FEET

140 0 28 70 140

ORIGINAL PAGE SIZE: 17"X11"

DATE: 10/04/2021

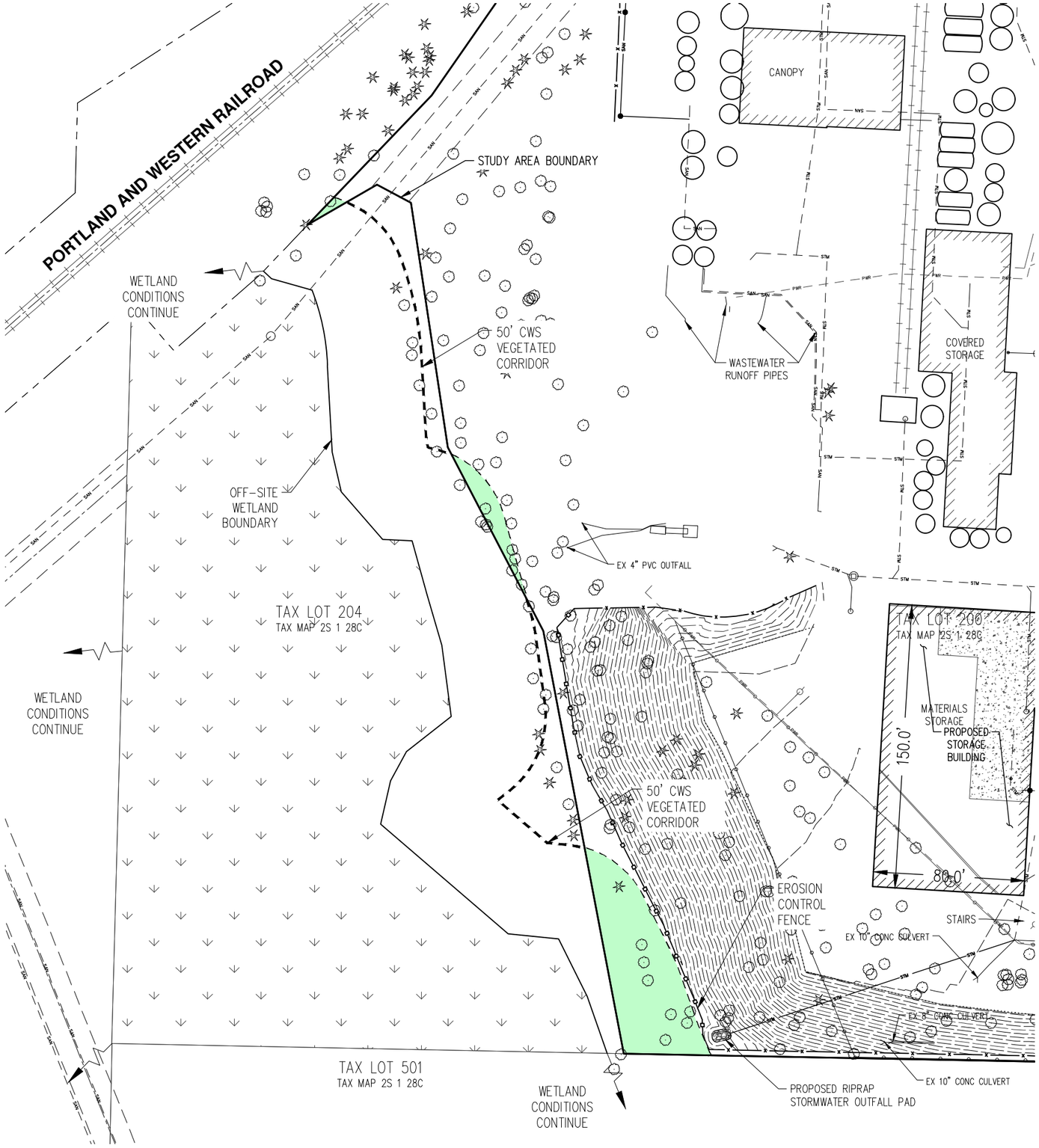
NATURAL RESOURCES SITE PLAN

14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

FIGURE **6A**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431



LEGEND (COLOR COPY):

ON-SITE GOOD CONDITION VEGETATED CORRIDOR TO REMAIN: 4,108 SF± (0.09 ACRES)

A PHOTO LOCATION & ORIENTATION

WETLAND AND WATER BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC ON APRIL 9, 2021 AND WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MAY 5, 2021.

1-FOOT INTERVAL GROUND CONTOURS, EXISTING CONDITIONS, STUDY AREA BOUNDARY, AND TREE >6" DBH DERIVED FROM AKS LAND SURVEY.

N

SCALE: 1"=60 FEET

60 0 12 30 60

ORIGINAL PAGE SIZE: 17" x 11"

DATE: 10/04/2021

NATURAL RESOURCES SITE PLAN

FIGURE **6B**

14200 SW TUALATIN-SHERWOOD ROAD SIMPLIFIED SITE ASSESSMENT

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: SAR
AKS JOB: 7431

Appendix B: Wetland Determination Data Sheets (Plots 1 through 10)

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 4/9/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: 1

Investigator(s): Sonya Templeton, Stacey Reed | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.388681 | Long: -121.56547938 | Datum:

Soil Map Unit Name: Wapato silty clay loam (Unit 43); Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Precipitation:
According to the NWS Portland KGW weather station, 0.00 inches of rainfall was received on the day of the site visit and 0.23 inches within the two weeks prior. Drier than normal conditions.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or ____)			
1. *Rubus armeniacus*	20%	Yes	FAC
2. *Rosa gymnocarpa*	10%	Yes	FACU
3. *Rosa nutkana*	5%	No	FAC
4.			
5.			
	35% = Total Cover		
Herb Stratum (Plot Size: 5' r or ____)			
1. *Phalaris arundinacea*	60%	Yes	FACW
2. *Alopecurus pratensis*	15%	No	FAC
3. *Ranunculus repens*	5%	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or ____)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 20%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	45	x 3 =	135
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	115 (A)		295 (B)

Prevalence Index = B/A = 2.57

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 1

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	92	7.5YR 4/4	8	C	M	SiCL	
4-14	2.5Y 4/1	95	10YR 4/6	5	C	M	SiC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	**Wetland**	
Water Table Present?	Yes X	No ___	Depth (inches): Surface	**Hydrology**	**Yes** X **No** ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): Surface	**Present?**	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 4/9/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: 2

Investigator(s): Sonya Templeton, Stacey Reed | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): <3%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.388681 | Long: -121.56545186 | Datum:

Soil Map Unit Name: Briedwell stony silt loam (Unit 5B), 0-7 percent; Non-Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Precipitation:
According to the NWS Portland KGW weather station, 0.00 inches of rainfall was received on the day of the site visit and 0.23 inches within the two weeks prior. Drier than normal conditions.

Remarks:
Plot located approximately 1' higher in elevation than Plot 1.

VEGETATION

Tree Stratum (Plot Size: 30' r or ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus garryana*	10%	Yes	FACU
2.			
3.			
4.			
	10% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or ____)			
1. *Toxicodendron diversilobum*	5%	Yes	FAC
2. *Rosa gymnocarpa*	3%	No	FACU
3. *Quercus garryana*	3%	No	FACU
4.			
5.			
	11% = Total Cover		
Herb Stratum (Plot Size: 5' r or ____)			
1. *Alopecurus pratensis*	70%	Yes	FAC
2. *Plantago lanceolata*	10%	No	FACU
3. *Geranium dissectum*	3%	No	NOL
4. *Ranunculus repens*	3%	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	86% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or ____)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 14%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 78	x 3 =	234
FACU species 16	x 4 =	64
UPL species 3	x 5 =	15
Column Totals: 97 (A)		313 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 2

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	100					SiCL	
9-16	2.5Y 4/1	100					SiC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): >16"	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): >16"	

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soils were dry throughout.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 4/9/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: **3**

Investigator(s): Sonya Templeton, Stacey Reed | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): <3%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.388434 | Long: -121.56537321 | Datum:

Soil Map Unit Name: Briedwell stony silt loam (Unit 5B), 0-7 percent; Non-Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation:
According to the NWS Portland KGW weather station, 0.00 inches of rainfall was received on the day of the site visit and 0.23 inches within the two weeks prior. Drier than normal conditions.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Crataegus douglasii*	20%	Yes	FAC
2. *Quercus garryana*	10%	Yes	FACU
3.			
4.			
	30% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or ____)			
1. *Corylus cornuta*	15%	Yes	FACU
2. *Symphoricarpos albus*	10%	Yes	FACU
3. *Crataegus douglasii*	10%	Yes	FAC
4.			
5.			
	35% = Total Cover		
Herb Stratum (Plot Size: 5' r or ____)			
1. *Geranium molle*	80%	Yes	NOL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or ____)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 20%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	35	x 4 =	140
UPL species	80	x 5 =	400
Column Totals:	145 (A)		630 (B)
Prevalence Index = B/A =			4.34

Hydrophytic Vegetation Indicators:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ____ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No **X**

Remarks:

SOIL

Sampling Point: 3

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	100						
10-16	10YR 3/1	95	7.5YR 3/4	5	C	M	SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): >16"	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): >16"	

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soils were moist.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 4/9/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: **4**

Investigator(s): Sonya Templeton, Stacey Reed | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.388420 | Long: -121.56538646 | Datum:

Soil Map Unit Name: Wapato silty clay loam (Unit 43); Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes **X** No ____
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	

Precipitation:
According to the NWS Portland KGW weather station, 0.00 inches of rainfall was received on the day of the site visit and 0.23 inches within the two weeks prior. Drier than normal conditions.

Remarks:
Plot is located approximately 6' lower in elevation than Plot 3.

VEGETATION

Tree Stratum (Plot Size: 30' r or ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	20%	Yes	FACW
2.			
3.			
4.			
	20% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or ____)			
1. *Crataegus douglasii*	25%	Yes	FAC
2. *Rosa nutkana*	20%	Yes	FAC
3. *Rubus armeniacus*	10%	No	FAC
4.			
5.			
	55% = Total Cover		
Herb Stratum (Plot Size: 5' r or ____)			
1. *Geranium molle*	5%	No	NOL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or ____)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 95%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 20	x 2 =	40
FAC species 55	x 3 =	165
FACU species 0	x 4 =	0
UPL species 5	x 5 =	25
Column Totals: 80 (A)		230 (B)

Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks:

SOIL

Sampling Point: 4

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					SiCL	
4-16	2.5Y 4/2	95	10YR 4/6	5	C	M	SiC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 1"

Water Table Present? Yes _____ No X Depth (inches): >14"

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): Surface

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Plot filled in from top.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 4/9/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: **5**

Investigator(s): Sonya Templeton, Stacey Reed | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.388089 | Long: -121.56540658 | Datum:

Soil Map Unit Name: Wapato silty clay loam (Unit 43); Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes **X** No ____
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	

Precipitation:
According to the NWS Portland KGW weather station, 0.00 inches of rainfall was received on the day of the site visit and 0.23 inches within the two weeks prior. Drier than normal conditions.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	20%	Yes	FACW
2.			
3.			
4.			
	20% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or ____)			
1. *Fraxinus latifolia*	5%	Yes	FACW
2. *Rosa nutkana*	5%	Yes	FAC
3. *Rubus armeniacus*	5%	Yes	FAC
4. *Symphoricarpos albus*	3%	No	FACU
5.			
	18% = Total Cover		
Herb Stratum (Plot Size: 5' r or ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or ____)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 100%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 25	x 2 =	50
FAC species 10	x 3 =	30
FACU species 3	x 4 =	12
UPL species 0	x 5 =	0
Column Totals: 38 (A)		92 (B)

Prevalence Index = B/A = 2.42

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks:
Bareground covered by leaf litter.

SOIL

Sampling Point: 5

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	98	7.5YR 3/4	2	C	M	SiC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	X	No	_____	Depth (inches): 2"
Saturation Present? (includes capillary fringe)	Yes	X	No	_____	Depth (inches): Surface

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 4/9/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: **6**

Investigator(s): Sonya Templeton, Stacey Reed | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex | Slope (%): <5%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.388081 | Long: -121.56539032 | Datum:

Soil Map Unit Name: Briedwell stony silt loam (Unit 5B), 0-7 percent; Non-Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation:
According to the NWS Portland KGW weather station, 0.00 inches of rainfall was received on the day of the site visit and 0.23 inches within the two weeks prior. Drier than normal conditions.

Remarks:
Plot is located approximately 1' higher in elevation than Plot 5.

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus garryana*	30%	Yes	FACU
2. *Prunus americana*	10%	Yes	FACU
3.			
4.			
	40% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rubus armeniacus*	15%	Yes	FAC
2. *Toxicodendron diversilobum*	10%	Yes	FAC
3. *Oemleria cerasiformis*	10%	Yes	FACU
4. *Symphoricarpos albus*	10%	Yes	FACU
5. *Quercus garryana*	5%	No	FACU
	50% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Geranium molle*	20%	Yes	NOL
2. *Poa species*	10%	No	FAC*
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 70%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 29% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	35	x 4 =	140
UPL species	20	x 5 =	100
Column Totals:	90 (A)		345 (B)

Prevalence Index = B/A = 3.83

Hydrophytic Vegetation Indicators:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ____ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No **X**

Remarks:
*Assumed FAC

SOIL

Sampling Point: 6

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes** ___ **No** X
Water Table Present?	Yes ___	No X	Depth (inches): >14"		
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >14"		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soils were dry throughout.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 4/9/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: 7

Investigator(s): Sonya Templeton, Stacey Reed | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.387782 | Long: -121.56521173 | Datum:

Soil Map Unit Name: Wapato silty clay loam (Unit 43); Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Precipitation:
According to the NWS Portland KGW weather station, 0.00 inches of rainfall was received on the day of the site visit and 0.23 inches within the two weeks prior. Drier than normal conditions.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	25%	Yes	FACW
2.			
3.			
4.			
	25% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or ____)			
1. *Corylus cornuta*	25%	Yes	FACU
2. *Fraxinus latifolia*	10%	No	FACW
3. *Rubus armeniacus*	10%	No	FAC
4. *Crataegus douglasii*	10%	No	FAC
5.			
	55% = Total Cover		
Herb Stratum (Plot Size: 5' r or ____)			
1. *Juncus effusus*	5%	Yes	FACW
2. *Tellima grandiflora*	2%	No	FACU
3. *Carex obnupta*	1%	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	8% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or ____)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 92%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 1	x 1 =	1
FACW species 40	x 2 =	80
FAC species 20	x 3 =	60
FACU species 27	x 4 =	108
UPL species 0	x 5 =	0
Column Totals: 88 (A)		249 (B)

Prevalence Index = B/A = 2.83

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Bareground covered by leaf litter and moss.

SOIL

Sampling Point: 7

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/1	98	7.5YR 4/4	2	C	M	SiC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes X	No ___	Depth (inches): 2"	**Wetland Hydrology Present?**	**Yes** X **No** ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): Surface		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Plot located approximately 2' away from 6" ponded surface water.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 4/9/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: **8**

Investigator(s): Sonya Templeton, Stacey Reed | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex | Slope (%): <3%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.387796 | Long: -121.56519688 | Datum:

Soil Map Unit Name: Briedwell stony silt loam (Unit 5B), 0-7 percent; Non-Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No **X**
Hydric Soil Present?	Yes ____	No **X**
Wetland Hydrology Present?	Yes ____	No **X**

Is the Sampled Area within a Wetland? Yes ____ No **X**

Precipitation:
According to the NWS Portland KGW weather station, 0.00 inches of rainfall was received on the day of the site visit and 0.23 inches within the two weeks prior. Drier than normal conditions.

Remarks:
Plot is located approximately 1' higher in elevation than Plot 7.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot Size: 30' r or ____)			
1. *Fraxinus latifolia*	25%	Yes	FACW
2. *Prunus americana*	15%	Yes	FACU
3. *Pseudotsuga menziesii*	10%	No	FACU
4. *Quercus garryana*	10%	No	FACU
	60% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or ____)			
1. *Rubus armeniacus*	40%	Yes	FAC
2. *Holodiscus discolor*	20%	Yes	FACU
3. *Oemleria cerasiformis*	15%	No	FACU
4. *Fraxinus latifolia*	15%	No	FACW
5. *Crataegus douglasii*	10%	No	FAC
	100% = Total Cover		
Herb Stratum (Plot Size: 5' r or ____)			
1. *Tellima grandiflora*	5%	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or ____)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 95%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	50	x 3 =	150
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	165 (A)		530 (B)

Prevalence Index = B/A = 3.21

Hydrophytic Vegetation Indicators:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ____ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No **X**

Remarks:
Bareground covered by moss.

SOIL

Sampling Point: 8

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/1	100					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes** ___ **No** X
Water Table Present?	Yes ___	No X	Depth (inches): >14"		
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >14"		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soils were dry throughout.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 5/3/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: **9**

Investigator(s): Stacey Reed, PWS | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.389863 | Long: -121.56313075 | Datum:

Soil Map Unit Name: Briedwell stony silt loam (Unit 5B), 0-7 percent; Non-Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation:
According to the NWS Portland KGW weather station, 0.06 inches of rainfall was received on the day of the site visit and 0.00 inches within the two weeks prior. Conditions are drier than normal.

Remarks:
Plot is located adjacent to 2' diameter culvert extending east/ west. Culvert was dry.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot Size: 30' r or ____)			
1. *Populus balsamifera*	60%	Yes	FAC
2.			
3.			
4.			
	60% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or ____)			
1. *Crataegus monogyna*	50%	Yes	FAC
2. *Rubus armeniacus*	5%	No	FAC
3. *Populus balsamifera*	5%	No	FAC
4.			
5.			
	60% = Total Cover		
Herb Stratum (Plot Size: 5' r or ____)			
1. *Schedonorus arundinaceus*	10%	No	FAC
2. *Poa species*	10%	No	FAC*
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or ____)			
1. *Rubus ursinus*	5%	Yes	FACU
2.			
	5% = Total Cover		

% Bare Ground in Herb Stratum 80%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	140	x 3 =	420
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	145 (A)		440 (B)

Prevalence Index = B/A = 3.03

Hydrophytic Vegetation Indicators:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
*Assumed FAC

SOIL

Sampling Point: 9

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compacted gravel and concrete

Depth (inches): 10"

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): >10"	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): >10"	

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: 14200 Tualatin Sherwood Road | City/County: Sherwood/ Washington County | Sampling Date: 5/3/2021

Applicant/Owner: Cascade Columbia Distribution | State: OR | Sampling Point: **10**

Investigator(s): Stacey Reed, PWS | Section, Township, Range: Sec 28, T2S, R1.W, W.M

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A. Northwest Forests and Coast | Lat: 45.389707 | Long: -121.56315769 | Datum:

Soil Map Unit Name: Briedwell stony silt loam (Unit 5B), 0-7 percent; Non-Hydric | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation:
According to the NWS Portland KGW weather station, 0.06 inches of rainfall was received on the day of the site visit and 0.00 inches within the two weeks prior. Conditions are drier than normal.

Remarks:

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot Size: 30' r or ____)			
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or ____)			
1. *Rosa nutkana*	10%	Yes	FAC
2.			
3.			
4.			
5.			
	10% = Total Cover		
Herb Stratum (Plot Size: 5' r or ____)			
1. *Phalaris arundinacea*	100%	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or ____)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 100	x 2 =	200
FAC species 10	x 3 =	30
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 110 (A)		230 (B)

Prevalence Index = B/A = 2.09

Hydrophytic Vegetation Indicators:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 10

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): >16"	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): >16"	

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C: VECO Data Sheets (VECO Plots A, B, & C)

Site:	14200 Tualatin-Sherwood Rd
Job Number:	7431
Investigators:	Sonya Templeton
Date:	April 9, 2021
Community:	Oregon white oak, Pacific poison oak, and common snowberry
Location:	At the edge of buffer zone, northeast of Plot 2
Plot ID:	VECO A

Tree species, % Cover, Native, Invasive - 30 foot radius, >5% cover:				90%
*	*Quercus garryana*	Oregon white oak	*native*	80%
*	*Pseudotsuga menziesii*	Douglas-fir	*native*	10%
Shrub species, % Cover, Native, Invasive - 30 foot radius, >5% cover:				80%
*	*Toxicodendron diversilobun*	Pacific poison-oak	*native*	20%
*	*Symphoricarpos albus*	common snowberry	*native*	20%
	Crataegus douglasii	black hawthorn	*native*	10%
	Mahonia aquifolium	holly-leaf Oregon-grape	*native*	10%
	Oemleria cerasiformis	oso-berry	*native*	10%
	Acer circinatum	vine maple	*native*	10%
Herb Species, % Cover, Native, Invasive - 10 foot radius, >5% cover:				45%
*	*Geranium molle*	dovefoot geranium	*non-native*	20%
*	*Polystichum munitum*	pineland sword fern	*native*	15%
*	*Schedonorus arundinaceus*	tall false rye grass	*non-native*	10%

* Dominant

Total Cover 215%

	Absolute areal cover
% Tree canopy:	**90%**
% Cover by natives:	185%
% Invasive:	0%
% Non-native:	30%
	215%

Corridor Condition: Good

Site:	14200 Tualatin-Sherwood Rd		
Job Number:	7431		
Investigators:	Sonya Templeton		
Date:	April 9, 2021		
Community:	Oregon white oak and dovefoot geranium		
Location:	Within on-site portion of vegetated corridor northeast of Plot 3		
Plot ID:	VECO B		
Tree species, % Cover, Native, Invasive - 30 foot radius, >5% cover:			60%
* *Quercus garryana*	Oregon white oak	*native*	60%
Shrub species, % Cover, Native, Invasive - 30 foot radius, >5% cover:			30%
* *Symphoricarpos albus*	common snowberry	*native*	10%
Corylus cornuta	beaked hazelnut	*native*	5%
Toxicodendron diversilobun	Pacific poison-oak	*native*	5%
Rosa gymnocarpa	bald-hip rose	*native*	5%
Oemleria cerasiformis	oso-berry	*native*	5%
Herb Species, % Cover, Native, Invasive - 10 foot radius, >5% cover:			85%
* *Geranium molle*	dovefoot geranium	*non-native*	80%
Polystichum munitum	pineland sword fern	*native*	5%

* Dominant

Total Cover 175%

	Absolute areal cover
% Tree canopy:	**60%**
% Cover by natives:	95%
% Invasive:	0%
% Non-native:	80%
	175%

Corridor Condition: Good

Site:	14200 Tualatin-Sherwood Rd
Job Number:	7431
Investigators:	Sonya Templeton
Date:	April 9, 2021
Community:	Oregon ash and Himalayan blackberry
Location:	Within on-site portion of vegetated corridor, northeast of Plot 8
Plot ID:	VECO C

Tree species, % Cover, Native, Invasive - 30 foot radius, >5% cover:				60%
*	*Fraxinus latifolia*	Oregon ash	*native*	25%
*	*Prunus emarginata*	bitter cherry	*native*	15%
*	*Pseudotsuga menziesii*	Douglas-fir	*native*	10%
*	*Quercus garryana*	Oregon white oak	*native*	10%
Shrub species, % Cover, Native, Invasive - 30 foot radius, >5% cover:				100%
*	*Rubus armeniacus*	Himalayan blackberry	*invasive*	40%
*	*Holodiscus discolor*	creambush	*native*	20%
	Fraxinus latifolia	Oregon ash	*native*	15%
	Oemleria cerasiformis	oso-berry	*native*	15%
	Crataegus douglasii	black hawthorn	*native*	10%
Herb Species, % Cover, Native, Invasive - 10 foot radius, >5% cover:				5%
*	*Tellima grandiflora*	fragrant fringecup	*native*	5%

* Dominant

Total Cover 165%

	Absolute areal cover
% Tree canopy:	**60%**
% Cover by natives:	125%
% Invasive:	40%
% Non-native:	0%
	165%

Corridor Condition: Good

Appendix D: Representative Site Photographs

Photo A. View south of the off-site wetland boundary and Plots 1 & 2 with off-site vegetated corridor.

Photo B. View southeast of on-site *good* condition vegetated corridor.

Photo C. View northeast of on-site *good* condition vegetated corridor.

Photo D. View southwest from upland plot 8 towards the off-site wetland boundary and Plot 7.

Photos taken by Sonya Templeton, April 9, 2021

Photo E. View north of gravel road and on-site existing conditions.

Photo F. View east of Plot 9 and existing culvert showing no evidence of defined bed and bank, OHWM, or signs of recent surface water flow.

Photo G. View north of on-site existing conditions.

Photo H. View east of Plot 10 within reed canary grass patch.

