Technical Information Report

Schmidt Residence

February 5, 2021

PREPARED FOR:

Peter & Lisa Schmidt
36515 249th Avenue SE
Enumclaw, WA 98022

Table of Contents

List of Figures

List of Appendices

1 PROJECT OVERVIEW

Peter and Lisa Schmidt intend to build a single family residence at 22306 SE 464th Street, Enumclaw, WA 98022. The property is in the Southeast quarter of Section 28, Township 20, Range 6 of unincorporated King County. The tax parcel number is 2820069034 and the site is zoned A-35 and contains 25.11 acres.

The new residence will be in the northern half of the site, with a driveway approach from the northwest corner. Site improvements will include new concrete surfacing, grade contouring, and restoration of landscaped areas. Previous clearing has disturbed 8.46 acres. An additional 1.32 acres will be cleared to accommodate the proposed improvements, for a total cleared area of 9.78 acres. Total impervious coverage will measure roughly 39,960 square feet (3.65 percent). The remainder of the site will continue to be used for minor agricultural purposes (i.e., hay).

A copy of the TIR Worksheet is provided in Appendix A.

Site Location and Topography

No prior development has occurred on the site; however, the portions of the site have previously been cleared and planted for agricultural use. Site conditions are flat; there are no steep slopes present or proposed. Elevations across the site vary between 680 to 690 feet mean sea level, accordingly to King County GIS, with localized grades of less than 5 percent.

Some stands of mature trees and some previously disturbed wetlands are present on the site. Wetland and buffer restoration/mitigation is in progress. Except as noted on the drawings to accommodate the proposed improvements, the mature trees and wetland buffers will be preserved and protected during construction activities.

Soil Parameters and Report Findings

The Natural Resource Conservation Service (NRCS) mapped the subject property as containing Alderwood gravelly sandy loam in the northern portion of the site, and Buckley gravelly silt loam in the remaining portion. These soil are described as moderately well drained and poorly drained, respectively, with very low to moderately low infiltration capacity. They are in hydrologic soil groups B and C/D, respectively. (NRCS 2020).

For additional soils information, see Appendix B.

Site Parameters that Influence Stormwater System Design

Stormwater management will be handled through dispersion of concentrated flows across open agricultural land. There are no soil parameters that would adversely impact stormwater system design.

Existing Storm Systems

A storm conveyance network does not presently exist for the portion of the site to be developed. Roadside conveyance channels (ditches) are present on the adjacent property to the north of the side, and along the right-of-way frontages.

Drainage to and from Adjacent Properties

While some sheet flow and shallow concentrated flow can be expected from the property immediately upland the east, the contributing area appears to be minor. The site itself drains westerly and southwesterly to the 220th Ave SE and SE 464th Street rights of-ways, in which runoff is conveyed downstream via roadside ditches. There will be no impacts from runoff to adjacent property.

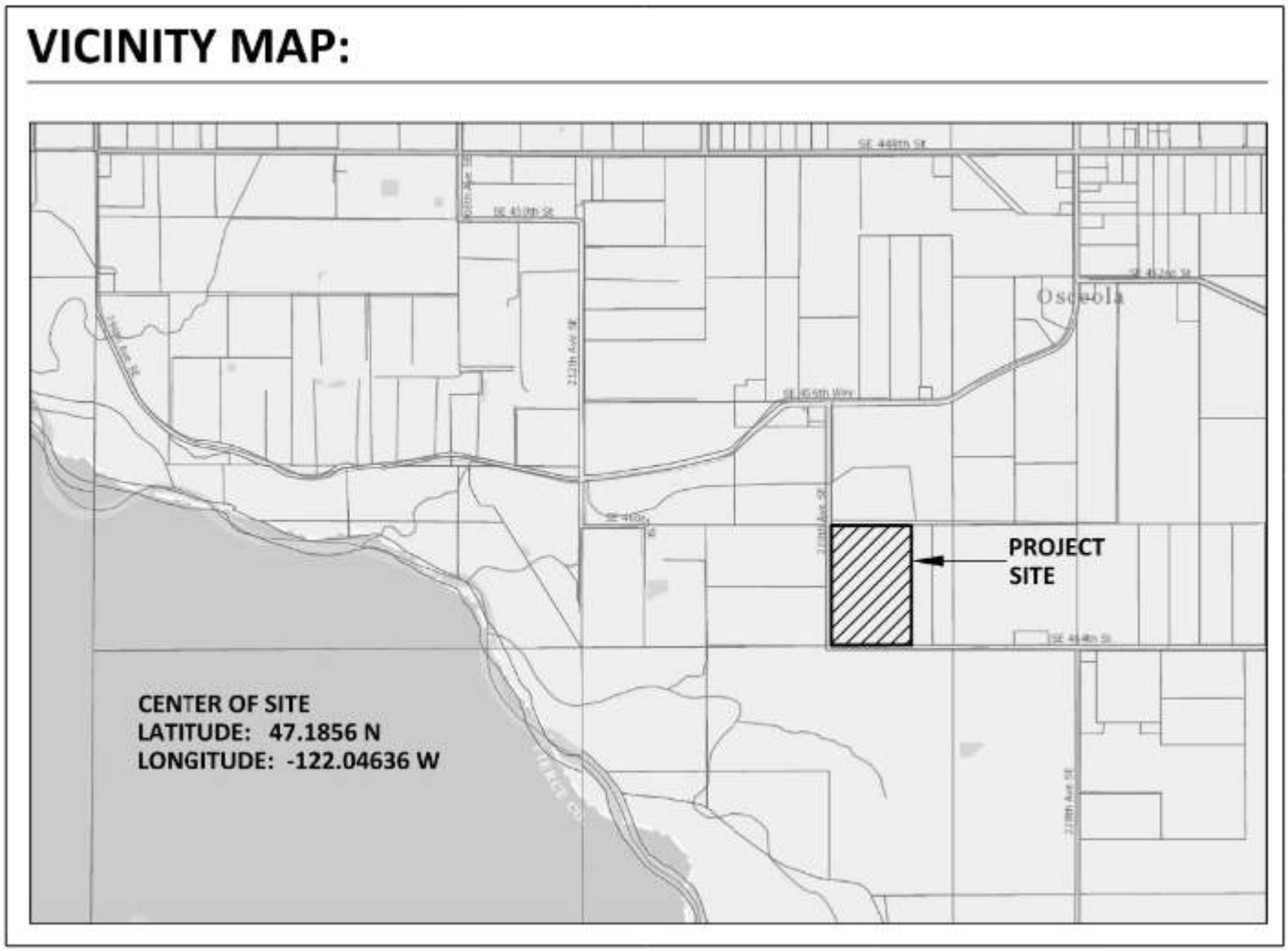
Adjacent Areas Description

All properties in the near vicinity of the subject property are of similar zoning and land use (i.e., agriculturally zoned lots with single family residences).

Site General Description

Peter and Lisa Schmidt intend to construct a new single family residence. The proposed development will add a total of 39,960 square feet new hard surface, consisting of 13,600 square feet of rooftop areas, 1,850 square feet of concrete patios and sidewalks, and 24,450 square feet of asphalt and gravel driveways. Concentrated stormwater from rooftop areas will converted back to sheet flow through the use of dispersion trenches, upstream of agricultural land. Runoff from driveways will similarly be managed through dispersion.

Figure 1 – Site Location Map



FLOW DISPERSION

RESIDENCE

MAIN ROOF AREA = 6,700 SF

OUTBUILDING ROOF AREA = 800 SF

TOTAL ROOF AREA = 7,500 SF

10 LF / 700 SF = 107.2 LF TOTAL TRENCH LENGTH REQUIRED

3X 40 LF = 120 LF TOTAL TRENCH LENGTH PROVIDED

BARN AND SHED

BARN ROOF AREA = 5,760 SF

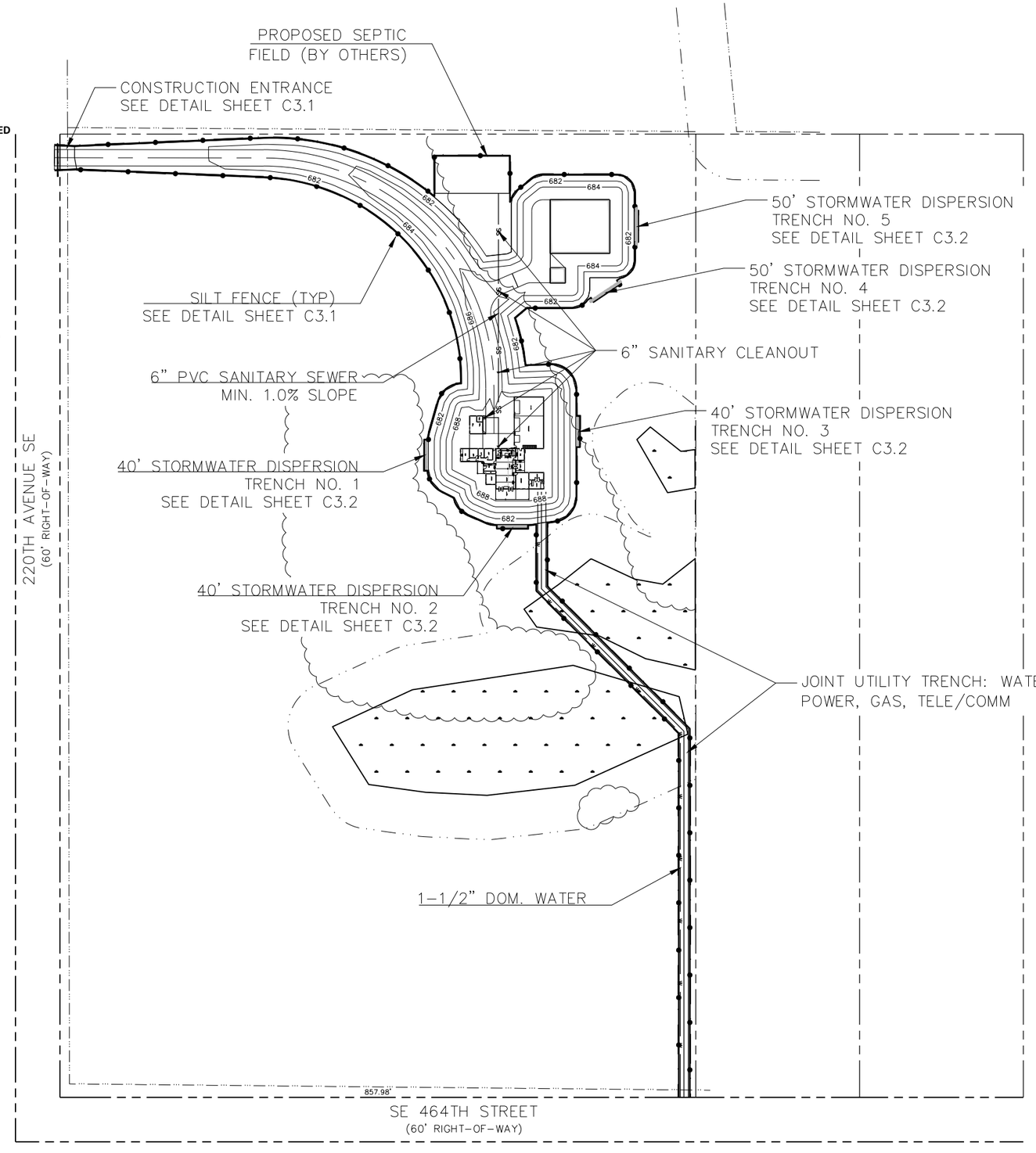
SHED ROOF AREA = 400 SF

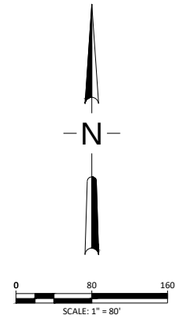
TOTAL ROOF AREA = 6,160 SF

10 LF / 700 SF = 88 LF TOTAL TRENCH LENGTH REQUIRED

2X 50 LF = 100 LF TOTAL TRENCH LENGTH PROVIDED

TRENCHES SHALL BE 24 INCHES WIDE BY 24 INCHES DEEP AND BACKFILLED WITH ¾" TO 1½" WASHED ROCK.





