

Engineering Land Use Application Review Comments



To: Eric Rutledge, Associate Planner, Planning Department
 From: Bob Galati, P.E., City Engineer, Engineering Department
 Project: Willamette Water Supply System Water Treatment Plant
 Site Plan Review, Conditional Use (LU 2020-019)
 Date: November 30, 2020 (Amended December 8, 2020)

Engineering staff has reviewed the information provided for the above cited project. Final construction plans will need to meet the standards established by the City of Sherwood Engineering Department and Public Works Department, Clean Water Services (CWS) and Tualatin Valley Fire & Rescue in addition to requirements established by other jurisdictional agencies providing land use comments. City of Sherwood Engineering Department comments are as follows:

GENERAL OBSERVATIONS

The proposed project is located in the northeast portion of the Tonquin Employment Area (TL#2S128D001200), adjacent to SW 124th Avenue and approximately 1,113-feet south of the intersection with Tualatin-Sherwood Road. The site occupies the southern 46 acres of the 100 acre original parcel. The original parcel has been split into two separate parcels via County land use action. Each individual parcel was then required to annex into the City and undergo City land use planning under separate actions.

TRANSPORTATION

GENERAL INFORMATION

The applicant has prepared and submitted a TIA (DKS Associates, dated July 2, 2020) for the proposed development, which has been reviewed and the conclusions accepted by City and County staff. The TIA concludes that the highest traffic usage will be during construction of the site, and that permanent traffic impacts during the long term operations will be minimal and not require any additional traffic mitigation measures.

SW ORR DRIVE

As part of an existing agreement with the Trammel-Crowe, the WWSP site development has agreed to dedicate the necessary right-of-way and construct an east-west collector status road (SW Orr Drive) meeting City standards. The City Transportation System Plan (TSP) and the Tonquin Employment Area (TEA) Concept Plan indicate that a 3-lane without on-street parking collector cross section, with an overall right-of-way width of between 72-feet and 76-feet is preferred.

The applicant has submitted a 76-foot road right-of-way section for SW Orr Drive that consists of the following design elements:

- a) Two 13-foot wide travel lanes (11-foot drive lane with 2-foot shy distance)

- b) One 14-foot wide median/turn lane
- c) Two 5-foot wide planter strips
- d) Two 12-foot wide multiuse paths
- e) Two 1-foot clear zone at back of sidewalks

The proposed SW Orr Drive right-of-way section is a deviation from City standards. Deviation from City standards may be approved by submittal/acceptance of a design modification request to the City Engineer. A design modification request must be made for each individual design item that does not conform with City standards. Each design modification request will be reviewed/approved on a case by case basis by the City Engineer.

The applicant has submitted a Design Modification Request form associated with the proposed section. The City Engineer has reviewed the proposed request and has signed off on the Design Modification Request for the SW Orr Drive street section. The approved Design Modification Request is attached to these Review Comments (see attached Exhibit 2).

GIS contour information surrounding SW Orr Drive indicate that there will be cut/fill sections that will require respective easements outside the ROW.

The intersection of SW Orr Drive with SW 124th will fall under the jurisdictional requirements of County. ROW dedication requirements along SW 124th Avenue shall at a minimum comply with County requirements, although frontage improvements along SW 124th Avenue shall comply with City of Sherwood requirements.

Street lighting for the SW Orr Drive shall be the City standard of PGE Option 'B', Cobra Head fixtures. A photometric analysis has not been submitted with the Land Use packet. However, a photometric analysis shall be required for public infrastructure plan approval and shall include the intersection of SW Orr Drive with SW 124th Avenue, and the extent of SW Orr Drive and SW 124th Avenue.

Although the construction of SW Orr Drive is assigned to the Willamette Water Supply Program project located adjacent and south of the subject site, the agreement between the two subject properties has indicated that the Trammel-Crow site will be responsible for any slope easements and PUE along the north side of the SW Orr Drive right-of-way.

The end of SW Orr Drive relative to this project will conform to City standards noted in the City's Engineering Design and Standard Details Manual. Specifically Detail RD-51 gives specific information on end of road treatment (based on future extension). Since SW Orr Drive is planned on not allowing any on-street parking, illegal on-street parking will result in fines and towing of vehicles.

The submittal shows two access drives to the site (south drive is main access, north drive is secondary access). The applicant has indicated that the north access drive will be gated to prevent non-authorized access entering the site from this location. However, the north access drive may be used as an exit point onto SW Orr Drive for WWSP operations vehicles. The spacing of the gate location will need to be coordinated to meet TVF&R spacing standards. The applicant has expressed a desire

to keep the gate as close to SW Orr Drive to prevent non-authorized persons from entering the site from this point, and to reserve the ability to use this point as an emergency backup access point should the main access drive be rendered impassible for some reason.

Although SW Orr Drive is classified as a collector status road, the cross section design is to meet the City standards for a collector status road, excepting that no on-street parking is being required, and any design modification requests are approved. The pavement section for this road shall meet the maximum of either the City pavement section standard for a collector road or as recommended by a geotechnical pavement design based on local site soils conditions.

A geotechnical report prepared by McMillan-Jacobs Associates (dated May 12, 2020) was submitted in the Land Use packet. The report has provided recommendations for pavement base rock and pavement surfaces. The recommendations appear to conform to the City's minimum standards.

SW 124th AVENUE

County has submitted a letter dated November 13th, 2020 which has listed conditions which are incorporated into the Engineering Conditions of Approval comments in their entirety (see attached County letter as Exhibit 1 to the Engineering Comments).

Highlighting several conditions of the County letter include:

- 1) Requiring half street improvements for a 5-lane arterial with turn lanes along the entire frontage with SW 124th Avenue meeting County standards, including:
 - a. Half-width pavement for a left turn lane
 - b. Dual through lanes
 - c. Curb & gutter
 - d. A 5-foot wide planter strip
 - e. A 12-foot wide multi-use path
 - f. Continuous street lighting.
- 2) Right-of-way dedication of 52-feet from the existing SW 124th Avenue road centerline, including adequate corner radius at the intersection with SW Orr Drive.

The County frontage improvements conditions include certain improvements which fall under the City's jurisdictional control. A Design Modification Request form for frontage and right-of-way improvements along SW 124th Avenue has been submitted by the applicant, reviewed and approved by the City Engineer (see Exhibit 3).

The City will be requiring frontage improvements along the SW 124th Avenue frontage, which will include the following items:

- a. An 12-foot wide concrete sidewalk
- b. A 5-foot wide planter strip, measured between street face of curb and street face edge of sidewalk
- c. Street trees, with approved root barriers
- d. Planter strip ground cover plantings

- e. Planter strip irrigation system (including controller, valves and sprinklers)
- f. Street lighting system

The applicant has submitted three Design Modification Request forms to the Engineering Department, for each non-conforming design element shown in the plans for review and approval by the City Engineer.

CONDITIONS

CONDITION: Prior to Approval of Engineering Public Improvement Plans, applicant shall have dedicated 52-feet of right-of-way along the west side of SW 124th Avenue in conformance with requirements delineated in a letter from County dated November 13th, 2020 which has listed conditions which are incorporated into the Engineering Conditions of Approval comments in their entirety (see attached County letter as Exhibit 1 to the Engineering Comments).

CONDITION: Prior to Approval of Engineering Public Improvement Plans, applicant shall have dedicated 76-foot right-of-way for SW Orr Drive in conformance with the proposed section submitted as a Design Modification Request, reviewed and approved by the City Engineer (see attached Exhibit 2).

CONDITION: Prior to Final Acceptance of Constructed Public Improvements, applicant shall record an 8-foot wide public utility easement (PUE) along all public street frontages, and provide proof that a PUE has been recorded along the north side of SW Orr Drive. The PUE shall be located adjacent to and outside the public street right-of-way.

CONDITION: Prior to Approval of Engineering Public Improvement Plans, construction plans shall include City required frontage improvements along SW 124th Avenue consistent with City standards as follows:

- a) An 12-foot wide concrete sidewalk & ADA ramps (if needed)
- b) A 5-foot wide planter strip, measured between street side face of curb and street side edge of sidewalk.
- c) Street trees, with approved root barrier
- d) Planter strip ground cover plantings
- e) Planter strip irrigation system, including controller, electronically controlled valves, piping and sprinkler heads
- f) Street lighting system

These frontage improvements shall commence at the north property line intersecting SW 124th Avenue right-of-way, and end at the point as defined by conditions set per County letter dated November 13th, 2020 (see attached County letter as Exhibit 1 to the Engineering Comments).

CONDITION: Prior to Approval of Engineering Public Improvement Plans, construction plans shall include public road frontage improvements for SW Orr Drive conforming with City standards as modified by an approved Design Modification Request, as follows:

- g) 12-foot wide concrete sidewalks with ADA ramps at the intersection of SW Orr Drive and SW 124th Avenue.

- h) 5-foot wide planter strips, measured between street side face of curb and street side edge of sidewalk.
- i) Street trees, with approved root barrier
- j) Planter strip ground cover plantings
- k) Planter strip irrigation system, including controller, electronically controlled valves, piping and sprinkler heads
- l) Street lighting system

These frontage improvements shall commence at the intersecting SW Orr Drive and SW 124th Avenue, and end at the west property line of the site development.

CONDITION: Prior to Issuance of any Site Grading Permit or Approval of Engineering Public Improvement Plans, the applicant shall obtain and submit a copy of an issued County Facility Permit, to the City as part of any Site Grading Permit or Approval of Engineering Public Improvement Plans.

CONDITION: Prior to Approval of Engineering Public Improvement Plans, the applicant shall submit a separate design modification request form for any additional non-conforming public infrastructure design element(s) that were not submitted under the Land Use process, to the City Engineer for review and approval.

CONDITION: Prior to Approval of Engineering Public Improvement Plans, engineering plans shall show a pavement section conforming to the City standard for a collector road, or as recommended by a geotechnical pavement design based on local site soils conditions which shall be submitted to the City as part of the plan review process. The design life of the geotechnical pavement design shall be 25-years.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, a photometric analysis shall be performed that encompasses the entire length of the SW Orr Drive including the intersection with SW 124th Avenue, and the site frontage along SW 124th Avenue.