Photos taken by Sonya Templeton, April 9, 2021

Appendix C: 2002 Google Earth Aerial Photograph

SW Tualatin-Sherwood Rd

May 2002

AKS Job# 7431
14200 SW Tualatin Sherwood Road

SW Gerda Ln

SW Oregon St

N

500 ft

Exhibit J: Preliminary Tree Preservation and Removal Inventory Table

Detailed Tree Inventory for 14200 SW Tualatin Sherwood Road

AKS Job No. 7431 - Evaluation Date: 10/13/2021 - Evaluated by: BRK

Tree #	DBH (in.)	Avg. Crown Radius (ft)	Tree Species Common Name (*Scientific name*)	Comments	Health Rating*	Structure Rating**	Remove/Preserve
10035	17	15	Oregon White Oak (*Quercus garryana*)	Epicormic sprouts	2	1	Remove
10036	9	9	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
10037	8	12	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
10038	17	15	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10040	6	6	Oregon White Oak (*Quercus garryana*)	Sparse canopy; Epicormic sprouts	2	2	Remove
10041	6	6	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10042	6	6	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10047	7	9	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10048	6	17	Oregon White Oak (*Quercus garryana*)	1-sided canopy (W)	1	2	Remove
10049	7	10	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10050	10	10	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10051	9,7,6	15	Oregon White Oak (*Quercus garryana*)	Codominant base; 1-sided canopy (W)	1	2	Remove
10052	11,11,7,7,6	15	Oregon White Oak (*Quercus garryana*)	1-sided canopy (S)	1	2	Remove
10053	10,8,7	16	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10054	8,6	15	Oregon White Oak (*Quercus garryana*)	1-sided canopy (S)	1	2	Remove
10055	10,8	17	Oregon Ash (*Fraxinus latifolia*)	1-sided canopy (S)	1	2	Remove
10056	10	15	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
10057	7,6,6,6,6	14	Oregon White Oak (*Quercus garryana*)	1-sided canopy (S)	1	2	Remove
10058	8,8,7	15	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10059	11	11	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
10060	7	16	Oregon White Oak (*Quercus garryana*)	Lean (S)	1	2	Remove
10061	9,8,7,6	16	Oregon White Oak (*Quercus garryana*)	Tree fallen on top; Broken top; Sparse canopy	2	3	Remove
10062	6	11	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10063	9	13	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
10064	19	20	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10065	11	14	Oregon White Oak (*Quercus garryana*)		1	1	Remove
10066	36	21	Douglas-fir (*Pseudotsuga menziesii*)	Codominant with included bark; Several leaders	1	2	Remove
10067	13	20	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
10068	6	0	Oregon Ash (*Fraxinus latifolia*)	Dead	3	3	Remove
10069	8	18	Oregon Ash (*Fraxinus latifolia*)	Crooked bole; 1-sided canopy (S)	1	2	Remove
10070	8,6	13	Oregon White Oak (*Quercus garryana*)	Lean (S)	1	2	Remove
10071	9	0	Oregon Ash (*Fraxinus latifolia*)	Dead	3	3	Remove
10072	13	14	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11326	23	19	Douglas-fir (*Pseudotsuga menziesii*)		1	1	Preserve
11328	8	13	Pacific Madrone (*Arbutus menziesii*)		1	1	Preserve
11331	32	25	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11364	25	18	Douglas-fir (*Pseudotsuga menziesii*)		1	1	Preserve
11406	11	10	Douglas-fir (*Pseudotsuga menziesii*)		1	1	Preserve
11407	6	10	Pacific Madrone (*Arbutus menziesii*)		1	1	Preserve
11408	6	10	Pacific Madrone (*Arbutus menziesii*)	Lean (N)	1	2	Preserve
11409	47	21	Douglas-fir (*Pseudotsuga menziesii*)		1	1	Preserve
11410	25	20	Douglas-fir (*Pseudotsuga menziesii*)	Dead branches; Epicormic sprouts	2	1	Preserve
11411	15	17	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11412	11	9	Douglas-fir (*Pseudotsuga menziesii*)		1	1	Preserve
11413	7	9	Douglas-fir (*Pseudotsuga menziesii*)		1	1	Preserve
11418	8	12	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11419	7	11	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11422	12,11,8,9	12	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11426	16	17	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11427	24	15	Douglas-fir (*Pseudotsuga menziesii*)	Dead top; In significant decline	3	3	Preserve
11465	13	15	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11466	11	16	Oregon White Oak (*Quercus garryana*)	1-sided canopy (E)	1	2	Preserve
11467	6	7	Oregon White Oak (*Quercus garryana*)	Very sparse canopy; In decline	3	2	Preserve
11469	6	14	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11471	6	9	Oregon White Oak (*Quercus garryana*)	1-sided canopy (E)	1	2	Preserve
11473	19	19	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11474	8	9	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11475	16	13	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11476	6	7	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11479	12	13	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11487	11	9	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11502	18	18	Oregon White Oak (*Quercus garryana*)	1-sided canopy (SW)	1	2	Preserve
11504	34	21	Douglas-fir (*Pseudotsuga menziesii*)	Sparse canopy; Epicormic sprouts	2	2	Preserve
11506	16	18	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11508	7	11	Oregon White Oak (*Quercus garryana*)	Suppressed; Broken limbs	2	2	Preserve
11511	20	19	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11512	22	18	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11513	14	10	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11514	10	12	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11515	14,8	12	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11516	12	18	Oregon White Oak (*Quercus garryana*)	Lean (E)	1	2	Preserve
11517	12	10	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11518	8	11	Oregon White Oak (*Quercus garryana*)	Lean (S)	1	2	Preserve
11519	8	7	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11520	10	0	Oregon White Oak (*Quercus garryana*)	Dead	3	3	Preserve
11522	13	12	Oregon White Oak (*Quercus garryana*)	Broken branches; Sparse canopy	2	2	Preserve

Tree #	DBH (in.)	Avg. Crown Radius (ft)	Tree Species Common Name (*Scientific name*)	Comments	Health Rating*	Structure Rating**	Remove/Preserve
11523	18	16	Douglas-fir (*Pseudotsuga menziesii*)	Sparse canopy; Dead branches	2	2	Preserve
11524	6	10	Oregon White Oak (*Quercus garryana*)	Suppressed; Broken limbs	2	2	Preserve
11525	6	8	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11527	24,20	19	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11529	8,6	10	Oregon White Oak (*Quercus garryana*)	Lean (S); Sparse canopy	2	2	Preserve
11531	13	17	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11536	9	0	Oregon White Oak (*Quercus garryana*)	Dead	3	3	Preserve
11537	8	10	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11538	6	0	Oregon White Oak (*Quercus garryana*)	Dead	3	3	Preserve
11539	14	15	Oregon White Oak (*Quercus garryana*)	1-sided canopy (W)	1	2	Preserve
11540	10,7	15	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11546	9	11	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11548	15	14	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11549	10	11	Oregon White Oak (*Quercus garryana*)	1-sided canopy (E); Dead branches	2	2	Preserve
11552	6	0	Oregon White Oak (*Quercus garryana*)	Dead	3	3	Preserve
11558	14,12	18	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11559	20	10	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11564	14	14	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11577	24	16	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11578	20	19	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11582	12	10	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11583	8	15	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11584	9	11	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11585	10	9	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11586	28	20	Douglas-fir (*Pseudotsuga menziesii*)		1	1	Remove
11587	6	6	Oregon White Oak (*Quercus garryana*)	Dead limbs	2	1	Remove
11588	8	0	Oregon White Oak (*Quercus garryana*)	Dead	3	3	Remove
11589	8	13	Oregon White Oak (*Quercus garryana*)	Lean (S)	1	2	Remove
11590	8	10	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11591	8	17	Oregon White Oak (*Quercus garryana*)	Lean (W)	1	2	Remove
11592	8	12	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11593	12,8	11	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11594	16	11	Douglas-fir (*Pseudotsuga menziesii*)	Butt sweep; Large conk	2	3	Remove
11595	8	0	Oregon Ash (*Fraxinus latifolia*)	Dead	3	3	Remove
11596	12	5	Douglas-fir (*Pseudotsuga menziesii*)	Very sparse canopy; In decline	3	2	Remove
11597	6	7	Oregon White Oak (*Quercus garryana*)	Suppressed; Sparse canopy	2	2	Remove
11598	9	15	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11599	6	12	Oregon White Oak (*Quercus garryana*)	Broken branches; Sparse canopy	2	2	Remove
11600	8	10	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11601	12	12	Oregon White Oak (*Quercus garryana*)	Broken branches; Sparse canopy	2	2	Remove
11602	9	13	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11603	14	16	Oregon White Oak (*Quercus garryana*)		1	1	Preserve
11604	7	15	Oregon White Oak (*Quercus garryana*)	1-sided canopy (W)	1	2	Preserve
11607	6	6	Willow (*Salix sp.*)	Dead top; In decline	3	2	Remove
11609	12	10	Willow (*Salix sp.*)	Growing horizontal (E); Cavity with decay; Dead branches	2	2	Remove
11610	10	0	Willow (*Salix sp.*)	Dead	3	3	Remove
11613	11	10	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11614	6	5	Oregon White Oak (*Quercus garryana*)	Broken top; Sparse canopy	2	3	Remove
11615	7	13	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11618	13,8	12	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11627	12,12	19	Bigleaf Maple (*Acer macrophyllum*)		1	1	Remove
11632	24,20	21	Black Cottonwood (*Populus trichocarpa*)	Codominant base with included bark	1	2	Remove
11641	9,7,7,6	10	Oregon White Oak (*Quercus garryana*)	Sparse canopy; Epicormic sprouts	2	2	Remove
11642	10	16	Oregon White Oak (*Quercus garryana*)	Lean (S)	1	2	Remove
11643	15	16	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11644	15	10	Douglas-fir (*Pseudotsuga menziesii*)	Cavity in base with decay; Crooked bole; Epicormic sprouts	2	2	Remove
11645	6	10	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11646	6	7	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11647	9,7	4	Oregon White Oak (*Quercus garryana*)	Broken top; Very sparse canopy; In decline	3	3	Remove
11648	8	15	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11649	7	15	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11650	13	14	Oregon White Oak (*Quercus garryana*)	Lean (W)	1	2	Remove
11652	9	15	Oregon Ash (*Fraxinus latifolia*)	Butt sweep	1	2	Remove
11653	11,10,7	15	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11654	12	14	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11655	8	13	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11658	19	17	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11659	6	7	Oregon White Oak (*Quercus garryana*)	Suppressed; Sparse canopy	2	2	Remove
11660	6	8	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11661	6	12	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11662	7	10	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11676	8	14	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11678	8,7	12	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11681	10	13	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11682	7,6	13	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11683	11,9	18	Oregon White Oak (*Quercus garryana*)	Lean (W)	1	2	Remove
11698	9	12	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11699	9	12	Oregon Ash (*Fraxinus latifolia*)	1-sided canopy (S)	1	2	Remove

Tree #	DBH (in.)	Avg. Crown Radius (ft)	Tree Species Common Name (*Scientific name*)	Comments	Health Rating*	Structure Rating**	Remove/Preserve
11700	12	13	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11701	8	17	Oregon Ash (*Fraxinus latifolia*)	Lean (N)	1	2	Remove
11703	8,8	12	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11704	25	15	Douglas-fir (*Pseudotsuga menziesii*)		1	1	Remove
11705	9	15	Oregon Ash (*Fraxinus latifolia*)	Large cavity with decay; Sparse canopy	2	2	Remove
11706	8	15	Oregon White Oak (*Quercus garryana*)	Broken branches; Sparse canopy	2	2	Remove
11707	13	15	Douglas-fir (*Pseudotsuga menziesii*)		1	1	Remove
11708	12	16	Oregon Ash (*Fraxinus latifolia*)		1	1	Remove
11709	9,8	9	Oregon White Oak (*Quercus garryana*)		1	1	Remove
11710	7,6	15	Oregon White Oak (*Quercus garryana*)	Lean (S)	1	2	Remove
11918	12	0	Black Cottonwood (*Populus trichocarpa*)	Dead	3	3	Remove
11919	18	18	Black Cottonwood (*Populus trichocarpa*)		1	1	Remove
11920	16	16	Black Cottonwood (*Populus trichocarpa*)		1	1	Remove
11922	8,8,7	0	Willow (*Salix sp.*)	Dead	3	3	Remove
11929	6	6	Willow (*Salix sp.*)		1	1	Remove
11964	14	16	Black Cottonwood (*Populus trichocarpa*)		1	1	Remove
11965	14	7	Black Cottonwood (*Populus trichocarpa*)	Dead; Some stems remain	3	3	Remove
11968	16	15	Black Cottonwood (*Populus trichocarpa*)	Dead limbs; Lean (E)	2	2	Remove
11972	6,6	19	Oregon White Oak (*Quercus garryana*)	1-sided canopy (W); Epicormic sprouts	2	2	Remove
11992	13,11	18	Oregon White Oak (*Quercus garryana*)		1	1	Remove
50001	8	10	Oregon White Oak (*Quercus garryana*)		1	1	Preserve

Total # of Existing Trees Inventoried = 175

Total # of Existing Onsite Trees = 175

Total # of Existing Onsite Trees to be Preserved = 66

Total # of Existing Onsite Trees to be Removed = 109

Total # of Existing Line Trees = 0

Total # of Existing Line Trees to be Preserved = 0

Total # of Existing Line Trees to be Removed = 0

Total # of Existing Offsite Trees = 0

Total # of Existing Offsite Trees to be Preserved = 0

Total # of Existing Offsite Trees to be Removed = 0

***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.

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.

Exhibit K: Tree Canopy Calculations

Existing Preserved Site Trees

Type	Mature canopy Area	Quantity	Total Canopy Area
Apple	(20' DIA) 314 SF	3	1,884
bigleaf Maple	(50' DIA) 1,963 SF	2	7,852
Cherry	(20' DIA) 314 SF	13	8,164
Cottonwood	(30' DIA) 707 SF	7	9,898
Doug-fir	(40' DIA) 1,257 SF	68	170,952
Hawthorn	(18' DIA) 254 SF	4	2,032
Oregon Ash	(40' DIA) 1,257 SF	6	15,084
Oregon White Oak	(50' DIA) 1,963 SF	57	223,782
Pacific Madrone	(30' DIA) 707 SF	8	11,312
Willow	(20' DIA) 314 SF	2	1,256

Total Retained Canopy:	452,225	452,216
Site Area:	733,986	
30% of Site Area:	220,196	
Additional Canopy Required:	(232,029)	

Canopy Calculations for 14200 SW Tualatin Sherwood Road

AKS Job No. 7431

Tree #	DBH (in.)	Tree Species Common Name (*Scientific name*)	Remove/Preserve	Canopy Dia (FT)	Canopy Area (SF)	Retained Canopy Area (SF) x2
10976	8	Apple (*Malus domestica*)	Preserve	20	314	628
10977	6	Apple (*Malus domestica*)	Preserve	20	314	628
11001	9,7	Apple (*Malus domestica*)	Preserve	20	314	628
11061	12,12	Bigleaf Maple (*Acer macrophyllum*)	Preserve	50	1,963	3,927
11691	16	Bigleaf Maple (*Acer macrophyllum*)	Preserve	50	1,963	3,927
10898	6	Black Cottonwood (*Populus trichocarpa*)	Preserve	30	707	1,414
10899	8,10,6,12,6,11,12,8	Black Cottonwood (*Populus trichocarpa*)	Preserve	30	707	1,414
10907	14	Black Cottonwood (*Populus trichocarpa*)	Preserve	30	707	1,414
10909	7,12,10,12,14,10,12,14	Black Cottonwood (*Populus trichocarpa*)	Preserve	30	707	1,414
10916	6	Black Cottonwood (*Populus trichocarpa*)	Preserve	30	707	1,414
10917	8	Black Cottonwood (*Populus trichocarpa*)	Preserve	30	707	1,414
10919	6	Black Cottonwood (*Populus trichocarpa*)	Preserve	30	707	1,414
10980	6	Black Hawthorn (*Crataegus douglasii*)	Preserve	18	254	509
11004	6	Black Hawthorn (*Crataegus douglasii*)	Preserve	18	254	509
11015	6	Black Hawthorn (*Crataegus douglasii*)	Preserve	18	254	509
11018	6	Black Hawthorn (*Crataegus douglasii*)	Preserve	18	254	509
10737	24	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10738	10	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10739	11	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10756	14	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10796	53	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10802	7	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10981	10	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10982	14	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10983	7	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10984	8,6	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10986	12	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10987	11	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10988	23	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10994	18	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10995	20,13,7	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10996	14	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
10997	7	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11059	20,18	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11062	17	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11063	17	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11064	19	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11065	25	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11067	25	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11070	27	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11071	21	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11072	17	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11076	19	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11077	23	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11082	13	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11083	15,15	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11084	18,15	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11085	15	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11086	8	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11087	8	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11088	14	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11089	6	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11090	12	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11091	6	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513

Tree #	DBH (in.)	Tree Species Common Name (*Scientific name*)	Remove/Preserve	Canopy Dia (FT)	Canopy Area (SF)	Retained Canopy Area (SF) x2
11092	7	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11093	9	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11094	6	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11095	9	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11097	39	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11098	42	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11100	6	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11101	8	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11102	10	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11103	7	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11104	12	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11105	11	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11106	6	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11110	37	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11326	23	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11364	25	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11406	11	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11409	47	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11410	25	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11412	11	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11413	7	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11427	24	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11495	36	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11504	34	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11523	18	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11674	36	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11769	8	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11772	10	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11773	8	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11860	16	Douglas-fir (*Pseudotsuga menziesii*)	Preserve	40	1,257	2,513
11403	19	Oregon Ash (*Fraxinus latifolia*)	Preserve	40	1,257	2,513
11443	7	Oregon Ash (*Fraxinus latifolia*)	Preserve	40	1,257	2,513
11677	7	Oregon Ash (*Fraxinus latifolia*)	Preserve	40	1,257	2,513
11689	8	Oregon Ash (*Fraxinus latifolia*)	Preserve	40	1,257	2,513
11692	14	Oregon Ash (*Fraxinus latifolia*)	Preserve	40	1,257	2,513
11693	8	Oregon Ash (*Fraxinus latifolia*)	Preserve	40	1,257	2,513
11331	32	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11399	13	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11411	15	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11418	8	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11419	7	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11422	12,11,8,9	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11426	16	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11465	13	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11466	11	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11467	6	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11469	6	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11471	6	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11473	19	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11474	8	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11475	16	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11476	6	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11479	12	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11487	11	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11502	18	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11506	16	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11508	7	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11511	20	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11512	22	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927

Tree #	DBH (in.)	Tree Species Common Name (*Scientific name*)	Remove/Preserve	Canopy Dia (FT)	Canopy Area (SF)	Retained Canopy Area (SF) x2
11513	14	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11514	10	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11515	14,8	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11516	12	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11517	12	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11518	8	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11519	8	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11520	10	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11522	13	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11524	6	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11525	6	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11527	24,20	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11529	8,6	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11531	13	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11533	7	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11535	16	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11536	9	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11537	8	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11538	6	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11539	14	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11540	10,7	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11541	9	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11546	9	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11548	15	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11549	10	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11552	6	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11558	14,12	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11559	20	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11564	14	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11577	24	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11578	20	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11603	14	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11604	7	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
50001	8	Oregon White Oak (*Quercus garryana*)	Preserve	50	1,963	3,927
11075	8	Pacific Madrone (*Arbutus menziesii*)	Preserve	30	707	1,414
11099	9	Pacific Madrone (*Arbutus menziesii*)	Preserve	30	707	1,414
11107	11	Pacific Madrone (*Arbutus menziesii*)	Preserve	30	707	1,414
11108	9	Pacific Madrone (*Arbutus menziesii*)	Preserve	30	707	1,414
11109	6	Pacific Madrone (*Arbutus menziesii*)	Preserve	30	707	1,414
11328	8	Pacific Madrone (*Arbutus menziesii*)	Preserve	30	707	1,414
11407	6	Pacific Madrone (*Arbutus menziesii*)	Preserve	30	707	1,414
11408	6	Pacific Madrone (*Arbutus menziesii*)	Preserve	30	707	1,414
10733	12	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
10734	7,6	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
10735	8	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
10999	6	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11007	7	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11021	12,8	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11025	8	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11026	18	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11027	6	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11028	6	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11029	8	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11034	18	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11690	11	Sweet Cherry (*Prunus avium*)	Preserve	20	314	628
11695	11	Willow (*Salix sp.*)	Preserve	20	314	628
11876	8	Willow (*Salix sp.*)	Preserve	20	314	628

Tree #	DBH (in.)	Tree Species Common Name (*Scientific name*)	Remove/Preserve	Canopy Dia (FT)	Canopy Area (SF)	Retained Canopy Area (SF) x2
Total Retained Canopy:		452,225				
Site Area:		733,986				
30% of Site Area:		220,196				
Additional Canopy Required:		(232,029)				

Exhibit L: Traffic Analysis Memo

lancaster mobley

321 SW 4th Ave., Suite 400
Portland, OR 97204
503.248.0313
lancastermobley.com

Memorandum

To: **Robert Code, Cascade Columbia Distribution**

CC: **Maria Miller, AKS Engineering and Forestry, LLC**

From: **Myla Cross**
Jennifer Danziger, PE

Date: **May 18, 2022**

Subject: **Cascade Columbia Distribution Expansion**
Trip Generation and Signal Warrant Analysis

RENEWS: 12/31/2023

Introduction

This memorandum examines the estimated trip generation of the proposed warehouse expansion at the Cascade Columbia Distribution Facility, located at 14200 SW Tualatin Sherwood Road and evaluates the need for a traffic signal warrant at the site access. The proposed expansion will include the construction of a 12,000-square-foot (SF) warehouse building, and an 8,400-SF covered storage area.

Additionally, the memorandum provides trip generation estimates for two covered outdoor storage areas on the site which have already been constructed but were never reviewed for traffic impacts.

Project & Location Description

Cascade Columbia Distribution is located on an approximately 16.9-acre parcel (Map No. 2S128C Tax Lot 200), south of SW Tualatin-Sherwood Road, and is surrounded by industrial land uses. Current access to Cascade Columbia Distribution is available via a two-way driveway along SW Tualatin-Sherwood Road.

The proposed development is expected to impact one nearby vicinity roadway, SW Tualatin Sherwood Road. Table 1 provides a description of SW Tualatin Sherwood Road.

Table 1: Vicinity Roadway Descriptions

Street Name	Jurisdiction	Functional Classification	Travel Lanes	Speed	Curbs & Sidewalks	On-Street Parking	Bicycle Facilities
SW Tualatin-Sherwood Road	Washington County	Arterial	3	45 mph	Both Sides	None	Bike lanes

Notes: Functional Classification based on the City of Sherwood Transportation System Plan

Figure 1 presents an aerial image of the nearby vicinity with the property line outlined in yellow, and the proposed expansions outlined in blue. The existing site includes several structures that have not yet been permitted which will be included in the proposed expansion application. These structures consist of a 4,300-SF canopy and 6,000-SF covered storage area which are highlighted in red.

Figure 1: Site Vicinity

Trip Generation

To estimate the number of trips that are projected to be generated by the development, trip rates from the *Trip Generation Manual*[1] were used. Specifically, data from the land use code 150, Warehousing is used to estimate the development's trip generation based on the gross floor area. Trip rates were used because the equations grossly overestimate trip generation for small warehouses. Although covered storage is not typically considered to be a trip generator, the covered storage as well as the warehouse space were included in the calculation.

Two trip generation estimates were calculated for the site:

1. The site currently includes two structures, a 4,300-SF canopy and a 6,000-SF covered storage area, which have not yet been permitted and will be included in the proposed expansion application. The two structures predate the traffic counts that were conducted on November 16, 2021; therefore, any trips generated by these structures were already captured in the counts.
2. The proposed expansion will include construction of a 12,000-SF warehouse building and an 8,400-SF covered storage area. These new structures are not expected to change the operations of the site;

[1] Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.

however, a trip generation estimate of potential new trips associated with these site improvements is presented below. These trips will be added to the volumes counted in November 2021.

The resulting trip generation estimates are summarized in Table 2. Detailed trip generation calculations are included in the appendix to this report.

Table 2: Trip Generation Summary

Land Use	ITE Code	Size (SF)	Morning Peak Hour			Evening Peak Hour			Weekday Trips
			In	Out	Total	In	Out	Total	
Previously Added Warehousing	150	10,300	2	0	2	1	1	2	18
Proposed New Warehousing	150	20,400	2	1	3	1	3	4	34

The trip generation calculations show that the previously added covered storage areas are estimated to generate 2 morning peak hour trips, 2 evening peak hour trips, and 18 average weekday trips. These trips are already using the driveway and the transportation network.

The proposed expansion will generate an increase of 3 morning peak hour trips, 4 evening peak hour trips, and 34 average weekday trips. These trips will be added to the driveway and the transportation network.

Per the City of Sherwood's Development Code, Sections 16.106.080.B as well as 16.106.040.K, the preparation of a Traffic Impact Analysis (TIA) is required if the proposed development generates 50 or more evening peak hour trip impacts on OR-99W; 100 or more evening peak hour trip impacts on the local transportation system; or generates 400 average daily trip impacts to the transportation system. Based on the trip generation of the previously added warehousing (10,300 SF) and the proposed new warehousing development (20,400 SF), the trip impact thresholds for requiring a TIA are not met.

Traffic Volume Estimates

Traffic counts were collected on Tuesday, November 16, 2021. These volumes include the trips generated by the 10,300 SF of previously added covered storage but not the proposed expansion. To estimate the future year volumes, a 2 percent growth rate and 10 percent COVID-19 adjustment factor were applied to the through movements of the existing counts to estimate Year 2022 Background volumes. The trip generation for the proposed expansion was then added to the background volumes to obtain the year 2022 Buildout volumes.

The volume calculations for the major street, SW Tualatin-Sherwood Road, and the minor street, site driveway, are summarized in Table 3.

Table 3: Estimated Peak Hour Volumes

Condition	Morning Peak Hour			Evening Peak Hour		
	Major Street Total	Minor Street		Major Street Total	Minor Street	
		In	Out		In	Out
2021 Existing Unadjusted Volume	1,451	16	7	1,688	1	20
2022 Background Volume	1,626	16	7	1,893	1	20
Proposal Expansion	2	2	1	1	1	3
2022 Buildout Volume	1,628	18	8	1,894	2	23

Warrant Analysis

Traffic signal warrants were examined for the intersection of SW Tualatin-Sherwood Road at the site access driveway to determine whether the installation of a new traffic signal will be warranted under Year 2022 buildout conditions. The warrant analysis is summarized in Table 4. Detailed analysis worksheets and traffic count data are included in the appendix of this report.

Table 4: Warrant Summary – 2022 Buildout Conditions

Warrant[1]	Minor Street Threshold[2]	Maximum Site Volumes	
		Morning Peak	Evening Peak
Warrant 1, 8-Hour Vehicular Volume, Condition A	105	8	23
Warrant 1, 8-Hour Vehicular Volume, Condition B	53		
Warrant 2, Four Hour Vehicular Volume	60		
Warrant 3, Peak Hour Vehicular Volume	75		

Notes:

1. Manual on Uniform Traffic Control Devices Chapter 4C, Sections 4C.02 – 4C.04.

2. Because SW Tualatin-Sherwood Road has a 45-mph posted speed at this location, the 70 percent thresholds were used.

Based on the analysis, traffic signal warrants are not projected to be met under year 2022 Buildout Conditions. Volumes are well below the minimum thresholds for the installation of a traffic signal. Accordingly, no signalization of the intersection is necessary or recommended.

Conclusions

The proposed site expansion, which includes a 12,000-SF warehouse building and 8,400-SF covered storage area, as well as the existing 4,300-SF canopy and 6,400-SF covered storage area, which were not previously reviewed, will not meet the City of Sherwood's trip impact thresholds requiring a TIA. No additional analysis is necessary beyond this trip generation memorandum.

Additionally, projected volumes with the proposed warehouse expansion for the site driveway access to SW Tualatin-Sherwood Road will be well below the thresholds for installation of a traffic signal. No signal is warranted at the site driveway.

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use:	Warehousing
Land Use Code:	150
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	1000 SF GFA
Trip Type:	Vehicle
Variable Quantity:	10.3

AM PEAK HOUR

Trip Rate: 0.17

	Enter	Exit	Total
Directional Split	77%	23%	
Trip Ends	2	0	2

PM PEAK HOUR

Trip Rate: 0.18

	Enter	Exit	Total
Directional Split	28%	72%	
Trip Ends	1	1	2

WEEKDAY

Trip Rate: 1.71

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	9	9	18

SATURDAY

Trip Rate: 0.15

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	1	1	2

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use:	Warehousing
Land Use Code:	150
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	1000 SF GFA
Trip Type:	Vehicle
Variable Quantity:	20.4

AM PEAK HOUR

Trip Rate: 0.17

	Enter	Exit	Total
Directional Split	77%	23%	
Trip Ends	2	1	3

PM PEAK HOUR

Trip Rate: 0.18

	Enter	Exit	Total
Directional Split	28%	72%	
Trip Ends	1	3	4

WEEKDAY

Trip Rate: 1.71

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	17	17	34

SATURDAY

Trip Rate: 0.15

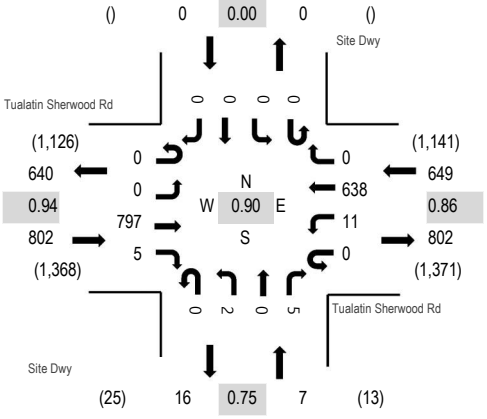
	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	2	2	4

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

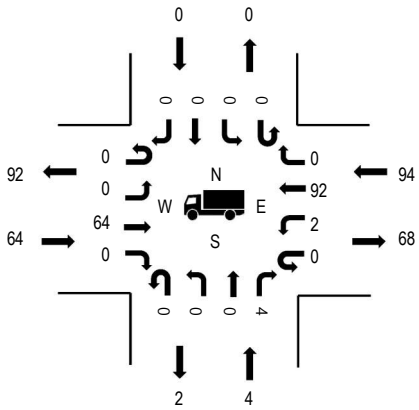
Location: 1 Site Dwy & Tualatin Sherwood Rd AM
Date: Tuesday, November 16, 2021
Peak Hour: 07:25 AM - 08:25 AM
Peak 15-Minutes: 07:25 AM - 07:40 AM

Peak Hour

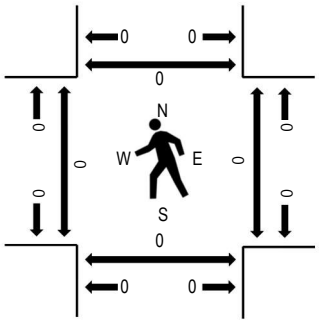
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	8.0%	0.94
WB	14.5%	0.86
NB	57.1%	0.75
SB	0.0%	0.00
All	11.1%	0.90

Traffic Counts - Motorized Vehicles

Interval Start Time	Tualatin Sherwood Rd Eastbound				Tualatin Sherwood Rd Westbound				Site Dwy Northbound				Site Dwy Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	0	38	0	0	2	31	0	0	0	0	0	0	0	0	0	71	1,154
7:05 AM	0	0	26	1	1	1	27	0	0	0	0	2	0	0	0	0	58	1,215
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1,282
7:15 AM	0	0	51	1	0	0	53	0	0	0	0	0	0	0	0	0	105	1,392
7:20 AM	0	0	25	0	0	0	22	0	0	0	0	1	0	0	0	0	48	1,400
7:25 AM	0	0	69	0	0	2	62	0	0	0	0	1	0	0	0	0	134	1,458
7:30 AM	0	0	69	1	0	1	63	0	0	0	0	0	0	0	0	0	134	1,420
7:35 AM	0	0	74	0	0	0	61	0	0	0	0	1	0	0	0	0	136	1,385
7:40 AM	0	0	66	1	0	2	43	0	0	0	0	0	0	0	0	0	112	1,361
7:45 AM	0	0	61	1	0	0	63	0	0	1	0	0	0	0	0	0	126	1,371
7:50 AM	0	0	68	1	0	2	49	0	0	0	0	1	0	0	0	0	121	1,359
7:55 AM	0	0	47	0	0	1	59	0	0	0	0	1	0	0	0	0	108	1,378
8:00 AM	0	0	78	1	0	0	53	0	0	0	0	0	0	0	0	0	132	1,368
8:05 AM	0	0	70	0	0	1	54	0	0	0	0	0	0	0	0	0	125	
8:10 AM	0	0	64	0	0	1	46	0	0	0	0	0	0	0	0	0	111	
8:15 AM	0	0	70	0	0	1	41	0	0	0	0	1	0	0	0	0	113	
8:20 AM	0	0	61	0	0	0	44	0	0	1	0	0	0	0	0	0	106	
8:25 AM	0	0	50	1	0	0	45	0	0	0	0	0	0	0	0	0	96	
8:30 AM	0	0	49	0	0	0	50	0	0	0	0	0	0	0	0	0	99	
8:35 AM	0	0	68	0	0	0	44	0	0	0	0	0	0	0	0	0	112	
8:40 AM	0	0	69	0	0	0	53	0	0	0	0	0	0	0	0	0	122	
8:45 AM	0	0	59	1	0	1	53	0	0	0	0	0	0	0	0	0	114	
8:50 AM	0	0	73	0	0	1	64	0	0	0	0	2	0	0	0	0	140	
8:55 AM	0	0	54	0	0	0	44	0	0	0	0	0	0	0	0	0	98	
Count Total	0	0	1,359	9	1	16	1,124	0	0	2	0	11	0	0	0	0	2,522	
Peak Hour	0	0	797	5	0	11	638	0	0	2	0	5	0	0	0	0	1,458	