22306 SE 464TH STREET
KING COUNTY, WASHINGTON

GRADING, DRAINAGE, AND UTILITY PLAN

REVISIONS:

JOB NO.:	2020-01
DATE:	02/05/2021
SCALE:	AS SHOWN
DESIGNED BY:	ELP
DRAWN BY:	ELP

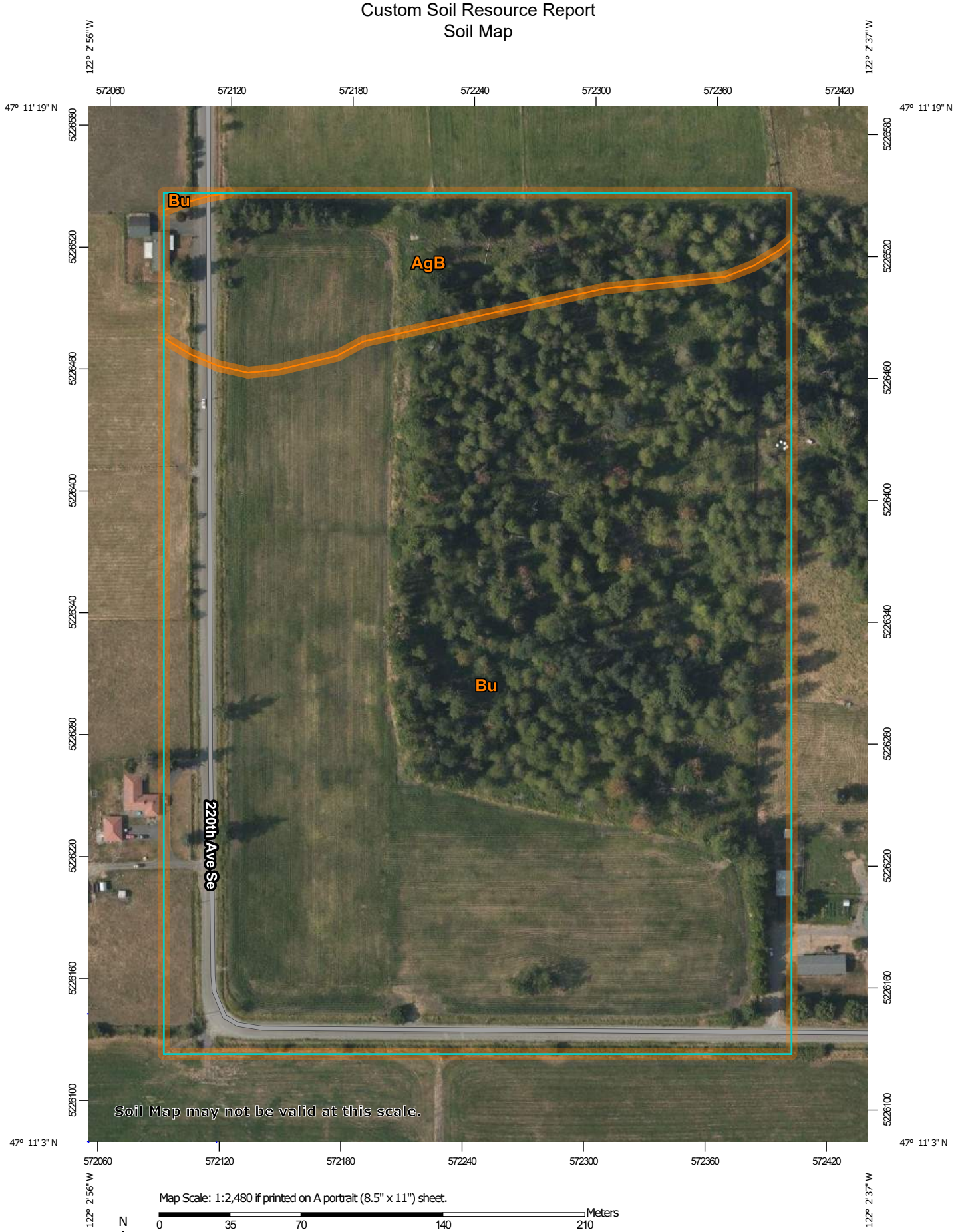
CLEARING AND GRADING SET

FIGURE 2

CALL 2 BUSINESS DAYS BEFORE YOU DIG 811 "It's the Law" www.callbeforeyoudig.com

FILE: \\WFS1\REDIRECTIONS\EPILCHER\DESKTOP\ERIC WORK\TAZCO\SCHMIDT\CIVIL\1.0 SITE 2.0 GRADING PLAN.DWG 2/5/2021 3:49 PM Epilcher

Custom Soil Resource Report
Soil Map



Map Scale: 1:2,480 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

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

FIGURE 3

2 CONDITIONS AND REQUIREMENTS SUMMARY

Land disturbing activities include grading, construction of new rooftop and pavement surfaces, surface contouring, and associated re-vegetation of disturbed areas.

Per Figure 1.1.2.A of the King County Surface Water Design Manual (SWDM), the project thresholds require Full Drainage Review (i.e., the project is a non-residential development that will result in more than 2,000 square feet of new plus replaced impervious area, but does not trigger the thresholds of a Large Project Drainage Review). There are eight core requirements, and five special requirements to be reviewed. However, not all of these elements are applicable to this project. A list of each element is provided below, together with the location of detailed information within this report, if applicable.

- CR #1, Discharge at Natural Location, SWDM Section 1.2.1
  - See TIR Section 3
- CR #2, Offsite Analysis, SWDM Section 1.2.2
  - See TIR Section 3
- CR #3, Flow Control, SWDM Section 1.2.3
  - See TIR Section 4
- CR #4, Conveyance System, SWDM Section 1.2.4
  - Not applicable. No existing conveyance systems will be impacted. No new conveyance systems are proposed.
- CR #5, Erosion and Sediment Control, SWDM Section 1.2.5
  - See TIR Section 8
- CR #6, Maintenance and Operations, SWDM Section 1.2.6
  - See TIR Section 10
- CR #7, Financial Guarantees and Liability, SWDM Section 1.2.7
  - See TIR Section 9
- CR #8, Water Quality, SWDM Section 1.2.8
  - See TIR Section 4
- CR #9, Flow Control BMPs, SWDM Section 1.2.9
  - See TIR Section 4
- SR #1, Other Adopted Requirements, SWDM Section 1.3.1
  - Not applicable. The site is not subject to adopted area-specific regulations.
- SR #2, Flood Hazard Area Delineation, SWDM Section 1.3.2
  - Not applicable. The site is not within a 100-year floodplain.
- SR #3, Flood Protection Facilities, SWDM Section 1.3.3
  - Not applicable. The project does not rely or, nor will affect a flood protection facility.
- SR #4, Source Control, SWDM Section 1.3.4
  - Not applicable. The proposed project is for a single-family residence.
- SR #5, Oil Control, SWDM Section 1.3.5
  - Not applicable. This is not a high-use site.

3 OFFSITE ANALYSIS

Core Requirement #1: Discharge to Natural Location

The purpose of this core requirement is to prevent adverse impacts to downstream properties. Stormwater runoff that does not infiltrate on-site flows westerly toward a roadside swale, which discharges to a drainage ditch to the southwest. There are no plans to change the off-site drainage pattern. Run-on from upland areas to the east of the development will continue to be routed across the site. On-site dispersion will be provided to offset runoff from new hard surfaces.

No downstream impacts are expected and this core requirement is met.

Core Requirement #2: Offsite Analysis

For this project, a Level 1 downstream analysis per Section 1.2.2.1 has been summarized.

Task 1: Define and map the study area
Please refer to the Drainage Basin Map (Figure 2) which includes the study area.

Task 2: Review all available information on the study area
Elevations contours and hydrography and hydrology information available through King County GIS has been reviewed, and is reflected in Figure 2.

Task 3: Field inspect the study area
No problems within the study area have been observed in the field.

Task 4: Describe the drainage system, and its existing and predicted drainage and water quality problems
Under existing conditions, non-infiltrating runoff from the site flows westerly to the roadside swale adjacent 220th Avenue SE, flowing south towards SE 464th Street. Upon reaching 464th Street, the flows enter an unnamed, man-made tributary to White River (approximately ¼ mile downstream). The man-made tributary flows westerly from 220th Avenue to a confluence of other man-made ditches (approximately ½ mile downstream), before eventually discharging to the White River (approximately 1 mile downstream).

No known problems currently existing within the roadside drainage swale or unnamed tributaries to the White River.

4 FLOW CONTROL, LOW IMPACT DEVELOPMENT (LID), AND WATER QUALITY FACILITY ANALYSIS AND DESIGN

A. Existing Site Hydrology

The area in which the work is being performed is limited to 8.75 acres within the 25.11-acre site. Native soils within the area are classified by NRCS as Alderwood gravelly sandy loam in the northern portion of the site, and Buckley gravelly silt loam in the remaining portion. Hydraulically, these soils are classified as B and C/D soil, respectively.

The disturbed area has been previously cleared of native vegetation, and portions of the cleared area have historically been used for agricultural use. For pre-developed conditions, it is assumed that the site was previously forested, consistent with adjacent undisturbed areas. For convenience, till soil is assumed.

The specific breakdown of ground cover is as follows:

- C, Forest, Flat – 9.78 acres

B. Developed Site Hydrology

Under developed conditions, runoff from new hard surfaces consisting of roof areas, concrete patios and walkways, and asphalt pavement will be dispersed over revegetated and agricultural areas.

The specific breakdown of proposed ground cover is as follows:

- C, Lawn, Mod – 2.30 acres
- C, Field, Flat – 3.71 acres
- C, Forest, Flat – 2.85 acres
- Rooftops – 0.31 acres
- Driveways, Flat – 0.56 acres
- Sidewalks, Flat – 0.05 acres

C. Performance Standards

Based on review of the King County Flow Control Application Map and Table 1.2.3.A of the SWDM, the level 2 flow control standard for historic site conditions applies. There are no downstream conveyance problems identified.

The following performance standards therefore apply:

- Match historic durations for 50% of 2-year through 50-year peaks
- Match historic 2- and 10-year peaks

D. Flow Control System (Core Requirements #3 and #9)

To provide flow control, this project has been design to disperse 100% of accumulated runoff from impervious surfaces across revegetated and agricultural areas, thus meeting both CR #3 and #9 for Flow Control and low-impact development (LID).

Concentrated runoff from rooftop areas will be directed to six separate dispersion trenches upstream of revegetated areas. Runoff from driveways and walks will similarly sheetflow to adjacent vegetated areas, allowing for flow dispersion.