CONDITION: Prior to Approval of Engineering Public Improvement Plans, the street lighting plans for SW Orr Drive and SW 124th Avenue shall show PGE Option "B" Cobra Head street lighting systems.

CONDITION: Prior to Approval of Engineering Public Improvement Plans, the applicant shall either record any slopes easements necessary to support the SW Orr Drive section/alignment, or provide proof of recorded slope easements by the adjacent property owner necessary to support the SW Orr Drive section/alignment. Slope easements shall be based on a 2 horizontal to 1 vertical finish slope grade.

CONDITION: Prior Acceptance of Constructed Public Improvements, applicant shall provide a two (2) year maintenance warranty for deficient workmanship and/or materials associated with the public improvements.

Sanitary Sewer

The subject property proposes to extend the public sanitary sewer from the existing public sanitary sewer located north of the site, to an approved point within SW Orr Drive. Any portion of the public sanitary sewer located outside the public right-of-way

shall be placed within a public sanitary sewer easement dedicated to the City. The width of the easement shall be a minimum of 15-feet for the sanitary line alone. If public water and/or storm water utilize the same alignment, then increase the easement width by 5-feet for each additional public utility located within the easement alignment.

CONDITION: Prior to Approval of Public Improvement Plans, public sanitary line shall be extended as needed, either east or west within SW Orr Drive to provide for private service laterals to the site. The applicant has provided design data that shows that extension of the public sanitary sewer line to the west end of SW Orr Drive is not required as the depth of cover and adverse grads preclude service connection to developable lots located west of the subject site.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall extend an appropriately sized public sanitary sewer from the existing public sanitary sewer located north of the site, into SW Orr Drive. Extension of the public sanitary sewer within SW Orr Drive shall only be what is necessary to serve the subject site, meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall provide design for any public sanitary sewer beneath any retaining wall to be installed within a sleeve meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Issuance of a Plumbing Permit, the proposed development shall design the private sanitary sewer to be in compliance with the current Oregon Plumbing Specialty Code.

CONDITION: Prior to Final Acceptance of the Constructed Public Improvements, any public sanitary sewer facilities located on private property shall have a recorded public sanitary sewer easement encompassing the related public sanitary sewer improvements meeting the approval of the Sherwood Engineering Department.

Water

The adjacent site development is constructing public water mainline extensions to the north property line of the subject site. These improvement consist of:

- a) A 16-inch water mainline extending south along SE Cipole Place and a public utility easement to the north property line of the subject property.
- b) A 12-inch water mainline extending south along SW 124th Avenue to the north property line of the subject property.

The subject property will connect to an existing 16-inch diameter public water line located just north of the subject site and extend it to an approved point within SW Orr Drive. The applicant shall then extend the 16-inch water line down SW Orr Drive ending at the western property line of the subject property.

The subject property will also connect to an existing 12-inch diameter public water line located within SW 124th Avenue at the north property of the subject site. The applicant will connect to this existing water mainline and extend it west along SW Orr Drive to

intersect with the new 16-inch water main line. This is a looped system to provide for resiliency and redundancy.

On-site fire protection may be necessary depending on conditions by Tualatin Valley Fire & Rescue.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall design to:

- a) Construct a new 16-inch diameter public water line from the existing public water line located north of the site within a utility easement, and extending it to an approved point within SW Orr Drive, then west along the SW Orr Drive alignment to the wester property line of the subject site, meeting the approval of the City of Sherwood Engineering Department.
- b) Construct a new 12-inch diameter public water line from the existing public water line located in SW 124th Avenue at the north property line of the subject site, west along SW Orr Drive to the intersection with the new 16-inch water mainline, meeting the approval of the City of Sherwood Engineering Department.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall provide design such that any public water line located beneath or through any retaining wall to be installed within a sleeve meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall design to provide water service to supply domestic, irrigation and fire water (if required) to the subject development at a location meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, water flows calculations (domestic, irrigation and fire) shall be provided by the developer to the City of Sherwood Public Works Department for review and approval.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall design for the installation of Reduced Pressure Backflow Assemblies meeting Sherwood Engineering Department standards.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, if on-site fire protection is to be installed, the proposed development shall design for the installation of backflow protection meeting Sherwood Engineering Department standards.

CONDITION: Prior to Issuance of a Plumbing Permit, the proposed development shall design for private water lines to be in compliance with the current Oregon Plumbing Specialty Code.

CONDITION: Prior to Final Acceptance of the Constructed Public Improvements, any public water facilities located on private property shall have a recorded public water line easement encompassing the related public water improvements meeting Sherwood Engineering standards.

Storm Sewer

There exists a 36-inch diameter culvert beneath SW Tualatin-Sherwood Road that serves the eastern half of the adjacent property and the northern portion of the subject property. There is another storm sewer within SW Tualatin-Sherwood Road that is used for street drainage only. The southern portion of the subject property flows south to existing wetlands. For this site development it is anticipated that the existing 36-inch diameter storm sewer will provide public storm sewer for the subject property.

The development will be required to install water quality treatment and hydromodification for all new/modified impervious area meeting Clean Water Services standards. Separate water quality treatment and hydromodification facilities shall be provided for off-site (public) and on-site (private) impervious surface areas.

A preliminary stormwater report prepared by Murraysmith (dated August 2nd, 2020) was provided as part of the Land Use submittal. The report indicates that on-site (private) stormwater treatment and hydromodification facilities (treatment ponds and swales) will be provided meeting CWS design requirements.

Off-site (public) stormwater treatment and hydromodification facilities (street planter strip treatment facilities) will be provided meeting City and CWS design requirements.

Discharge of the combined outflow will occur through a public stormwater system constructed by the adjacent site development, located just north of the subject site.

The preliminary storm drainage report indicates that there are no deficiencies within the downstream conveyance system.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall design to provide for storm water runoff collection, conveyance, treatment and hydromodification for SW Orr Drive meeting the requirements of CWS and approval of the Sherwood Engineering Department.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall provide design such that any public storm water system located beneath or through any retaining wall to be installed within a sleeve meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, a final storm drainage report in compliance with Clean Water Service standards shall be submitted meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, if the final storm drainage report indicates any downstream deficiencies, then the subject development shall either correct the downstream deficiencies or provide detention meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall design to supply storm sewer service to the subject development site meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall design to provide storm water quality treatment and hydro-modification in compliance with Clean Water Services' standards meeting the approval

of the Sherwood Engineering Department for all new impervious area constructed/modified by the subject development including any required improvements within Washington County right-of-way.

CONDITION: Prior to Issuance of a Plumbing Permit, the proposed development shall design for private storm water runoff within the subject property to be collected and conveyed in accordance with the current Oregon Plumbing Specialty Code.

CONDITION: Prior to Final Acceptance of the Constructed Public Improvements, any public storm sewer located on or across private property shall have a recorded public storm sewer easement encompassing the related public storm sewer improvements meeting Sherwood Engineering standards.

Grading and Erosion Control

City policy requires that prior to grading, a permit is obtained from the Building Department for all grading on the private portion of the site.

The Engineering Department requires a grading permit for all areas graded as part of the public improvements. The Engineering permit for grading of the public improvements is reviewed, approved and released as part of the public improvement plans.

An erosion control plan and permit are required from the City of Sherwood Engineering Department for all public and private improvements. The erosion control permit is reviewed, approved and released as part of the public improvement plans.

The proposed disturbance area for the subject development is greater than 5 acres in area therefore a DEQ NPDES 1200-C permit is required for this project.

It has been presented that site grading will include significant site blasting processes. The applicant will need to obtain a Blasting Permit from TVF&R and include it with the submittal to obtain a City Blasting permit. The City Blasting Permit only covers the blasting process and does not replace the need to obtain a site grading permit.

The City of Tualatin operates an elevated water storage tank on an adjacent parcel located north and west of the subject site. As part of the blasting permit, it is advised that the applicant coordinate with the City of Tualatin and any additional measures needed to ensure safety of the existing public system

CWS standards call for a phased mass grading plan for projects where clearing and mass grading activities are proposed during the wet weather period.

CONDITION: Prior to Grading Permit, the subject development shall submit a phased mass grading plan/erosion control plan meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Grading Permit, the subject development shall obtain a DEQ NPDES 1200-C permit.

CONDITION: Prior to Issuance of a Site Grading Permit (if blasting is desired), the applicant shall obtain a Blasting Permit from TVF&R and include it with any submittal to

obtain a City issued Blasting Permit. The City Blasting Permit only covers the blasting process and does not replace the need to obtain a site grading permit.

Natural Resources:

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall design for vegetative corridor enhancements in compliance with the conditions imposed by Clean Water Services meeting the approval of the Sherwood Engineering Department.

CONDITION: Prior to Acceptance of the Constructed Public Improvements, the proposed development shall provide an access easement to the City of Sherwood and CWS over each natural resource area.

Other Engineering Issues

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, a Storm Water Connection Permit Authorization from Clean Water Services shall be obtained.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans or Issuance of Building Permits, an Engineering Compliance Agreement shall be obtained from the City of Sherwood Engineering Department.

CONDITION: Prior to Acceptance of Public Improvements, the proposed development shall dedicate a minimum 8-foot wide PUE along the subject property frontage of all public right-of-way meeting the approval of the Sherwood Engineering Department unless otherwise approved by the City Engineer.

CONDITION: Prior to Acceptance of Public Improvements, the proposed development shall set all monumentation and record the survey with the Washington Count Surveyor's Office.

There is no Sherwood Broadband existing along the subject property frontage of SW Orr Drive nor along the subject property frontage of SW 124th Avenue.

CONDITION: Prior to Approval of the Engineering Public Improvement Plans, the proposed development shall design for Sherwood Broadband conduits and vaults along the subject property frontage of SW Orr Drive and SW 124th Avenue in areas where a PUE is dedicated meeting the approval of the Sherwood Engineering Department unless otherwise approved for a payment-in-lieu.