Location: 1 Site Dwy & Tualatin Sherwood Rd AM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	6	0	5	0	11	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	6	2	1	0	9	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	1	0	0	1	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	5	0	9	0	14	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	1	4	0	6	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	3	1	14	0	18	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	7	0	8	0	15	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	9	1	7	0	17	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	6	0	8	0	14	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	4	0	7	0	11	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	6	1	5	0	12	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	3	1	7	0	11	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	8	0	10	0	18	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	3	0	10	0	13	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	6	0	6	0	12	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	2	0	6	0	8	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	7	0	6	0	13	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	2	0	8	0	10	8:25 AM	0	0	1	0	1	8:25 AM	0	0	0	0	0
8:30 AM	4	0	11	0	15	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	3	0	5	0	8	8:35 AM	0	0	0	0	0	8:35 AM	0	1	0	0	1
8:40 AM	4	0	13	0	17	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	8	0	8	0	16	8:45 AM	0	0	0	0	0	8:45 AM	0	1	0	0	1
8:50 AM	6	1	11	0	18	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	6	0	7	0	13	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	115	9	176	0	300	Count Total	0	0	1	0	1	Count Total	0	2	0	0	2
Peak Hour	64	4	94	0	162	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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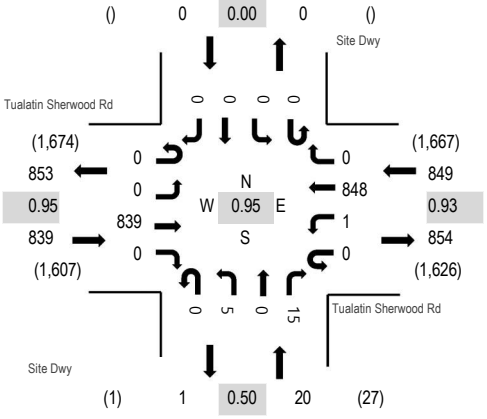
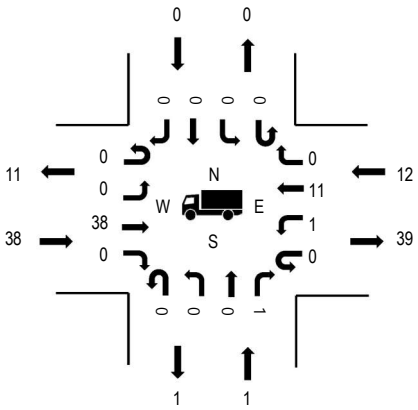
Location: 1 Site Dwy & Tualatin Sherwood Rd PM
Date: Tuesday, November 16, 2021
Peak Hour: 04:35 PM - 05:35 PM
Peak 15-Minutes: 04:35 PM - 04:50 PM

Peak Hour

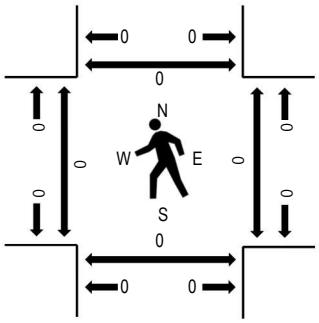
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.5%	0.95
WB	1.4%	0.93
NB	5.0%	0.50
SB	0.0%	0.00
All	3.0%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	Tualatin Sherwood Rd Eastbound				Tualatin Sherwood Rd Westbound				Site Dwy Northbound				Site Dwy Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	76	0	0	0	72	0	0	0	0	2	0	0	0	0	150	1,682
4:05 PM	0	0	76	0	0	0	75	0	0	0	0	0	0	0	0	0	151	1,697
4:10 PM	0	0	56	0	0	0	80	0	0	0	0	0	0	0	0	0	136	1,686
4:15 PM	0	0	64	0	0	0	76	0	0	0	0	0	0	0	0	0	140	1,692
4:20 PM	0	0	66	0	0	0	70	0	0	1	0	0	0	0	0	0	137	1,686
4:25 PM	0	0	55	0	0	0	55	0	0	1	0	2	0	0	0	0	113	1,687
4:30 PM	0	0	70	0	0	0	65	0	0	0	0	0	0	0	0	0	135	1,705
4:35 PM	0	0	71	0	0	0	80	0	0	0	0	1	0	0	0	0	152	1,708
4:40 PM	0	0	69	0	0	1	85	0	0	0	0	0	0	0	0	0	155	1,680
4:45 PM	0	0	68	0	0	0	71	0	0	1	0	1	0	0	0	0	141	1,649
4:50 PM	0	0	66	0	0	0	64	0	0	0	0	0	0	0	0	0	130	1,631
4:55 PM	0	0	68	0	0	0	73	0	0	1	0	0	0	0	0	0	142	1,625
5:00 PM	0	0	71	0	0	0	89	0	0	1	0	4	0	0	0	0	165	1,619
5:05 PM	0	0	72	0	0	0	65	0	0	0	0	3	0	0	0	0	140	
5:10 PM	0	0	78	0	0	0	62	0	0	1	0	1	0	0	0	0	142	
5:15 PM	0	0	63	0	0	0	70	0	0	0	0	1	0	0	0	0	134	
5:20 PM	0	0	74	0	0	0	62	0	0	1	0	1	0	0	0	0	138	
5:25 PM	0	0	65	0	0	0	65	0	0	0	0	1	0	0	0	0	131	
5:30 PM	0	0	74	0	0	0	62	0	0	0	0	2	0	0	0	0	138	
5:35 PM	0	0	56	0	0	0	68	0	0	0	0	0	0	0	0	0	124	
5:40 PM	0	0	57	0	0	0	67	0	0	0	0	0	0	0	0	0	124	
5:45 PM	0	0	56	0	0	0	67	0	0	0	0	0	0	0	0	0	123	
5:50 PM	0	0	63	0	0	0	60	0	0	1	0	0	0	0	0	0	124	
5:55 PM	0	0	73	0	0	0	63	0	0	0	0	0	0	0	0	0	136	
Count Total	0	0	1,607	0	0	1	1,666	0	0	8	0	19	0	0	0	0	3,301	
Peak Hour	0	0	839	0	0	1	848	0	0	5	0	15	0	0	0	0	1,708	

Location: 1 Site Dwy & Tualatin Sherwood Rd PM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	4	0	1	0	5	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	3	0	1	0	4	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	1	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	3	0	4	0	7	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	4	0	0	0	4	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	5	0	0	0	5	4:25 PM	0	0	0	0	0	4:25 PM	0	1	0	0	1
4:30 PM	3	0	0	0	3	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	4	0	2	0	6	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	1	0	3	0	4	4:40 PM	1	0	0	0	1	4:40 PM	0	0	0	0	0
4:45 PM	2	1	0	0	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	2	0	0	0	2	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	4	0	0	0	4	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	2	0	2	0	4	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	8	0	0	0	8	5:05 PM	0	0	1	0	1	5:05 PM	0	0	0	0	0
5:10 PM	1	0	1	0	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	2	0	0	0	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	5	0	1	0	6	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	5	0	3	0	8	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	2	0	0	0	2	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	3	0	1	0	4	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	1	0	0	0	1	5:40 PM	0	0	0	0	0	5:40 PM	0	1	0	0	1
5:45 PM	4	0	0	0	4	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	3	0	3	0	6	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	6	0	0	0	6	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	77	1	23	0	101	Count Total	1	0	1	0	2	Count Total	0	2	0	0	2
Peak Hour	38	1	12	0	51	Peak Hour	1	0	1	0	2	Peak Hour	0	0	0	0	0

TRAFFIC SIGNAL WARRANTS - BASED ON 2009 MUTCD

INTERSECTION INFORMATION

City:	Sherwood		Condition:	Volumes from Site Access Driveway	
Population:	20000				
Intersection Location:					
(Rural/Urban)	Urban				
Major Street Name:	Tualatin-Sherwood Road		Minor Street Name:	Site Access Driveway	
Number of Moving Lanes for Each	1		Number of Moving Lanes for Each	1	
Speed:	45 mph		Speed:	25 mph	
Street Width:	45 ft		Street Width:	34 ft	
Direction:	EB	WB	Direction:	NB	SB
Hour Beginning:			Hour Beginning:		
12:00 AM			12:00 AM		
1:00 AM			1:00 AM		
2:00 AM			2:00 AM		
3:00 AM			3:00 AM		
4:00 AM			4:00 AM		
5:00 AM			5:00 AM		
6:00 AM			6:00 AM		
7:00 AM	1,628		7:00 AM	8	
8:00 AM			8:00 AM		
9:00 AM			9:00 AM		
10:00 AM			10:00 AM		
11:00 AM			11:00 AM		
12:00 PM			12:00 PM		
1:00 PM			1:00 PM		
2:00 PM			2:00 PM		
3:00 PM			3:00 PM		
4:00 PM	1,894		4:00 PM	23	
5:00 PM			5:00 PM		
6:00 PM			6:00 PM		
7:00 PM			7:00 PM		
8:00 PM			8:00 PM		
9:00 PM			9:00 PM		
10:00 PM			10:00 PM		
11:00 PM			11:00 PM		
24-hour Total	3,522	0	24-hour Total	31	0

Warrants Evaluted:

Warrant 1, 8-Hour Vehicular Volume - Evaluated for Conditions A & B
Warrant 2 , 4-Hour Vehicular Volume - Evaluated
Warrant 3, Peak Hour - Evaluated for Conditions A-2, A-3 (A-1 needs to be evaluated separately), and Condition B
Warrant 4, Pedestrian Volume - Not Analyzed
Warrant 5, School Crossing - Not Analyzed
Warrant 6, Coordinated Signal System - Not Analyzed
Warrant 7, Accident Experience - Not Analyzed
Warrant 8, Roadway Network - Not Analyzed
Warrant 9, Intersection Near a Grade Crossing - Not Analyzed

WARRANT 1, 8-HOUR VEHICULAR VOLUME

	MAJOR			MINOR						
	EB	WB	Total	NB	SB	Max	A	B	A or B	80% A&B
4:00 PM	1,894	0	1,894	23	0	23	N	N	N	N
7:00 AM	1,628	0	1,628	8	0	8	N	N	N	N
11:00 PM	0	0	0	0	0	0	N	N	N	N
10:00 PM	0	0	0	0	0	0	N	N	N	N
9:00 PM	0	0	0	0	0	0	N	N	N	N
8:00 PM	0	0	0	0	0	0	N	N	N	N
7:00 PM	0	0	0	0	0	0	N	N	N	N
6:00 PM	0	0	0	0	0	0	N	N	N	N
5:00 PM	0	0	0	0	0	0	N	N	N	N
3:00 PM	0	0	0	0	0	0	N	N	N	N
2:00 PM	0	0	0	0	0	0	N	N	N	N
1:00 PM	0	0	0	0	0	0	N	N	N	N

Note: The major street has a speed which exceeds 40 mph, therefore these minimum volumes are 70 percent of the regular requirements

Warrant Requirements:

Major Street Lanes: 1
Minor Street Lanes: 1

CONDITION A - Minimum Vehicular Volume

Minimum Volume on Combined Major Street Approaches: 350
Minimum Volume on Higher Minor Street Approach: 105

CONDITION B - Interruption of Continuous Traffic

Minimum Volume on Combined Major Street Approaches: 525
Minimum Volume on Higher Minor Street Approach: 53

IS CONDITION A OF SIGNAL WARRANT 1 MET? NO
IS CONDITION B OF SIGNAL WARRANT 1 MET? NO
IS COMBINATION OF A OR B MET? NO
IS 80% OF CONDITION A AND CONDITION B MET? NO

Note: Signal Warrant 1 is met if either Condition A or Condition B is met.

WARRANT 2, FOUR HOUR VEHICULAR VOLUME

	MAJOR			MINOR			Calculated	
	EB	WB	Total	NB	SB	Max	Threshold	
4:00 PM	1,894	0	1,894	23	0	23	60	N
7:00 AM	1,628	0	1,628	8	0	8	60	N
11:00 PM	0	0	0	0	0	0	500	N
10:00 PM	0	0	0	0	0	0	500	N
9:00 PM	0	0	0	0	0	0	500	N
8:00 PM	0	0	0	0	0	0	500	N
7:00 PM	0	0	0	0	0	0	500	N
6:00 PM	0	0	0	0	0	0	500	N

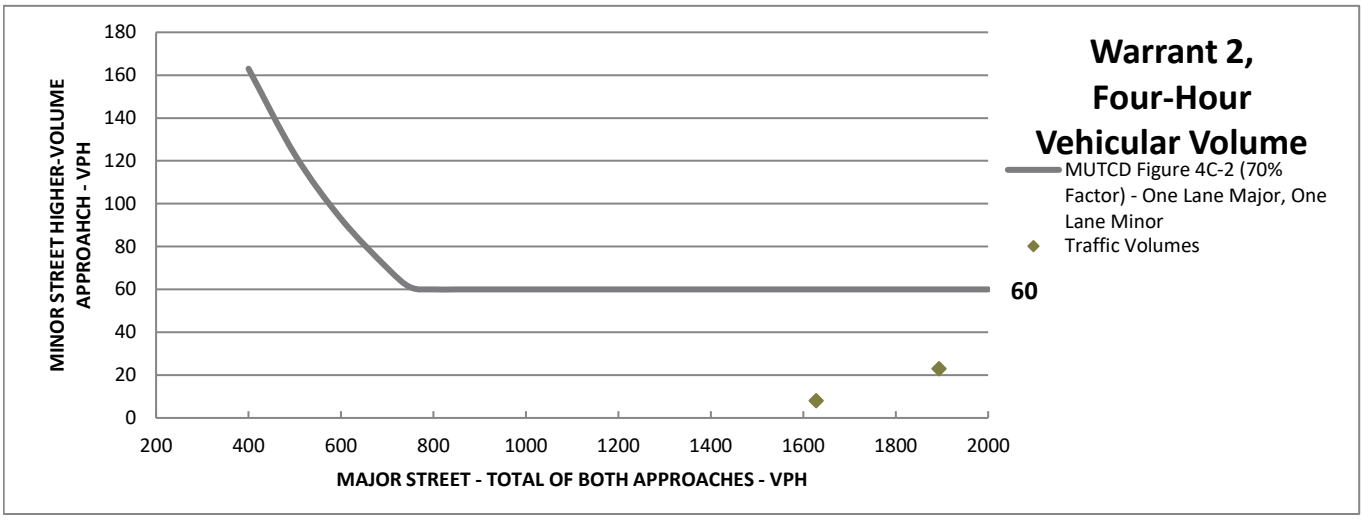
Note: The major street has a speed which exceeds 40 mph, therefore these minimum volumes are 70 percent of the regular requirements

Warrant Requirements:

Major Street Lanes: 1

Minor Street Lanes: 1

IS SIGNAL WARRANT 2 MET? **NO**



WARRANT 3, PEAK HOUR VEHICULAR VOLUME

	MAJOR			MINOR			Calculated		
	EB	WB	Total	NB	SB	Max	Threshold (B)	A-2&3	B
4:00 PM	1,894	0	1,894	23	0	23	75	N	N
7:00 AM	1,628	0	1,628	8	0	8	75	N	N
11:00 PM	0	0	0	0	0	0	610	N	N
10:00 PM	0	0	0	0	0	0	610	N	N

Note: The major street has a speed which exceeds 40 mph, therefore these minimum volumes are 70 percent of the regular requirements

Warrant Requirements:
Major Street Lanes: 1
Minor Street Lanes: 1

CONDITION A-1 - Stopped Delay
Cannot be evaluated based on volumes alone. Condition met if traffic on one minor-street approach (one direction only) controlled by STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.

CONDITION A-2 - Minor Street Volume
Minimum Volume on Higher Minor Street Approach: 100

CONDITION A-3 - Total Approach Volume
Minimum Volume of Total Approaches: 650

CONDITION B - Plot of Minor Street Volume (high vol approach) vs. Major Street Volume (Both approaches)

ARE CONDITIONS A-2 AND A-3 OF SIGNAL WARRANT 3 MET? **NO**
Note: All 3 subsections of Condition A must be met to warrant signal.

IS CONDITION B OF SIGNAL WARRANT 3 MET? **NO**

Note: Signal Warrant 3 is met if either Condition A or Condition B is met.

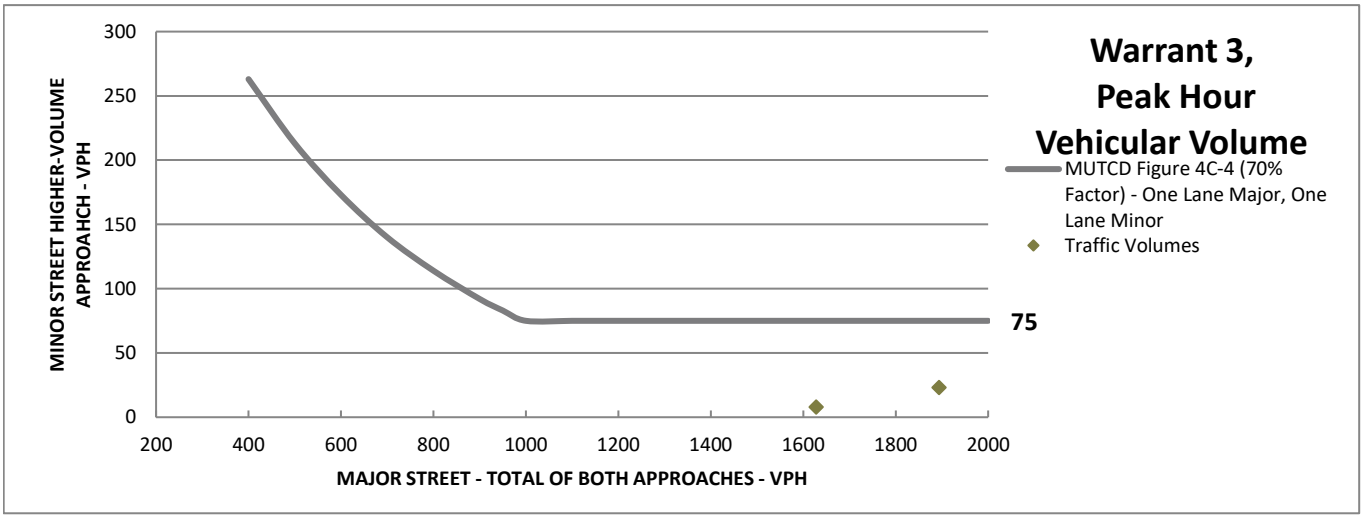


Exhibit M: Conditions of Approval of the Original Decision (Case # SP 92-7)

1993 Condition of Approval	Compliance Response
Administered by TVF&R	
1. Chemical Storage: a. All chemical transfer activities shall be totally enclosed, except where the Tualatin Valley Fire and Rescue (TVFR) determines such enclosures will be detrimental to the public or facility safety. If TVFR cannot determine the appropriate course of conduct, an analysis shall be prepared by a qualified, independent consultant retained by the City, and paid for by the applicant, results of which shall be reviewed and approved by TVFR.	Compliant-TVFR conducts annual reviews and random tours for training purposes.
b. If the TVFR's annual review of the materials inventory list of all chemical substances stored on site is discontinued, the City may hire a qualified professional, at the applicant's expense, to annually review the inventory to ensure compliance with State requirements.	Annual Fire Marshal report is submitted to the State.
c. Empty chemical storage drums shall be separated and handled based on original contents in accordance with Fire Code material separation standards, to TVFR's satisfaction.	All empty containers are stored in marked locations and separated.
d. The facility site plan shall be amended to illustrate and designate empty drum storage areas. The facility shall be managed so that empty drums or other materials are not stored in parked trucks or empty trailers and are handled and stored in the same essential manner as full drums, subject to inspection by TVFR.	Compliant. Parked trucks and trailers are not used for storage.
e. Storage and handling all gaseous products are prohibited, except for those used incidentally in the routine operation and Maintenance of the facility. Prior to the addition of any chemical products that are not within the same classification, as defined by Fire Code, of those products listed in the original approval, the applicant must obtain the permission of the City and TVFR.	Cascade Columbia Distribution does not handle gaseous products, with the exception of propane for forklift use, which is permitted in the course of facility operations.
f. A computerized chemical inventory system identifying and controlling chemical storage locations and volumes, and streamlining inspections, shall be installed and maintained. TVFR shall review and approve the system proposed for installation and may conduct inventory inspections on an as needed basis.	Current inventory retrieval system has been demonstrated to TVFR during hazmat drills.
2. Emergency Provisions a. Proof shall be provided to TVFR that facility personnel are trained at First Responder Operator level as certified by Occupational Health and Safety (OSMA), and qualified at First Aid/CPR level.	Annual training is regularly performed to maintain all production personnel and certified First Aid employees staffed.
b. An electronic surveillance system shall be provided to monitor all chemical storage activities and facility security by an Underwriters Laboratory (UL) approved central station regarding the operation and security of this facility. This system shall provide for monitoring of the retention areas, tank levels, and intrusion by unauthorized personnel during non-operating hours. Chemical sensing devices shall be installed to detect flammable air/chemical mixtures caused by ruptured drums or other spill accidents, and to activate the alarm	Wired alarm system (with battery backup), motion, photo beams and security cameras with remote access are all installed and operational. Fire suppression is operational and inspected annually.

system. Provide sensing devices that will automatically activate fire suppression systems and contact the central station in the event of a fire. All electronic systems shall have battery back-up. Owner shall provide a plan for immediate response in the event of any alarm or intrusion. Alarm system and response program shall be reviewed and approved jointly by City Police, City staff, and TVFR.	Emergency Response Plan (ERP) has been written and is trained to.
c. On an annual basis, TVFR shall review and approve the facility's emergency response plan. If such service is discontinued, the City may annually hire, at the applicant's expense, a consultant to analyze the facility's emergency response equipment and materials program as required by State and local agencies responsible for monitoring safety.	TVFR reviews ERP, as does DHS, EPA and the Local Emergency Planning Commission.
d. Storm water containment areas shall be sized to handle rain fall from a six (6) day storm event of a ten (10) year storm intensity, plus contingency capacity accommodating the addition of fire suppression water to such flows. The specific sizing of containment areas shall be determined through consultation between TVFR and the applicant, to TVFR's satisfaction.	No changes have been made over the years to the original design. Detention pond is still fully operational.
e. An emergency response plan that includes fire suppression devices, evacuation plans, and maximum protection for the environment and nearby residents shall be approved by the City and TVFR prior to issuance of any building permits. If sirens or other off-site warning devices are deemed appropriate, they shall be installed and maintained by the applicant. The emergency response plan shall include consultation with and recommendations from appropriate area health care providers. Subsequent to occupancy, modifications to the emergency response plan necessitated by changes to the facilities physical plant or operations shall be reviewed and approved by TVFR in consultation with the City.	Emergency Response Plan is reviewed and updated annually.
f. Provide an all-weather emergency access road, separate from the main driveway access to the rear of the site with its own exit onto a public street to the satisfaction of TVFR. If site or ownership restrictions make this impractical, re-site the facility as necessary to permit such secondary access.	TVF&R is satisfied with the existing access.
Administered by the City	
1. Site Planning	
a. Roofing and skirting materials and siding, if necessary, shall be extended over covered storage areas, including Buildings B, C, and D, and the drumming area, to provide additional rain protection as approved by City staff.	This condition was satisfied on the construction plans and compliance was verified during building permit issuance.
b**.** The final approved site plan shall illustrate the specific use and function of all buildings and tanks. Facilities identified as "future" on the site plan and not constructed as part of the initial building permit shall be subject to additional site plan review, and are not subject to this approval.	This condition was satisfied on the construction plans and compliance was verified during building permit issuance.
c. Comply with, and submit appropriate plans where required, all City site development standards including landscaping, off-street parking	This condition was satisfied on the construction plans

and loading, on-site circulation, on-site outdoor storage, lighting, and signage.	and compliance was verified during building permit issuance.
d**.** Native plant species shall be used in combination with the maximum feasible retention of existing trees, and vegetation to create full sight-obscuring landscape screening of the facility from Oregon Street, Tualatin-Sherwood Road and Rock Creek Wetlands. A separate landscape plan achieving this end shall be submitted for the City's review and approval prior to issuance of any building permits.	This condition was satisfied on the construction plans and compliance was verified during building permit issuance.
e. Security fencing shall be provided around the entire perimeter of the facility inside the tree line, with the provision that fencing systems shall permit fire, police and other public safety personnel and equipment access in the case of emergency.	This condition was satisfied on the construction plans and compliance was verified during building permit issuance.
f. All storage buildings shall be sprinklered except for areas where chemicals are water reactive, and then other appropriate automatic fire suppression devices shall be installed.	Storage buildings are sprinkled.
2. Storm Water and Pollution Management a**.** As required by the City and Unified Sewerage Agency (USA), as storm water pollution prevention plan specifying physical features, and operational practices and procedures, to contain and manage contamination incidents shall be provided.	Permit on file and inspections conducted by Clean Water Services.
b. All City and USA requirements and standards regarding water supply, erosion control, storm and sanitary sewers, and on-site water quality facilities shall be complied with.	CCDC complies.
c. The City shall review and approve the preliminary design of the storm water drainage/treatment systems to ensure protection of Rock Creek.	No changes have been made to stormwater system since the original design.
d. All facilities for the containment and treatment of chemical spills shall be designed and operated to be drained by pumping rather than through gravity feed valved systems.	All chemical containment requires pumping.
e. Chemical storage and handling and truck parking areas shall be paved and underlaid by an impervious membrane to protect from spills and leakage. The entire paved surface is to be designed to drain into a central containment area, which shall include inspection port or ports to help detect any leakage through the paved surfaces.	Facility was constructed to the approved design, and no changes from the original design and installation.
f. All storm water and other discharges from areas defined in Condition B.2.e., excluding roof run-off, shall be discharged directly into the Rock Creek sanitary sewer after collection in containment areas and appropriate testing and treatment as defined by USA, and other appropriate agencies.	Storm water discharge permit inspected and issued by Clean Water Services. Certificate of Excellence issued to CCDC 2020.
3. Roads and Transportation a. A driveway access permit to Tualatin-Sherwood Road shall be obtained from Washington County.	Complied.
b. A non-remonstrance agreement with Washington County and the City for future public improvements shall be executed and recorded.	Complied.

c. Additional right-of-way shall be dedicated along the full frontage of Tax Lot 200:2S128C to provide Tualatin- Sherwood Road with a right-of-way width of 45 feet from center line.	Complied. Washington County is currently in the process of right-of-way acquisition for road widening, Applicant is coordinating with County staff.
d. A one-foot deep non-access reserve strip shall be recorded along the full frontage of Tax Lot 200:2S128C, except at the County approved driveway access.	Complied.
e. Relocate the main driveway access onto Tualatin-Sherwood Road to a point approximately 200 feet east of the edge of the rail right-of-way to ensure eastbound double- trailer trucks can fully clear the rail line before having to begin to make turning movements, subject to City obtaining concurrence of the County.	The existing access is in the approved location. The scope of the current application does not include any changes to the access.
f. Install an on-demand traffic signal on Tualatin-Sherwood Road for vehicles centering and exiting the facility, subject to City obtaining concurrence of the County. If the County does not concur within sixty (60) days, the issue shall be returned to the City Council for further consideration.	The County did not require a traffic signal at the time; neither is a signal warranted at this location today, as demonstrated in the Traffic Analysis Memo prepared by Lancaster Mobley, dated December 2021.
4. Generally: a. Proof of compliance with all applicable Federal, State and local regulations shall be provided.	The facility is in full compliance with all applicable Federal, State and local regulations. Required documents were provided at the time of permit issuance.
C. General Conditions of Approval 1. An annual site and facility inspection shall be conducted by TVFR or a qualified independent consultant retained by the City and paid by the applicant, as deemed appropriate, the results of which shall be reviewed by the TVFR and other appropriate agencies. The purpose of this inspection is to identify failures or potential failures in the structures, equipment, containment, and primary and secondary impervious layers and to ensure that no chemicals have escaped from the containment area by sampling the adjacent' land and as appropriate. The inspection shall also review compliance with all other conditions of approval with recommendations for changes and improvements. The City may request more frequent inspections as needed.	Annual inspections are performed by TVFR on a regular basis.
2. Revise the site plan in accordance with all the preceding conditions and resubmit to the City staff for review and approval for compliance with those condition	This condition was satisfied prior to building permit issuance.