E. Water Quality System (Core Requirement #8)

The dispersion method described above will also satisfy CR#8 for Water Quality from pollution generating hard surfaces. No further water quality systems are proposed.

5 CONVEYANCE SYSTEM ANALYSIS AND DESIGN

Not applicable. A new conveyance system is not proposed. No existing conveyance systems will be impacted.

6 SPECIAL REPORTS AND STUDIES

It is understood that wetlands are present on site, and that the wetlands and their buffers have been previously impacted by prior clearing and grading activities. A site evaluation and restoration plan has been prepared by Sewall Wetland Consulting, Inc. (see Appendix C).

Resolution of Existing Complaints

It is noted that there are previous drainage complaints within the near vicinity of the site, as indicated by King County GIS. These are complaints 2018-0939 concerning water not draining from tax parcel 2820069062, 2002-0235 requesting that channel restrictions be removed at downstream properties from tax parcel 2820069023, and 2015-0656 (no specific comments) at parcel 2820069025.

None of these complaints appear to have a direct bearing on the subject property.

7 OTHER PERMITS

Aside from clearing and grading, no other known permits are required.

8 CSWPP ANALYSIS AND DESIGN

Core Requirement #5, Erosion and Sediment Control

Please refer to the accompanying Construction Stormwater Pollution Prevention Plan and TESC drawings (see Appendix D.)

9 BOND QUANTITIES, FACILITY SUMMARIES, AND DECLARATION OF COVENANT

Bond Quantities Worksheet

A draft Bond Quantity Worksheet is provided in Appendix E.

Declaration of Covenant for Privately Maintained Flow Control BMPs

A draft declaration of covenant for private maintenance of the bioretention cells is provided in Appendix E.

10 OPERATIONS AND MAINTENANCE MANUAL

Core Requirement #6, Maintenance and Operations

Maintenance and operations instructions are provided in Appendix E.

REFERENCES

King Co. 2016a. Stormwater Pollution Prevention Manual. King County Department of Natural Resources and Parks, Seattle, WA. April.

King Co. 2016b. Surface Water Design Manual (SWDM). King County Department of Natural Resources and Parks, Seattle, WA. April 24.

NRCS 2020. Custom Soil Resource Report for King County Area, Washington, 22306 SE 464th St. U.S. Department of Agriculture, Natural Resources Conservation Service, Washington, D.C. Downloaded: July 31.

Sewall 2021. Critical Area Report – Parcel #2820069034 (NE portion of parcel). Sewall Wetland Consulting, Inc., Fall City, WA. January 25.

Appendix A TIR Worksheet

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 1 PROJECT OWNER AND PROJECT ENGINEER

Project Owner: Peter Schmidt
Phone: (206) 295-4000
Address: 36515 249th Avenue SE
Enumclaw, WA 98022
Project Engineer: Eric Pilcher, PE
Company:
Phone: (253) 370-5894

Part 2 PROJECT LOCATION AND DESCRIPTION

Project Name: Schmidt Residence
DPER Permit #:
Location Township: 20
Range: 6
Section: 28
Site Address: 22306 SE 464th St
Enumclaw, WA 98022

Part 3 TYPE OF PERMIT APPLICATION

- ☐ Landuse (e.g.,Subdivision / Short Subd. / UPD)
- ☐ Building (e.g.,M/F / Commercial / SFR)
- ☒ Clearing and Grading
- ☐ Right-of-Way Use
- ☐ Other _____

Part 4 OTHER REVIEWS AND PERMITS

- ☐ DFW HPA
- ☐ COE 404
- ☐ DOE Dam Safety
- ☐ FEMA Floodplain
- ☐ COE Wetlands
- ☐ Other _____
- ☐ Shoreline Management
- ☐ Structural Rockery/Vault/_____
- ☐ ESA Section 7

Part 5 PLAN AND REPORT INFORMATION

Technical Information Report

Type of Drainage Review (check one):
- ☒ Full
- ☐ Targeted
- ☐ Simplified
- ☐ Large Project
- ☐ Directed

Date (include revision dates):
Date of Final:

Site Improvement Plan (Engr. Plans)

Plan Type (check one):
- ☒ Full
- ☐ Modified
- ☐ Simplified

Date (include revision dates):
Date of Final:

Part 6 SWDM ADJUSTMENT APPROVALS

Type (circle one): (Standard) / Experimental / Blanket

Description: (include conditions in TIR Section 2)

Approved Adjustment No. _____ Date of Approval: _____

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 7 MONITORING REQUIREMENTS

Monitoring Required: Yes / (No)

Start Date: _____

Completion Date: _____

Describe: _____

_____

_____

Re: KCSWDM Adjustment No. _____

Part 8 SITE COMMUNITY AND DRAINAGE BASIN

Community Plan : Encumclaw

Special District Overlays: _____

Drainage Basin: Mud Mountain

Stormwater Requirements: _____

Part 9 ONSITE AND ADJACENT SENSITIVE AREAS

- ☐ River/Stream _____
- ☐ Lake _____
- ☒ Wetlands _____
- ☐ Closed Depression _____
- ☐ Floodplain _____
- ☐ Other _____

_____

- ☐ Steep Slope _____
- ☐ Erosion Hazard _____
- ☐ Landslide Hazard _____
- ☐ Coal Mine Hazard _____
- ☐ Seismic Hazard _____
- ☐ Habitat Protection _____
- ☐ _____

Part 10 SOILS

Soil Type	Slopes	Erosion Potential
Alderwood gravelly sandy loam	0 - 8%	Low
Buckley gravelly silt loam	0 - 3%	Low

- ☐ High Groundwater Table (within 5 feet)
- ☐ Other _____
- ☐ Sole Source Aquifer
- ☐ Seeps/Springs

☐ Additional Sheets Attached

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 11 DRAINAGE DESIGN LIMITATIONS	
REFERENCE	LIMITATION / SITE CONSTRAINT
☐ Core 2 – Offsite Analysis	
☐ Sensitive/Critical Areas	
☐ SEPA	
☐ LID Infeasibility	
☐ Other	
☐	
☐ Additional Sheets Attached	

Part 12 TIR SUMMARY SHEET (provide one TIR Summary Sheet per Threshold Discharge Area)	
Threshold Discharge Area: (name or description)	On-site dispersion
Core Requirements (all 8 apply):	
Discharge at Natural Location	Number of Natural Discharge Locations: N/A
Offsite Analysis	Level: (1) / 2 / 3 dated:
Flow Control (include facility summary sheet)	Level: 1 / (2) / 3 or Exemption Number Flow Control BMPs On-site dispersion
Conveyance System	Spill containment located at:
Erosion and Sediment Control / Construction Stormwater Pollution Prevention	CSWPP/CESCL/ESC Site Supervisor: Contact Phone: After Hours Phone:
Maintenance and Operation	Responsibility (circle one): (Private) / Public If Private, Maintenance Log Required: Yes / (No)
Financial Guarantees and Liability	Provided: Yes / (No)
Water Quality (include facility summary sheet)	Type (circle one): (Basic) / Sens. Lake / Enhanced Basic / Bog or Exemption No. Landscape Management Plan: Yes / (No)
Special Requirements (as applicable):	
Area Specific Drainage Requirements	Type: CDA / SDO / MDP / BP / LMP / Shared Fac. / None Name:
Floodplain/Floodway Delineation	Type (circle one): Major / Minor / Exemption / None 100-year Base Flood Elevation (or range): Datum:
Flood Protection Facilities	Describe:

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 12 TIR SUMMARY SHEET (provide one TIR Summary Sheet per Threshold Discharge Area)	
Source Control (commercial / industrial land use)	Describe land use: Describe any structural controls:
Oil Control	High-use Site: Yes / No Treatment BMP: _____ Maintenance Agreement: Yes / No with whom? _____
Other Drainage Structures	
Describe:	

Part 13 EROSION AND SEDIMENT CONTROL REQUIREMENTS

MINIMUM ESC REQUIREMENTS DURING CONSTRUCTION	MINIMUM ESC REQUIREMENTS AFTER CONSTRUCTION
☒ Clearing Limits	☒ Stabilize exposed surfaces
☐ Cover Measures	☒ Remove and restore Temporary ESC Facilities
☒ Perimeter Protection	☐ Clean and remove all silt and debris, ensure operation of Permanent Facilities, restore operation of Flow Control BMP Facilities as necessary
☐ Traffic Area Stabilization	☐ Flag limits of SAO and open space preservation areas
☐ Sediment Retention	☐ Other _____
☐ Surface Water Collection	
☐ Dewatering Control	
☐ Dust Control	
☐ Flow Control	
☐ Protection of Flow Control BMP Facilities (existing and proposed)	
☐ Maintain BMPs / Manage Project	

Part 14 STORMWATER FACILITY DESCRIPTIONS (Note: Include Facility Summary and Sketch)

Flow Control	Type/Description	Water Quality	Type/Description
☐ Detention	_____	☒ Vegetated Flowpath	Dispersion
☐ Infiltration	_____	☐ Wetpool	_____
☐ Regional Facility	_____	☐ Filtration	_____
☐ Shared Facility	_____	☐ Oil Control	_____
☒ Flow Control BMPs	Dispersion	☐ Spill Control	_____
☐ Other	_____	☐ Flow Control BMPs	_____
		☐ Other	_____

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 15 EASEMENTS/TRACTS		Part 16 STRUCTURAL ANALYSIS
☐ Drainage Easement		☐ Cast in Place Vault
☒ Covenant		☐ Retaining Wall
☐ Native Growth Protection Covenant		☐ Rockery > 4' High
☐ Tract		☐ Structural on Steep Slope
☐ Other _____		☐ Other _____

Part 17 SIGNATURE OF PROFESSIONAL ENGINEER

I, or a civil engineer under my supervision, have visited the site. Actual site conditions as observed were incorporated into this worksheet and the attached Technical Information Report. To the best of my knowledge the information provided here is accurate.