END OF COMMENTS.



WASHINGTON COUNTY OREGON

EXHIBIT 1

November 13, 2020

To: Eric Rutledge - Associate Planner

From: Naomi Vogel - Associate Planner

**RE: WWSP Water Treatment Plant
City File Number: LU 2020-019
County File Number: CP 20-920
Tax Map and Lot Number: 2S128D001200
Location: 21309 SW 124th Avenue**

Washington County Department of Land Use and Transportation has reviewed this development application for a new water treatment plant for the Willamette Water Supply System and the construction of a new City public, SW Orr Street, that will align with SW Blake Street. The new public street will be constructed on SW 124th Avenue, a County-maintained Arterial street.

I. PRIOR TO ISSUANCE OF A GRADING PERMIT BY THE CITY OF SHERWOOD, THE APPLICANT SHALL OBTAIN A WASHINGTON COUNTY FACILITY PERMIT FOR CONSTRUCTION OF THE FOLLOWING PUBLIC IMPROVEMENTS ON SW 124TH AVENUE:

A. Submit the following to **Washington County** Public Assurance Staff (503-846-3843):

1. Completed "Design Option" form.
2. **\$20,000.00** Administration Deposit.

NOTE: The Administration Deposit is a cost-recovery account used to pay for County services provided to the developer, including plan review and approval, field inspections, as-built approval, and project administration. The Administration Deposit amount noted above is an estimate of what it will cost to provide these services. If, during the project, the Administration Deposit account is falls below County approved level, additional funds will be requested to cover the estimated time left on the project (at then-current rates per the adopted Washington County Fee Schedule). If there are any unspent funds at project close out, they will be refunded to the applicant. Any point of contact with County staff can be a chargeable cost. If project plans are not complete or do not comply with County standards and

**Department of Land Use & Transportation
Operations and Maintenance**

1400 SW Walnut Street, MS 51, Hillsboro, OR 97123-5625
phone: 503-846-7623 • fax: 503-846-7620
www.co.washington.or.us/lut • lutops@co.washington.or.us

codes, costs will be higher. There is a charge to cover the cost of every field inspection. Costs for enforcement actions will also be charged to the applicant.

3. Copy of the City's Notice of Decision (NOD) and the County's letter dated November 13, 2020.
4. Engineering plans, Geotech/Pavement report and Sight Distance Analysis via ProjectDox for construction of the following public improvements to County standards:
 - a. Closure of all existing access from the subject tax lot to SW 124th Avenue.
 - b. Construction access from SW 124th Avenue. Include sight distance analysis, traffic control plan and truck turning templates per County Engineer requirements.
 - c. SW Orr Street connection to SW 124th Avenue (stop-controlled) aligned with SW Blake Street, including adequate street illumination, to County standard. The access shall be constructed to permit future signalization of the intersection, including streetlight conduit, signal conduit(s) and interconnect conduit.
 - d. Half-street improvement for a 5-lane Arterial with turn lanes along the site's frontage of SW 124th Avenue to County standards. The half-street improvement shall include half-width pavement for a left-turn lane, dual through lanes, curb/gutter, a 12 foot multi-use path with a 5 foot planter strip and continuous street lighting.

NOTE: The outside travel lane shall be a minimum of 15 feet. Street trees shall meet City standards.

- e. Half-street improvement for a 5-lane Arterial along the site's frontage of SW 124th Avenue to County standards if the County can acquire the right-of-way from Tax Lot 851 that fronts the applicant's tax lot. The half-street shall include half-width pavement for a left-turn lane, dual through lanes, curb/gutter, a 12 foot multi-use path with a 5 foot planter strip and continuous street lighting. The planter strip that fronts the retaining wall shall be reduced to 3 feet.

NOTE: The outside travel lane shall be a minimum of 15 feet. Street trees/shrubs shall meet City standards.

5. The following shall be recorded with Washington County Survey Division (Contact John Kidd @ 503.846.7932 if dedication is via document or the Survey Division at 503.846.8723 if dedication is via a plat):

- a. Dedication of additional right-of-way to provide 52 feet from the centerline of SW 124th Avenue, including adequate corner radius at the intersection with SW Orr Street.
- b. Dedication of an 8 foot PUE along the site's frontage of SW 124th Avenue.

II. PRIOR TO OCCUPANCY BY THE CITY OF SHERWOOD:

- A. All public improvements required on SW 124th Avenue and the intersection of SW Orr Street/SW 124th Avenue shall be completed and accepted by Washington County.
- B. Provide Final Sight Distance Certification for the intersection of SW Orr Street/124th Avenue.

If you have any questions, please contact me at 503-846-7639.

Cc: Road Engineering Services
Traffic Engineering Services
Assurances Section
Transportation File



EXHIBIT 2

Memorandum

*To: Bob Galati, P.E.
City Engineer, City of Sherwood*

From: Greg Lindstadt, CDM Smith

Date: November 16, 2020

Subject: Design Modification Request for Orr Drive Section

Location of Requested Design Modification

The future SW Orr Drive (formerly called SW Blake Street) from SW 124th Avenue to the western property edge of the Willamette Water Supply System (WWSS) Water Treatment Plant (WTP) Property (Tax Lot ID 2S128D001200).

Current Standards

SW Orr Drive (formerly called SW Blake Street) is classified as a collector street per the City TSP. The Engineering Pre-Application Comments from the January 10, 2019 meeting indicated that the Orr Drive section shall conform to the 3-lane road section without on-street parking standard (76-foot right-of-way-width). Standard collector street sections are shown on Drawing Number RD-3 of the City of Sherwood Engineering Manual (Attachment A) and consists of the following half-street section for a 3-lane section without parking:

Median / turn lane	7' wide (half of median / turn lane)
Vehicle lane	11' wide
Bike lane	6' wide
Landscape strip	5' wide
Sidewalk	8' wide
Space behind sidewalk	1' wide
Half-street right-of-way	38' wide (76' total road right-of-way width)

Note that Section 16.106.060.B.1 of the City of Sherwood Development Code clarifies the sidewalk requirements shown on Drawing number RD-3 by stating that commercial industrial areas must have a minimum 8-foot wide sidewalk.

Design Modification Being Requested

The following revised road section for SW Orr Drive is requested.

Median / turn lane	7' wide (half of median / turn lane)
--------------------	--------------------------------------

Design Modification Request for Orr Drive Section

November 16, 2020

Page 2

Vehicle lane	13' wide (11' wide vehicle lane with 2' shy distance)
Landscape strip	5' wide
Multi-use path	12' wide
Space behind sidewalk	1' wide
Half-street right-of-way	38' wide (76' total road right-of-way width)

In summary, a 13' wide vehicle lane and 12' wide multi-use path is requested in place of an 11' wide vehicle lane, 6' bike lane, and 8' wide sidewalk.

Existing Conditions

The existing WWSS WTP site is an undeveloped site, consisting of forested sections, existing wetlands and other sensitive areas, rock outcroppings, and a PGE easement which limits the development of the site. See Attachment B for WWSS WTP property encumbrances.

Result of Meeting Standards

The City's standard road section can be met. However, the City has requested the revised road section.

Proposed Design Modification

The following revised road section for SW Orr Drive be provided:

Median / turn lane	7' wide (half of median / turn lane)
Vehicle lane	13' wide (11' wide vehicle lane with 2' shy distance)
Landscape strip	5' wide
Multi-use path	12' wide
Space behind sidewalk	1' wide
Half-street right-of-way	38' wide (76' total road right-of-way width)

Reason Why Design Request Should be Approved

The revised SW Orr Drive section represents direction that the City gave to the applicant at a meeting held on October 8, 2020. It will provide a smooth transition from the 12' multi-use path on SW 124th Avenue to SW Orr Drive. The multi-use path on SW Orr Drive also moves bicycle traffic away from the vehicle travel lanes, which are likely to see large truck traffic to and from the future WTP and other industrial and employment uses that may develop along the extension of SW Orr Drive in the future.

Design Modification Request for Orr Drive Section
November 16, 2020
Page 3



11/16/2020

Design Engineer

Date

Craig Christensen, P.E. - City Project Manager

Date

- Approved
- Approved with Conditions (conditions below or on attached sheet)
- Denied

Bob Galati, P.E. - City Engineer

11/30/2020

Date



EXHIBIT 3

Memorandum

*To: Bob Galati, P.E.
City Engineer, City of Sherwood*

From: Greg Lindstadt, CDM Smith

Date: November 16, 2020

Subject: Design Modification Request for SW 124th Ave Landscape Strip

Location of Requested Design Modification

SW 124th Avenue from the northern edge of the existing retaining wall to the southern property edge of the Willamette Water Supply System (WWSS) Water Treatment Plant (WTP) Property (Tax Lot ID 2S128D001200).

Current Standards

SW 124th Avenue is classified as an arterial street per the City TSP.

The Engineering Pre-Application Comments from the April 10, 2020 meeting indicated that the ROW dedication requirements along SW 124th Avenue shall at a minimum comply with WACO requirements, although frontage improvements along SW 124th Avenue shall comply with City of Sherwood requirements.

The City's standard frontage improvements consist of the following:

Bike lane	6' wide
Landscape strip	5' wide
Sidewalk	8' wide
Space behind sidewalk	1' wide
Frontage improvements	20' wide total

Note that Section 16.106.060.B.1 of the City of Sherwood Development Code clarifies the sidewalk requirements shown on Drawing number RD-4 (Attachment A) by stating that commercial industrial areas must have a minimum 8-foot wide sidewalk.

An 8' PUE and 15' visual buffer are also required outside the road right-of-way dedication. These are allowed to overlap.