3. To the extent that any of the conditions imposed herein conflict with the requirements of any oversight agency, including but not limited to Oregon Department of Environmental Quality, Environmental Protection Agency, and TVFR, any necessary changes shall be returned to the City for further review and approval.	This condition was satisfied prior to building permit issuance.

See top of page
a.f.

90 NW Park Steet
Sherwood, Oregon 97140
503/625-5522 □ FAX 625-5524

TAX LOT: 200:2S1 28C
CASE NO: SP 92-7
DATE MAILED: March 16, 1993

NOTICE OF DECISION

TO: Cascade Columbia Dist. Company
P.O. Box 9247
Seattle, WA 98109-0247

CIDA
9045 SW Barbur Blvd. No. 4
Portland, Oregon 97219

Richard Vial
5285 SW Meadows Road, Suite 350
Lake Oswego, Oregon 97035

On March 10, 1993, the City Council of the City of Sherwood, Oregon decided to approve your application for a Site Plan to construct a chemical distribution warehouse.

The decision was based on the following major findings:

See Findings, Conclusions and Order for SP 92-7 and staff reports dated October 12, and November 24, 1992.

The following conditions were placed on approval of the application:

A. The following conditions shall be primarily administered by Tualatin Valley Fire and Rescue (TVFR), in consultation with the City:

1. Chemical Storage:

a. All chemical transfer activities shall be totally enclosed, except where the Tualatin Valley Fire and Rescue (TVFR) determines such enclosures will be detrimental to the public or facility safety. If TVFR cannot determine the appropriate course of conduct, an analysis shall be prepared by a qualified, independent consultant retained by the City, and paid for by the applicant, results of which shall be reviewed and approved by TVFR.

b. If the TVFR's annual review of the materials inventory list of all chemical substances stored on site is discontinued, the City may hire a qualified professional, at the applicant's expense, to annually review the inventory to ensure compliance with State requirements.

c. Empty chemical storage drums shall be separated and handled based on original contents in accordance with Fire Code material separation standards, to TVFR's satisfaction.

d. The facility site plan shall be amended to illustrate and designate empty drum storage areas. The facility shall be managed so that empty drums or other materials are not stored in parked trucks or empty trailers and are handled and stored in the same essential manner as full drums, subject to inspection by TVFR.

e. Storage and handling of all gaseous products are prohibited, except for those used incidentally in the routine operation and maintenance of the facility. Prior to the addition of any chemical products that are not within the same classification, as defined by Fire Code, of those products listed in the original approval, the applicant must obtain the permission of the City and TVFR.

f. A computerized chemical inventory system identifying and controlling chemical storage locations and volumes, and streamlining inspections, shall be installed and maintained. TVFR shall review and approve the system proposed for installation, and may conduct inventory inspections on an as needed basis.

2. Emergency Provisions

a. Proof shall be provided to TVFR that facility personnel are trained at First Responder Operator level as certified by Occupational Health and Safety (OSHA), and qualified at First Aid/CPR level.

b. An electronic surveillance system shall be provided to monitor all chemical storage activities and facility security by an Underwriters Laboratory (UL) approved central station regarding the operation and security of this facility. This system shall provide for monitoring of the retention areas, tank levels, and intrusion by unauthorized personnel during non-operating hours. Chemical sensing devices shall be installed to detect flammable air/chemical mixtures caused by ruptured drums

or other spill accidents, and to activate the alarm system. Provide sensing devices that will automatically activate fire suppression systems and contact the central station in the event of a fire. All electronic systems shall have battery back-up. Owner shall provide a plan for immediate response in the event of any alarm or intrusion. Alarm system and response program shall be reviewed and approved jointly by City Police, City staff, and TVFR.

c. On an annual basis, TVFR shall review and approve the facility's emergency response plan. If such service is discontinued, the City may annually hire, at the applicant's expense, a consultant to analyze the facility's emergency response equipment and materials program as required by State and local agencies responsible for monitoring safety.

d. Storm water containment areas shall be sized to handle rain fall from a six (6) day storm event of a ten (10) year storm intensity, plus contingency capacity accommodating the addition of fire suppression water to such flows. The specific sizing of containment areas shall be determined through consultation between TVFR and the applicant, to TVFR's satisfaction.

e. An emergency response plan that includes fire suppression devices, evacuation plans, and maximum protection for the environment and nearby residents shall be approved by the City and TVFR prior to issuance of any building permits. If sirens or other off-site warning devices are deemed appropriate, they shall be installed and maintained by the applicant. The emergency response plan shall include consultation with and recommendations from appropriate area health care providers. Subsequent to occupancy, modifications to the emergency response plan necessitated by changes to the facilities physical plant or operations shall be reviewed and approved by TVFR in consultation with the City.

f. Provide an all-weather emergency access road, separate from the main driveway access, to the rear of the site with its own exit onto a public street to the satisfaction of TVFR. If site or ownership restrictions make this impractical, re-site the facility as necessary to permit such secondary access.

B. The following conditions shall be primarily administered by the City, in consultation with other appropriate agencies:

1. Site Planning:

a. Roofing and skirting materials and siding, if necessary, shall be extended over covered storage areas, including Buildings B, C, and D, and the drumming area, to provide additional rain protection as approved by City staff.

b. The final approved site plan shall illustrate the specific use and functions of all buildings and tanks. Facilities identified as "future" on the site plan and not constructed as part of the initial building permit shall be subject to additional site plan review, and are not subject to this approval.

c. Comply with, and submit appropriate plans where required, all City site development standards including landscaping, off-street parking and loading, on-site circulation, on-site outdoor storage, lighting, and signage.

d. Native plant species shall be used in combination with the maximum feasible retention of existing trees and vegetation to create full sight-obscuring landscaped screening of the facility from Oregon Street, Tualatin-Sherwood Road and Rock Creek wetlands. A separate landscape plan achieving this end shall be submitted for the City's review and approval prior to issuance of any building permits.

e. Security fencing shall be provided around the entire perimeter of the facility inside the tree line, with the provision that fencing systems shall permit fire, police and other public safety personnel and equipment access in the case of emergency.

f. All storage buildings shall be sprinklered except for areas where chemicals are water reactive, and then other appropriate automatic fire suppression devices shall be installed.

2. Storm Water and Pollution Management

a. As required by the City and Unified Sewerage Agency (USA), a storm water pollution prevention plan specifying physical features, and operational practices and procedures, to contain and manage contamination incidents shall be provided.

b. All City and USA requirements and standards regarding water supply, erosion control, storm and sanitary sewers, and on-site water quality facilities shall be complied with.

c. The City shall review and approve the preliminary design of the storm water drainage/treatment systems to ensure protection of Rock Creek.

d. All facilities for the containment and treatment of chemical spills shall be designed and operated to be drained by pumping rather than through gravity feed valved systems.

e. Chemical storage and handling and truck parking areas shall be paved and underlaid by an impervious membrane to protect from spills and leakage. The entire paved surface is to be designed to drain into a central containment area, which shall include inspection port or ports to help detect any leakage through the paved surfaces.

f. All storm water and other discharges from areas defined in Condition B.2.e., excluding roof run-off, shall be discharged directly into the Rock Creek sanitary sewer after collection in containment areas and appropriate testing and treatment as defined by USA, and other appropriate agencies.

3. Roads and Transportation

a. A driveway access permit to Tualatin-Sherwood Road shall be obtained from Washington County.

b. A non-remonstrance agreement with Washington County and the City for future public improvements shall be executed and recorded.

c. Additional right-of-way shall be dedicated along the full frontage of Tax Lot 200:2S128C to provide Tualatin-Sherwood Road with a right-of-way width of 45 feet from center line.

d. A one-foot deep non-access reserve strip shall be recorded along the full frontage of Tax Lot 200:2S128C, except at the County approved driveway access.

e. Relocate the main driveway access onto Tualatin-Sherwood Road to a point approximately 200 feet east of the edge of the rail right-of-way to ensure eastbound double-trailer trucks can fully clear the rail line before having to begin to make turning movements, subject to City obtaining concurrence of the County.

f. Install an on-demand traffic signal on Tualatin-Sherwood Road for vehicles entering and exiting the facility, subject to City obtaining concurrence of the County. If the County does not concur within sixty (60) days, the issue shall be returned to the City Council for further consideration.

4. Generally:

a. Proof of compliance with all applicable Federal, State and local regulations shall be provided.

C. The following are general conditions of approval:

1. An annual site and facility inspection shall be conducted by TVFR or a qualified independent consultant retained by the City and paid by the applicant, as deemed appropriate, the results of which shall be reviewed by the TVFR and other appropriate agencies. The purpose of this inspection is to identify failures or potential failures in the structures, equipment, containment, and primary and secondary impervious layers and to ensure that no chemicals have escaped from the containment area by sampling the adjacent land and as appropriate. The inspection shall also review compliance with all other conditions of approval with recommendations for changes and improvements. The City may request more frequent inspections as needed.

2. Revise the site plan in accordance with all the preceding conditions and resubmit to the City staff for review and approval for compliance with those conditions.

3. To the extent that any of the conditions imposed herein conflict with the requirements of any oversight agency, including but not limited to Oregon Department of Environmental Quality, Environmental Protection Agency, and TVFR, any necessary changes shall be returned to the City for further review and approval.

Exhibit N: Pride Disposal Approval

Maria Miller

From: Kristen Tabscott <kTabscott@pridedisposal.com>
Sent: Tuesday, November 16, 2021 12:36 PM
To: Nye Underwood
Cc: Maria Miller; Steve Roper
Subject: RE: 14200 SW Tualatin Sherwood Rd - Trash Enclosure Access

Hello,

Thank you for reaching out. It appears according to the site plan that you are not making any changes near the existing trash location, and that the flow of traffic won't be affected at all, correct? If so, this will be fine.

Kristen Tabscott
EXECUTIVE ASSISTANT
–
Pride Disposal & Recycling Company
503-625-6177
pridedisposal.com
Follow the latest Pride news:
Facebook | Twitter | enewsletter

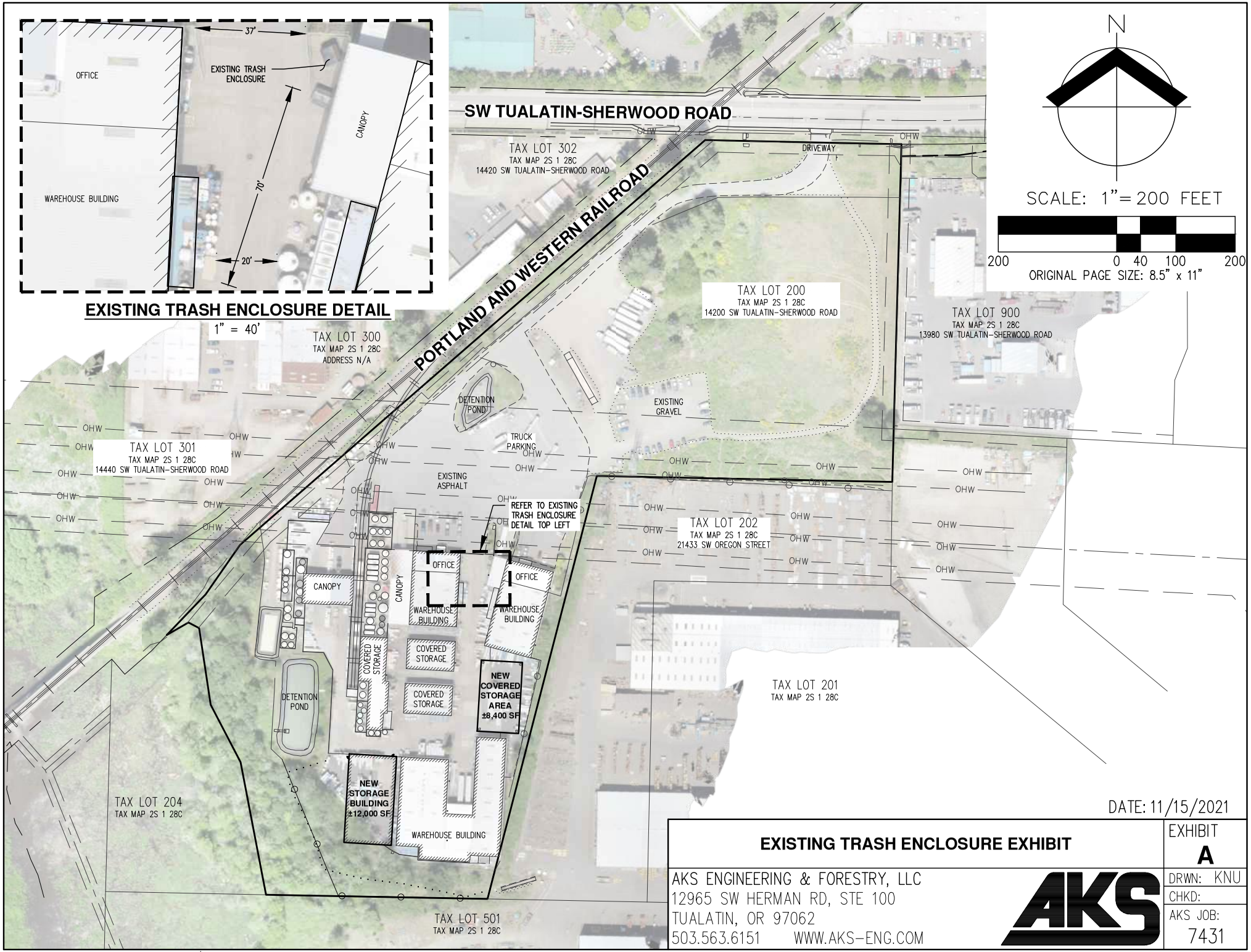
From: Nye Underwood <underwoodn@aks-eng.com>
Sent: Monday, November 15, 2021 12:50 PM
To: Kristen Tabscott <kTabscott@pridedisposal.com>
Cc: Maria Miller <mariam@aks-eng.com>; Steve Roper <ropers@aks-eng.com>
Subject: 14200 SW Tualatin Sherwood Rd - Trash Enclosure Access

Good afternoon, Kristen,

We're working on a project located at 14200 SW Tualatin-Sherwood Rd., Sherwood, OR that involves adding a new storage building and a new covered storage area to the existing industrial site. I'm reaching out as a precaution to confirm that the existing trash enclosure/service area will continue to be acceptable with Pride given the proposed improvements. Please find attached an exhibit of the project site showing the existing trash enclosure/service area as well as existing and proposed structures/buildings. Please let me know if you have any questions or concerns of the proposed improvements impacting Pride's ability to service this area.

Thank you,
Nye Underwood

AKS ENGINEERING & FORESTRY, LLC
12965 SW Herman Road, Suite 100 | Tualatin, OR 97062
P: 503.563.6151 Ext. 285 | www.aks-eng.com | underwoodn@aks-eng.com
Offices in: Bend, OR | Keizer, OR | Tualatin, OR | Vancouver, WA



DATE: 11/15/2021

EXISTING TRASH ENCLOSURE EXHIBIT	EXHIBIT A
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: KNU CHKD: AKS JOB: 7431

DWG: 7431 PRELIM SITE – TRASH ENCLOSURE | P07

Exhibit O: Preliminary Stormwater Report

Cascade Columbia Distribution Company
Sherwood, Oregon

Preliminary Stormwater Report

Date: May 27, 2022

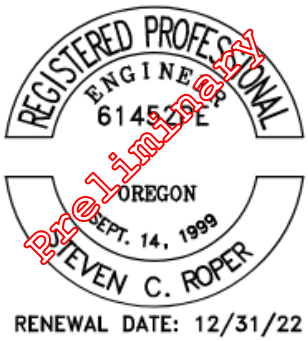
Client:
Cascade Columbia Distribution Company
14200 SW Tualatin-Sherwood Road
Sherwood, OR 97140

Engineering Contact:
Steve Roper, PE
503.563.6151 | ropers@aks-eng.com

Prepared By: Nye Underwood

Engineering Firm:
AKS Engineering & Forestry, LLC
12965 SW Herman Road
Suite 100
Tualatin, OR 97062

AKS Job Number: 7431



AKS ENGINEERING & FORESTRY

www.aks-eng.com

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Preliminary Stormwater Report
14200 SW TUALATIN-SHERWOOD ROAD
SHERWOOD, 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 site is located at 14200 SW Tualatin-Sherwood Road, Sherwood, OR 97140, encompassing approximately 16.93 acres (Tax Lot 200, Washington County Assessor's Map 2S 1 28C). The existing site has an industrial use with existing warehouses, office space, rail spur, and associated infrastructure for Cascade Columbia Distribution Company and Northstar Chemical Inc.

The proposed project will add a new covered storage area, new warehouse building, and associated site improvements to the existing site. The site improvements will include grading, underground utilities, paved parking areas, and stormwater facilities. Roof runoff generated by the new covered storage area and the new warehouse building will be conveyed to a new water quality manhole and detained in underground detention pipes prior to discharge to the existing drainage way (Rock Creek). Surface runoff from the new gravel area will sheet flow to the existing retention pond. Surface runoff from the new paved parking area will sheet flow to a new water quality catch basin where it will be directed to the existing drainage way (Rock Creek).

3.0 Regulatory Design Criteria

3.1. Stormwater Quantity

Per Clean Water Services' (CWS) *Design and Construction Standards* (R&O 07-20), *Section 4.02: Water Quantity Control Requirements for Conveyance Capacity*, on-site detention for conveyance capacity (25-year storm event) is required when any of the following conditions exist:

1. *There is an identified downstream deficiency and the District or City determines that detention rather than conveyance system enlargement is the more effective solution.*
2. *There is an identified regional detention site within the boundary of the development.*
3. *Water quantity facilities are required by District-adopted watershed management plans or adopted subbasin master plans.*

No downstream analysis has been conducted. There are no pre-defined deficiencies on the downstream path of runoff, so detention for the 25-year storm event is not required for the subject site based on the above criteria. See section 6.5. Downstream Drainage Conditions for more information.

3.2. Stormwater Hydromodification

Per Clean Water Services' (CWS) *Design and Construction Standards* (R&O 07-20), *Section 4.03: Water Quantity Control Requirements*, stormwater hydromodification is required unless the project meets any of the following criteria:

1. *The project results in the addition and/or modification of less than 12,000 square feet of impervious surface.*
2. *The project is located in an area with a District approved subbasin strategy with an identified regional stormwater management approach for hydromodification.*

Per the above requirements for CWS Hydromodification, the project doesn't meet the exceptions of criteria 1 or 2. After review of the Hydromodification Approach Project Category Table 4-2, the subject site is identified as Category 2. Therefore, the subject project will meet CWS hydromodification requirements by providing peak-flow matching detention, using the criteria established within CWS Section 4.08.6.

3.3. Stormwater Quality

Stormwater quality management for this project will be met by using one (1) Contech storm filter cartridge manhole and one (1) Contech storm filter cartridge catch basin designed per the requirements of *Clean Water Services' Design and Construction Standards* (R&O 07-20).

4.0 Design Methodology

The Santa Barbara Urban Hydrograph (SBUH) Method was used to analyze stormwater runoff from the site. This method utilizes the Natural Resource Conservation Service (NRCS) Type 1A 24-hour design storm. HydroCAD 10.0 computer software aided in the analysis. Representative runoff Curve Numbers (CN) were obtained from the NRCS *Urban Hydrology for Small Watersheds* (Technical Release 55), and are included in Appendix E.

5.0 Design Parameters

5.1. Design Storms

Per CWS requirements, the following rainfall intensities and durations were used in analyzing the existing and proposed stormwater facilities:

Table 5-1: Rainfall Intensities

Recurrence Interval (Years)	Storm Period (Hours)	Total Precipitation Depth (Inches)
WQ	4	0.36
2	24	2.50
5	24	3.10
10	24	3.45
25	24	3.90

5.2. Pre-Developed Site Conditions

5.2.1. Site Topography

Existing on-site grades generally vary from ±1% to ±144%, with the site draining towards the west (Rock Creek). The site has a high point of ±187 feet near the east property line and a low point of ±131 feet near the southwest property corner.

5.2.2. Storm System

The existing site consists of an industrial property with warehouses, office space, a rail spur, gravel and asphalt parking areas, open field space, and wooded areas, and it has three (3) separate onsite storm systems which are identified below.

1. The first system collects roof runoff from southern buildings and discharges runoff on the south end of the wooded slopes on the southwest property line, ultimately draining west to Rock Creek.
2. The second system collects runoff from inside warehouses and from multiple catch basins located on the surrounding hard surfaces near the warehouses. The runoff is conveyed to a retention pond on the west side of the property where the water quality is monitored prior to release. Water is then either discharged to the wooded slopes on the west property line and drains to Rock Creek, or it is discharged to the public sanitary sewer to the north, depending on water quality and volume of water being treated.
3. The third system collects roof runoff from the existing northern most buildings in addition to two (2) parking lot catch basins. This runoff is conveyed to and discharged on the north end of the wooded slope on the west property line and ultimately drains to Rock Creek.

5.3. Soil Type

The soil beneath the project site and associated drainage basins are classified as loams, silt loams, and stony silt loams according to the USDA Natural Resources Conservation Service (NRCS) Soil Survey for Washington County. The following table outlines the Hydrologic Soil Group rating for the soil types:

Table 5-2: Hydrologic Soil Groupings

NRCS Map Unit Identification	NRCS Soil Classification	Hydrologic Soil Group Rating
5B	Briedwell Stony Silt Loam	B
37A/B/D	Quatama Loam	C
2225A	Huberly Silt Loam	C/D

Further information on this soil type is included in the NRCS Soil Resource Report located in Appendix D of this report.

5.4. Post-Developed Site Conditions

5.4.1. Site Topography

The southern on-site slopes will be modified with cuts and fills to accommodate the construction of the new warehouse building, associated gravel area, and paved parking area. The remainder of the proposed site grading will not significantly change from the existing site topography.

5.4.2. Storm System

The post-developed storm system will make minor modifications to the first, second, and third existing storm systems described in section 5.2.2. Modifications to the first storm system involve tying in roof runoff from the new covered storage area and the new warehouse building, adding a Contech storm filter cartridge manhole at the point of confluence for the system, adding an underground detention pipe, adding a flow control manhole, and extending the outlet location further west down the wooded slope on the southwest property line where an outlet protection stilling basin will be constructed to minimize erosion. The second storm system will remain in its existing condition, except surface runoff from the new gravel area will sheet flow to the existing retention pond. The third storm system will have an existing catch basin replaced with a Contech storm filter cartridge catch basin, and surface runoff from the new paved parking area will sheet flow to the new catch basin.

5.4.3. Post-Developed Site Parameters

Appendices A and B provide HydroCAD reports and input parameters that were generated for the analyzed storm events with respect to the drainage basins contributing to the redeveloped site. These reports include all the parameters (e.g., impervious/pervious areas, time of concentration, etc.) used to model the site hydrology.

5.4.4. Description of Off-Site Contributing Basins

The adjacent site to the east of the subject property discharges runoff to the southeast corner of the subject property. The proposed improvements include the addition of an area drain to pick up offsite run-on from the adjacent site and direct it to the proposed outlet protection stilling basin at the southwest corner. No changes in run-off quantity from the adjacent site are anticipated with this development.

6.0 Stormwater Analyses

6.1. Proposed Stormwater Conduit Sizing

The proposed storm pipes will be sized to meet CWS sizing requirements using Manning's equation to convey the peak flows from the 25-year storm event.

6.2. Proposed Stormwater Quality Management

This project is comprised of new development and redevelopment. Therefore, per Clean Water Services' (CWS) *Design and Construction Standards Manual for Sanitary Sewer and Surface Water Management (R&O 19-5)*, Section 4.08 Stormwater Management Approach Sizing, the impervious area requiring treatment is defined as: *Area = New Imp. + 3(Modified Imp. - Permanently Removed Imp.); up to the total existing site impervious area.* The impervious areas are summarized below in Table 6-1:

Table 6-1: Impervious Area Summary

New Impervious Area (Sq. Ft.)	Modified Impervious Area (Sq. Ft.)	Area Required to be Treated (Sq. Ft.)
±33,859	±15,734	±81,061

To provide onsite water quality treatment, a Contech storm filter manhole and a Contech storm filter catch basin have been designed per Clean Water Services Design and Construction Standards for Sanitary Sewer and Surface Water Management (R&O 19-05). Table 6-2 below summarizes the water quality flows and required number of filters for the structures.

Table 6-2: Storm Filter Sizing

Stormwater Structure	Water Quality Flow (CFS)	Contech Storm Filter Media Type	Storm Filter Height (Inches)	Maximum Allowable Flow Rate (CFS)	Required Number of Filters
Manhole	0.132	ZPG	27	0.05	3
Catch Basin	0.110	ZPG	27	0.05	3

6.3. Stormwater Hydromodification Management

The proposed project will generate and redevelop approximately 49,593 square feet of impervious area, thus classifying as a Medium Project. Per CWS Hydromod Planning Tool, the subject site is located within a developed region, discharging into a low risk level existing stream. Based on these parameters and CWS Table 4-2, the subject site is within Category 2 Hydromodification approach.

Per CWS Category 2, the subject site will provide peak-flow matching detention, using design criteria in CWS Section 4.08.6, and evaluating areas per CWS Section 4.08. Specifically, the subject site's post-developed 2, 5, and 10-year storm event runoff flows will match the site's existing 50% of 2, 5, and 10-year storm event runoff flows. The stormwater runoff flow comparisons will be evaluated taking into consideration the undisturbed site.

6.4. Stormwater Quantity Control Facility Design

The proposed project provides stormwater quantity management by utilizing storm chambers designed per CWS standards. The following table outlines the results of the detention facility outflow which limits the post-development peak flows to equal to or less than the allowable existing peak flows for each storm event, as outlined within CWS stormwater detention and hydromodification management requirements.

Table 6-3: Existing and Post Developed Flows

Recurrence Interval (Years)	Existing Peak Flows (CFS)	Detained Post-Development Peak Flows (CFS)	Peak Flow Increase or (Decrease) – (CFS)
2	4.04*	3.97	(0.07)
5	5.44	5.36	(0.08)
10	6.28	6.21	(0.07)
25	7.44	7.77	0.33

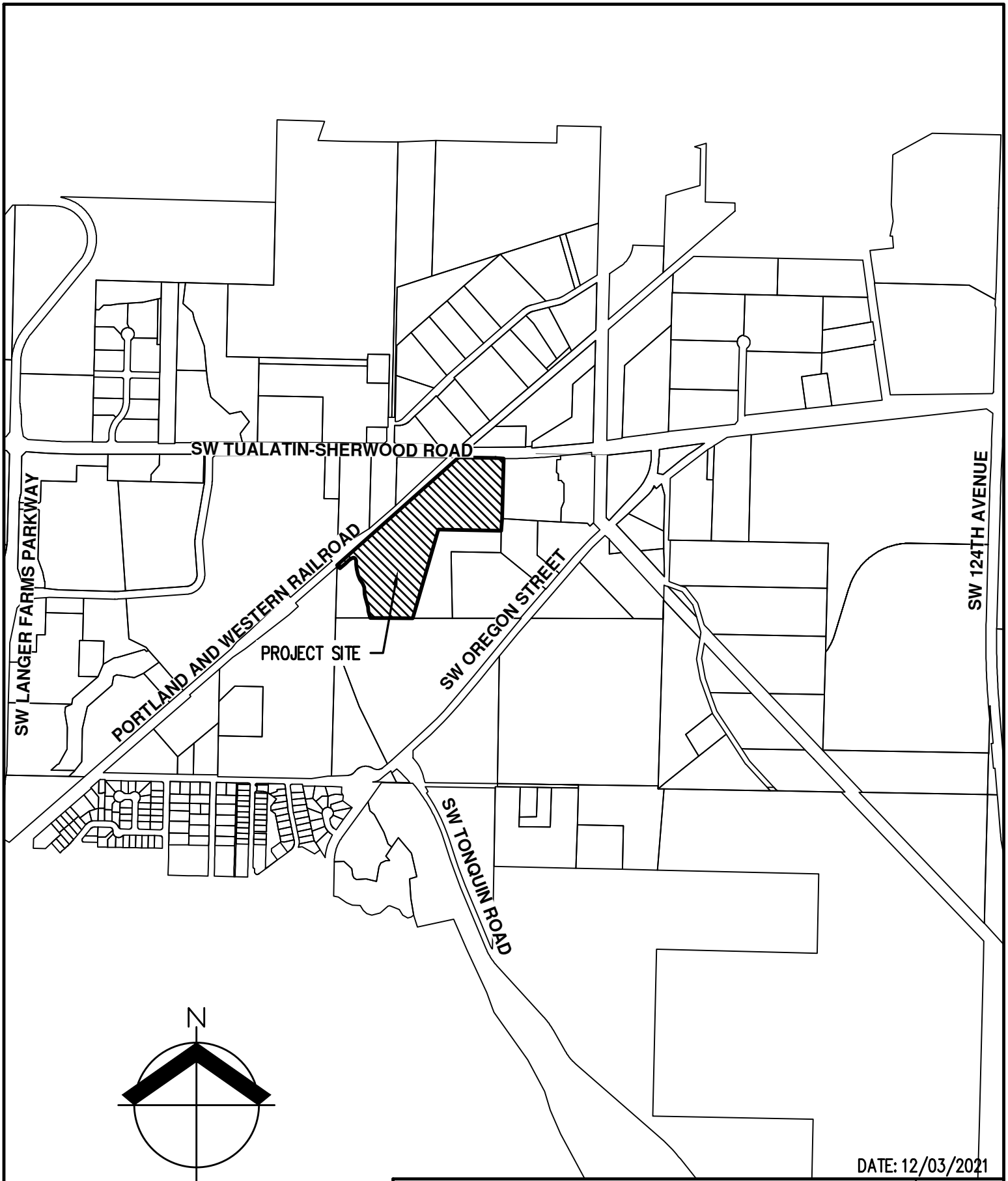
*Presented peak flows determined by subtracting 50% of link 2T (existing areas to be developed and redeveloped) peak flows from link 3T – total existing site condition flow.