Signed/Date

Appendix B Soil Reports

1. **Custom Soil Resource Report for 22306 SE 464th St. NRCS 2020.**

United States Department of Agriculture

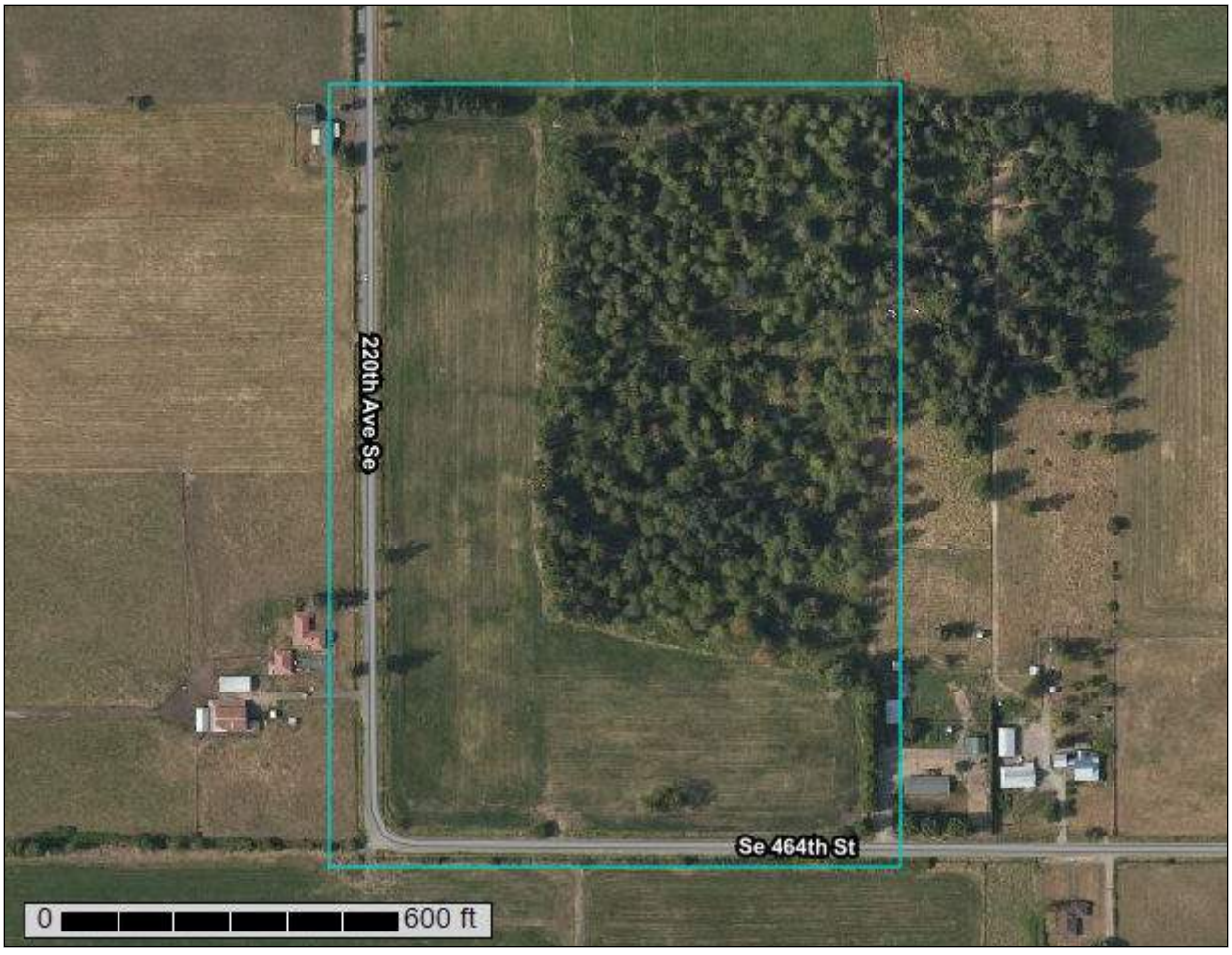
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for King County Area, Washington

22306 SE 464th St



July 31, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

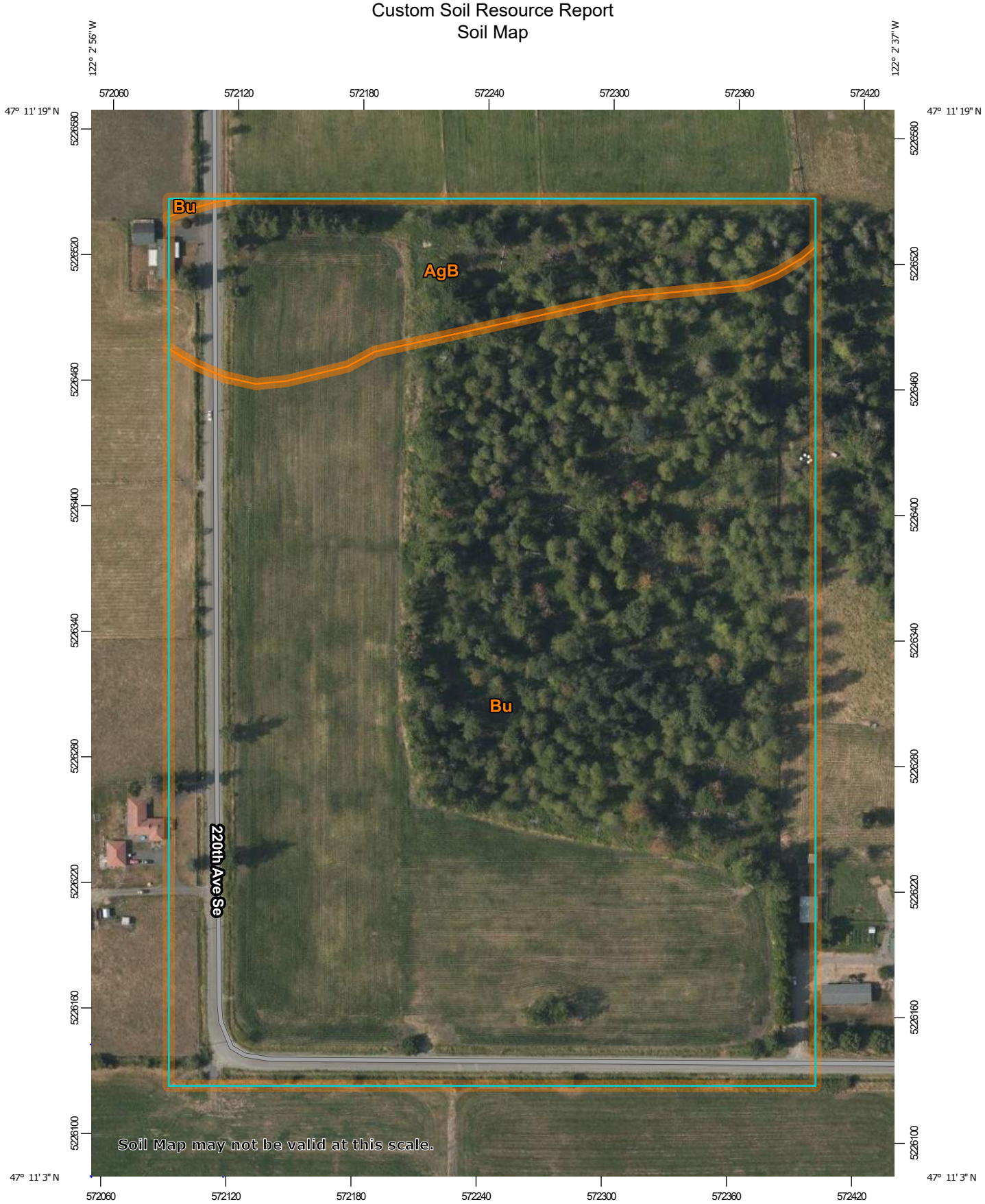
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:2,480 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

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 Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: King County Area, Washington
Survey Area Data: Version 16, Jun 4, 2020

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

Date(s) aerial images were photographed: Jul 30, 2018—Aug 6, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AgB	Alderwood gravelly sandy loam, 0 to 8 percent slopes	4.7	14.4%
Bu	Buckley gravelly silt loam, 0 to 3 percent slopes	27.9	85.6%
Totals for Area of Interest		**32.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

King County Area, Washington

AgB—Alderwood gravelly sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t625
Elevation: 50 to 800 feet
Mean annual precipitation: 25 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 240 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Alderwood and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alderwood

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Glacial drift and/or glacial outwash over dense glaciomarine deposits

Typical profile

A - 0 to 7 inches: gravelly sandy loam
Bw1 - 7 to 21 inches: very gravelly sandy loam
Bw2 - 21 to 30 inches: very gravelly sandy loam
Bg - 30 to 35 inches: very gravelly sandy loam
2Cd1 - 35 to 43 inches: very gravelly sandy loam
2Cd2 - 43 to 59 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Forage suitability group: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA), Limited Depth Soils (G002XS301WA)
Other vegetative classification: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA), Limited Depth Soils (G002XS301WA)

Hydric soil rating: No

Minor Components

Everett

Percent of map unit: 5 percent
Landform: Kames, eskers, moraines
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Mckenna

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Shalcar

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Norma

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Bu—Buckley gravelly silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2rtyp
Elevation: 390 to 820 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Buckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Buckley

Setting

Landform: Lahars
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Mudflow deposits

Typical profile

Ap - 0 to 10 inches: gravelly silt loam
A - 10 to 16 inches: gravelly loam
Bg - 16 to 38 inches: gravelly sandy clay loam
Cd - 38 to 60 inches: gravelly sandy clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Forage suitability group: Wet Soils (G002XF103WA)
Other vegetative classification: Wet Soils (G002XF103WA)
Hydric soil rating: Yes

Minor Components

Alderwood

Percent of map unit: 10 percent
Landform: Hills, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, talf
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Seattle

Percent of map unit: 5 percent
Landform: Glacial drainage channels
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix C Wetland Restoration

Sewall Wetland Consulting, Inc.
PO Box 880
Fall City, WA 98024
Phone: 253-859-0515

January 25, 2021

Peter Schmidt
36515 249th Avenue SE
Enumclaw, Washington 98022

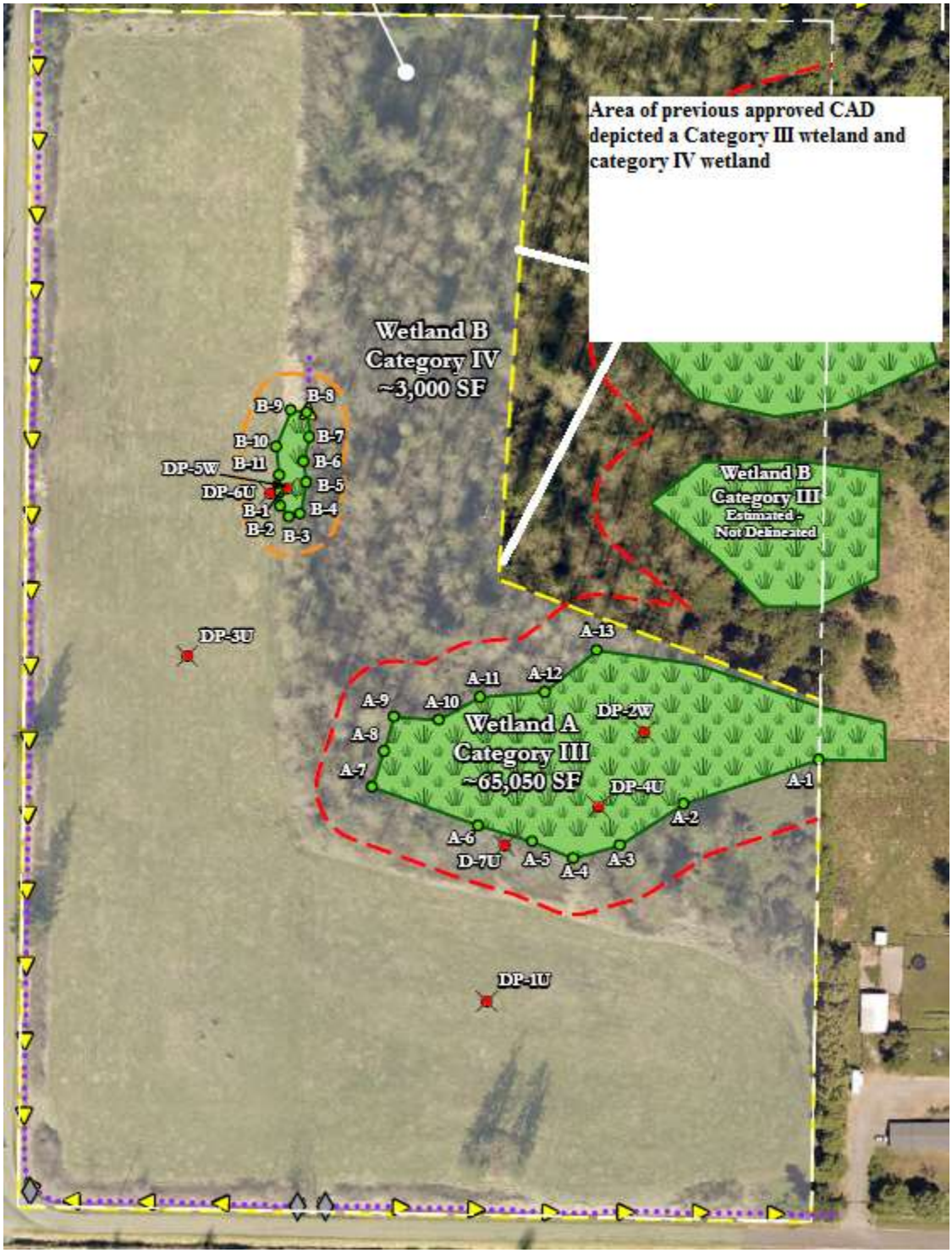
RE: Critical Area Report – Parcel #2820069034 (NE portion of parcel)
Unincorporated King County, Washington
SWC Job #20-163

Dear Peter,

This report describes our observations of jurisdictional wetlands, streams and buffers on or within 200' of the northeast portion of Parcel #282006-9034, located to the east of the existing approved CAD for the property. The site is located in the Osceola area of unincorporated King County, Washington.