Design Modification Being Requested

Design Modification Request for SW 124th Ave Landscape Strip
November 16, 2020
Page 2

The following modifications to the frontage improvements along 124th Avenue are requested in the area adjacent to the existing retaining wall if the County acquires the property between the WTP property and the 52-foot right-of-way dedication by December 31, 2020, in which case the applicant will provide half-street improvements on this frontage:

Landscape strip	3' wide
Multi-use path	12' wide
Space behind multi-use path	3' wide
Frontage improvements	18' wide total

In order to maintain the 52' right-of-way provided north of the existing retaining wall, the reduction in width of the landscape strip by 2' requires a corresponding increase in the distance behind the multi-use path by 2'.
In summary, a 3' landscape strip and 3' space behind the multi-use path is requested in place of a 5' wide landscape strip and 1' space behind the sidewalk.

Existing Conditions

SW 124th Avenue currently consists of a 37' half-road section, with no landscape strip, bike path, or sidewalk.

The existing WWSS WTP site is an undeveloped site, consisting of forested sections, existing wetlands and other sensitive areas, rock outcroppings, and a PGE easement which limits the development of the site. See Attachment B for WWSS WTP property encumbrances.

Result of Meeting Standards

In the area adjacent to an existing retaining wall located near the southeast property corner, the standard frontage improvements cannot be accommodated due to the location of the existing retaining wall in relation to the existing road centerline.

Proposed Design Modification

The frontage improvements along 124th Avenue adjacent to the existing retaining wall will be provided as follows:

Landscape strip	3' wide
Multi-use path	12' wide
Space behind multi-use path	3' wide
Frontage improvements	18' wide total

In the area adjacent to an existing retaining wall located near the southeast property corner, the landscape strip will be reduced to 3' wide and the space behind the multi-use path will be increased to 3' wide.

Reason Why Design Request Should be Approved

The revised frontage improvements along SW 124th Avenue represent direction that the City

Design Modification Request for SW 124th Ave Landscape Strip
November 16, 2020
Page 3

and Washington County gave to the applicant at a meeting held on October 8, 2020. The improvements will be aligned with the multi-use path being provided by PGE on the east side of SW 124th Avenue.

The proposed narrower planter strip and revised location of the PUE will allow the existing retaining wall, installed recently during the SW 124th Avenue extension project, to remain.



11/16/2020

Design Engineer

Date

Craig Christensen, P.E. - City Project Manager

Date

- Approved
- Approved with Conditions (conditions below or on attached sheet)
- Denied

11/30/2020

Bob Galati, P.E. - City Engineer

Date



EXHIBIT 4

Memorandum

*To: Bob Galati, P.E.
City Engineer, City of Sherwood*

From: Greg Lindstadt, CDM Smith

Date: November 16, 2020

Subject: Design Modification Request for SW 124th Ave Landscape Strip

Location of Requested Design Modification

SW 124th Avenue from the northern edge of the existing retaining wall to the southern property edge of the Willamette Water Supply System (WWSS) Water Treatment Plant (WTP) Property (Tax Lot ID 2S128D001200).

Current Standards

SW 124th Avenue is classified as an arterial street per the City TSP.

The Engineering Pre-Application Comments from the April 10, 2020 meeting indicated that the ROW dedication requirements along SW 124th Avenue shall at a minimum comply with WACO requirements, although frontage improvements along SW 124th Avenue shall comply with City of Sherwood requirements.

The City's standard frontage improvements consist of the following:

Bike lane	6' wide
Landscape strip	5' wide
Sidewalk	8' wide
Space behind sidewalk	1' wide
Frontage improvements	20' wide total

Note that Section 16.106.060.B.1 of the City of Sherwood Development Code clarifies the sidewalk requirements shown on Drawing number RD-4 (Attachment A) by stating that commercial industrial areas must have a minimum 8-foot wide sidewalk.

An 8' PUE and 15' visual buffer are also required outside the road right-of-way dedication. These are allowed to overlap.

Design Modification Being Requested

Design Modification Request for SW 124th Ave Landscape Strip
 November 16, 2020
 Page 2

The following modifications to the frontage improvements along 124th Avenue are requested in the area adjacent to the existing retaining wall if the County acquires the property between the WTP property and the 52-foot right-of-way dedication by December 31, 2020, in which case the applicant will provide half-street improvements on this frontage:

Landscape strip	3' wide
Multi-use path	12' wide
Space behind multi-use path	3' wide
Frontage improvements	18' wide total

In order to maintain the 52' right-of-way provided north of the existing retaining wall, the reduction in width of the landscape strip by 2' requires a corresponding increase in the distance behind the multi-use path by 2'.
 In summary, a 3' landscape strip and 3' space behind the multi-use path is requested in place of a 5' wide landscape strip and 1' space behind the sidewalk.

Existing Conditions

SW 124th Avenue currently consists of a 37' half-road section, with no landscape strip, bike path, or sidewalk.

The existing WWSS WTP site is an undeveloped site, consisting of forested sections, existing wetlands and other sensitive areas, rock outcroppings, and a PGE easement which limits the development of the site. See Attachment B for WWSS WTP property encumbrances.

Result of Meeting Standards

In the area adjacent to an existing retaining wall located near the southeast property corner, the standard frontage improvements cannot be accommodated due to the location of the existing retaining wall in relation to the existing road centerline.

Proposed Design Modification

The frontage improvements along 124th Avenue adjacent to the existing retaining wall will be provided as follows:

Landscape strip	3' wide
Multi-use path	12' wide
Space behind multi-use path	3' wide
Frontage improvements	18' wide total

In the area adjacent to an existing retaining wall located near the southeast property corner, the landscape strip will be reduced to 3' wide and the space behind the multi-use path will be increased to 3' wide.

Reason Why Design Request Should be Approved

The revised frontage improvements along SW 124th Avenue represent direction that the City

Design Modification Request for SW 124th Ave Landscape Strip
November 16, 2020
Page 3

and Washington County gave to the applicant at a meeting held on October 8, 2020. The improvements will be aligned with the multi-use path being provided by PGE on the east side of SW 124th Avenue.

The proposed narrower planter strip and revised location of the PUE will allow the existing retaining wall, installed recently during the SW 124th Avenue extension project, to remain.



11/16/2020

Design Engineer

Date

Craig Christensen, P.E. - City Project Manager

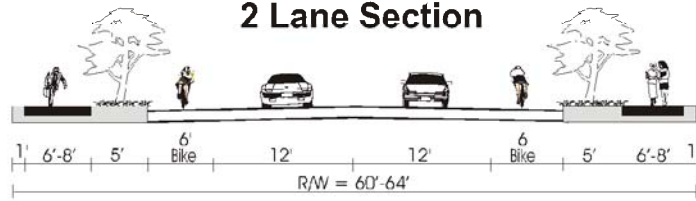
Date

- Approved
- Approved with Conditions (conditions below or on attached sheet)
- Denied

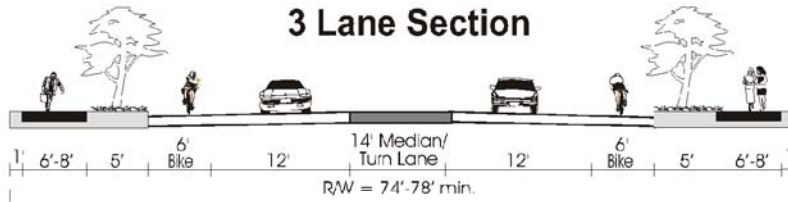
Bob Galati, P.E. - City Engineer

Date

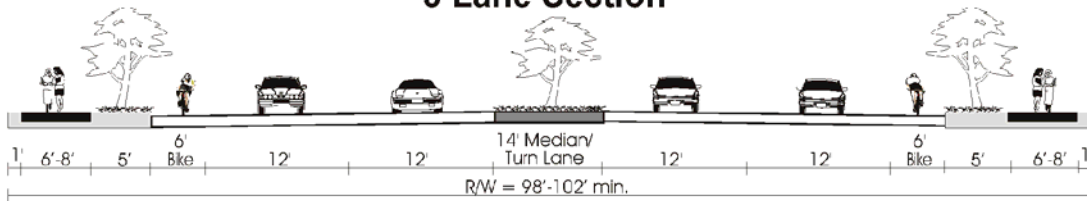
2 Lane Section



3 Lane Section

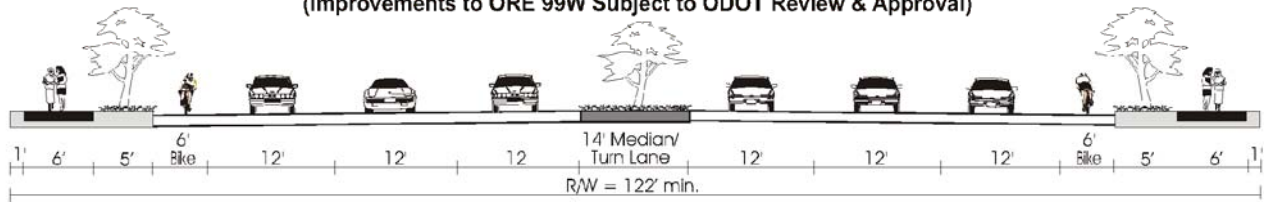


5 Lane Section



7 Lane Section

(Improvements to ORE 99W Subject to ODOT Review & Approval)



Arterial Street Design Characteristics

A variance requires demonstration of hardship or other exceptional circumstances resulting from conditions of the property. Variances must meet Sherwood Development Code and TPR criteria.

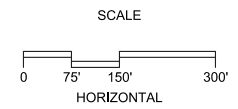
Characteristic	Arterials
Vehicle Lane Widths (Turn Lane - 12-14 ft.)	12 ft.
On-Street Parking	Only in (i.e. downtown) (8 ft.)
Bicycle Lanes (minimums)	6 ft.
Sidewalks (minimums)	6-8 ft. *1
Landscape Strips	Required
Raised Medians	Required
Neighborhood Traffic Management (NTM)	Prohibited
Transit	Appropriate
Turn Lanes	When Warranted *2
Access Control	See Later Discussion

Notes:

1. 8 feet for residential streets, 6 feet in commercial/industrial areas.
2. Turn lane warrants should be reviewed using Highway Research Record No. 211, NCHRP Report No. 279 or other updated/superseding reference.