The flow control manhole and detention chamber system have been designed per CWS requirements to have a minimum 1-foot freeboard from the top of the manhole during the 25-year storm event. The proposed stormwater facility has sufficient capacity to detain the required post-developed site flows to the allowable existing site flows and meets the requirements established by Clean Water Service's Design and Construction for Sanitary Sewer and Surface Water Management Manual (R&O 19-05).

6.5. Downstream Drainage Conditions

Runoff from the project site discharges to Rock Creek to the west, which flows freely under the railroad trestle bridge to the north. It then flows through a large box culvert under SW Tualatin-Sherwood road, travels roughly a mile through grassy floodplains, under a bridge on Pacific Highway 99 W, and then another half mile to join the Tualatin River. There are no pre-defined deficiencies of the drainage system on the downstream path of runoff.

Figure 1: Vicinity Map



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ORIGINAL PAGE SIZE: 8.5" x 11"

DATE: 12/03/2021

VICINITY MAP

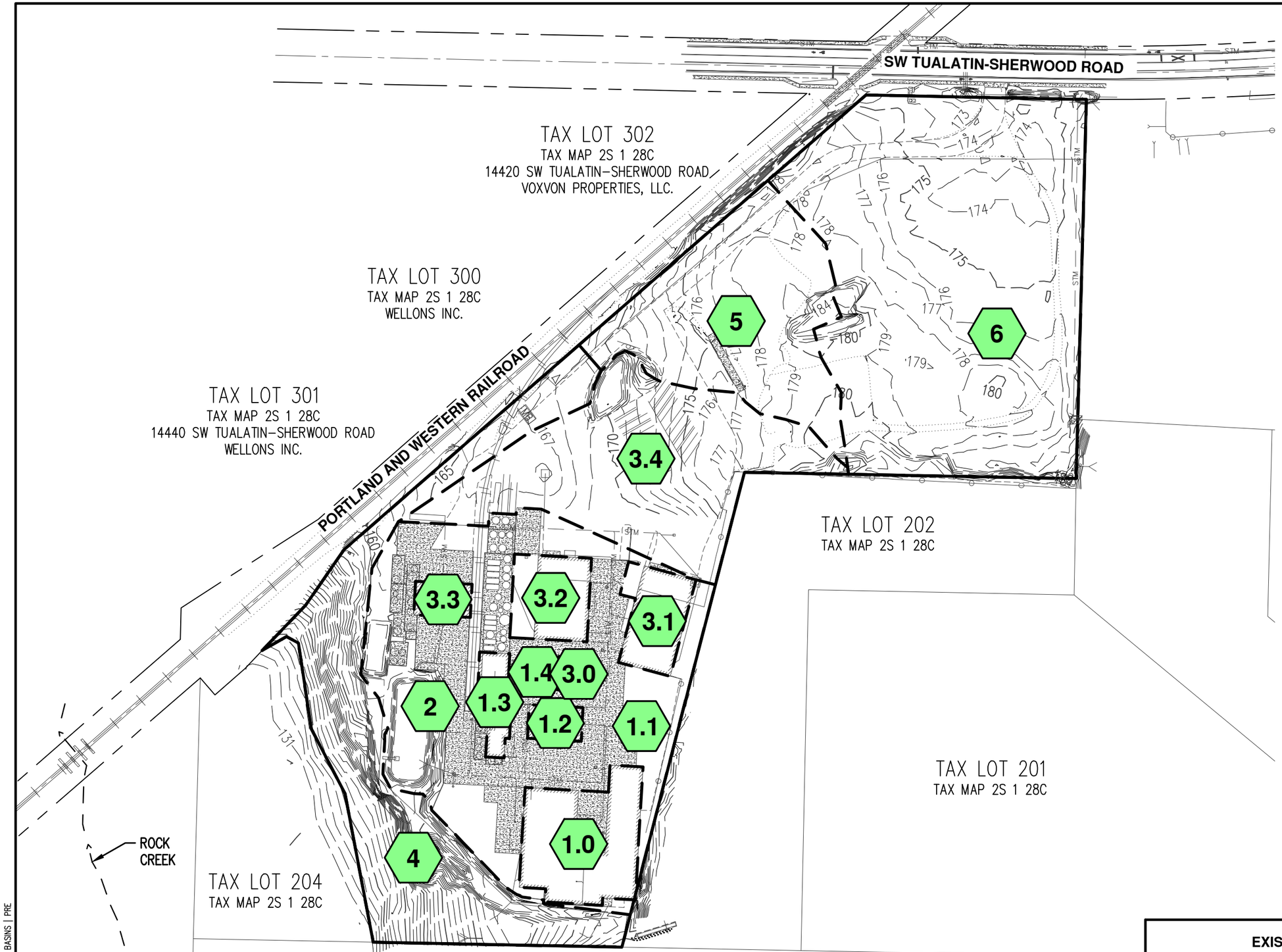
FIGURE 1

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: KNU
CHKD: SR
AKS JOB: 7431

DWG: 7431 VICINITY | P01

Figure 2: Existing Basin Delineation



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CATCHMENT SUMMARY

CATCHMENT 1:
HSG: B AND C
IMPERVIOUS AREA (EXISTING): 44,038 SF

CATCHMENT 2:
HSG: B AND C
IMPERVIOUS AREA (EXISTING): 135,996 SF
PERVIOUS AREA: 16,807 SF

CATCHMENT 3:
HSG: B AND C
IMPERVIOUS AREA (EXISTING): 121,474 SF
PERVIOUS AREA: 11,038 SF

CATCHMENT 4:
HSG: B
IMPERVIOUS AREA (EXISTING): 15,425 SF
PERVIOUS AREA: 90,095 SF

CATCHMENT 5:
HSG: C
IMPERVIOUS AREA (EXISTING): 56,681 SF
PERVIOUS AREA: 24,888 SF

CATCHMENT 6:
HSG: C AND C/D
IMPERVIOUS AREA (EXISTING): 24,845 SF
PERVIOUS AREA: 196,215 SF

DATE: 05/25/2022

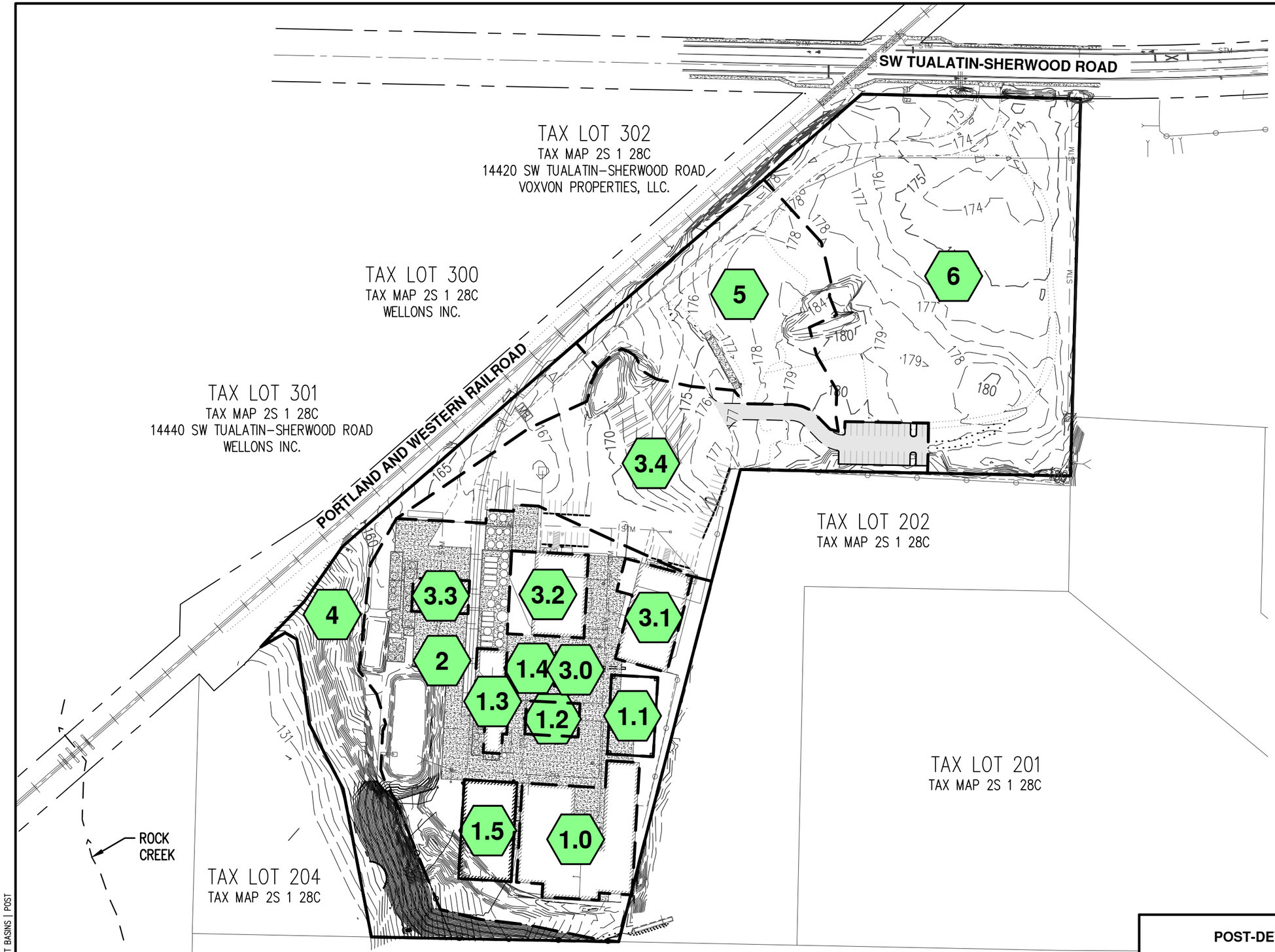
EXISTING BASIN DELINEATION	FIGURE
14200 SW TUALATIN-SHERWOOD ROAD	2

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: KNU
CHKD: SR
AKS JOB: 7431

DWG: 7431 20220523 POST BASINS | PRE

Figure 3: Post-Developed Basin Delineation



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SCALE: 1"=100 FEET

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ORIGINAL PAGE SIZE: 22" x 34"

CATCHMENT SUMMARY

CATCHMENT 1:
- HSG: B AND C
- IMPERVIOUS AREA (EXISTING): 51,131 SF
- IMPERVIOUS AREA (MODIFIED): 10,052 SF
- IMPERVIOUS AREA (NEW): 1,948 SF

CATCHMENT 2:
- HSG: B AND C
- IMPERVIOUS AREA (EXISTING): 118,851 SF
- IMPERVIOUS AREA (NEW): 23,047 SF
- PERVIOUS AREA: 16,831 SF

CATCHMENT 3:
- HSG: B AND C
- IMPERVIOUS AREA (EXISTING): 115,940 SF
- IMPERVIOUS AREA (MODIFIED): 5,682 SF
- IMPERVIOUS AREA (NEW): 7,556 SF
- PERVIOUS AREA: 16,565 SF

CATCHMENT 4:
- HSG: B
- IMPERVIOUS AREA (EXISTING): 15,425 SF
- PERVIOUS AREA: 65,076 SF

CATCHMENT 5:
HSG: C
- IMPERVIOUS AREA (EXISTING): 54,074 SF
- PERVIOUS AREA: 24,076 SF

CATCHMENT 6:
HSG: C AND C/D
- IMPERVIOUS AREA (EXISTING): 23,580 SF
- IMPERVIOUS AREA (NEW): 1,308 SF
- PERVIOUS AREA: 186,360 SF

DATE: 05/25/2022

POST-DEVELOPED BASIN DELINEATION

14200 SW TUALATIN-SHERWOOD ROAD

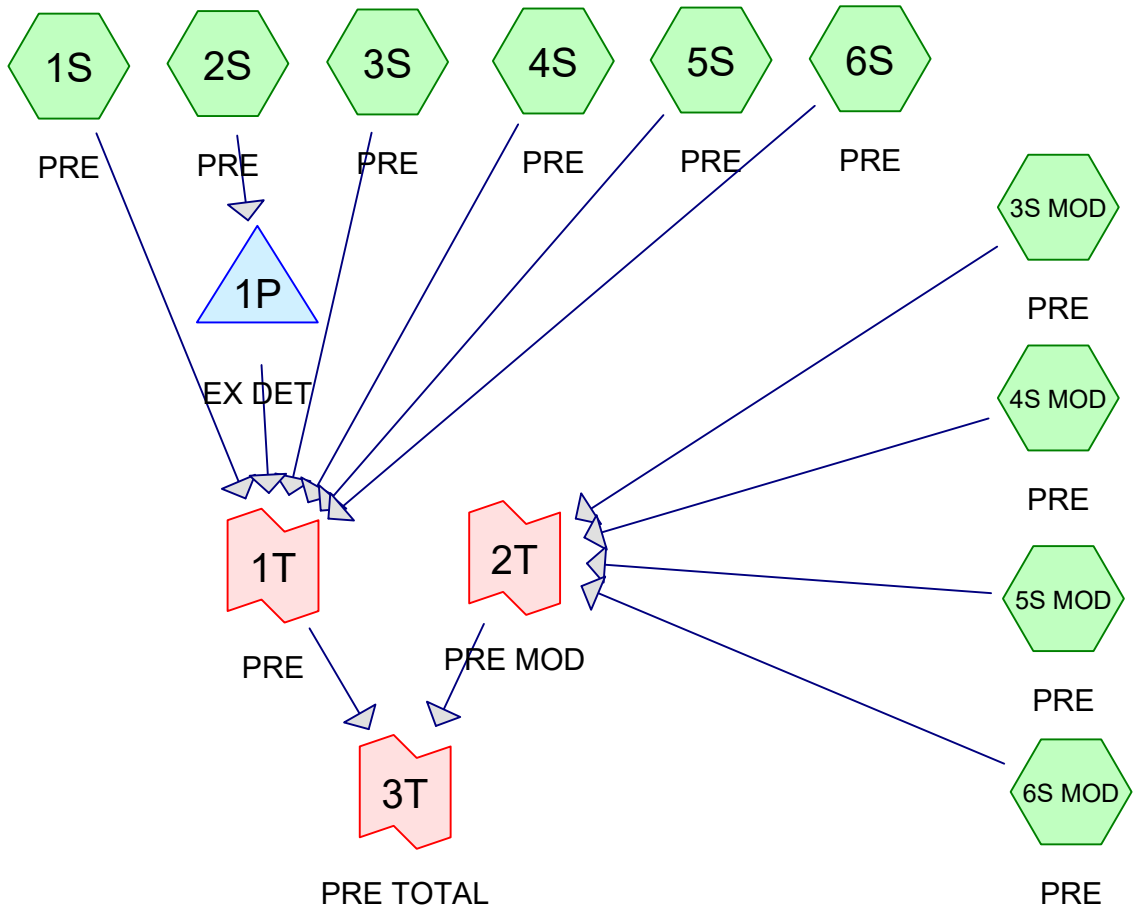
FIGURE 3

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: KNU
CHKD: SR
AKS JOB: 7431

DWG: 7431 20220523 POST BASINS | POST

Appendix A: HydroCAD Reports for Existing Condition Storm Events



Subcat Reach Pond Link

Routing Diagram for 7431 Stormwater Model
Prepared by AKS Engineering & Forestry, Printed 5/27/2022

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.386	69	50-75% Grass cover, Fair, HSG B (2S)
5.242	79	50-75% Grass cover, Fair, HSG C (3S, 3S MOD, 5S, 5S MOD, 6S, 6S MOD)
8.873	98	IMPERVIOUS EXISTING (1S, 2S, 3S, 4S, 5S, 6S)
0.361	75	IMPERVIOUS MODIFIED (2S, 3S MOD, 5S MOD, 6S MOD)
2.068	60	Woods, Fair, HSG B (4S, 4S MOD)
16.931	**86**	**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE Runoff Area=44,038 sf 100.00% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=0/98 Runoff=0.583 cfs 0.191 af

Subcatchment2S: PRE Runoff Area=152,803 sf 82.42% Impervious Runoff Depth=1.96"
Tc=5.0 min CN=71/98 Runoff=1.689 cfs 0.572 af

Subcatchment3S: PRE Runoff Area=130,598 sf 91.56% Impervious Runoff Depth=2.15"
Tc=5.0 min CN=79/98 Runoff=1.620 cfs 0.537 af

Subcatchment3S MOD: PRE Runoff Area=1,914 sf 0.00% Impervious Runoff Depth=0.65"
Tc=5.0 min CN=75/0 Runoff=0.004 cfs 0.002 af

Subcatchment4S: PRE Runoff Area=80,525 sf 19.16% Impervious Runoff Depth=0.58"
Flow Length=597' Tc=7.9 min CN=60/98 Runoff=0.198 cfs 0.089 af

Subcatchment4S MOD: PRE Runoff Area=24,995 sf 0.00% Impervious Runoff Depth=0.17"
Flow Length=597' Tc=7.9 min CN=60/0 Runoff=0.008 cfs 0.008 af

Subcatchment5S: PRE Runoff Area=78,376 sf 72.32% Impervious Runoff Depth=1.87"
Tc=5.0 min CN=79/98 Runoff=0.825 cfs 0.281 af

Subcatchment5S MOD: PRE Runoff Area=3,193 sf 0.00% Impervious Runoff Depth=0.69"
Tc=5.0 min CN=76/0 Runoff=0.009 cfs 0.004 af

Subcatchment6S: PRE Runoff Area=211,621 sf 11.74% Impervious Runoff Depth=1.01"
Flow Length=701' Tc=15.0 min CN=79/98 Runoff=0.864 cfs 0.407 af

Subcatchment6S MOD: PRE Runoff Area=9,439 sf 0.00% Impervious Runoff Depth=0.79"
Flow Length=701' Tc=15.0 min CN=78/0 Runoff=0.026 cfs 0.014 af

Pond 1P: EX DET Peak Elev=152.93' Storage=24,932 cf Inflow=1.689 cfs 0.572 af
Outflow=0.000 cfs 0.000 af

Link 1T: PRE Inflow=4.026 cfs 1.505 af
Primary=4.026 cfs 1.505 af

Link 2T: PRE MOD Inflow=0.039 cfs 0.029 af
Primary=0.039 cfs 0.029 af

Link 3T: PRE TOTAL Inflow=4.063 cfs 1.534 af
Primary=4.063 cfs 1.534 af

Total Runoff Area = 16.931 ac Runoff Volume = 2.107 af Average Runoff Depth = 1.49"
47.59% Pervious = 8.058 ac 52.41% Impervious = 8.873 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE Runoff Area=44,038 sf 100.00% Impervious Runoff Depth=2.87"
Tc=5.0 min CN=0/98 Runoff=0.730 cfs 0.242 af

Subcatchment2S: PRE Runoff Area=152,803 sf 82.42% Impervious Runoff Depth=2.51"
Tc=5.0 min CN=71/98 Runoff=2.159 cfs 0.733 af

Subcatchment3S: PRE Runoff Area=130,598 sf 91.56% Impervious Runoff Depth=2.73"
Tc=5.0 min CN=79/98 Runoff=2.049 cfs 0.683 af

Subcatchment3S MOD: PRE Runoff Area=1,914 sf 0.00% Impervious Runoff Depth=1.03"
Tc=5.0 min CN=75/0 Runoff=0.009 cfs 0.004 af

Subcatchment4S: PRE Runoff Area=80,525 sf 19.16% Impervious Runoff Depth=0.85"
Flow Length=597' Tc=7.9 min CN=60/98 Runoff=0.249 cfs 0.131 af

Subcatchment4S MOD: PRE Runoff Area=24,995 sf 0.00% Impervious Runoff Depth=0.37"
Flow Length=597' Tc=7.9 min CN=60/0 Runoff=0.015 cfs 0.018 af

Subcatchment5S: PRE Runoff Area=78,376 sf 72.32% Impervious Runoff Depth=2.42"
Tc=5.0 min CN=79/98 Runoff=1.070 cfs 0.363 af

Subcatchment5S MOD: PRE Runoff Area=3,193 sf 0.00% Impervious Runoff Depth=1.08"
Tc=5.0 min CN=76/0 Runoff=0.016 cfs 0.007 af

Subcatchment6S: PRE Runoff Area=211,621 sf 11.74% Impervious Runoff Depth=1.45"
Flow Length=701' Tc=15.0 min CN=79/98 Runoff=1.356 cfs 0.587 af

Subcatchment6S MOD: PRE Runoff Area=9,439 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=701' Tc=15.0 min CN=78/0 Runoff=0.046 cfs 0.022 af

Pond 1P: EX DET Peak Elev=153.92' Storage=31,931 cf Inflow=2.159 cfs 0.733 af
Outflow=0.000 cfs 0.000 af

Link 1T: PRE Inflow=5.368 cfs 2.006 af
Primary=5.368 cfs 2.006 af

Link 2T: PRE MOD Inflow=0.070 cfs 0.050 af
Primary=0.070 cfs 0.050 af

Link 3T: PRE TOTAL Inflow=5.435 cfs 2.055 af
Primary=5.435 cfs 2.055 af

Total Runoff Area = 16.931 ac Runoff Volume = 2.788 af Average Runoff Depth = 1.98"
47.59% Pervious = 8.058 ac 52.41% Impervious = 8.873 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE Runoff Area=44,038 sf 100.00% Impervious Runoff Depth=3.22"
Tc=5.0 min CN=0/98 Runoff=0.816 cfs 0.271 af

Subcatchment2S: PRE Runoff Area=152,803 sf 82.42% Impervious Runoff Depth=2.83"
Tc=5.0 min CN=71/98 Runoff=2.437 cfs 0.828 af

Subcatchment3S: PRE Runoff Area=130,598 sf 91.56% Impervious Runoff Depth=3.07"
Tc=5.0 min CN=79/98 Runoff=2.300 cfs 0.768 af

Subcatchment3S MOD: PRE Runoff Area=1,914 sf 0.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=75/0 Runoff=0.011 cfs 0.005 af

Subcatchment4S: PRE Runoff Area=80,525 sf 19.16% Impervious Runoff Depth=1.03"
Flow Length=597' Tc=7.9 min CN=60/98 Runoff=0.294 cfs 0.158 af

Subcatchment4S MOD: PRE Runoff Area=24,995 sf 0.00% Impervious Runoff Depth=0.51"
Flow Length=597' Tc=7.9 min CN=60/0 Runoff=0.020 cfs 0.024 af

Subcatchment5S: PRE Runoff Area=78,376 sf 72.32% Impervious Runoff Depth=2.75"
Tc=5.0 min CN=79/98 Runoff=1.215 cfs 0.412 af

Subcatchment5S MOD: PRE Runoff Area=3,193 sf 0.00% Impervious Runoff Depth=1.33"
Tc=5.0 min CN=76/0 Runoff=0.020 cfs 0.008 af

Subcatchment6S: PRE Runoff Area=211,621 sf 11.74% Impervious Runoff Depth=1.73"
Flow Length=701' Tc=15.0 min CN=79/98 Runoff=1.665 cfs 0.699 af

Subcatchment6S MOD: PRE Runoff Area=9,439 sf 0.00% Impervious Runoff Depth=1.46"
Flow Length=701' Tc=15.0 min CN=78/0 Runoff=0.059 cfs 0.026 af

Pond 1P: EX DET Peak Elev=154.46' Storage=36,070 cf Inflow=2.437 cfs 0.828 af
Outflow=0.000 cfs 0.000 af

Link 1T: PRE Inflow=6.185 cfs 2.308 af
Primary=6.185 cfs 2.308 af

Link 2T: PRE MOD Inflow=0.098 cfs 0.064 af
Primary=0.098 cfs 0.064 af

Link 3T: PRE TOTAL Inflow=6.277 cfs 2.372 af
Primary=6.277 cfs 2.372 af

Total Runoff Area = 16.931 ac Runoff Volume = 3.200 af Average Runoff Depth = 2.27"
47.59% Pervious = 8.058 ac 52.41% Impervious = 8.873 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE Runoff Area=44,038 sf 100.00% Impervious Runoff Depth=3.67"
Tc=5.0 min CN=0/98 Runoff=0.926 cfs 0.309 af

Subcatchment2S: PRE Runoff Area=152,803 sf 82.42% Impervious Runoff Depth=3.25"
Tc=5.0 min CN=71/98 Runoff=2.797 cfs 0.951 af

Subcatchment3S: PRE Runoff Area=130,598 sf 91.56% Impervious Runoff Depth=3.51"
Tc=5.0 min CN=79/98 Runoff=2.622 cfs 0.878 af

Subcatchment3S MOD: PRE Runoff Area=1,914 sf 0.00% Impervious Runoff Depth=1.59"
Tc=5.0 min CN=75/0 Runoff=0.015 cfs 0.006 af

Subcatchment4S: PRE Runoff Area=80,525 sf 19.16% Impervious Runoff Depth=1.28"
Flow Length=597' Tc=7.9 min CN=60/98 Runoff=0.391 cfs 0.197 af

Subcatchment4S MOD: PRE Runoff Area=24,995 sf 0.00% Impervious Runoff Depth=0.71"
Flow Length=597' Tc=7.9 min CN=60/0 Runoff=0.031 cfs 0.034 af

Subcatchment5S: PRE Runoff Area=78,376 sf 72.32% Impervious Runoff Depth=3.17"
Tc=5.0 min CN=79/98 Runoff=1.403 cfs 0.476 af

Subcatchment5S MOD: PRE Runoff Area=3,193 sf 0.00% Impervious Runoff Depth=1.66"
Tc=5.0 min CN=76/0 Runoff=0.027 cfs 0.010 af

Subcatchment6S: PRE Runoff Area=211,621 sf 11.74% Impervious Runoff Depth=2.09"
Flow Length=701' Tc=15.0 min CN=79/98 Runoff=2.080 cfs 0.847 af

Subcatchment6S MOD: PRE Runoff Area=9,439 sf 0.00% Impervious Runoff Depth=1.81"
Flow Length=701' Tc=15.0 min CN=78/0 Runoff=0.077 cfs 0.033 af

Pond 1P: EX DET Peak Elev=155.12' Storage=41,437 cf Inflow=2.797 cfs 0.951 af
Outflow=0.000 cfs 0.000 af