The site has an approved CAD on the south and western sides of the site which identified a Category III wetland on the south and a small Category IV wetland on the west. The study, prepared by Soundview Consultants also identified two areas of potential Category III wetlands on the eastern side of the site outside the CAD study they conducted.

Above: King County iMap tax parcel location map.



Above: Map showing the study area of the site.

METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site on October 13 and November 27, 2020 and January 15, 2021. The site was reviewed using methodology described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), and the *Western Mountains, Valleys and Coast region Supplement* (Version 2.0) dated June 24, 2010, as required by the US Army Corps of Engineers and the City of Kent. Soil colors were identified using the 1990 Edited and Revised Edition of the *Munsell Soil Color Charts* (Kollmorgen Instruments Corp. 1990).

A site visit was made with Neil Molsted of WADOE on November 30, 2020 to review site conditions and delineations.

A site visit was also conducted with Larry Fisher of WDFW to review the classification of ditches abutting the site.

OBSERVATIONS

Existing Site Documentation.

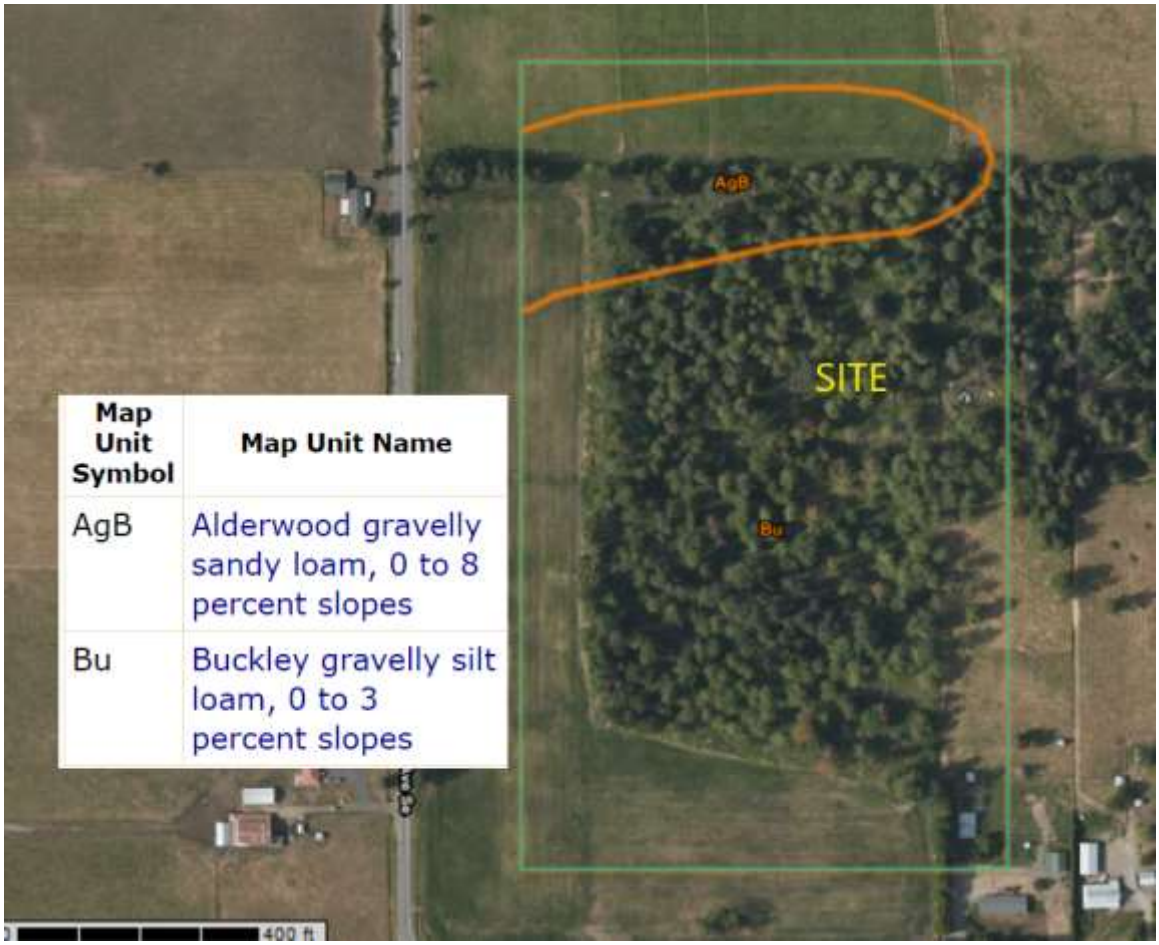
Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the National Wetland Inventory Map and the NRCS Soil Survey online mapping and Data and the King County iMap website with wetland and stream layers activated.

King County iMap

The King County iMap website with wetland and stream layers activated indicates no critical areas on the site (*see image Page 1 of this report*).

Soil Survey

According to the NRCS Soil Mapper, the site is mapped as moderately well drained Alderwood gravelly loam soils on the north with the remainder of the site as Buckley silt loam. Buckley soils in an undrained state are considered hydric or wetland soils.



Map Unit Symbol	Map Unit Name
AgB	Alderwood gravelly sandy loam, 0 to 8 percent slopes
Bu	Buckley gravelly silt loam, 0 to 3 percent slopes

Above: USDA Soil Survey Map of the site

National Wetlands Inventory (NWI)

According to the NWI map for the site, there is a forested wetland located on the north end of the site. The mapping of this wetland by US Fish and Wildlife service was an aerial photograph interpretation of a 1981 aerial photograph with no field verification. As identified in the mapping:

The wetlands and deepwater habitats in this area were photo interpreted using **1:58,000** scale, **color infrared** imagery from **1981**.

Above: National Wetlands Inventory Map of the site.

WADNR Fpars Stream Mapping

According to the Department of Natural Resources FPARS map, there are no streams on or near the site.

Above: WDNR Fpars stream mapping

WDFW Priority Habitats and Species Maps

According to the WDFW Priority Habitats and Species maps, the wetland identified on the NWI map is re-iterated on this mapping as well as the pink shading indicating this area is in the "general area" of regular concentrations of elk.

Above: WDFW Priority Habitats mapping of the area of the site.

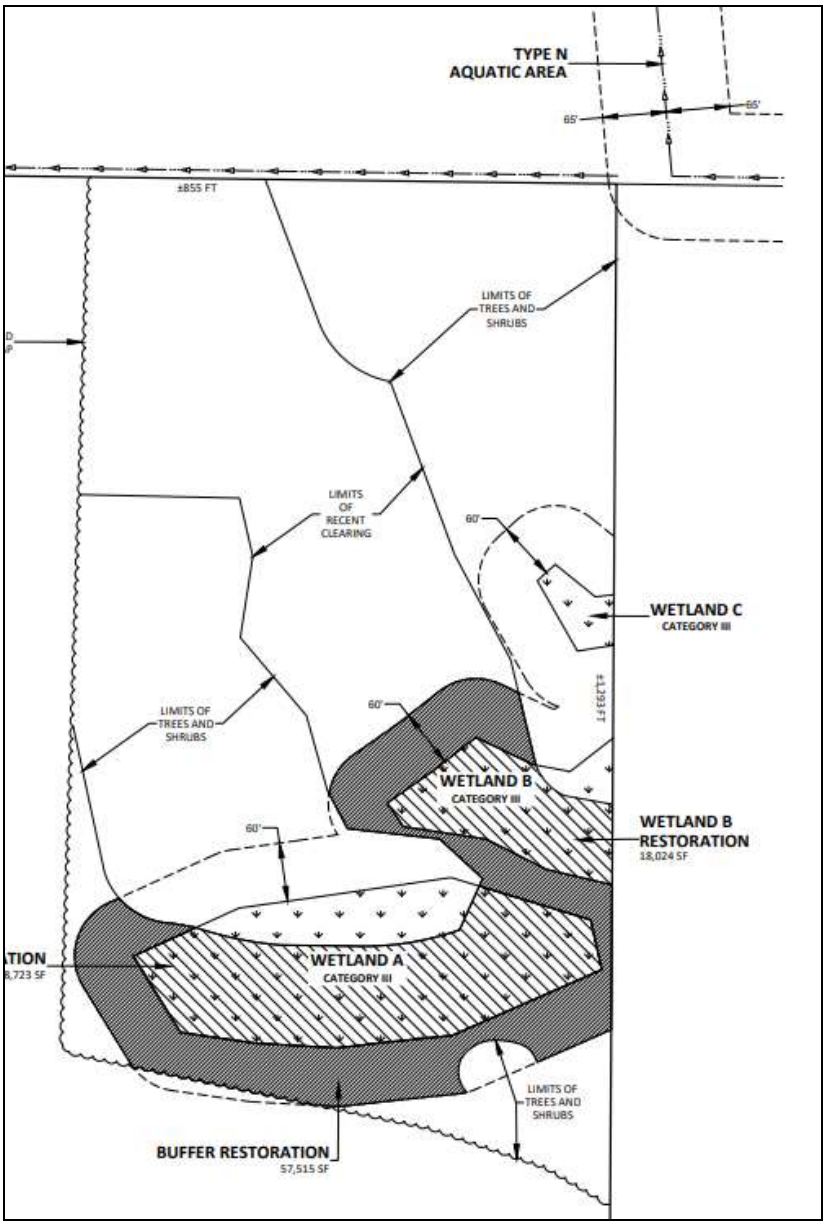
Field observations

The study area of the site consists of a combination of recently cleared forest now tilled agricultural land, as well as a 40-50 year old deciduous forest.

The forested area consist primarily of a mix of red alder and some black cottonwood, with a few scattered bitter cherry, big leaf maple and cedar with a dense understory of Himalayan blackberry with some salmonberry, elderberry, Indian plum, snowberry, reed canary grass, stinging nettle and sword fern.