STANDARD DRAWING TITLE		DRAWING NUMBER
STANDARD ARTERIAL STREET SECTIONS		RD-4
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE	DATE
	N.T.S.	JUL' 09



KEY	
	PROPERTY BOUNDARY
	BLAKE RD
	WETLAND
	PGE EASEMENT
	SLOPE EASEMENT
	PARTIALLY ISOLATED LAND
	SUBSTANTIALLY ISOLATED LAND

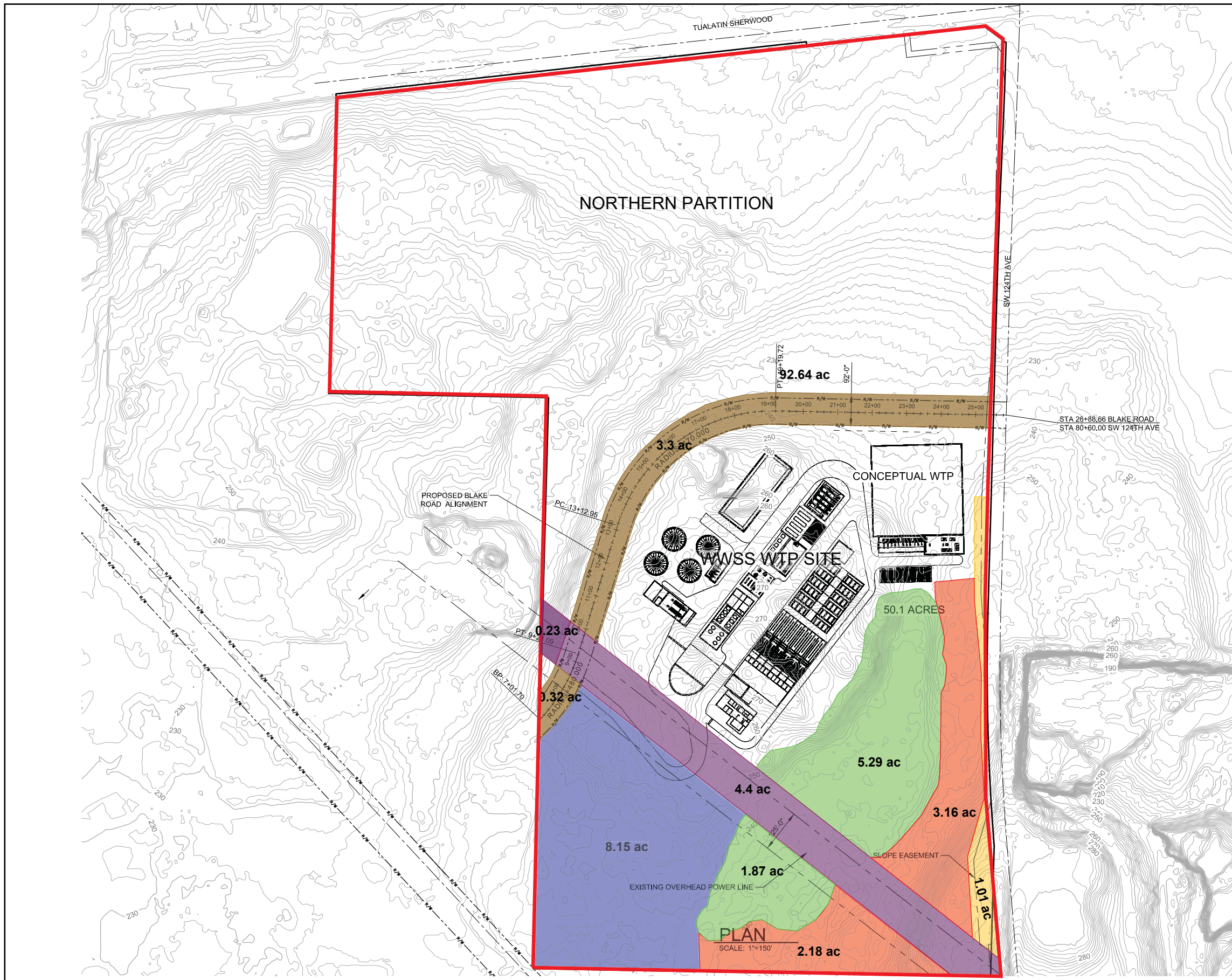




EXHIBIT 5

Memorandum

*To: Bob Galati, P.E.
City Engineer, City of Sherwood*

From: Greg Lindstadt, CDM Smith

Date: November 16, 2020

Subject: Design Modification Request for SW 124th PUE in ROW

Location of Requested Design Modification

SW 124th Avenue from the northern edge of the existing retaining wall to the point adjacent to the southern property edge of the Willamette Water Supply System (WWSS) Water Treatment Plant (WTP) Property (Tax Lot ID 2S128D001200).

Current Standards

SW 124th Avenue is classified as an arterial street per the City TSP.

The Engineering Pre-Application Comments from the April 10, 2020 meeting indicated that the ROW dedication requirements along SW 124th Avenue shall at a minimum comply with WACO requirements, although frontage improvements along SW 124th Avenue shall comply with City of Sherwood requirements.

The City's standard frontage improvements consist of the following:

Bike lane	6' wide
Landscape strip	5' wide
Sidewalk	8' wide
Space behind sidewalk	1' wide
Frontage improvements	20' wide total

Note that Section 16.106.060.B.1 of the City of Sherwood Development Code clarifies the sidewalk requirements shown on Drawing number RD-4 (Attachment A) by stating that commercial industrial areas must have a minimum 8-foot wide sidewalk.

Per the Engineering Design Manual, Section 120.3(A), PUEs are required beyond the right-of-way. The development code, Section 16.118.020(B) also requires PUEs adjacent to (outside) the right-of-way. For the arterial, a 8' PUE and 15' visual buffer are required outside the road right-of-way dedication. These are allowed to overlap.

Design Modification Request for SW 124th Ave PUE in ROW
 November 16, 2020
 Page 2

Design Modification Being Requested

The following modifications to the frontage improvements along 124th Avenue are requested in the area adjacent to the existing retaining wall if the County acquires the property between the WTP property and the 52-foot right-of-way dedication by December 31, 2020, in which case the applicant will provide half-street improvements on this frontage:

Landscape strip	3' wide
Multi-use path	12' wide
Space behind multi-use path	3' wide
Frontage improvements	18' wide total

Due to the existing retaining wall, it is requested that the 8' wide PUE be allowed to run in the road right-of way under the multi-use path.

Existing Conditions

SW 124th Avenue currently consists of a 37' half-road section, with no landscape strip, bike path, or sidewalk.

The existing WWSS WTP site is an undeveloped site, consisting of forested sections, existing wetlands and other sensitive areas, rock outcroppings, and a PGE easement which limits the development of the site. See Attachment B for WWSS WTP property encumbrances.

Result of Meeting Standards

In the area adjacent to an existing retaining wall located near the southeast property corner, there is no way to provide the PUE outside of the road right-of-way without running it up the very steep slope or routing it under the existing retaining wall.

Proposed Design Modification

The frontage improvements along 124th Avenue adjacent to the existing retaining wall will be provided as follows:

Landscape strip	3' wide
Multi-use path	12' wide
Space behind the multi-use path	3' wide
Frontage improvements	18' wide total

In the area adjacent to an existing retaining wall located near the southeast property corner, the 8' wide PUE will run in the road right-of way under the multi-use path.

Reason Why Design Request Should be Approved

The revised frontage improvements along SW 124th Avenue represent direction that the City and Washington County gave to the applicant at a meeting held on October 8, 2020. The improvements will be aligned with the multi-use path being provided by PGE on the east side of SW 124th Avenue.

Design Modification Request for SW 124th Ave PUE in ROW
November 16, 2020
Page 3

The proposed narrower planter strip and revised location of the PUE will allow the existing retaining wall, installed recently during the SW 124th Avenue extension project, to remain.



11/16/2020

Design Engineer

Date

Craig Christensen, P.E. - City Project Manager

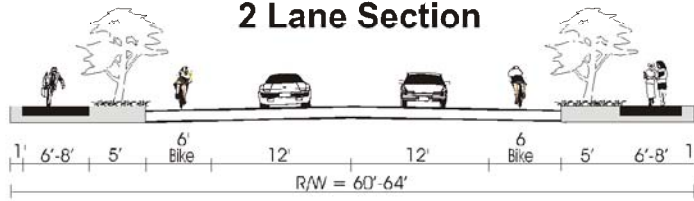
Date

- Approved
- Approved with Conditions (conditions below or on attached sheet)
- Denied

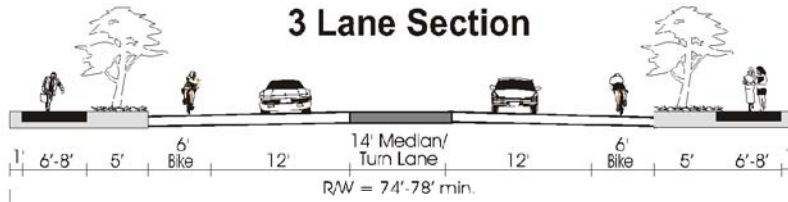
Bob Galati, P.E. - City Engineer

Date

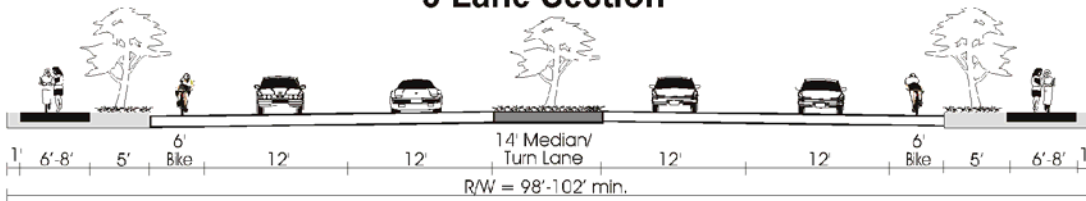
2 Lane Section



3 Lane Section

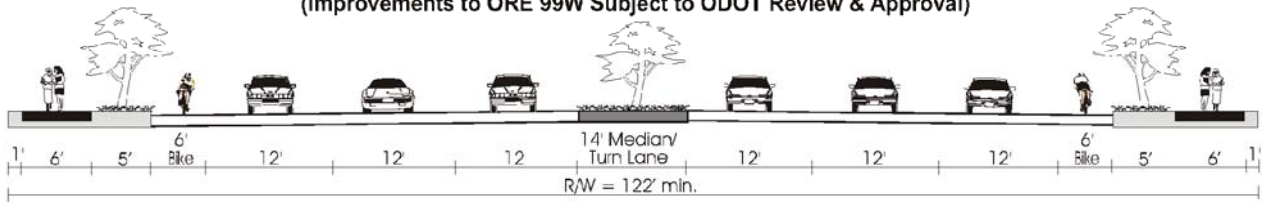


5 Lane Section



7 Lane Section

(Improvements to ORE 99W Subject to ODOT Review & Approval)



Arterial Street Design Characteristics

A variance requires demonstration of hardship or other exceptional circumstances resulting from conditions of the property. Variances must meet Sherwood Development Code and TPR criteria.