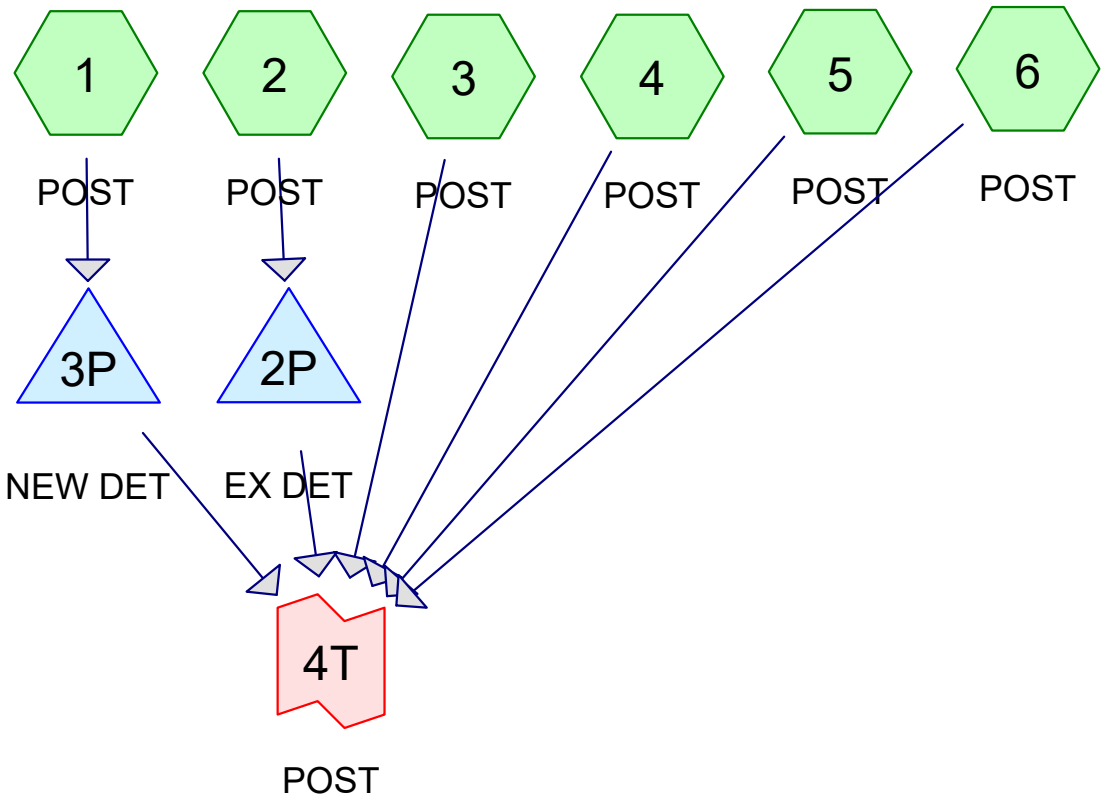
Link 1T: PRE Inflow=7.299 cfs 2.706 af
Primary=7.299 cfs 2.706 af

Link 2T: PRE MOD Inflow=0.149 cfs 0.083 af
Primary=0.149 cfs 0.083 af

Link 3T: PRE TOTAL Inflow=7.441 cfs 2.789 af
Primary=7.441 cfs 2.789 af

Total Runoff Area = 16.931 ac Runoff Volume = 3.741 af Average Runoff Depth = 2.65"
47.59% Pervious = 8.058 ac 52.41% Impervious = 8.873 ac

Appendix B: HydroCAD Reports for Post-Developed Condition Storm Events



Subcat Reach Pond Link

Routing Diagram for 7431 Stormwater Model
Prepared by AKS Engineering & Forestry, Printed 5/27/2022

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.386	69	50-75% Grass cover, Fair, HSG B (2)
5.211	79	50-75% Grass cover, Fair, HSG C (3, 5, 6)
8.701	98	IMPERVIOUS EXISTING (1, 2, 3, 4, 5, 6)
0.130	98	IMPERVIOUS MODIFIED (3)
0.777	98	IMPERVIOUS NEW (1, 2, 3, 6)
0.231	98	IMPEVIOUS MODIFIED (1)
1.494	60	Woods, Fair, HSG B (4)
16.931	**88**	**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: POST Runoff Area=63,131 sf 100.00% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=0/98 Runoff=0.835 cfs 0.274 af

Subcatchment2: POST Runoff Area=158,729 sf 89.40% Impervious Runoff Depth=2.07"
Tc=5.0 min CN=69/98 Runoff=1.883 cfs 0.630 af

Subcatchment3: POST Runoff Area=145,743 sf 88.63% Impervious Runoff Depth=2.11"
Tc=5.0 min CN=79/98 Runoff=1.766 cfs 0.588 af

Subcatchment4: POST Runoff Area=80,501 sf 19.16% Impervious Runoff Depth=0.58"
Flow Length=597' Tc=7.9 min CN=60/98 Runoff=0.198 cfs 0.089 af

Subcatchment5: POST Runoff Area=78,150 sf 69.19% Impervious Runoff Depth=1.83"
Tc=5.0 min CN=79/98 Runoff=0.799 cfs 0.273 af

Subcatchment6: POST Runoff Area=211,248 sf 11.78% Impervious Runoff Depth=1.01"
Flow Length=701' Tc=15.0 min CN=79/98 Runoff=0.864 cfs 0.407 af

Pond 2P: EX DET Peak Elev=153.29' Storage=27,441 cf Inflow=1.883 cfs 0.630 af
Outflow=0.000 cfs 0.000 af

Pond 3P: NEW DET Peak Elev=157.35' Storage=0.025 af Inflow=0.835 cfs 0.274 af
Outflow=0.438 cfs 0.274 af

Link 4T: POST Inflow=3.973 cfs 1.631 af
Primary=3.973 cfs 1.631 af

Total Runoff Area = 16.931 ac Runoff Volume = 2.261 af Average Runoff Depth = 1.60"
41.89% Pervious = 7.092 ac 58.11% Impervious = 9.839 ac

Summary for Pond 2P: EX DET

Inflow Area = 3.644 ac, 89.40% Impervious, Inflow Depth = 2.07" for CWS 2YR event
Inflow = 1.883 cfs @ 7.89 hrs, Volume= 0.630 af
Outflow = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 153.29' @ 26.23 hrs Surf.Area= 6,995 sf Storage= 27,441 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

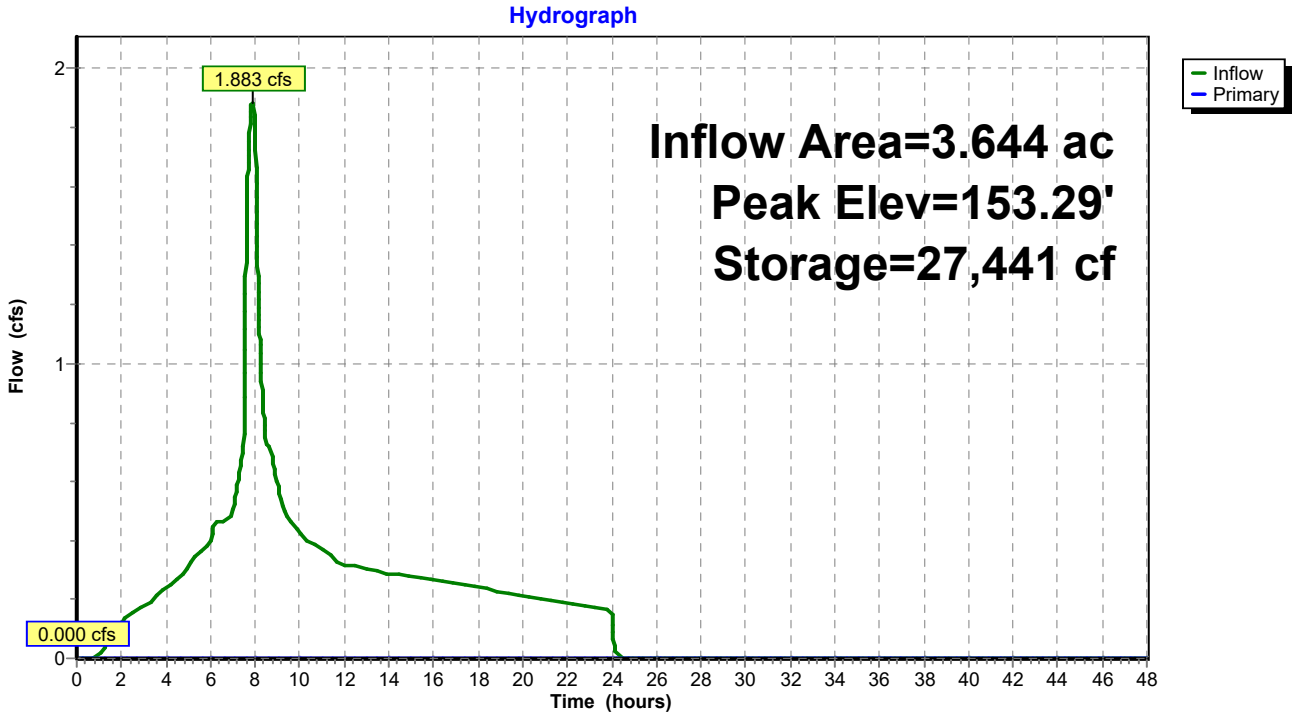
Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	58,427 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
148.00	3,486	298.0	0	0	3,486
149.00	4,096	311.0	3,787	3,787	4,186
150.00	4,732	324.0	4,410	8,197	4,915
151.00	5,393	337.0	5,059	13,256	5,675
152.00	6,080	350.0	5,733	18,989	6,464
153.00	6,793	363.0	6,433	25,422	7,283
154.00	7,495	376.0	7,141	32,563	8,133
155.00	8,225	389.0	7,857	40,421	9,012
156.00	8,988	402.0	8,604	49,024	9,920
157.00	9,823	415.0	9,402	58,427	10,859

Device	Routing	Invert	Outlet Devices		
#1	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#2	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#3	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#4	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=0.000 cfs @ 0.00 hrs HW=148.00' TW=0.00' (Dynamic Tailwater)
- **1=Orifice/Grate** (Controls 0.000 cfs)
- **2=Orifice/Grate** (Controls 0.000 cfs)
- **3=Orifice/Grate** (Controls 0.000 cfs)
- **4=Orifice/Grate** (Controls 0.000 cfs)

Pond 2P: EX DET



Summary for Pond 3P: NEW DET

Inflow Area = 1.449 ac,100.00% Impervious, Inflow Depth = 2.27" for CWS 2YR event
Inflow = 0.835 cfs @ 7.88 hrs, Volume= 0.274 af
Outflow = 0.438 cfs @ 8.26 hrs, Volume= 0.274 af, Atten= 48%, Lag= 22.7 min
Primary = 0.438 cfs @ 8.26 hrs, Volume= 0.274 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 157.35' @ 8.26 hrs Surf.Area= 0.013 ac Storage= 0.025 af

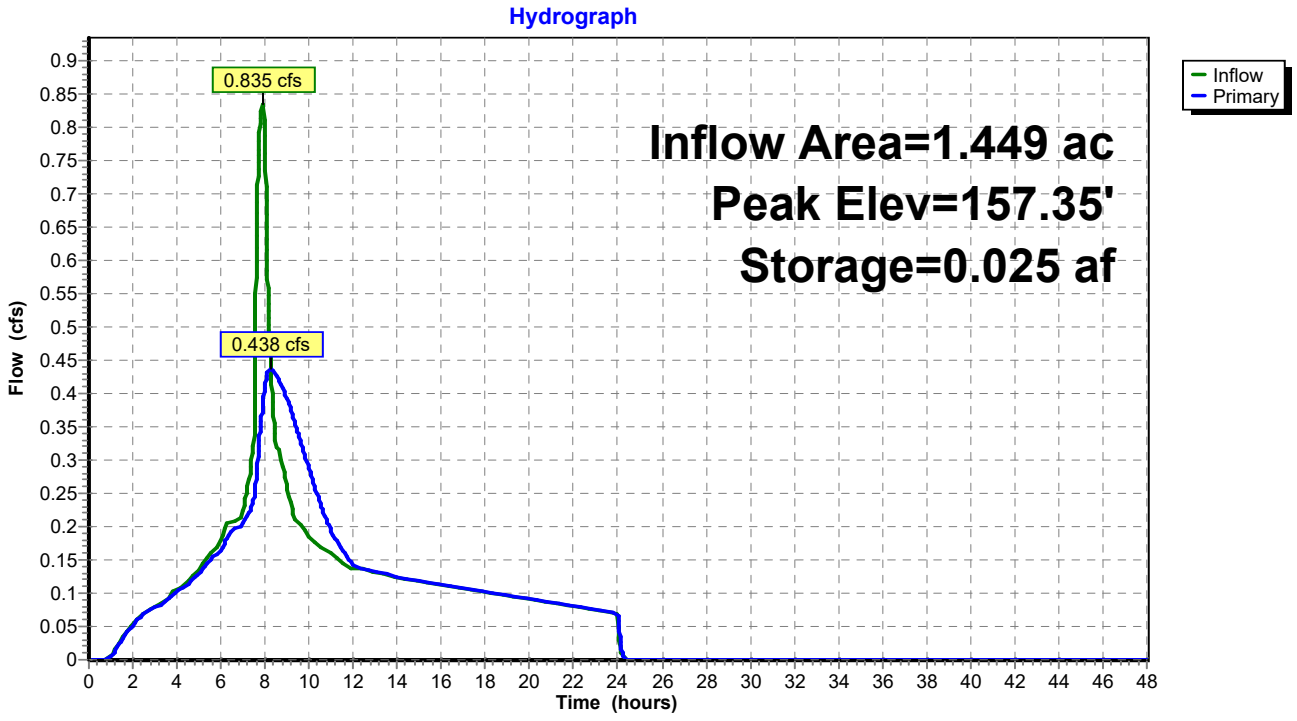
Plug-Flow detention time= 13.2 min calculated for 0.274 af (100% of inflow)
Center-of-Mass det. time= 13.2 min (685.8 - 672.6)

Volume	Invert	Avail.Storage	Storage Description
#1	155.00'	0.040 af	**48.0" Round Pipe Storage** L= 140.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	**3.3" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	157.35'	**2.6" Vert. Orifice/Grate** C= 0.600
#3	Primary	158.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.438 cfs @ 8.26 hrs HW=157.35' TW=0.00' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.438 cfs @ 7.38 fps)
- **2=Orifice/Grate** (Controls 0.000 cfs)
- **3=Orifice/Grate** (Controls 0.000 cfs)

Pond 3P: NEW DET



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: POST Runoff Area=63,131 sf 100.00% Impervious Runoff Depth=2.87"
Tc=5.0 min CN=0/98 Runoff=1.047 cfs 0.346 af

Subcatchment2: POST Runoff Area=158,729 sf 89.40% Impervious Runoff Depth=2.64"
Tc=5.0 min CN=69/98 Runoff=2.385 cfs 0.802 af

Subcatchment3: POST Runoff Area=145,743 sf 88.63% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=79/98 Runoff=2.241 cfs 0.749 af

Subcatchment4: POST Runoff Area=80,501 sf 19.16% Impervious Runoff Depth=0.85"
Flow Length=597' Tc=7.9 min CN=60/98 Runoff=0.249 cfs 0.131 af

Subcatchment5: POST Runoff Area=78,150 sf 69.19% Impervious Runoff Depth=2.37"
Tc=5.0 min CN=79/98 Runoff=1.041 cfs 0.355 af

Subcatchment6: POST Runoff Area=211,248 sf 11.78% Impervious Runoff Depth=1.45"
Flow Length=701' Tc=15.0 min CN=79/98 Runoff=1.354 cfs 0.587 af

Pond 2P: EX DET Peak Elev=154.31' Storage=34,927 cf Inflow=2.385 cfs 0.802 af
Outflow=0.000 cfs 0.000 af

Pond 3P: NEW DET Peak Elev=158.00' Storage=0.032 af Inflow=1.047 cfs 0.346 af
Outflow=0.625 cfs 0.346 af

Link 4T: POST Inflow=5.358 cfs 2.167 af
Primary=5.358 cfs 2.167 af

Total Runoff Area = 16.931 ac Runoff Volume = 2.969 af Average Runoff Depth = 2.10"
41.89% Pervious = 7.092 ac 58.11% Impervious = 9.839 ac

Summary for Pond 2P: EX DET

Inflow Area = 3.644 ac, 89.40% Impervious, Inflow Depth = 2.64" for CWS 5YR event
Inflow = 2.385 cfs @ 7.88 hrs, Volume= 0.802 af
Outflow = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 154.31' @ 26.22 hrs Surf.Area= 7,718 sf Storage= 34,927 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

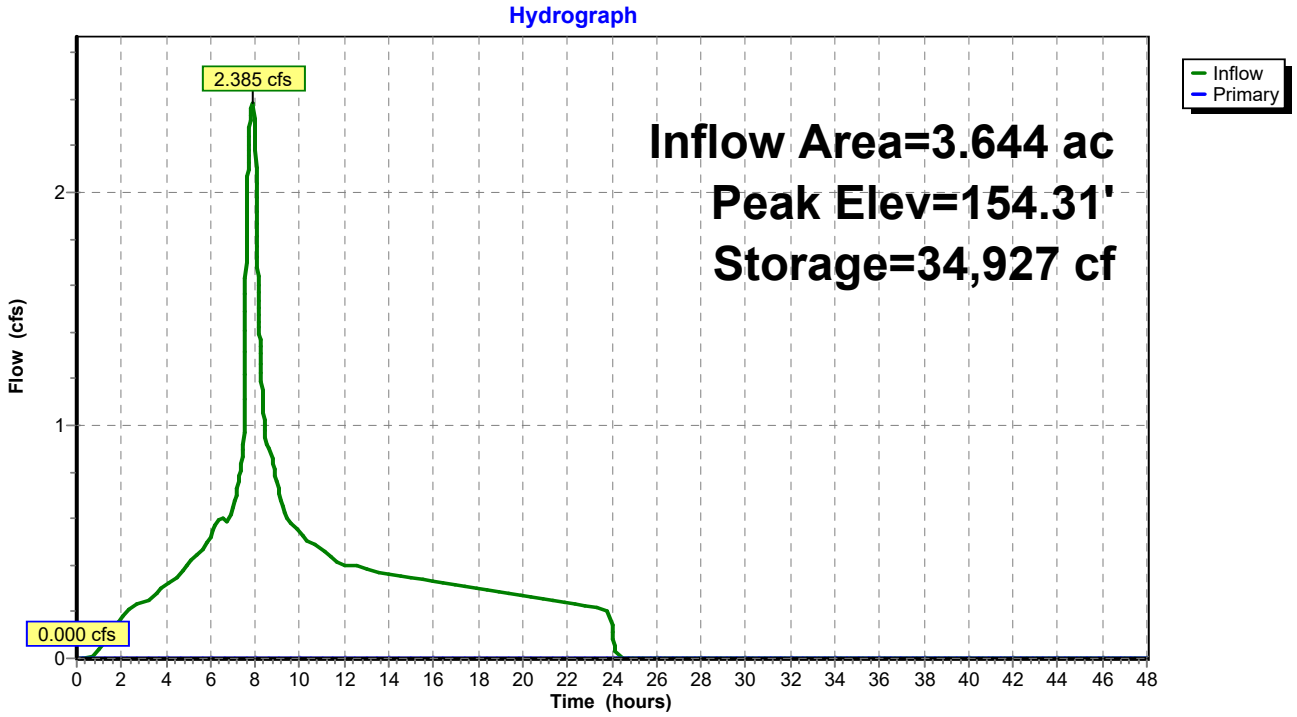
Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	58,427 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
148.00	3,486	298.0	0	0	3,486
149.00	4,096	311.0	3,787	3,787	4,186
150.00	4,732	324.0	4,410	8,197	4,915
151.00	5,393	337.0	5,059	13,256	5,675
152.00	6,080	350.0	5,733	18,989	6,464
153.00	6,793	363.0	6,433	25,422	7,283
154.00	7,495	376.0	7,141	32,563	8,133
155.00	8,225	389.0	7,857	40,421	9,012
156.00	8,988	402.0	8,604	49,024	9,920
157.00	9,823	415.0	9,402	58,427	10,859

Device	Routing	Invert	Outlet Devices		
#1	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#2	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#3	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#4	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=0.000 cfs @ 0.00 hrs HW=148.00' TW=0.00' (Dynamic Tailwater)
- **1=Orifice/Grate** (Controls 0.000 cfs)
- **2=Orifice/Grate** (Controls 0.000 cfs)
- **3=Orifice/Grate** (Controls 0.000 cfs)
- **4=Orifice/Grate** (Controls 0.000 cfs)

Pond 2P: EX DET



Summary for Pond 3P: NEW DET

Inflow Area = 1.449 ac,100.00% Impervious, Inflow Depth = 2.87" for CWS 5YR event
Inflow = 1.047 cfs @ 7.88 hrs, Volume= 0.346 af
Outflow = 0.625 cfs @ 8.18 hrs, Volume= 0.346 af, Atten= 40%, Lag= 18.4 min
Primary = 0.625 cfs @ 8.18 hrs, Volume= 0.346 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.00' @ 8.18 hrs Surf.Area= 0.011 ac Storage= 0.032 af

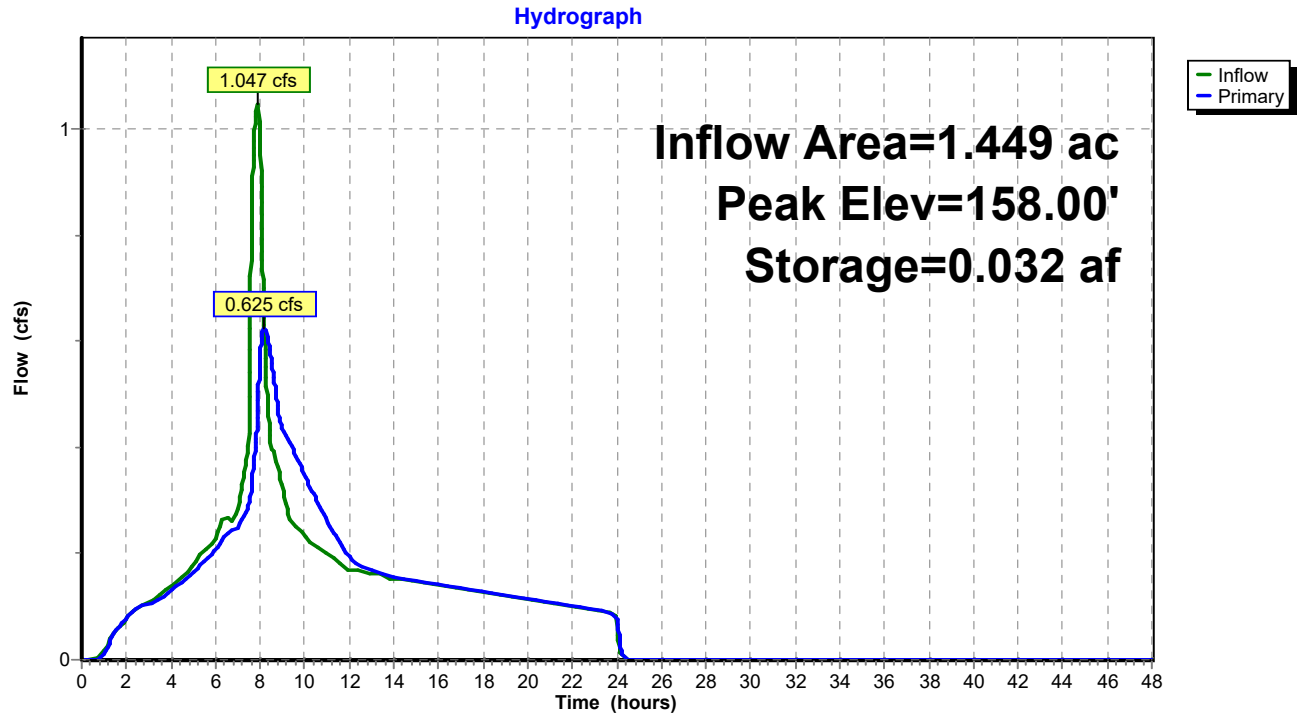
Plug-Flow detention time= 16.2 min calculated for 0.346 af (100% of inflow)
Center-of-Mass det. time= 16.2 min (682.3 - 666.1)

Volume	Invert	Avail.Storage	Storage Description
#1	155.00'	0.040 af	**48.0" Round Pipe Storage** L= 140.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	**3.3" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	157.35'	**2.6" Vert. Orifice/Grate** C= 0.600
#3	Primary	158.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.625 cfs @ 8.18 hrs HW=158.00' TW=0.00' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.495 cfs @ 8.33 fps)
- **2=Orifice/Grate** (Orifice Controls 0.130 cfs @ 3.53 fps)
- **3=Orifice/Grate** (Controls 0.000 cfs)

Pond 3P: NEW DET



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: POST Runoff Area=63,131 sf 100.00% Impervious Runoff Depth=3.22"
Tc=5.0 min CN=0/98 Runoff=1.170 cfs 0.388 af

Subcatchment2: POST Runoff Area=158,729 sf 89.40% Impervious Runoff Depth=2.97"
Tc=5.0 min CN=69/98 Runoff=2.681 cfs 0.903 af

Subcatchment3: POST Runoff Area=145,743 sf 88.63% Impervious Runoff Depth=3.02"
Tc=5.0 min CN=79/98 Runoff=2.519 cfs 0.843 af

Subcatchment4: POST Runoff Area=80,501 sf 19.16% Impervious Runoff Depth=1.03"
Flow Length=597' Tc=7.9 min CN=60/98 Runoff=0.293 cfs 0.158 af

Subcatchment5: POST Runoff Area=78,150 sf 69.19% Impervious Runoff Depth=2.70"
Tc=5.0 min CN=79/98 Runoff=1.185 cfs 0.403 af

Subcatchment6: POST Runoff Area=211,248 sf 11.78% Impervious Runoff Depth=1.73"
Flow Length=701' Tc=15.0 min CN=79/98 Runoff=1.662 cfs 0.698 af

Pond 2P: EX DET Peak Elev=154.87' Storage=39,332 cf Inflow=2.681 cfs 0.903 af
Outflow=0.000 cfs 0.000 af

Pond 3P: NEW DET Peak Elev=158.46' Storage=0.037 af Inflow=1.170 cfs 0.388 af
Outflow=0.710 cfs 0.388 af

Link 4T: POST Inflow=6.208 cfs 2.491 af
Primary=6.208 cfs 2.491 af

Total Runoff Area = 16.931 ac Runoff Volume = 3.394 af Average Runoff Depth = 2.41"
41.89% Pervious = 7.092 ac 58.11% Impervious = 9.839 ac

Summary for Pond 2P: EX DET

Inflow Area = 3.644 ac, 89.40% Impervious, Inflow Depth = 2.97" for CWS 10YR event
Inflow = 2.681 cfs @ 7.88 hrs, Volume= 0.903 af
Outflow = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 154.87' @ 26.30 hrs Surf.Area= 8,126 sf Storage= 39,332 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

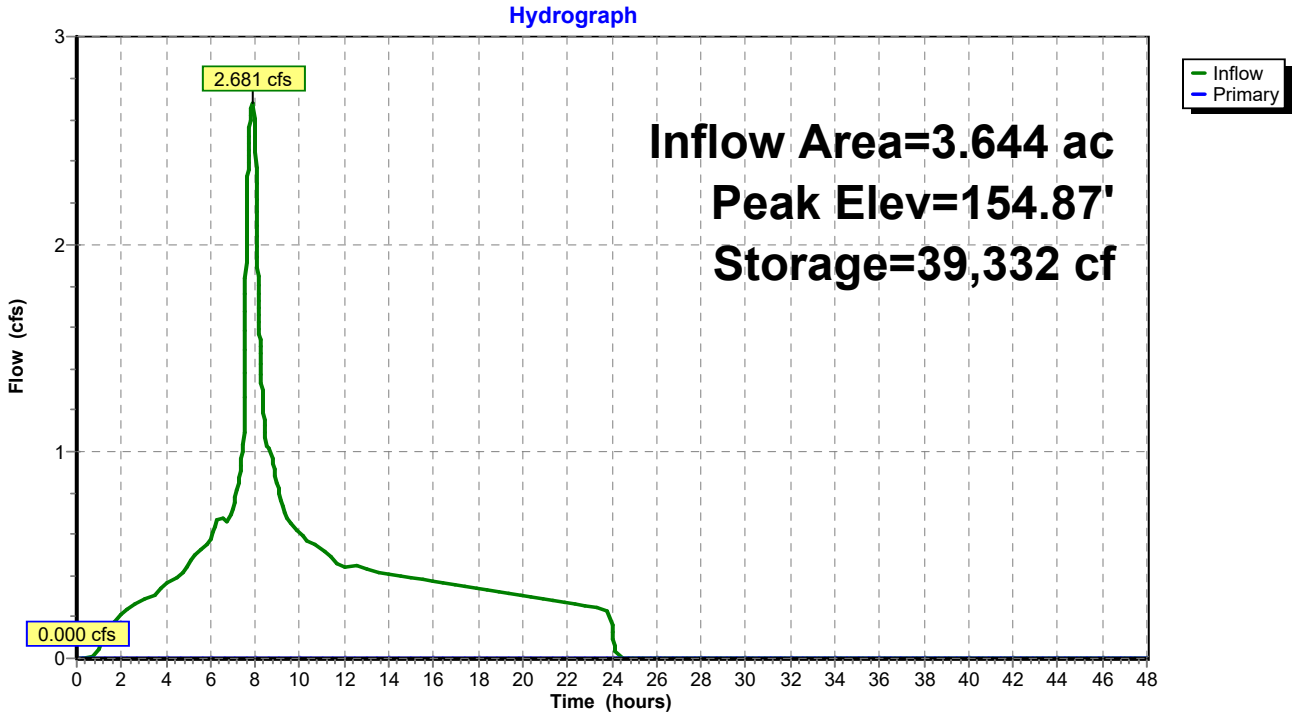
Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	58,427 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
148.00	3,486	298.0	0	0	3,486
149.00	4,096	311.0	3,787	3,787	4,186
150.00	4,732	324.0	4,410	8,197	4,915
151.00	5,393	337.0	5,059	13,256	5,675
152.00	6,080	350.0	5,733	18,989	6,464
153.00	6,793	363.0	6,433	25,422	7,283
154.00	7,495	376.0	7,141	32,563	8,133
155.00	8,225	389.0	7,857	40,421	9,012
156.00	8,988	402.0	8,604	49,024	9,920
157.00	9,823	415.0	9,402	58,427	10,859