The portion of the site that was recently cleared appears to have been a forested area with the same characteristics described above. All

vegetation in this area was removed and the soils disked/tilled to a depth of approximately 12".



Above: Mapping of the two wetlands (Wetlands B & C) within the current study area as well as Wetland A located outside the study area but within the previous CAD approval.

The site was reviewed in the winter wet season in a period of above normal rainfall. The upland areas within the forested portion of the site

had an A-horizon approximately 12" thick comprise of gravelly loam with a color of 10YR 2/2 overlying a B-horizon of gravelly loam with a color of 10YR 4/3 and were only moist.

Within the cleared portion of the site upland pits were found to be similar to the forested areas or with a chroma of 2 with no redoximorphic concentrations or other hydric indicators.

Wetlands

There are two wetland areas on within the study area and are roughly in the locations as those shown on the Soundview approximation mapping. In continuing with the Soundview mapping on the parcel, we labeled the wetland in the previous CAD to the south that was partially cleared as Wetland A, the southern wetland within the study area as Wetland B (also partially cleared) and the north one as Wetland C.

Wetland B

Wetland B is an area that was identified as potential wetland in the Soundview report and was subsequently cleared of any vegetation. Soils disturbance includes tilling as well.

This area has no vegetation except for a small area of reed canary grass and blackberry on the eastern edge of the site. This wetland area was forested prior to clearing based upon aerial photographs.

Soil pits within this wetland revealed a gravelly loam with a B-horizon matrix color of 10YR 4/2 with common, medium, distinct redoximorphic concentrations, as well as soils saturated to the surface. Abutting upland areas did not have any redox features or other hydric indicators, and generally had a continuous soil color of 10YR 2/2 throughout the profile.

Using the 2014 WADOE Wetland Rating system and rating these wetlands together as one feature and as depressional wetland, the wetland scored a total of 17 points with 4 for habitat. This indicates a Category III wetland. A Category III wetland with 5 habitat points in the rural areas of King County for a moderate land use such as a single family home have a 60' buffer measured from the wetland edge.

Wetland C

Wetland C consists of a forested wetland area comprised of an overstory of red alder with reed canary grass in the understory. The wetland is generally topographically well-defined and was flagged with flags A1-A7 (gps points #267-#273). Although flagged with flags labeled "A", we are referring to this as wetland C so as not to be confused with the Wetland A from the previous CAD approval.

Soil pits within this wetland revealed a gravelly loam with a B-horizon matrix color of 10YR 2/2 with common, medium, distinct redoximorphic concentrations, as well as soils saturated to the surface. Abutting upland areas did not have any redox features and lacked wetland hydrology.

Using the 2014 WADOE Wetland Rating system and rating these wetlands together as one feature and as depressional wetland, the wetland scored a total of 17 points with 4 for habitat. This indicates a Category III wetland. A Category III wetland with 5 habitat points in the rural areas of King County for a moderate land use such as a single family home have a 60' buffer measured from the wetland edge.

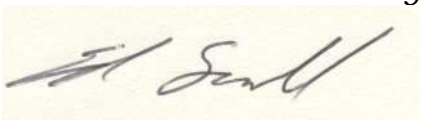
Streams

There are no streams or ditches within the study area. There is a ditch along the north side of the site which drains to the west to the roadside ditch. This is a agricultural ditch and not a stream. There is a small channel located off-site to the east of the northeast corner of the site. This ditch contained water flowing eventually to the north. To determine the classification of this area we made a site visit with Larry Fisher of WDFW to determine the classification. Larry agreed this is a non-fish bearing water with no fish habitat and would be best classified as a Type Ns stream.

Type N streams in the rural areas of King County have a 65' buffer measured from the OHWM. This buffer just extends onto the northeast corner of the site.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at esewall@sewallwc.com .

Sincerely,
Sewall Wetland Consulting, Inc.



Ed Sewall
Senior Wetlands Ecologist PWS #212

Attached: Data Forms
Rating Form with exhibits

REFERENCES

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U. S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

Muller-Dombois, D. and H. Ellenberg. 1974. Aims and Methods of Vegetation Ecology. John Wiley & Sons, Inc. New York, New York.

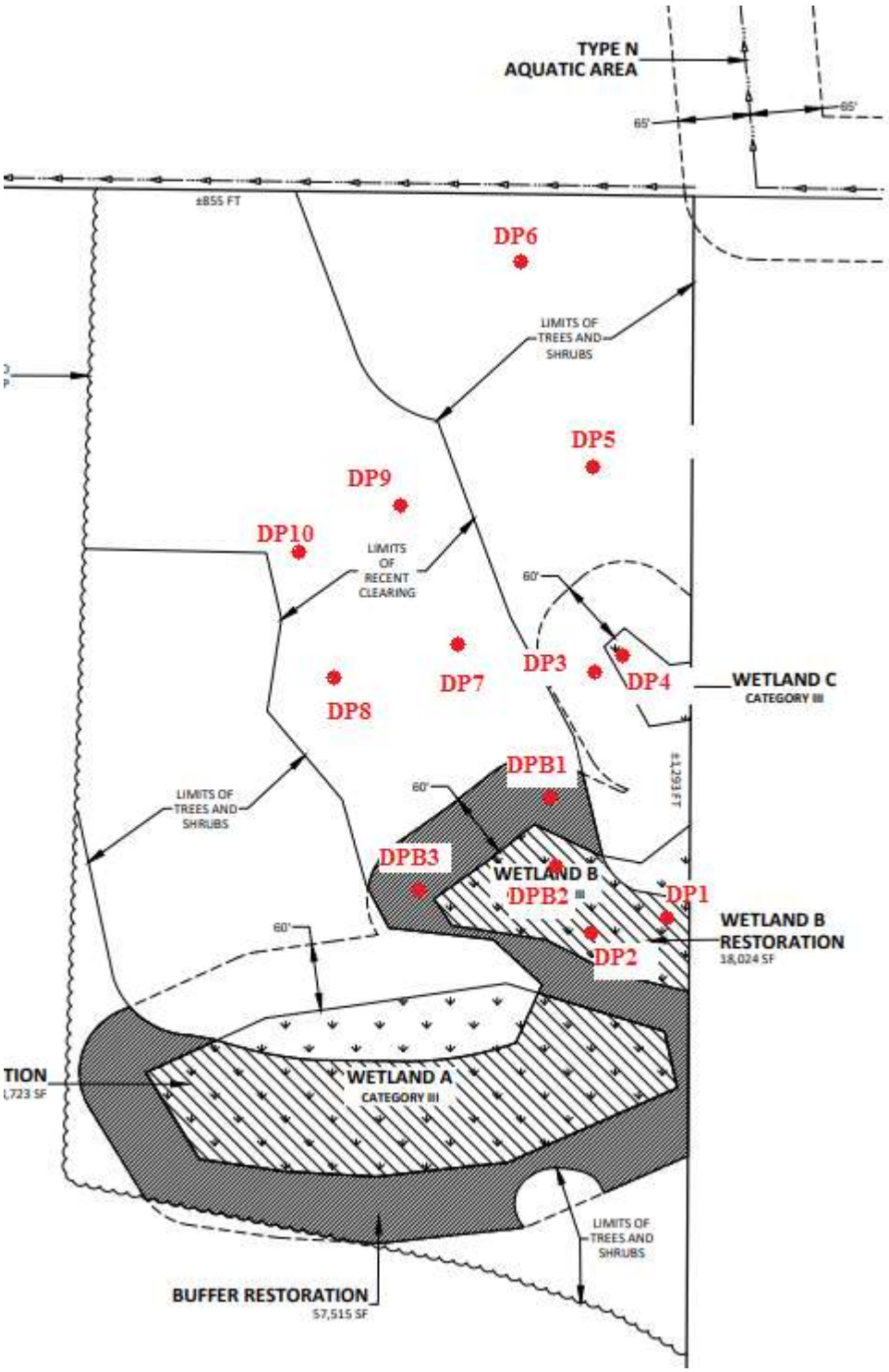
Munsell Color. 1988. Munsell Soil Color Charts. Kollmorgen Instruments Corp., Baltimore, Maryland.

National Technical Committee for Hydric Soils. 1991. Hydric Soils of the United States. USDA Misc. Publ. No. 1491.

Reed, P., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). 1988. U. S. Fish and Wildlife Service, Inland Freshwater Ecology Section, St. Petersburg, Florida.

Reed, P.B. Jr. 1993. 1993 Supplement to the list of plant species that occur in wetlands: Northwest (Region 9). USFWS supplement to Biol. Rpt. 88(26.9) May 1988.

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1


TYPE N
AQUATIC AREA
65'
65'
±855 FT
DP6
LIMITS OF
TREES AND
SHRUBS
DP5
DP9
DP10
LIMITS
OF
RECENT
CLEARING
60'
DP3
DP4
WETLAND C
CATEGORY III
DP7
DP8
DPB1
±1,739 FT
LIMITS OF
TREES AND
SHRUBS
60'
DPB3
WETLAND B
DPB2
DP1
WETLAND B
RESTORATION
18,024 SF
DP2
60'
TION
,723 SF
WETLAND A
CATEGORY III
LIMITS OF
TREES AND
SHRUBS
BUFFER RESTORATION
57,515 SF

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Schmidt City/County: King Co. Sampling Date: 10.13.20

Applicant/Owner: State: WA Sampling Point: DP#1

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ✓

Hydric Soil Present? Yes ✓ No ____

Wetland Hydrology Present? Yes ✓ No ____

Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: - above normal rainfall
- vegetation cleared

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Cleared

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
10	10YR2/1							
16	10YR4/2		Cmd				gsl	

[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)
- ___ 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 ____

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 ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): ~10"

Wetland Hydrology Present? Yes ✓ 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: Schmidt City/County: King Co. Sampling Date: 10.13.20

Applicant/Owner: State: WA Sampling Point: DP#2

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____

Hydric Soil Present? Yes ✓ No ____

Wetland Hydrology Present? Yes ____ No ____

Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: above normal rainfall climate

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: Climate

US Army Corps of Engineers Western Mountains, Valleys, and Coast – Interim Version

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
7	10YR 2/1							
16	10YR 4/2		cmd				gsl	

[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)
- ___ 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 ____

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 ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): -2"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers Western Mountains, Valleys, and Coast – Interim Version

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Schmidt City/County: King Co. Sampling Date: 10-13-20

Applicant/Owner: State: WA Sampling Point: DP #3

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks: above normal rainfall

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1. Alnus rubra	30		FAC
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Rubus discolor	20		FAC
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Phalaris arundinacea	80		FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

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 ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	10YR 2/2							
16	10YR 4/3						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)
- ___ 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 ✓

Remarks: No indicators

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 ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Schmidt City/County: King Co. Sampling Date: 10.13.20
Applicant/Owner: State: WA Sampling Point: DP4
Investigator(s): Ed Sewall Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: Buckley NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✓ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ 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 ___	Is the Sampled Area within a Wetland? Yes ✓ No ___
Hydric Soil Present?	Yes ✓	No ___	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks: above normal rainfall

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Populus balsamifera	30		FAC
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1. Phalaris arundinacea	30		FACW
2. Mentha sp.	20		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

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	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: ___

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
10	10YR 2/1							
16	10YR 4/2		common				gSL	

[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)
___ 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 ___

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 ✓ Depth (inches): ___
Water Table Present? Yes ___ No ✓ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): ~10
Wetland Hydrology Present? Yes ✓ 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: Schmidt City/County: King Co. Sampling Date: 10.13.20