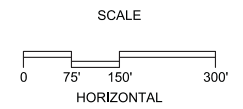
Characteristic	Arterials
Vehicle Lane Widths (Turn Lane - 12-14 ft.)	12 ft.
On-Street Parking	Only in (i.e. downtown) (8 ft.)
Bicycle Lanes (minimums)	6 ft.
Sidewalks (minimums)	6-8 ft. *1
Landscape Strips	Required
Raised Medians	Required
Neighborhood Traffic Management (NTM)	Prohibited
Transit	Appropriate
Turn Lanes	When Warranted *2
Access Control	See Later Discussion

Notes:

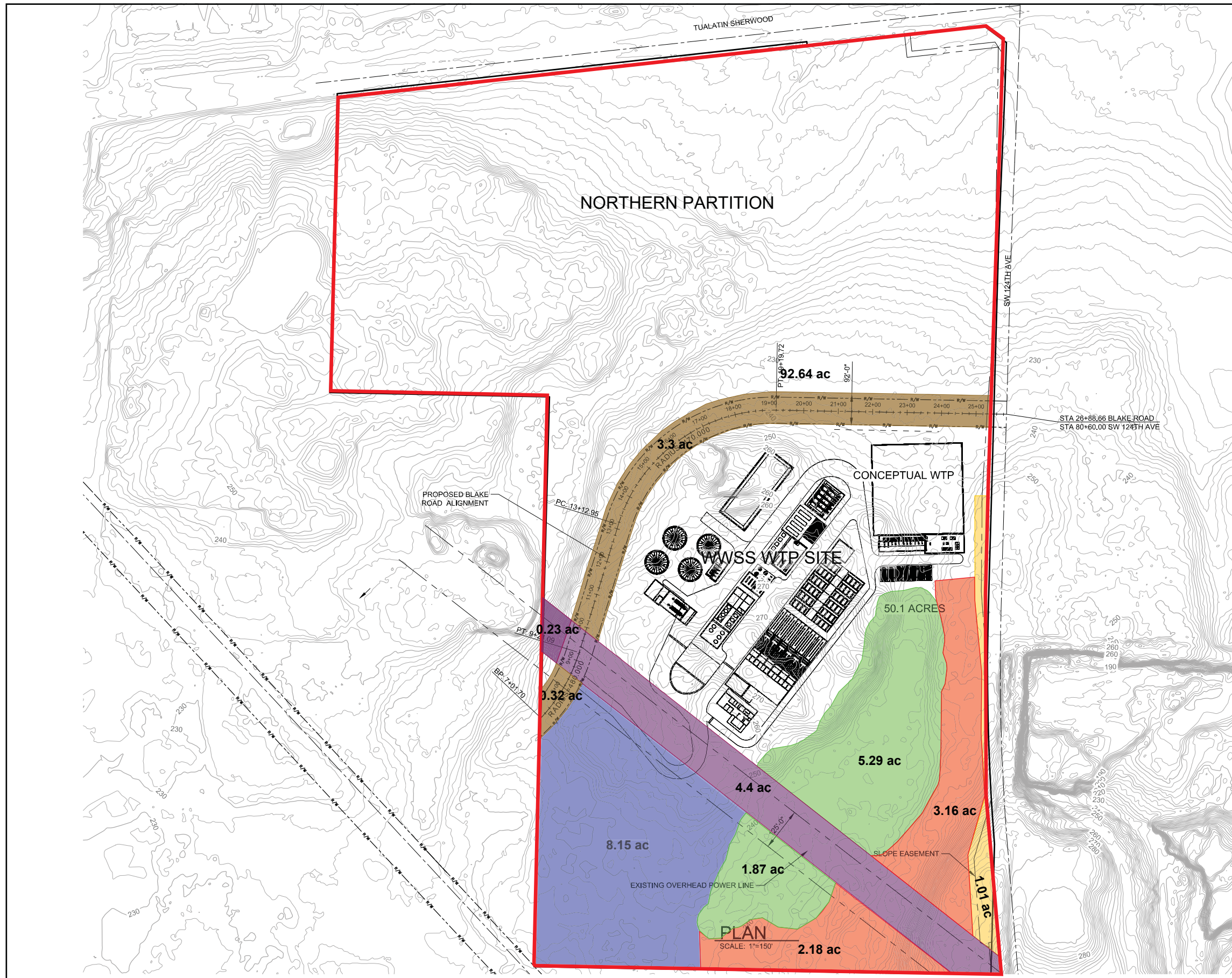
1. 8 feet for residential streets, 6 feet in commercial/industrial areas.
2. Turn lane warrants should be reviewed using Highway Research Record No. 211, NCHRP Report No. 279 or other updated/superseding reference.



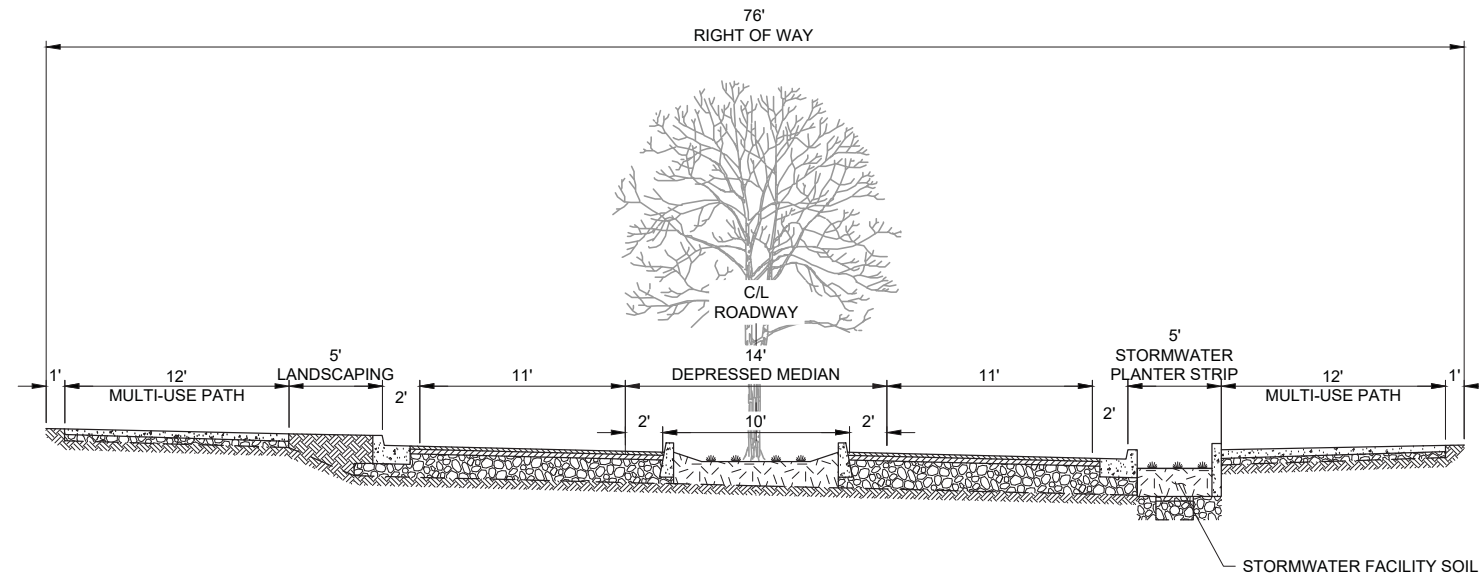
STANDARD DRAWING TITLE		DRAWING NUMBER
STANDARD ARTERIAL STREET SECTIONS		RD-4
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE	DATE
	N.T.S.	JUL' 09



KEY	
	PROPERTY BOUNDARY
	BLAKE RD
	WETLAND
	PGE EASEMENT
	SLOPE EASEMENT
	PARTIALLY ISOLATED LAND
	SUBSTANTIALLY ISOLATED LAND