Device	Routing	Invert	Outlet Devices		
#1	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#2	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#3	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#4	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=0.000 cfs @ 0.00 hrs HW=148.00' TW=0.00' (Dynamic Tailwater)
- **1=Orifice/Grate** (Controls 0.000 cfs)
- **2=Orifice/Grate** (Controls 0.000 cfs)
- **3=Orifice/Grate** (Controls 0.000 cfs)
- **4=Orifice/Grate** (Controls 0.000 cfs)

Pond 2P: EX DET



Summary for Pond 3P: NEW DET

Inflow Area = 1.449 ac,100.00% Impervious, Inflow Depth = 3.22" for CWS 10YR event
Inflow = 1.170 cfs @ 7.88 hrs, Volume= 0.388 af
Outflow = 0.710 cfs @ 8.18 hrs, Volume= 0.388 af, Atten= 39%, Lag= 17.9 min
Primary = 0.710 cfs @ 8.18 hrs, Volume= 0.388 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.46' @ 8.18 hrs Surf.Area= 0.009 ac Storage= 0.037 af

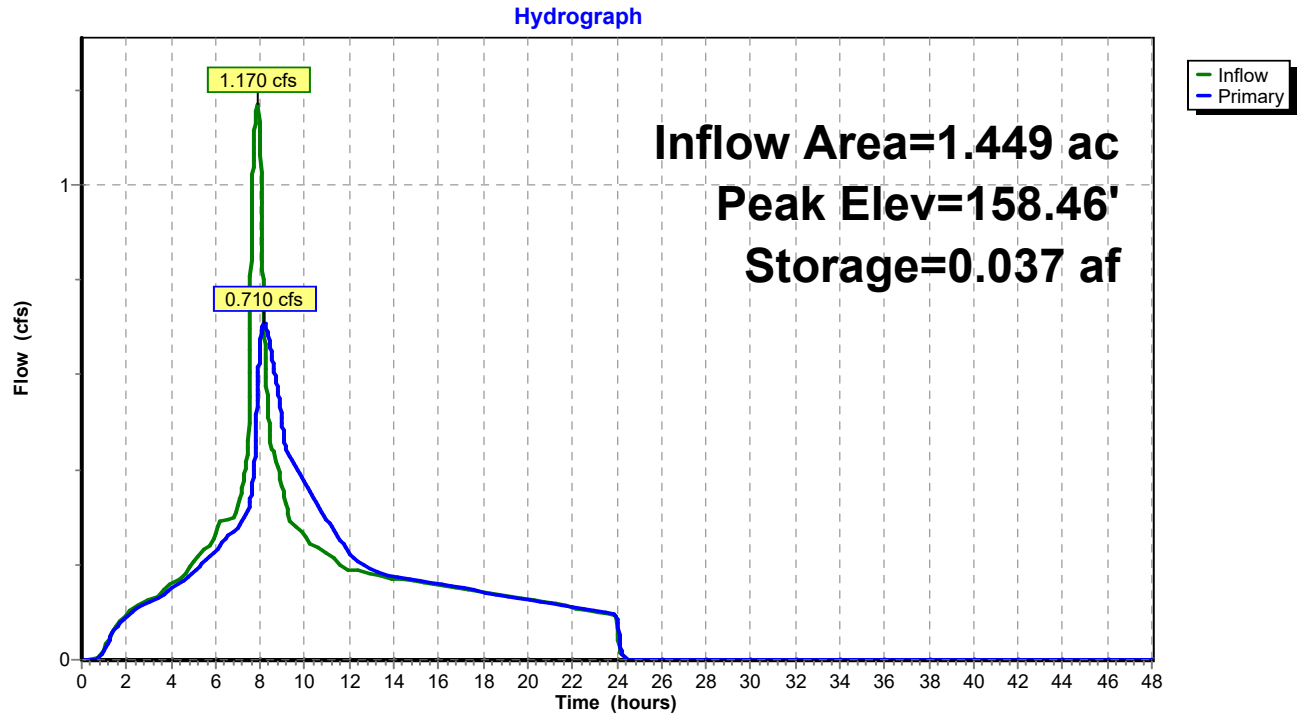
Plug-Flow detention time= 17.8 min calculated for 0.388 af (100% of inflow)
Center-of-Mass det. time= 17.8 min (681.0 - 663.2)

Volume	Invert	Avail.Storage	Storage Description
#1	155.00'	0.040 af	**48.0" Round Pipe Storage** L= 140.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	**3.3" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	157.35'	**2.6" Vert. Orifice/Grate** C= 0.600
#3	Primary	158.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.710 cfs @ 8.18 hrs HW=158.46' TW=0.00' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.532 cfs @ 8.96 fps)
- **2=Orifice/Grate** (Orifice Controls 0.178 cfs @ 4.83 fps)
- **3=Orifice/Grate** (Controls 0.000 cfs)

Pond 3P: NEW DET



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: POST Runoff Area=63,131 sf 100.00% Impervious Runoff Depth=3.67"
Tc=5.0 min CN=0/98 Runoff=1.328 cfs 0.443 af

Subcatchment2: POST Runoff Area=158,729 sf 89.40% Impervious Runoff Depth=3.40"
Tc=5.0 min CN=69/98 Runoff=3.062 cfs 1.034 af

Subcatchment3: POST Runoff Area=145,743 sf 88.63% Impervious Runoff Depth=3.46"
Tc=5.0 min CN=79/98 Runoff=2.878 cfs 0.965 af

Subcatchment4: POST Runoff Area=80,501 sf 19.16% Impervious Runoff Depth=1.28"
Flow Length=597' Tc=7.9 min CN=60/98 Runoff=0.391 cfs 0.197 af

Subcatchment5: POST Runoff Area=78,150 sf 69.19% Impervious Runoff Depth=3.12"
Tc=5.0 min CN=79/98 Runoff=1.372 cfs 0.466 af

Subcatchment6: POST Runoff Area=211,248 sf 11.78% Impervious Runoff Depth=2.09"
Flow Length=701' Tc=15.0 min CN=79/98 Runoff=2.077 cfs 0.846 af

Pond 2P: EX DET Peak Elev=155.54' Storage=44,965 cf Inflow=3.062 cfs 1.034 af
Outflow=0.053 cfs 0.009 af

Pond 3P: NEW DET Peak Elev=158.72' Storage=0.039 af Inflow=1.328 cfs 0.443 af
Outflow=1.198 cfs 0.443 af

Link 4T: POST Inflow=7.773 cfs 2.926 af
Primary=7.773 cfs 2.926 af

Total Runoff Area = 16.931 ac Runoff Volume = 3.950 af Average Runoff Depth = 2.80"
41.89% Pervious = 7.092 ac 58.11% Impervious = 9.839 ac

Summary for Pond 2P: EX DET

Inflow Area = 3.644 ac, 89.40% Impervious, Inflow Depth = 3.40" for CWS 25YR event
Inflow = 3.062 cfs @ 7.88 hrs, Volume= 1.034 af
Outflow = 0.053 cfs @ 24.14 hrs, Volume= 0.009 af, Atten= 98%, Lag= 975.3 min
Primary = 0.053 cfs @ 24.14 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 155.54' @ 24.14 hrs Surf.Area= 8,632 sf Storage= 44,965 cf

Plug-Flow detention time= 1,509.9 min calculated for 0.009 af (1% of inflow)
Center-of-Mass det. time= 920.6 min (1,588.6 - 668.0)

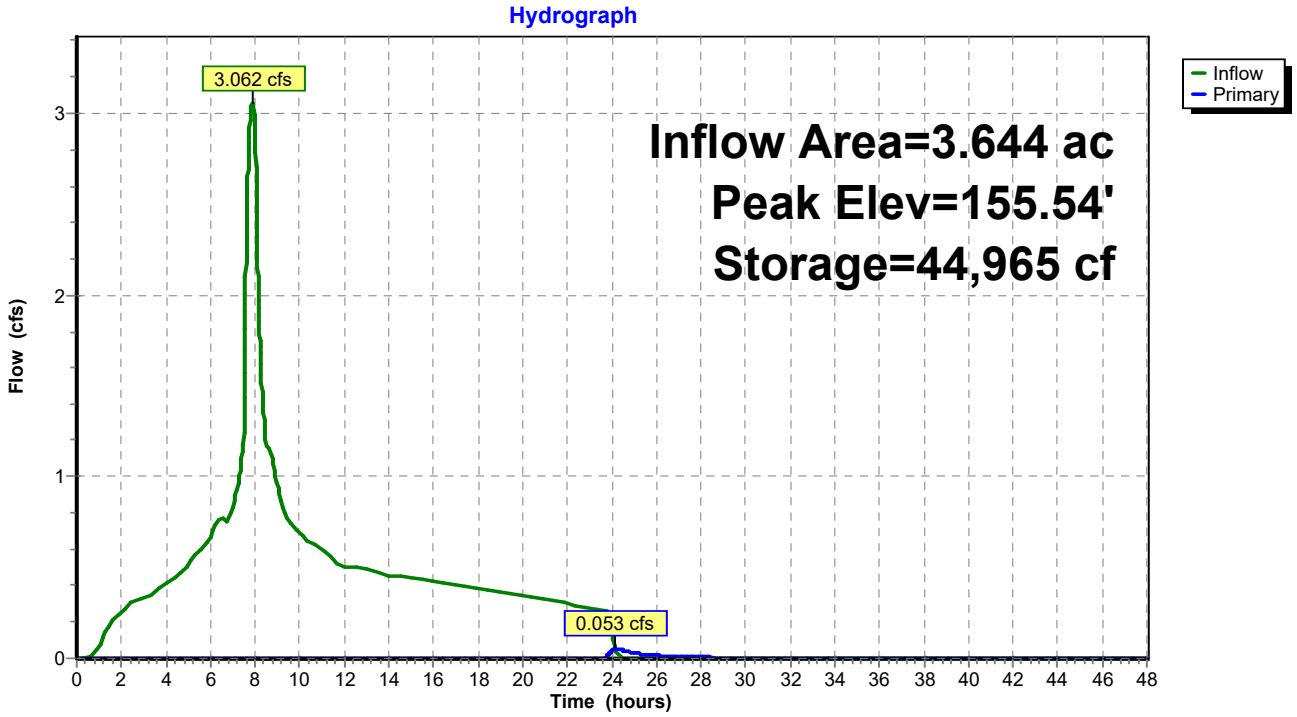
Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	58,427 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
148.00	3,486	298.0	0	0	3,486
149.00	4,096	311.0	3,787	3,787	4,186
150.00	4,732	324.0	4,410	8,197	4,915
151.00	5,393	337.0	5,059	13,256	5,675
152.00	6,080	350.0	5,733	18,989	6,464
153.00	6,793	363.0	6,433	25,422	7,283
154.00	7,495	376.0	7,141	32,563	8,133
155.00	8,225	389.0	7,857	40,421	9,012
156.00	8,988	402.0	8,604	49,024	9,920
157.00	9,823	415.0	9,402	58,427	10,859

Device	Routing	Invert	Outlet Devices		
#1	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#2	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#3	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#4	Primary	155.50'	**2.0" Horiz. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=0.053 cfs @ 24.14 hrs HW=155.54' TW=0.00' (Dynamic Tailwater)
- **1=Orifice/Grate** (Weir Controls 0.013 cfs @ 0.65 fps)
- **2=Orifice/Grate** (Weir Controls 0.013 cfs @ 0.65 fps)
- **3=Orifice/Grate** (Weir Controls 0.013 cfs @ 0.65 fps)
- **4=Orifice/Grate** (Weir Controls 0.013 cfs @ 0.65 fps)

Pond 2P: EX DET



Summary for Pond 3P: NEW DET

Inflow Area = 1.449 ac,100.00% Impervious, Inflow Depth = 3.67" for CWS 25YR event
Inflow = 1.328 cfs @ 7.88 hrs, Volume= 0.443 af
Outflow = 1.198 cfs @ 8.02 hrs, Volume= 0.443 af, Atten= 10%, Lag= 8.8 min
Primary = 1.198 cfs @ 8.02 hrs, Volume= 0.443 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.72' @ 8.02 hrs Surf.Area= 0.007 ac Storage= 0.039 af

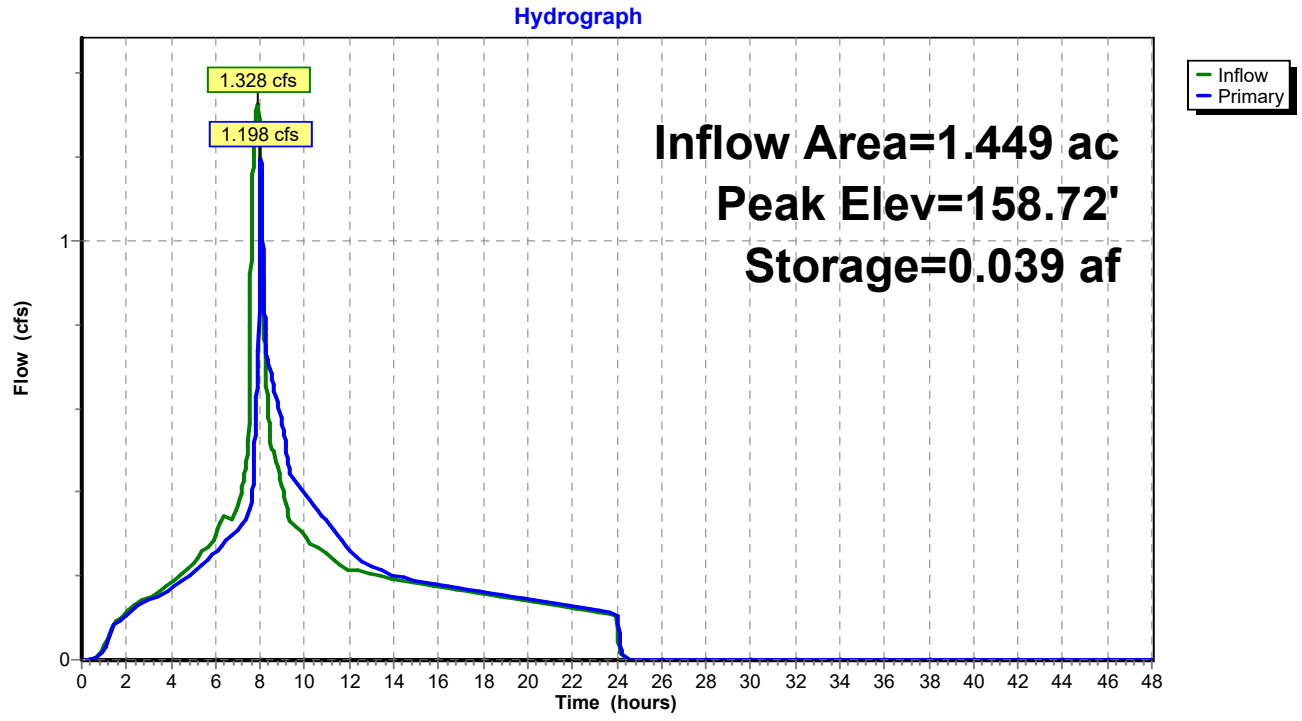
Plug-Flow detention time= 19.2 min calculated for 0.443 af (100% of inflow)
Center-of-Mass det. time= 19.2 min (679.3 - 660.1)

Volume	Invert	Avail.Storage	Storage Description
#1	155.00'	0.040 af	**48.0" Round Pipe Storage** L= 140.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	**3.3" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	157.35'	**2.6" Vert. Orifice/Grate** C= 0.600
#3	Primary	158.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.197 cfs @ 8.02 hrs HW=158.72' TW=0.00' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.552 cfs @ 9.29 fps)
- **2=Orifice/Grate** (Orifice Controls 0.200 cfs @ 5.41 fps)
- **3=Orifice/Grate** (Orifice Controls 0.446 cfs @ 2.27 fps)

Pond 3P: NEW DET



Appendix C: Stormwater Quality Calculations

STORMWATER QUALITY CALCULATIONS

Client: Cascade Columbia Distribution Inc.
Project: 14200 SW Tualatin-Sherwood Road
AKS Job No.: 7431
Date: 5/27/2022
Done By: KNU
Checked By: SR

IMPERVIOUS AREA

Total Site Area:	16.93	acres
Total Site Area:	737,439	square feet (sf)
Onsite New Impervious Area	33,859	sf
Onsite Modified/Replaced Impervious Area:	15,734	sf
Impervious Area Required for Treatment:	81,061	sf

(New Impervious Area + 3*Modified/Replaced Impervious Area)

CWS approved Contech 27" ZPG media Catridge flow rate = 0.05 cfs

STORM WATER QUALITY FLOW (WQF)

(Per CWS 4.08.5a3 - R&O 19-05)

WQ Manhole:

Contributing Area: 63,131 sf

$$WQF = \frac{0.36"* \text{ Area (sf)}}{12*4*60*60} = \mathbf{0.132\ cfs}$$

WQ Catch Basin:

Contributing Area: 53,012 sf

$$WQF = \frac{0.36"* \text{ Area (sf)}}{12*4*60*60} = \mathbf{0.110\ cfs}$$

WATER QUALITY CATRIDGES REQUIRED

(Per CWS 4.08.5a3 - R&O 19-05)

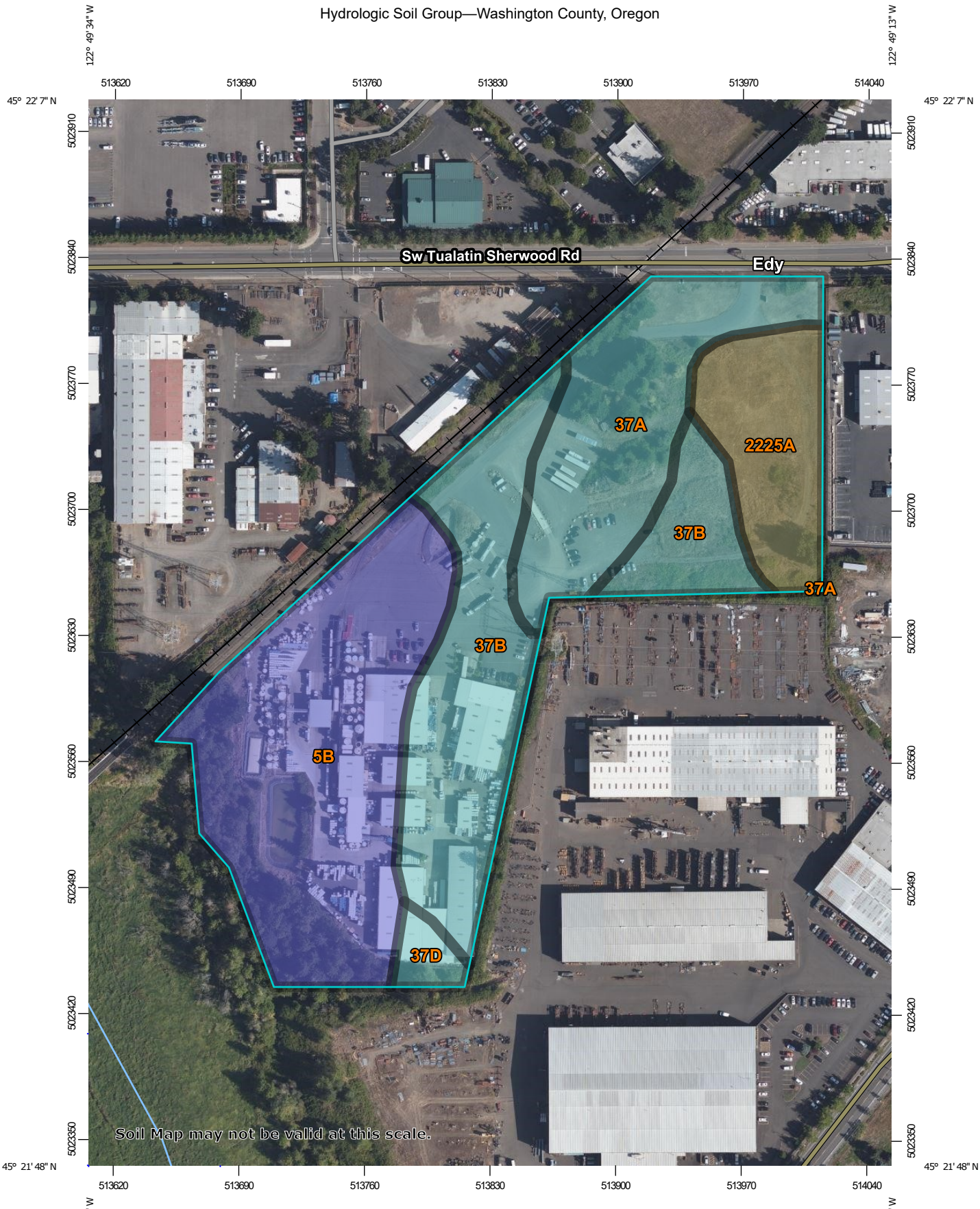
WQ Manhole:

$$\text{No. Catridges} = \frac{WQF}{0.05} = 2.630 = \mathbf{3}$$ **- 27" Catridge CB**

WQ Catch Basin:

$$\text{No. Catridges} = \frac{WQF}{0.05} = 2.209 = \mathbf{3}$$ **- 27" Catridge CB**

Appendix D: USDA-NRCS Soil Resource Report



Map Scale: 1:2,880 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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 Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Washington County, Oregon
Survey Area Data: Version 20, Aug 26, 2021

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

Date(s) aerial images were photographed: Aug 1, 2019—Sep 12, 2019

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
5B	Briedwell stony silt loam, 0 to 7 percent slopes	B	6.2	36.6%
37A	Quatama loam, 0 to 3 percent slopes	C	3.5	20.7%
37B	Quatama loam, 3 to 7 percent slopes	C	4.9	28.9%
37D	Quatama loam, 12 to 20 percent slopes	C	0.3	2.0%
2225A	Huberly silt loam, 0 to 3 percent slopes	C/D	2.0	11.9%
Totals for Area of Interest			**16.9**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix E: TR-55 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.

Table 2-2b Runoff curve numbers for cultivated agricultural lands [1/]

Cover description			Curve numbers for hydrologic soil group			
Cover type	Treatment [2/]	Hydrologic condition [3/]	A	B	C	D
Fallow	Bare soil	—	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
	C&T+ CR	Poor	65	73	79	81
		Good	61	70	77	80
Small grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	81	84
		Good	60	72	80	83
	C&T	Poor	61	72	79	82
		Good	59	70	78	81
	C&T+ CR	Poor	60	71	78	81
		Good	58	69	77	80
Close-seeded or broadcast legumes or rotation meadow	SR	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C&T	Poor	63	73	80	83
		Good	51	67	76	80

[1] Average runoff condition, and I_a=0.2S

[2] Crop residue cover applies only if residue is on at least 5% of the surface throughout the year.

[3] Hydraulic condition is based on combination factors that affect infiltration and runoff, including (a) density and canopy of vegetative areas, (b) amount of year-round cover, (c) amount of grass or close-seeded legumes, (d) percent of residue cover on the land surface (good ≥ 20%), and (e) degree of surface roughness.

Poor: Factors impair infiltration and tend to increase runoff.

Good: Factors encourage average and better than average infiltration and tend to decrease runoff.

Table 2-2c Runoff curve numbers for other agricultural lands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. [2/]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. [3/]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 [4/]	48	65	73
Woods—grass combination (orchard or tree farm). [5/]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. [6/]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 [4/]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

1 Average runoff condition, and $I_a = 0.2S$.

2 *Poor:* <50%) ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: > 75% ground cover and lightly or only occasionally grazed.

3 *Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

4 Actual curve number is less than 30; use CN = 30 for runoff computations.

5 CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

6 *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Table 2-2d Runoff curve numbers for arid and semiarid rangelands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition [2/]	A [3/]	B	C	D
Herbaceous—mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen—mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush.	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper—pinyon, juniper, or both; grass understory.	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory.	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, bursage, palo verde, mesquite, and cactus.	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

1 Average runoff condition, and I_a, = 0.2S. For range in humid regions, use table 2-2c.
2 Poor: <30% ground cover (litter, grass, and brush overstory).
Fair: 30 to 70% ground cover.
Good: > 70% ground cover.
3 Curve numbers for group A have been developed only for desert shrub.

Exhibit P: Existing Site Improvements Requiring Retroactive Approval

Cascade Columbia Distribution
14200 SW Tualatin-Sherwood Rd.

GALBREATH

GERDA

TUALATIN SHERWOOD

Staging area completed by others (used for equipment storage)
AREA 1

Truck parking/storage
AREA 3

Employee Parking
AREA 2

Storage of empty containers
AREA 5

Additional storage tanks (same as previously approved tanks)
AREA 6

Truck Scale
AREA 4

Rain cover for truck loading
AREA 7

Additional covered outdoor storage
AREA 8

Outdoor storage area (to be replaced with new covered storage)
AREA 10

Paved area for storage of empty containers
AREA 9

Site

Paving Limits per Site Plan Approvals

Emergency Vehicle Gravel Road

N

0 75 150 300

Feet

City of Sherwood Oregon

Date: 5/1/2022 Created by: Eric Rutledge

Map data provided by METRO and the City of Sherwood. The City of Sherwood's infrastructure records,drawings, and other documents have been gathered over many years, using many different formats and standards. While the data provided is generally believed to be accurate, occasionally it proves to be incorrect; thus its accuracy is not guaranteed.

Exhibit Q: Clean Water Services Permit

Clean Water Services
2550 SW Hillsboro Highway
Hillsboro, Oregon 97123-9379
(503) 681-3600
Source Control Fax (503) 681-5138

Industrial Wastewater Discharge Permit

Permit Number 111211
Effective Date of Permit: January 31, 2017
Expiration Date of Permit: January 30, 2022

In accordance with the provisions of Clean Water Services' (District) Resolution & Order 09-1, or as amended, Industry Name: **Cascade Columbia Distribution Co** (Herein known as Permittee), located at: 14200 SW Tualatin Sherwood RD , Sherwood OR 97140; **Tax Map/Lot No** 2S12BC000200, discharging to the Durham Wastewater Treatment Plant is hereby authorized to discharge wastewater from the above identified facility, and through the discharge points identified in Section 1.A., into the public sanitary sewer system in accordance with the conditions set forth in this permit. The Permittee is identified as a **Non-Significant Industrial User**, and is responsible to comply with the conditions identified in the District's Rules and Regulations.

This permit is effective on **January 31, 2017**, and will expire on **January 30, 2022**. This permit is issued based upon the information provided in the Application for Industrial Waste Discharge Permit, submitted on **December 30, 2016**. Discharges not identified in the Application may be cause for enforcement as identified in the following paragraph. Compliance with this permit does not relieve the Permittee of its obligation to comply with any or all applicable pretreatment regulations, standards or requirements under local, State, and Federal laws, including any such regulations, standards, requirements, or laws that may become effective during the term of this permit. Noncompliance with any term or condition of this permit, or any compliance schedule, shall constitute a violation of the District's Sewer Use Ordinance(s), and may be grounds for administrative action or enforcement proceedings including civil or criminal penalties (of up to $25,000 per day per violation), injunctive relief, and summary abatement, as identified in Ordinance 27 and Resolution and Order No. 09-1, or as amended.