Applicant/Owner: State: WA Sampling Point: DP#5

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: above normal rainfall

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	40	✓	FAC
2. Prunus emarginata	20	____	NPL
3.	____	____	____
4.	____	____	____
	____ = Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1. Sambucus racemosa	30	____	FACU
2. Rubus discolor	20	____	FAC
3.	____	____	____
4.	____	____	____
5.	____	____	____
	____ = Total Cover		

Herb Stratum (Plot size: ____)			
1. Phalaris arundinacea	70	____	FACW
2.	____	____	____
3.	____	____	____
4.	____	____	____
5.	____	____	____
6.	____	____	____
7.	____	____	____
8.	____	____	____
9.	____	____	____
10.	____	____	____
11.	____	____	____
	____ = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.	____	____	____
2.	____	____	____
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR 3/3						gsL	

[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)
___ 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 ✓

Remarks: no indicators

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 ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: no indicators

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Schmidt City/County: King Co. Sampling Date: 10-13-20

Applicant/Owner: State: WA Sampling Point: DP#6

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ____ No ✓	

Remarks: above normal rainfall

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	60	✓	FAC
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Ribes divaricatum	30	✓	FAC
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Phalaris arundinacea	40	✓	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Remarks:

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	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
3	duff							
16	10YR 4/3						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)
___ 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 ____

Remarks: no indicators

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 ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: no indicators

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Schmidt City/County: King Co. Sampling Date: 11-27-20

Applicant/Owner: State: WA Sampling Point: DP B1

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ✓ ?	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks: above normal rainfall
clear

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: Clear

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2							
6-16	10YR 3/4						gSL	

[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)
- ___ 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 ✓

Remarks: No Wetland

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 ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): -14"

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No Wetland

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Schmidt City/County: King Co. Sampling Date: 11-27-20

Applicant/Owner: State: WA Sampling Point: DP B 2

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	?
Hydric Soil Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Wetland Hydrology Present?	Yes ____	No ____	

Remarks: above normal rainfall Climate

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: Climate

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
9	10YR 2/2							
16	10YR 2/2		CMd				gsC	

[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)
___ 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 ____

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 ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ 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: Schmidt City/County: King Co. Sampling Date: 11-27-20

Applicant/Owner: State: WA Sampling Point: DPB3

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ?	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: above normal rainfall

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: Cleared

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0	10YR 2/2							
16	10YR 3/2						gsL	

[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)
- ___ 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 ✓

Remarks: No wetland

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 ✓ Depth (inches): ____

Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ~14"

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Schmidt City/County: King Co. Sampling Date: 12-30-20

Applicant/Owner: State: WA Sampling Point: DP#7

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ____ No ____	

Remarks: above normal rainfall climate

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: clear

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR 2/2						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)
- ___ 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 ✓

Remarks: no redoxity

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 ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): ~10

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: not growing season at the heavy rainfall

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Schmidt City/County: King Co. Sampling Date: 12-30-20

Applicant/Owner: State: WA Sampling Point: DP#8

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____ ?	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks: above normal rainfall Cloudy

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: Cloudy

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
8	10YR 2/2							
TC	10YR 3/3						SL	

[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)
- ___ 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 ✓

Remarks: no indicators

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 ✓ Depth (inches): ____

Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 6

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: above normal rainfall

non growing season

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Schmidt City/County: King Co. Sampling Date: 12-30-20

Applicant/Owner: State: WA Sampling Point: DP #=9410

Investigator(s): Ed Sewall Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Buckley NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____ ?	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: above normal rainfall
Chm

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks:
Chm

SOIL

Sampling Point: ____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
14	10YR 3/2						gr L	

[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)
- ___ 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 ✓

Remarks:
No redox

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 ✓ Depth (inches): ____

Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): ~12

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No redox

Wetland name or number ____

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Schmidt Unit B Date of site visit: 1-21

Rated by SJ Scott Trained by Ecology? ✓Yes ___No Date of training ____

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✓N

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map ____

OVERALL WETLAND CATEGORY III (based on functions ___ or special characteristics ___)

1. Category of wetland based on FUNCTIONS

___ **Category I** – Total score = 23 - 27

___ **Category II** – Total score = 20 - 22

✓ **Category III** – Total score = 16 - 19

___ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	H (M) L	H (M) L	H M (L)	
Value	(H) M L	H (M) L	H (M) L	TOTAL
Score Based on Ratings	7	6	4	17

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	✓

Wetland name or number B

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D S.2	
Map of the contributing basin	D 4.3, D S.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R S.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S S.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number _____

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlonds. If it is Saltwater Tidal Fringe it is on **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
   ___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
   ___The water leaves the wetland **without being impounded.**

NO – go to 5 **YES** – The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ___The overbank flooding occurs at least once every 2 years.

Wetland name or number _____

NO – go to 6 **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7 **YES – The wetland class is Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 **YES – The wetland class is Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you ore still unable to determine which of the above criterio opply to your wetland, or if you have **more than 2 HGM classes** within o wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number ____

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet)	points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*.	Yes = 4 / No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.*		
Area seasonally ponded is > ½ total area of wetland	points = 4	
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	2
Total for D 1	Add the points in the boxes above	10

Rating of Site Potential If score is: ___12-16 = H ✓ 6-11 = M ___0-5 = L *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 / No = 0	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 / No = 0	
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 / No = 0	
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source: agriculture	Yes = 1 / No = 0	1
Total for D 2	Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___3 or 4 = H ✓ 1 or 2 = M ___0 = L *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 / No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 / No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality *(answer YES if there is a TMDL for the basin in which the unit is found)*?	Yes = 2 / No = 0	2
Total for D 3	Add the points in the boxes above	4

Rating of Value If score is: ✓ 2-4 = H ___1 = M ___0 = L *Record the rating on the first page*

Wetland name or number 13

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	4
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	3
Total for D 4	Add the points in the boxes above	7

Rating of Site Potential If score is: ___12-16 = H ✓ 6-11 = M ___0-5 = L *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 / No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 / No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 / No = 0	1
Total for D 5	Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___3 = H ✓ 1 or 2 = M ___0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	1
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 / No = 0	0
Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: ___2-4 = H ✓ 1 = M ___0 = L *Record the rating on the first page*

Wetland name or number ____

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

___Aquatic bed	4 structures or more: points = 4
___Emergent	3 structures: points = 2
___Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
✓ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

✓ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

✓ Permanently flooded or inundated	4 or more types present: points = 3
___Seasonally flooded or inundated	3 types present: points = 2
___Occasionally flooded or inundated	2 types present: points = 1
___Saturated only	1 type present: points = 0
___Permanently flowing stream or river in, or adjacent to, the wetland	
___Seasonally flowing stream in, or adjacent to, the wetland	
___**Lake Fringe wetland**	**2 points**
___**Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

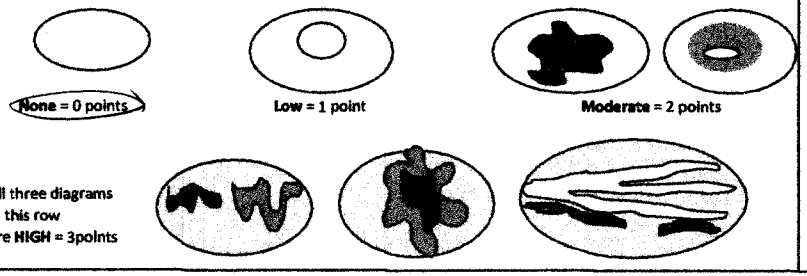
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: > 19 species	points = 2
S - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points **Low** = 1 point **Moderate** = 2 points

All three diagrams in this row are **HIGH** = 3points

0

Wetland name or number B

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

✓	Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).
___	Standing snags (dbh > 4 in) within the wetland
___	Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
___	Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*
___	At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently *or* seasonally inundated *(structures for egg-laying by amphibians)*
___	Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)

1

Total for H 1 — Add the points in the boxes above: 1

Rating of Site Potential If score is: ___15-18 = H ___7-14 = M (0-6 = L) *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: 2 % undisturbed habitat + [(% moderate and low intensity land uses)/2] 1 = 3 %

If total accessible habitat is:	
> 1/3 (33.3%) *of* 1 km Polygon	points = 3
20-33% of 1 km Polygon	points = 2
10-19% of 1 km Polygon	points = 1
< 10% *of* 1 km Polygon	points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: 15 % undisturbed habitat + [(% moderate and low intensity land uses)/2] 4 = 19 %

Undisturbed habitat > 50% of Polygon	points = 3
Undisturbed habitat 10-50% and in 1-3 patches	points = 2
Undisturbed habitat 10-50% and > 3 patches	points = 1
Undisturbed habitat < 10% of 1 km Polygon	points = 0

1

H 2.3. Land use intensity in 1 km Polygon: If

> 50% of 1 km Polygon is high intensity land use	points = (-2)
≤ 50% of 1 km Polygon is high intensity	points = 0

-2

Total for H 2 — Add the points in the boxes above: -1

Rating of Landscape Potential If score is: ___4-6 = H ___1-3 = M ✓ < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria: points = 2

- — It has 3 or more priority habitats within 100 m (see next page)
- — It provides habitat for Threatened or Endangered species (any plant or animal on the state *or* federal lists)
- — It is mapped as a location for an individual WDFW priority species
- — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- — It has been categorized as an Important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

Site has 1 or 2 priority habitats (listed on next page) within 100 m: points = 1

Site does not meet any of the criteria above: points = 0

1

Rating of Value If score is: ___2 = H ✓1 = M ___0 = L *Record the rating on the first page*

Wetland name or number____

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 **No= Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No - Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? —The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) —At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. —The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to **SC 2.2** **No – Go to SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = **Category I** No = **Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – **Contact WNHP/WDNR and go to SC 2.4** **No = Not a WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below. If you answer YES you will still need to rate the wetland based on its functions.* SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. if the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Is a Category I bog** No = **Is not a bog**	**Cat. I**

Wetland name or number 13

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding ~~21 in (53 cm)~~ **Yes = Category I** **No = Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon**	**Cat. I**
SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ⅓ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** No = **~~not an interdunal wetland for rating~~**	**Cat I**
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**	**Cat. II**
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**	**Cat. III**
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

Wetland name or number ____

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Schmidt Wet C Date of site visit: 1-21

Rated by Ed Sarb Trained by Ecology? __ Yes ___No Date of training_____

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ____N

NOTE: Form is not complete without the figures requested *(figures con be combined).*

Source of base aerial photo/map _____

OVERALL WETLAND CATEGORY III (based on functions ✓ or special characteristics ___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

✓ **Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	TOTAL
	Circle the oppropriote rotings			
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	H (M) L	H (M) L	H M (L)	
Value	(H) M L	H (M) L	H (M) L	
Score Based on Ratings	7	6	4	17

Score for each function based on three ratings *(order of rotings is not importont)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	✓

Wetland name or number C

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*con be odded to map of hydroperiods*)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (*con be odded to onother figure*)	D 2.2, D S.2	
Map of the contributing basin	D 4.3, D S.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*con be odded to onother figure*)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (*con be odded to onother figure*)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R S.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*con be odded to onother figure*)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*con be odded to figure obove)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S S.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number ____

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO - go to 2 **YES** - the wetland class is **Tidal Fringe** - go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO - Saltwater Tidal Fringe (Estuarine) **YES - Freshwater Tidal Fringe**

   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO - go to 3 **YES** - The wetland class is **Flats**

   *If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
   ___At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO - go to 4 **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
   ___The water leaves the wetland **without being impounded.**

   NO - go to 5 **YES** - The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ___The overbank flooding occurs at least once every 2 years.