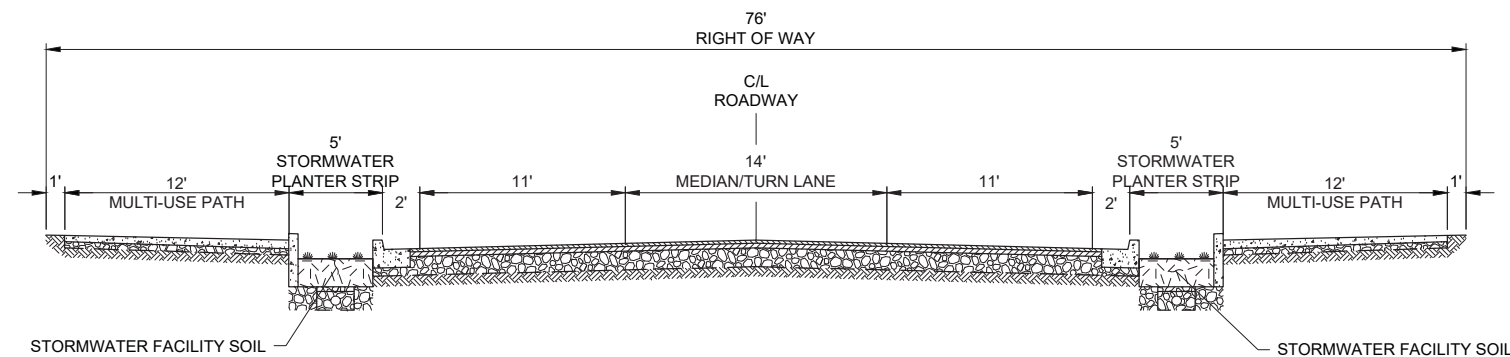
SW Orr Drive and SW 124th Avenue Typical Cross Sections



SW ORR DRIVE WITH DEPRESSED MEDIAN (SUPERELEVATED)
SCALE: 1"=5'-0"

NOTES:

1. ONSITE STORMWATER FACILITIES, CURB AND GUTTER AND FENCING WHERE SHOWN ON PLANS.
2. CURB CUTS TO BE DETERMINED IN COORDINATION WITH STORMWATER DRAINAGE AND TREATMENT DESIGN.
3. SW ORR DRIVE DEPRESSED MEDIAN TO BE USED AS A STORMWATER PLANTER FROM STA 12+50± TO STA 19+50±.



SW ORR DRIVE WITH MEDIAN/LEFT TURN LANE (NORMAL CROWN)
SCALE: 1"=5'-0"

BY: NICK MCFADDIN

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM

DWG FILE: C:\cmt\mick.mcfaddin@murray-smith.us\0274278\WTP1-03-GR-30001.dwg

90% DESIGN - NOT FOR CONSTRUCTION

DSGN	C JAIN				
DR	M ESTEP				
CHK	NA				
APVD	NA	NO.	DATE	REVISION	BY

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY.

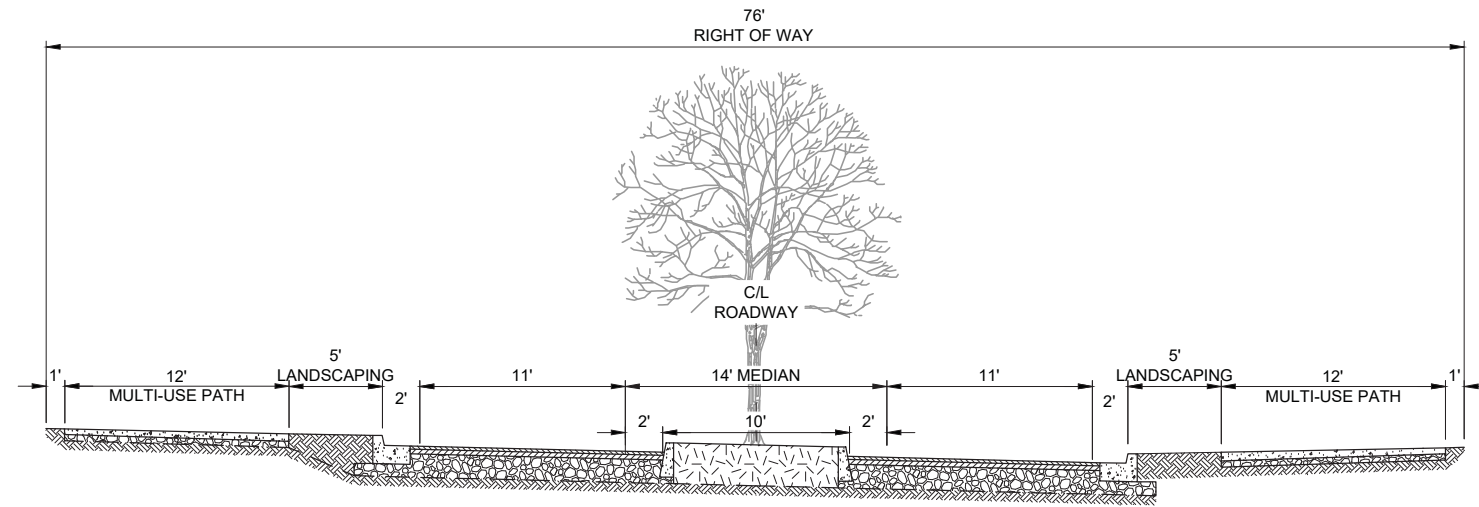


SITE
GRADING
ROADWAY TYPICAL SECTIONS 1

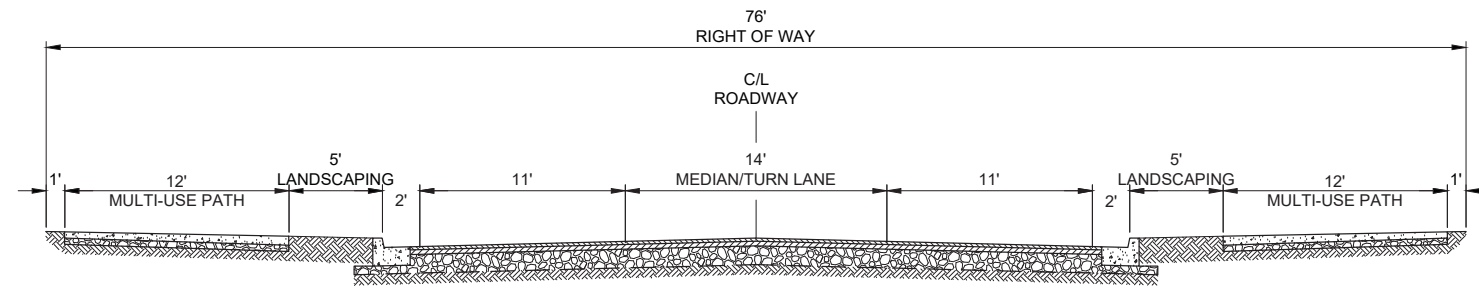
SHEET	
DWG	03-GR-30001
DATE	DECEMBER 2020
PROJ	WTP_1.0

FILENAME: WTP1-03-GR-30001.dwg

PLOT DATE AND TIME: 11/24/2020 10:54:07 AM



SW ORR DRIVE WITH RAISED MEDIAN (SUPERELEVATED)
SCALE: 1"=5'-0"

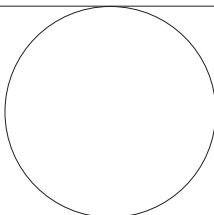


SW ORR DRIVE WITH MEDIAN/LEFT TURN LANE (NORMAL CROWN)
SCALE: 1"=5'-0"

BY: NICK MCFADDIN

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM

DWG FILE: C:\cmt\mick.mcfaddin@murraysmith.us\0274278\WTP1-03-GR-30001.dwg



DSGN	C JAIN					
DR	M ESTEP					
CHK	NA					
APVD	NA	NO.	DATE	REVISION	BY	APVD

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

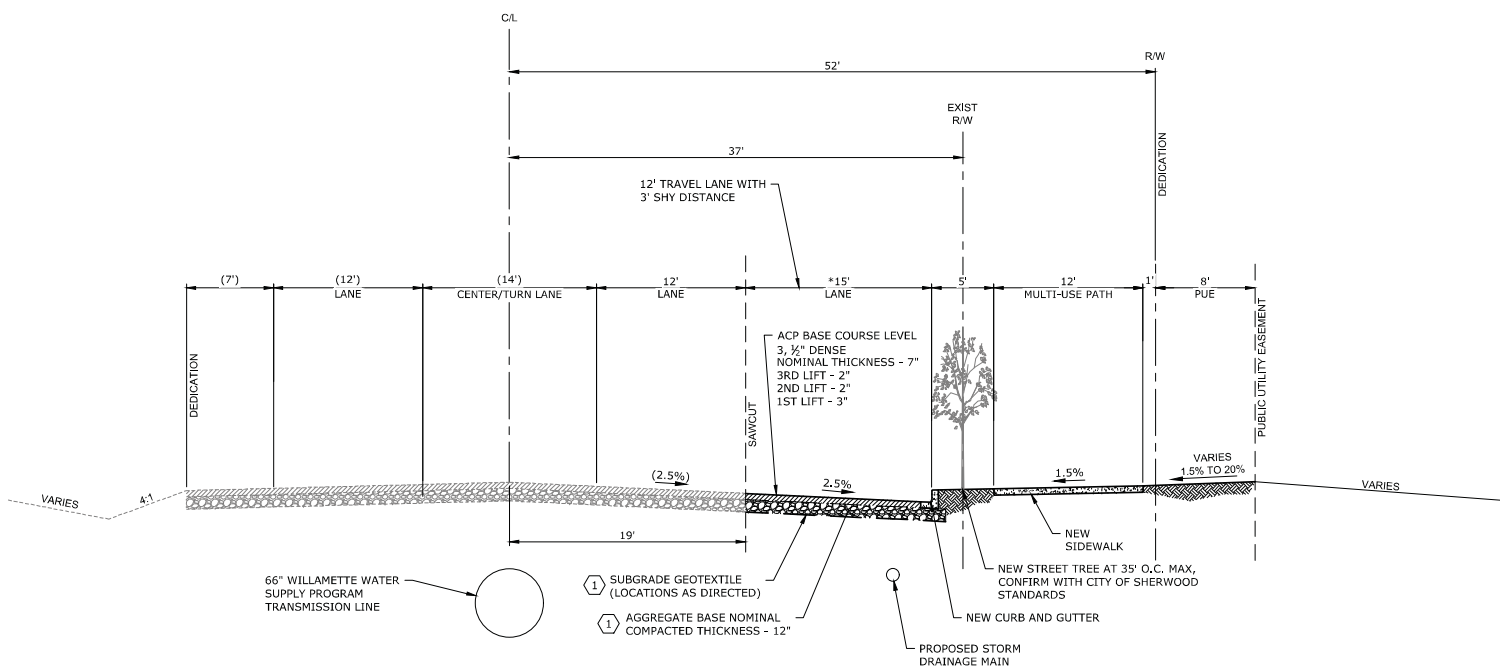


90% DESIGN - NOT FOR CONSTRUCTION

SITE
GRADING
ROADWAY TYPICAL SECTIONS 1

SHEET	
DWG	03-GR-30001
DATE	DECEMBER 2020
PROJ	WTP_1.0

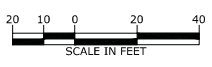
G:\PDX_Projects\18-2281 - CDM_Smith_WWSP_WTP\CAD\Figures\18-2281-OR-ROADS_124TH_IMPROVEMENTS.dwg SECT 1 11/24/2020 9:20 AM NICK.MCFADDIN 23.0a (LMS Tech)