In no case shall this permit be transferred to another owner, partnership or corporation without prior written permission from the District. Permittees wishing to transfer a permit to a new owner must notify the District in writing at least 60 days in advance of any anticipated transfer. Written notification must include information by the new owner which certifies the new owner's intent not to change the facility's operations or processes; identifies the specific date on which the transfer is to occur; and acknowledges full responsibility for complying with the wastewater discharge permit.

Failure to provide advance notice of a transfer renders the wastewater permit void on the date of the facility transfer. In the event ownership of the permitted discharge changes, the owner of this permit shall provide a copy of this permit to the new owner or operator.

A Permittee may be required to re-apply for an Industrial Waste Discharge Permit at least 90 days prior to the expiration date, in accordance with the requirements of the District's Resolution & Order 09-1, Sections 3.03 and 3.11, or as amended.

By: _____ Issued this 25th Day of January, 2017
District Representative

_____ Date: 1/25/17
Source Control Investigator

_____ Date: 2-9-17
Industry Representative
Acknowledge Receipt of Permit

11311
☐ Original to File ☐ Copy to User ☐ Copy to City ☐ Copy to WQL ☐ Copy to Accounting

Clean Water Services
2550 SW Hillsboro Highway
Hillsboro, Oregon 97123-9379
(503) 681-3600
Source Control Fax (503) 681-5138

Industrial Wastewater Discharge Permit

Permit Number 111211
Effective Date of Permit: January 31, 2017
Expiration Date of Permit: January 30, 2022

SECTION 1 MONITORING REQUIREMENTS/EFFLUENT LIMITATIONS

1.A. Applicable Regulation(s) for this permit: Ordinance # 27

1.B. Permitted Outfall(s)
During the effective period of this permit, the Permittee is authorized to discharge process wastewater from the outfall(s) listed in the Application and further defined below: *(Refer to diagram(s) on last page of this permit for Outfall location(s)).*

Outfall	SAMP_LOC_NAME:
1	Final Effluent Tanks

The discharge(s) from the following outfall(s) shall not exceed the specified effluent limitations. The Permittee shall monitor and report the information from the above-identified outfall(s) for the following parameters, at the indicated frequency:

Effluent Limitations

Outfall	Parameter	Min Daily Conc	Monthly Avg Conc	Max Daily Conc	Unit	Sample Frequency	Sample Type
1	Chronic pH Excursions (Minutes)	----	----	0	Minutes	Once/Batch	Grab
1	pH - Grab (Gross Violation)	5.0	----	12.49	S.U.	Once/Batch	GRAB
1	pH - Permit Limits	6.0	----	11	S.U.		GRAB
1	Total Chemical O2 Demand	----	----	----	mg/L	Once/Batch	GRAB
1	Total Suspended Solids	----	----	----	mg/L	Once/Batch	GRAB

1.C. Best Management Practices
The District may develop Best Management Practices (BMPs) to implement local prohibitions. In cases where the Pretreatment Standard requires compliance with a Best Management Practice (BMP) or pollution prevention alternative, the Industrial User must submit documentation required by the District or the Pretreatment Standard necessary to determine the compliance status of the User.

1.D. Additional Permit Conditions
The following additional permit conditions apply for purposes of this discharge permit. By accepting this permit, the user acknowledges that all known constituents that could be disposed of into the sanitary sewer system have been disclosed to the District.

The following additional conditions are established for this permit:

Any accidental spills or drops from the hauling or repacking process operations shall be dealt with in accordance with instructions provided in the On-Site Chemical Management and Spill Plan. Notify the District of any non-routine discharge potential as soon as possible.

11311
☐ Original to File ☐ Copy to User ☐ Copy to City ☐ Copy to WQL ☐ Copy to Accounting

Clean Water Services
2550 SW Hillsboro Highway
Hillsboro, Oregon 97123-9379
(503) 681-3600
Source Control Fax: (503) 681-5138

Relating to the operation of the retention pond, the additional protocol shall be adopted:

- Evaluate pH and conductivity when accumulated retention pond water reaches stage where discharge is contemplated. If there is evidence that a chemical product release to the pond has occurred, a pH and conductivity assessment must be obtained prior to discharge.

- If the evaluated pH is <5.5 or >11.5 Standard Units, accumulated water must be pretreated to Industrial Wastewater Permit Standards (> or equal to 6.0 and <11.0 SU) and discharged to the public sanitary sewer under the requirements of Industrial Wastewater Permit #111211.

- If the measured conductivity exceeds 300 millivolts (mV) during the period from October 1st thru April 30th, or exceeds 150 mV during the period May 1st thru September 30th, the accumulated water must be discharged to the public sanitary sewer system under the requirements of Industrial Wastewater Discharge Permit Number #111211.

1.E. Additional Sampling and Testing Provision
In the event compliance monitoring shows any constituent regulated under local limits not otherwise specified in this permit to be approaching the limit, additional sampling and testing will be required.

1.F. Proper Sampling and Analysis Procedures
All collection, preservation, handling and laboratory analyses of samples for compliance monitoring shall be performed in accordance with 40 CFR Part 136, and amendments thereto, unless specified otherwise in this permit. If a commercial laboratory performs sampling and/or analysis on behalf of the Permittee, it is the Permittee's responsibility to ensure that all sampling & analyses are performed in accordance with 40 CFR Part 136, or as otherwise specified.

1.G. Grab vs. Composite Sample Pollutants
For any constituents listed under Section 1.B. of this permit, grab samples must be used for pH (unless using a chart recorder), cyanide, total phenols, oil & grease, sulfide and volatile organic compounds. For all other pollutants, 24-hour composite samples must be obtained through flow-proportional composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by the District. If time-proportional or grab sampling is authorized, the samples must be representative of the discharge and the decision to allow such sampling techniques must be documented in the Industrial User's file.

Prohibitions

1.H. Federal and Local General Discharge Prohibitions
The Permittee shall not discharge, cause or permit to be discharged, directly or indirectly, any pollutant or wastewater, which will cause interference or pass through at the treatment plant(s). These general and specific prohibitions apply to all users of the District's wastewater system whether or not they are subject to Categorical Pretreatment Standards or any other national, state or local pretreatment standards or requirements.

Clean Water Services
2550 SW Hillsboro Highway
Hillsboro, Oregon 97123-9379
(503) 681-3600
Source Control Fax: (503) 681-5138

Industrial Wastewater Discharge Permit

Permit Number 111211
Effective Date of Permit: January 31, 2017
Expiration Date of Permit: January 30, 2022

1.I. Specific Discharge Prohibitions

Per the District's Resolution & Order 09-1, Section 2.02, or as amended, the Permittee shall not discharge wastewater containing any of the following prohibitions from any of their permitted outfalls:

- Flammable or explosive materials with a closed cup flashpoint of <140 deg F
- Corrosive materials with a pH < 5.0 or caustic materials with a pH >= 12.5
- Solid (greater than ½ inch in any dimension) or viscous materials which will obstruct flow in the Publicly Owned Treatment Works (POTW)
- Any pollutant, including oxygen demanding pollutants (COD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW
- Heated wastewater >104 deg F at its point of entry into the POTW
- Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through at the POTW
- Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems
- Trucked or hauled pollutants

SECTION 2 REPORTING REQUIREMENTS

2.A. Application Provision for New or Changed Discharges

At least 90 days prior to commencement of discharge, new sources, including existing users which have changed operations or processes so as to become new sources shall be required to submit a Baseline Monitoring Report (Industrial Wastewater Discharge Permit Application). The District may also request new Applications if facility changes are of a magnitude that warrant additional or updated information on the processes, ownership, or use.

2.B. Self-Monitoring Report Submission

Any Permittee subject to sampling, testing and reporting schedules set out in the permit shall submit Periodic Compliance Reports. The reports are due on the tenth (10th) day of the month following discharge and shall indicate the volume, nature and concentration of all pollutants in the effluent for which sampling and analyses were performed during the calendar month preceding the submission of each report. This includes the measured highest single daily value (Daily Maximum) and the average of total monthly (Monthly Average) flows. All reports shall be submitted to the District Source Control Division as requested.

2.C. Submittal of Additional Pollutant Analysis

If the Permittee subject to reporting requirements (Periodic Compliance Reports) monitors any regulated pollutant more frequently than required by the District, using the procedures specified in 40 CFR Part 136, and from the location identified on the last page of this permit, the results of this monitoring shall be included in the compliance report.

2.D. Violation Notification Requirement

If sampling performed by the Permittee indicates a permit violation, the Permittee shall notify the District within 2, but in no case more than 24 hours, once aware of the violation. The Permittee shall also repeat the sampling and analysis and submit the results of the repeat analysis to the District within 30 days after becoming aware of the violation. The Permittee must continue the notification and re-sampling requirement until compliance is achieved.

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2.E. Notification of Significant Changes

The Permittee shall immediately report any significant changes (permanent or temporary) to the premises or operations that cause substantial changes in production, volume or character of the wastewater discharge, or deviate from the terms and conditions of this permit. Unless emergency situations prevail, the District requires that changes be reported prior to being implemented. Permit violations may occur if notification requirements are not followed. All categorical and non-categorical Industrial Users shall notify Clean Water Services immediately of all discharges that could cause problems to the POTW including any slug loadings.

2.F. Hazardous Waste Notification Provision

Notification from the Permittee is required to the District, the EPA RCRA Director, and the Oregon State Hazardous Waste Director within 90 days of the effective date of a published RCRA ruling, of a discharge (or changed discharge) of either a listed or characteristic hazardous waste to the sanitary sewer. The District requests notification even if the results of the hazardous material sampling are submitted on self-monitoring reports (Periodic Compliance Reports).

2.G. Affirmative Defense

An upset, and an affirmative defense for such, shall not be allowed under circumstances where non-compliance has been caused by operational error, improperly designed or inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation. In case of an upset or upon reduction, loss or failure of its treatment facility, the permittee shall control production and/or all discharges to the extent necessary to maintain compliance with applicable pretreatment standards until treatment is restored or an alternative method of treatment is provided. This requirement also applies in situations where the primary source of power for the treatment facility is reduced, lost or fails.

2.H. Bypass

The intentional diversion of one or more wastestreams or processes from any portion of the Permittees treatment facility is prohibited per the District's Industrial Sewer Rules and Regulations (R&O 09-1).

2.I. Legal Authority for SNC Inclusion

An Industrial User is in significant non-compliance if the POTW determines a violation or a group of violations of the user's Best Management Practices will adversely affect the operation or implementation of the local pretreatment program.

2.J. Non-Categorical Periodic Reports on Continued Compliance

In the case of reporting requirements for industrial users not subject to categorical Pretreatment Standards where a local limit requires compliance with a BMP or pollution prevention alternative, the user must submit documentation as required by the District in order to determine the compliance status of the user.

SECTION 3 NOTIFICATION AND RECORD KEEPING REQUIREMENTS

3.A. Sample and Analysis Records Requirements

Any Permittee subject to reporting requirements shall retain and preserve all records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sampling and chemical analyses made by or on behalf of the Permittee in connection with its discharge.

Documentation of activities to demonstrate compliance with any BMP requirements must also be retained by the permittee. Such records shall be subject to review by the District, and shall include for all samples:

- The date, exact place, time, and methods of sampling or measurements, and sampling preservation techniques;
- Who performed the sampling or measurements;
- The date(s) the analyses were performed;
- Who performed the analyses;
- The analytical techniques or methods used; and
- The results of such analyses.

3.B. Record Retention and Availability

The Permittee shall retain for a minimum of three years all such records defined in Section 3.A. above, and shall make such records available for inspection and copying by the District, the DEQ Director and the EPA Regional Administrator. **This period may be extended by the District, the DEQ Director or the EPA at any time.** All records that pertain to matters which are the subject of special orders or any other enforcement or litigation activities brought by the District shall be retained and preserved by the permittee until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

3.C. Retention of Faxed Records

For any information faxed to the District, the original shall be retained on the Permittee's premises for a minimum of three (3) years; or the original may be mailed to the District as a follow-up to the fax. This section does not supersede Section 3B above.

SECTION 4 STANDARD CONDITIONS

4.A. Permit Modification

The District reserves the right to amend any Wastewater Discharge Permit issued hereunder for good cause including, but not limited to the following:

- To incorporate any new or revised local, State or Federal pretreatment standards or requirements;
- Alterations or additions to the Permittee's operations, processes, discharge volume or characteristic not considered in drafting the original permit;
- A change in any condition at the Permittee's facility or the Publicly Owned Treatment Works (POTW) requiring a temporary or permanent reduction or elimination of the authorized discharge;
- Information indicating that the permitted discharge poses a threat to the POTW's collection or treatment systems, personnel or receiving waters;
- Violation of any terms or conditions of the permit;
- Misrepresentation or failure to disclose fully all relevant facts in the permit application or any required reporting;
- To correct typographical or other errors in the permit;
- To reflect transfer of the facility ownership and/or operation to a new owner/operator;
- Upon request of the permitted Industrial User, provided the request does not violate any requirements, standards, laws, rules or regulations.

CleanWater Services
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4.B. Dilution Prohibition

The permittee shall not increase the use of potable or process water in any way for the purpose of diluting a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the standards set forth in this discharge permit or any District ordinances, or in lieu of proper disposal of any material as solid waste. The District may impose mass limitations on dischargers which, in its judgment, appear to be using dilution to meet applicable pretreatment standards or requirements of this section, or in cases where the imposition of mass limitations is otherwise deemed appropriate by the District.

4.C. Representative Sampling

Samples and measurements taken as required by this permit shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit, and unless otherwise specified, before the permitted discharge joins or is diluted by any other wastestreams, body of water or substance. Samples must also be taken in accordance with 40 CFR Part 136 methodology.

All equipment used for sampling and analyses must be routinely calibrated, inspected and maintained to ensure its accuracy. Monitoring points shall not be changed without notification to, and prior District approval.

4.D. Inspection and Entry

The District may inspect the facilities of any Permittee to determine compliance with the requirements of the District rules and regulations. The Permittee shall allow the District or its representatives to enter upon the premises of the Permittee at all reasonable hours without being unreasonably detained (not to exceed 15 minutes) and without prior notification by the District, for the purposes of inspection, sampling, and records examination and copying. The District shall have the right to set upon the Permittee's property such devices as are necessary to conduct sampling, inspection, compliance monitoring and/or metering operations. Unusual clearance requirements for purposes of security may be considered unreasonable for purposes of this section.

4.E. Signatory Requirements/Certification Statement

The signed certification statement defined in Appendix A of the Industrial Wastewater Discharge Application shall accompany all reports and testing results submitted by any Permittee.

SECTION 5 SPECIAL CONDITIONS

5.A. Accidental Spill Prevention Plan

An Accidental Spill Prevention Plan (ASPP) is required for identification and correction of potential problems. This plan is necessary to assess and condition the emergency planning of the Permittee in caser of a slug load or chemical spill at the facility. If Clean Water Services decides an Accidental Spill Prevention Plan is needed, it shall contain at a minimum:
A description of discharge practices, including non-routine batch discharges;
A description/listing of stored chemicals;
Procedures for immediately notifying Clean Water Services of slug discharges with procedures for follow-up written notification within five (5) business days;

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If necessary, procedures to prevent adverse impact from accidental spills, including inspection/maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment for emergency response.
Conditions of an approved Accidental Spill Prevention Plan are enforceable under this permit.
Industrial Users are required to notify Clean Water Services immediately of any changes at their facility affecting the potential for a slug discharge.

☒ An ASPP has been received and approved by the District on: ***November 19, 2009.***

5.B. Biannual Sampling

Biannual sampling, if required, may be performed at any time during the periods of January to June, and July to December. The results need to be reported to the District as indicated in Section 1.A., unless a violation has occurred, in which case the requirements of violation notification period specified in Section 2.D. and re-sampling/resubmitting shall prevail. In no case shall the interval of required biannual sampling exceed six (6) months.

5.C. Special Discharge Permit Conditions

Flow Volume Limits

This permit is issued based on the following purchased capacity:

Monthly average: 5,690 Gallons per Day

Any applicable flow meters are to be read and recorded daily on the Self-Monitoring Report form. The total flow volume is to be calculated as directed. These flow values are to be reported with any other Self-Monitoring requirements established in Section 1 of this permit.

Administrative penalties defined in the District's Resolution and Order 09-1, or as amended, will apply for volumes discharged beyond these purchased capacities.

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☐ Original to File ☐ Copy to User ☐ Copy to City ☐ Copy to WQL ☐ Copy to Accounting

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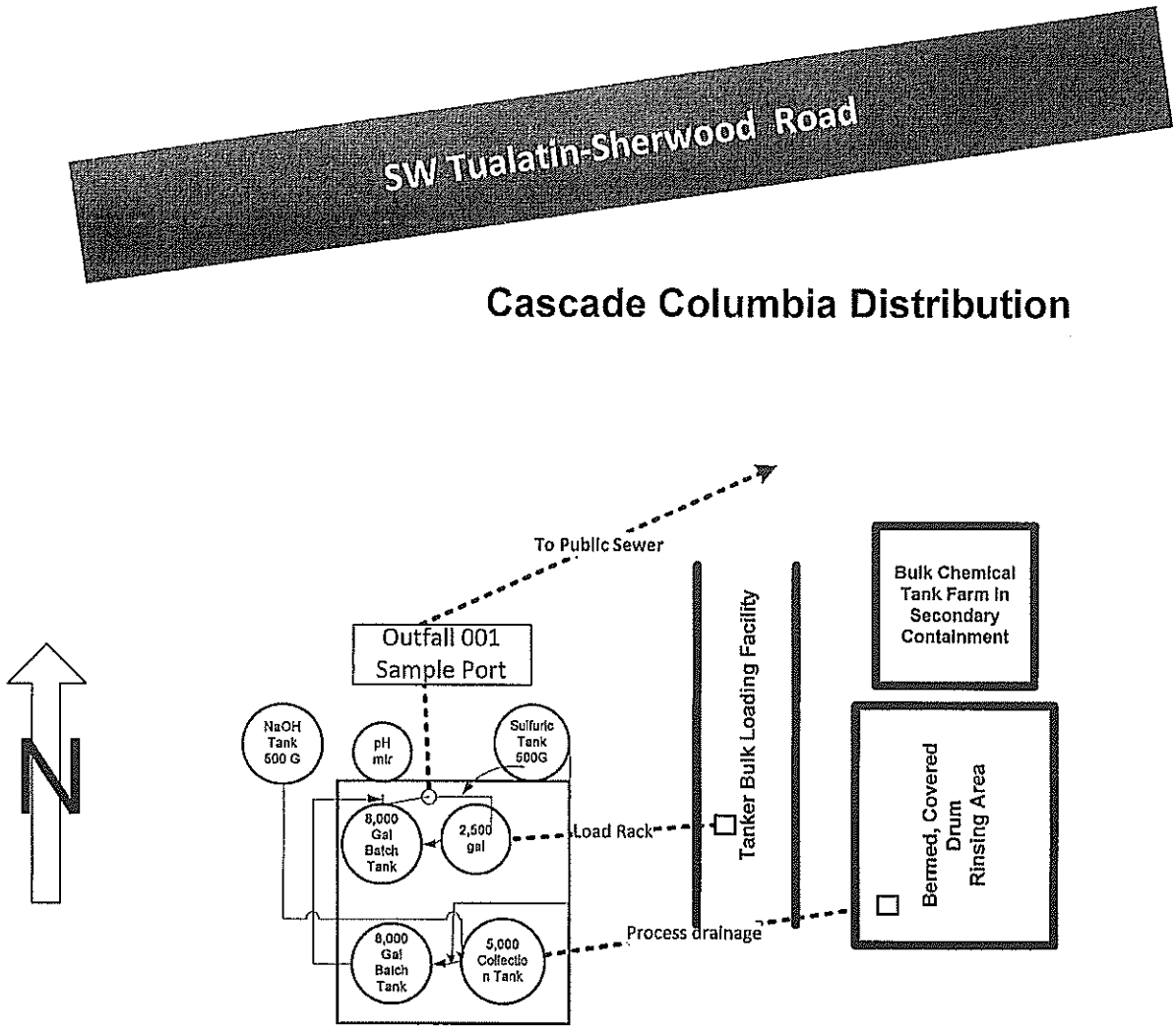
Industrial Wastewater Discharge Permit

Permit Number 111211
Effective Date of Permit: January 31, 2017
Expiration Date of Permit: January 30, 2022

SAMPLE SITE LOCATION

The following Outfall sample sites are the official District and Permittee sample collection locations. If required, a separate cyanide sampling point is included. All samples collected for compliance monitoring must be obtained from these sites.



11311
☐ Original to File ☐ Copy to User ☐ Copy to City ☐ Copy to WQL ☐ Copy to Accounting

External Sender
Steve,

We have been short staffed and are working on your nondomestic pretreatment permit, as you are currently covered under you current permit which has been administratively extended. I am sorry for the delay. You can forward this email to the city of Sherwood as Environmental Services program is only involved in the sanitary discharge of your site, as your facility does not qualify 1200-Z stormwater permit.

Industrial Permit Status for Cascade Columbia Distribution (CCD).

- Clean Water Services-Environmental Services program is currently working on the renewing the Industrial- Nondomestic Waste Discharge permit #111211 for CCD.
- CCD has submitted all the required renewal forms at this time for industrial permit renewal.
- The CWS will be providing a draft renewal permit to CCD for their review, and then will re-issue the permit to this facility..
- At this time there are no substantial changes for the sanitary discharge expected to the nondomestic waste discharge permit #111211.
- CCD Standard Industrial Code (SIC) is not required to have coverage under the DEQ General Industrial Stormwater permit at this time.

If the City has any additional questions for CWS-Environmental Service please have the City of Sherwood contact Joy Ramirez at 503.681.5147 or 928.522.4142.

Thank you,

Joy Ramirez (she,her)| Environmental Services Supervisor
Clean Water Services | Regulatory Affairs
2550 SW Hillsboro Hwy | Hillsboro OR 97123
o 503.681.5147 | **sc:** 503.681.5175
[**email:** ramirezj@cleanwaterservices.org]
engage news | facebook | twitter

From: Steve Durrell <steved@cascadecolumbia.com>
Sent: Wednesday, May 04, 2022 10:10 AM
To: Joy Ramirez <RamirezJ@CleanWaterServices.org>; Jerry Orlando <OrlandoJ@CleanWaterServices.org>
Cc: Matt Keinonen <MattK@cascadecolumbia.com>
Subject: New Permit

EXTERNAL EMAIL

Joy,
I have not seen a copy of our current permit yet. We are needing this for our Land Use Application with the city of Sherwood. Would it be possible to get this completed?

Steve Durrell | General Manager

Cascade Columbia Distribution

14200 SW Tualatin-Sherwood Rd. Sherwood, OR 97140
Phone: 503.625.5293 | **Fax:** 503.625.4335
Email: steved@cascadecolumbia.com

Exhibit R: Transmission Line Easement

303

BPA
(Rev. 8-15-48)

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Tract No. OC-K-34

TRANSMISSION LINE EASEMENT

The GRANTOR, herein so styled whether one or more, MILLARD S. ROSENBLATT and CAROLYN G. ROSENBLATT, husband and wife, and I. C. BRILL and ISOBEL BRILL, husband and wife,

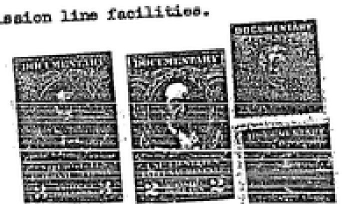
for and in consideration of the sum of - FIVE THOUSAND - Dollars ($5,000.00), in hand paid by the UNITED STATES OF AMERICA, receipt of which is hereby acknowledged, hereby grants, bargains, sells, and conveys to the UNITED STATES OF AMERICA and its assigns, a perpetual easement and right to enter and erect, operate, maintain, repair, rebuild, and patrol one or more electric power transmission lines and appurtenant signal lines, poles, towers, wires, cables, and appliances necessary in connection therewith, in, upon, over, under, and across the following-described parcel of land in the County of Washington, in the State of Oregon, to wit:

That portion of that part of the NW¼SW¼ of Section 28, Township 2 South, Range 1 West of the Willamette Meridian, Washington County, Oregon, lying southeasterly of the Southern Pacific Company right-of-way, which lies within a strip of land 250 feet in width, the boundaries of said strip lying 62.5 feet distant southerly from and 187.5 feet distant northerly from and parallel to the survey line of the Oregon City-Keeler section of the Big Eddy-Keeler transmission line as now located and staked on the ground over, across, upon and/or adjacent to the above-described property, said survey line being particularly described as follows:

Beginning at survey station 5306+45.9, a point on the North-South quarter section line of Section 28, Township 2 South, Range 1 West, W.M., said point being N. 1°37'40" E. a distance of 1202.7 feet from the quarter section corner on the south line of said Section 28; thence N. 42°59'00" W. a distance of 1007.1 feet to survey station 5316+53.0; thence N. 86°50'50" W. a distance of 1926.4 feet to survey station 5335+79.4, a point on the west line of said Section 28, said point being S. 2°31'00" W. a distance of 658.3 feet from the quarter section corner on the west line of said Section 28.

The right to cut danger trees is limited to strips of land 77.5 feet in width on both sides of and beyond the outside limits of the right-of-way between survey stations 5328+04 and 5337+83.

The Grantors reserve the right to construct railroad track spurs across the right-of-way in a manner that will not interfere with the construction, operation and maintenance of the transmission line facilities.



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together with the right to clear said parcel of land and keep the same clear of all brush, timber, structures, and fire hazards, provided however, the words "fire hazards" shall not be interpreted to include growing crops; and also the present and future right to top, limb, fell, and remove all growing trees, dead trees or snags (collectively called "danger trees") located on Grantor's land adjacent to said parcel of land, which could fall upon or against said transmission and signal line facilities.

TO HAVE AND TO HOLD said easement and rights unto the UNITED STATES OF AMERICA and its assigns, forever.

The Grantor covenants to and with the UNITED STATES OF AMERICA and its assigns that the title to all brush and timber cut and removed from said parcel of land and also all growing trees, dead trees or snags (collectively called "danger trees") cut and removed from Grantor's land adjacent to said parcel of land, is and shall be vested in the UNITED STATES OF AMERICA and its assigns and that the consideration paid for conveying said easement and rights herein described is accepted as full compensation for all damages incidental to the exercise of any of said rights.

The Grantor also covenants to and with the UNITED STATES OF AMERICA that Grantor is lawfully seized and possessed of the lands aforesaid; has a good and lawful right and power to sell and convey same; that same are free and clear of encumbrances, except as above indicated; and that Grantor will forever warrant and defend the title to said easement and the quiet possession thereof against the lawful claims and demands of all persons whomsoever.

Dated this 9th day of July, 1957

Millard S. Rosenblatt
Millard S. Rosenblatt

Carolyn G. Rosenblatt
Carolyn G. Rosenblatt

I. C. Brill
I. C. Brill

Isobel Brill
Isobel Brill

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BPA 177
Rev. 5-29-52 (Standard form of acknowledgment approved for use with all conveyances in Washington and Oregon)

3959-3

STATE OF OREGON)
) ss:
COUNTY OF Multnomah)

On the 19th day of February, 1957, personally came before me, a notary public in and for said County and State, the within-named MILLARD S. ROSENBLATT and CAROLYN G. ROSENBLATT, husband and wife, to me personally known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed, for the uses and purposes therein mentioned.

GIVEN under my hand and official seal the day and year last above written.

(SEAL)

Roger C. Nelson
Notary Public in and for the
State of Oregon
Residing at Portland

My commission expires: June 25, 1958

STATE OF OREGON)
) ss:
County of Multnomah)

On the 19th day of February, 1957, personally came before me, a notary public in and for said County and State, the within-named I. C. BRILL and ISOBEL BRILL, husband and wife, to me personally known to be the identical persons described in and who executed the within and foregoing instrument, and acknowledged to me that they executed the same as their free and voluntary act and deed, for the uses and purposes therein mentioned.

GIVEN under my hand and official seal the day and year last above written.

(SEAL)

Roger C. Nelson
Notary Public in and for the
State of Oregon
Residing at Portland

My commission expires: June 25, 1958

STATE OF OREGON,)
) ss:
County of Washington,)

I CERTIFY that the within instrument was received for the record on the 28 day of February, 1957, at 10:45 A.M., and recorded in book 391 on page 304, records of Deeds of said County.

Witness my hand and seal of County affixed.

ROGER THOMSSEN, County Clerk

By Lois Cook Deputy.

After recording, please return to:

TITLE SECTION, BRANCH OF LAND
BONNEVILLE POWER ADMINISTRATION
P.O. BOX No. 3537
PORTLAND 8, OREGON

hm