TYPICAL SECTION 1
SW 124TH AVENUE - HALF-STREET IMPROVEMENTS
 SOUTH OF ORR ROAD AND NORTH OF EXISTING RETAINING WALL
 (LOOKING SOUTH)

- SHEET NOTES:**
1. ASPHALT PAVEMENT SECTION SHALL MATCH EXISTING PAVEMENT SECTION CONSTRUCTED AS PART OF SW 124TH AVENUE EXTENSION. PROJECT NUMBER 100158.
 2. COMPACTION OF THICK PAVEMENTS, WHERE A NOMINAL COMPACTED THICKNESS OF A COURSE OF ACP WILL BE LESS THAN 2 INCHES, MAY REQUIRE DENSITY TESTING AT THE DIRECTION OF WASHINGTON COUNTRY INSPECTION.

- KEY NOTES:**
1. IN LOCATIONS WHERE SUBGRADE SOILS ARE NOTE MACHINE COMPACTIBLE TO OPTIMUM MOISTURE CONTENT DUE TO WET WEATHER OR OTHER CIRCUMSTANES, THE AGGREGATE BASE COURSE SHALL BE INCREASED TO 18 INCHES THICKNESS AND SHALL BE UNDERLAIN BY WOVEN GEOTEXTILE FABRIC.



Willamette Water Supply **FIGURE 1A**
Our Reliable Water
WWSP WTP-1.0

TYPICAL SECTION 1 NOV 2020
18-2281



EXHIBIT 6

Memorandum

*To: Bob Galati, P.E.
City Engineer, City of Sherwood*

From: Greg Lindstadt, CDM Smith

Date: November 16, 2020

Subject: Design Modification Request for SW 124th Ave Multi-Use Path

Location of Requested Design Modification

SW 124th Avenue from the intersection with SW Orr Drive (formerly called SW Blake Street) to the point where the Willamette Water Supply System (WWSS) Water Treatment Plant (WTP) (Tax Lot ID 2S128D001200) property line diverges from the 52-foot right-of-way dedication or to a point adjacent to the WTP southern property line if Washington County acquires the intervening property by December 31, 2020.

Current Standards

SW 124th Avenue is classified as an arterial street per the City TSP.

The Engineering Pre-Application Comments from the April 10, 2020 meeting indicated that the ROW dedication requirements along SW 124th Avenue shall at a minimum comply with WACO requirements, although frontage improvements along SW 124th Avenue shall comply with City of Sherwood requirements.

The City's standard frontage improvements consist of the following:

Bike lane	6' wide
Landscape strip	5' wide
Sidewalk	8' wide
Space behind sidewalk	1' wide
Frontage improvements	20' wide total

Note that Section 16.106.060.B.1 of the City of Sherwood Development Code clarifies the sidewalk requirements shown on Drawing number RD-4 (Attachment A) by stating that commercial industrial areas must have a minimum 8-foot wide sidewalk.

An 8' PUE and 15' visual buffer are also required outside the road right-of-way dedication. These are allowed to overlap.

Design Modification Request for SW 124th Ave Multi-Use Path
 November 16, 2020
 Page 2

Design Modification Being Requested

The following modifications to the frontage improvements along 124th Avenue are requested.

Landscape strip	5' wide
Multi-use path	12' wide
Space behind multi-use path	1' wide
Frontage improvements	18' wide total

In summary, a 12' wide multi-use path is requested in place of a 6' wide bike lane and 8' wide sidewalk.

Existing Conditions

SW 124th Avenue currently consists of a 37' half-road section, with no landscape strip, bike path, or sidewalk.

The existing WWSS WTP site is an undeveloped site, consisting of forested sections, existing wetlands and other sensitive areas, rock outcroppings, and a PGE easement which limits the development of the site. See Attachment B for WWSS WTP property encumbrances.

Result of Meeting Standards

The City's standard frontage improvements can be met. However, the City has requested the revised frontage improvements utilizing the multi-use path.

Proposed Design Modification

The frontage improvements along 124th Avenue be provided as follows:

Landscape strip	5' wide
Multi-use path	12' wide
Space behind multi-use path	1' wide
Frontage improvements	18' wide total

Reason Why Design Request Should be Approved

The revised frontage improvements along SW 124th Avenue represent direction that the City and Washington County gave to the applicant at a meeting held on October 8, 2020. The improvements will be aligned with the multi-use path being provided by PGE on the east side of SW 124th Avenue.

Design Modification Request for SW 124th Ave Multi-Use Path
November 16, 2020
Page 3



11/16/2020

Design Engineer

Date

Craig Christensen, P.E. - City Project Manager

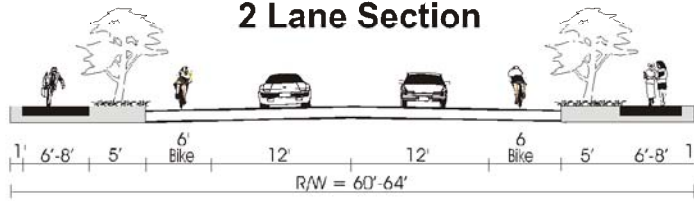
Date

- Approved
- Approved with Conditions (conditions below or on attached sheet)
- Denied

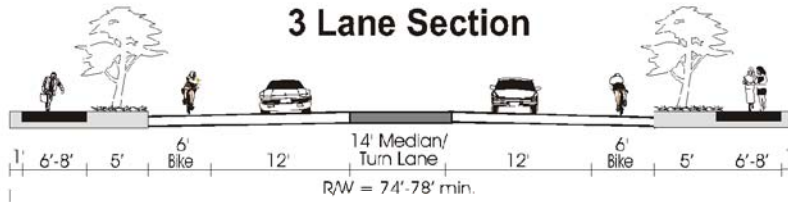
Bob Galati, P.E. - City Engineer

Date

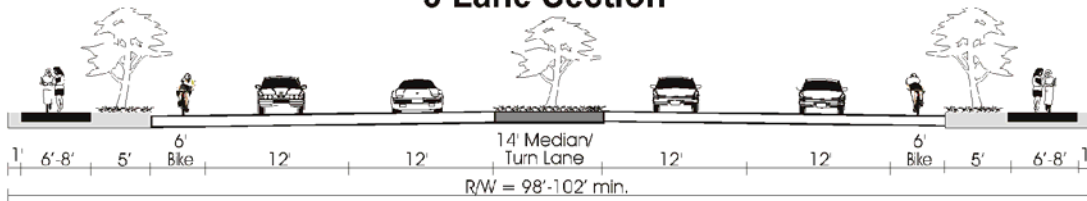
2 Lane Section



3 Lane Section

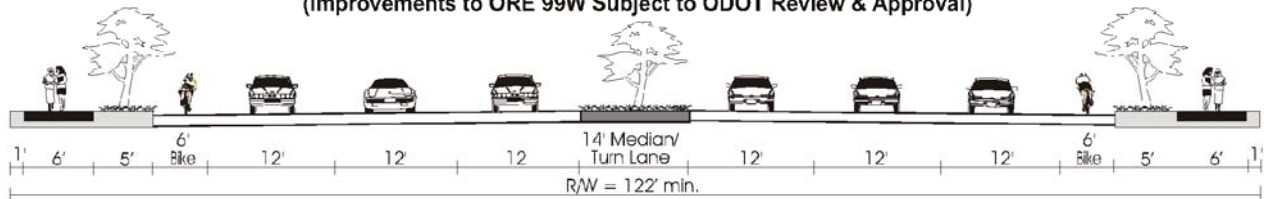


5 Lane Section



7 Lane Section

(Improvements to ORE 99W Subject to ODOT Review & Approval)



Arterial Street Design Characteristics

A variance requires demonstration of hardship or other exceptional circumstances resulting from conditions of the property. Variances must meet Sherwood Development Code and TPR criteria.

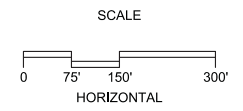
Characteristic	Arterials
Vehicle Lane Widths (Turn Lane - 12-14 ft.)	12 ft.
On-Street Parking	Only in (i.e. downtown) (8 ft.)
Bicycle Lanes (minimums)	6 ft.
Sidewalks (minimums)	6-8 ft. *1
Landscape Strips	Required
Raised Medians	Required
Neighborhood Traffic Management (NTM)	Prohibited
Transit	Appropriate
Turn Lanes	When Warranted *2
Access Control	See Later Discussion

Notes:

1. 8 feet for residential streets, 6 feet in commercial/industrial areas.
2. Turn lane warrants should be reviewed using Highway Research Record No. 211, NCHRP Report No. 279 or other updated/superseding reference.



STANDARD DRAWING TITLE		DRAWING NUMBER
STANDARD ARTERIAL STREET SECTIONS		RD-4
Any alteration of this drawing may not be associated in any way with the City of Sherwood Standard Drawings.	SCALE	DATE
	N.T.S.	JUL' 09



KEY

- PROPERTY BOUNDARY
- BLAKE RD
- WETLAND
- PGE EASEMENT
- SLOPE EASEMENT
- PARTIALLY ISOLATED LAND
- SUBSTANTIALLY ISOLATED LAND