Wetland name or number C

NO - go to 6 **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

   NO - go to 7 **YES - The wetland class is Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

   NO - go to 8 **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number C

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?

D 1.1. Characteristics of surface water outflows from the wetland:
- Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3
- Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2
- Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1
- Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1

→ 3

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*. Yes = 4 No = 0 → 0

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):
- Wetland has persistent, ungrazed, plants > 95% of area points = 5
- Wetland has persistent, ungrazed, plants > ½ of area points = 3
- Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1
- Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0

→ 3

D 1.4. Characteristics of seasonal ponding or inundation:
This is the area that is ponded for at least 2 months. See description in manual.
- Area seasonally ponded is > ½ total area of wetland points = 4
- Area seasonally ponded is > ¼ total area of wetland points = 2
- Area seasonally ponded is < ¼ total area of wetland points = 0

→ 2

Total for D 1 — Add the points in the boxes above → 8

Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 → 0

D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0 → 1

D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0 → 0

D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0 → C

Total for D 2 — Add the points in the boxes above → 1

Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M 0 = L *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0 → 1

D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0 → 1

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality *(answer YES if there is a TMDL for the basin in which the unit is found)*? Yes = 2 No = 0 → 2

Total for D 3 — Add the points in the boxes above → 4

Rating of Value If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*

Wetland name or number C

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:
- Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2
- Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1
- Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

→ 4

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*
- Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- The wetland is a "headwater" wetland points = 3
- Wetland is flat but has small depressions on the surface that trap water points = 1
- Marks of ponding less than 0.5 ft (6 in) points = 0

→ 0

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*
- The area of the basin is less than 10 times the area of the unit points = 5
- The area of the basin is 10 to 100 times the area of the unit points = 3
- The area of the basin is more than 100 times the area of the unit points = 0
- Entire wetland is in the Flats class points = 5

→ 3

Total for D 4 — Add the points in the boxes above → 7

Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 → C

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 → 0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 → 1

Total for D 5 — Add the points in the boxes above → 1

Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):
- Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2
- Surface flooding problems are in a sub-basin farther down-gradient. points = 1

Flooding from groundwater is an issue in the sub-basin. points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0

There are no problems with flooding downstream of the wetland. points = 0

→ 1

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 → 0

Total for D 6 — Add the points in the boxes above → 1

Rating of Value If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*

Wetland name or number C

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

___Aquatic bed	4 structures or more: points = 4
___Emergent	3 structures: points = 3
___Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
✓ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

___The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, mass/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

___Permanently flooded or inundated	4 or more types present: points = 3
✓ Seasonally flooded or inundated	3 types present: points = 2
___Occasionally flooded or inundated	2 types present: points = 1
___Saturated only	1 type present: points = 0
___Permanently flowing stream or river in, or adjacent to, the wetland	
___Seasonally flowing stream in, or adjacent to, the wetland	
___**Lake Fringe wetland**	**2 points**
___**Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

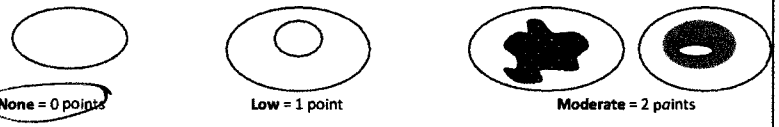
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

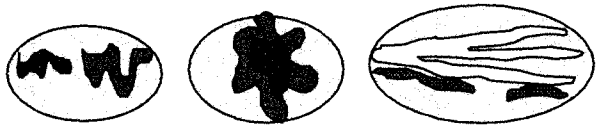
H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points **Low** = 1 point **Moderate** = 2 points

All three diagrams in this row are **HIGH** = 3points



0

Wetland name or number C

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

✓ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
___Standing snags (dbh > 4 in) within the wetland	
___Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)	
___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*	
___At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*	
___Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	1
Total for H 1 — Add the points in the boxes above	3

Rating of Site Potential If score is: ___15-18 = H ___7-14 = M ✓ 0-6 = L — *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: 2 % undisturbed habitat 2 + [(% moderate and low intensity land uses)/2] 1 = 3 %

If total accessible habitat is:	
> 1/3 (33.3%) of 1 km Polygon	points = 3
20-33% of 1 km Polygon	points = 2
10-19% of 1 km Polygon	points = 1
< 10% of 1 km Polygon	points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: 15 % undisturbed habitat 8 + [(% moderate and low intensity land uses)/2] 4 = 19 %

Undisturbed habitat > 50% of Polygon	points = 3
Undisturbed habitat 10-50% and in 1-3 patches	points = 2
Undisturbed habitat 10-50% and > 3 patches	points = 1
Undisturbed habitat < 10% of 1 km Polygon	points = 0

1

H 2.3. Land use intensity in 1 km Polygon: If

> 50% of 1 km Polygon is high intensity land use	points = (-2)
≤ 50% of 1 km Polygon is high intensity	points = 0

-2

Total for H 2 — Add the points in the boxes above: -1

Rating of Landscape Potential If score is: ___4-6 = H ___1-3 = M ✓ < 1 = L — *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria:	points = 2
— It has 3 or more priority habitats within 100 m (see next page)	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	
— It is mapped as a location for an individual WDFW priority species	
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1
Site does not meet any of the criteria above	points = 0

1

Rating of Value If score is: ___2 = H ✓ 1 = M ___0 = L — *Record the rating on the first page*

Wetland name or number ____

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

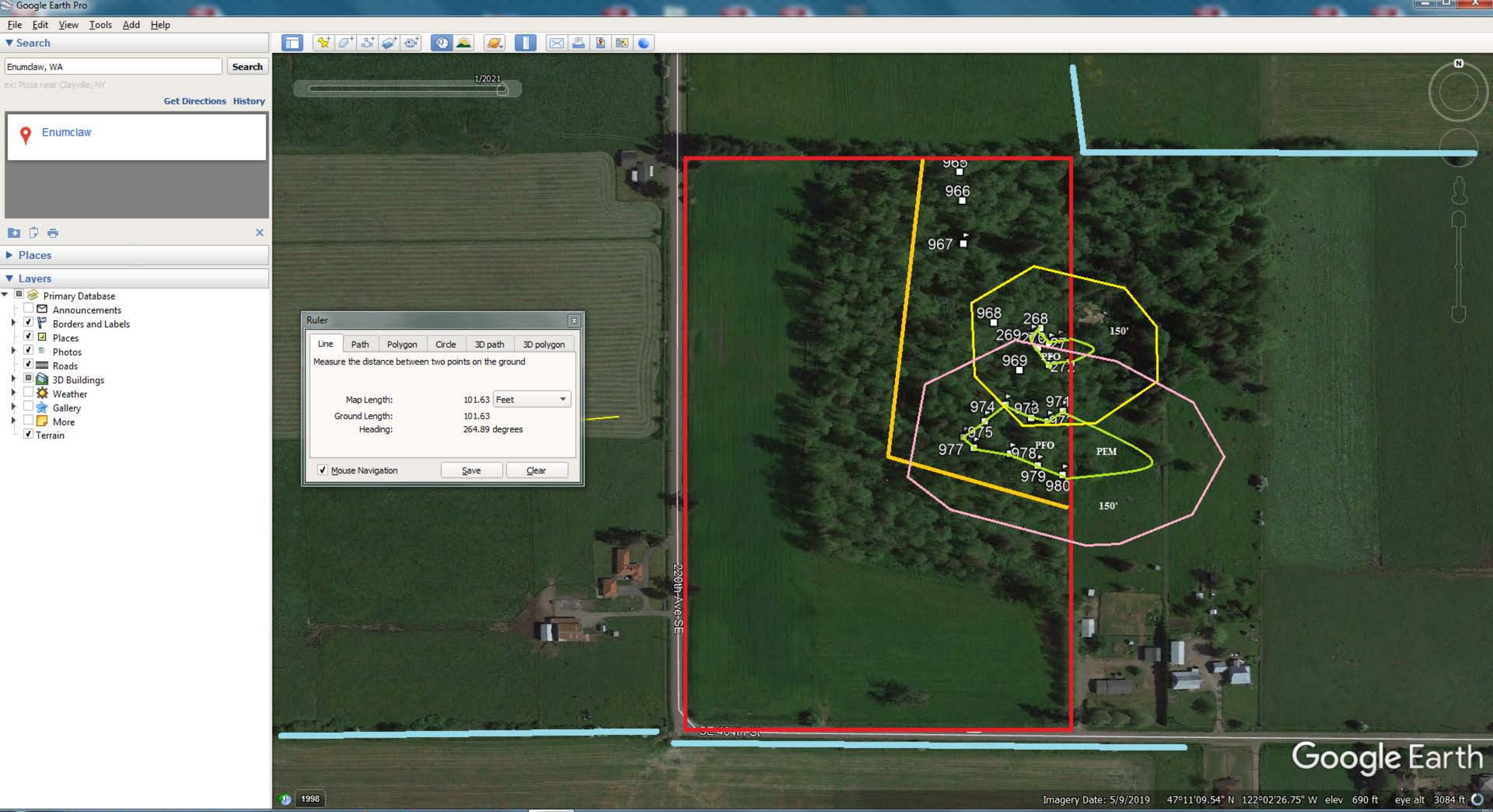
Wetland name or number C

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No - Go to **SC 1.2**	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? —The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) —At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. —The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to **SC 2.2** No – Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = **Category I** No = **Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – **Contact WNHP/WDNR and go to SC 2.4** No = **Not a WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = **Category I** No = **Not a WHCV**	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below. If you answer YES you will still need to rate the wetland based on its functions.* SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Is a Category I bog** No = **Is not a bog**	Cat. I

Wetland name or number C

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC S.1** No = **Not a wetland in a coastal lagoon** SC S.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ⅓ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 10S — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based *on* Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA


Google Earth Pro
File Edit View Tools Add Help
Search
Enumclaw, WA
Search
Get Directions History
Enumclaw
Places
Layers
Primary Database
Announcements
Borders and Labels
Places
Photos
Roads
3D Buildings
Weather
Gallery
More
Terrain
1/2021
Ruler
Line Path Polygon Circle 3D path 3D polygon
Measure the distance between two points on the ground
Map Length: 101.63 Feet
Ground Length: 101.63
Heading: 264.89 degrees
Mouse Navigation
Save
Clear
965
966
967
968
268
969
974
973
971
975
977
978
979
980
PFO
PEM
150'
150'
220th Ave SE
1998
Google Earth
Imagery Date: 5/9/2019 47°11'09.54" N 122°02'26.75" W elev 690 ft eye alt 3084 ft
11:07 AM
1/5/2021

Assessment of state waters 303d | Water Quality Atlas - Map

apps.ecology.wa.gov/waterqualityatlas/wqa/map?CustomMap=y&BBox=-14338616,5395963,-12562831,6503994&RT=0&Layers=27&Filters=y,n,n,n,n,n&F1.4=n,n,n,n,n,y

DEPARTMENT OF ECOLOGY State of Washington

Water Quality Atlas Map

Legend | Filter | Zoom | **Tools**

Home | Add/Remove Map Data | My Maps | Print | Share | About

Basic

Drawing

Other

Keyboard Identify | **Measure Distance** | Measure Area | Image Service

Usage:

Click on map to add measure points. Double-click to finish.

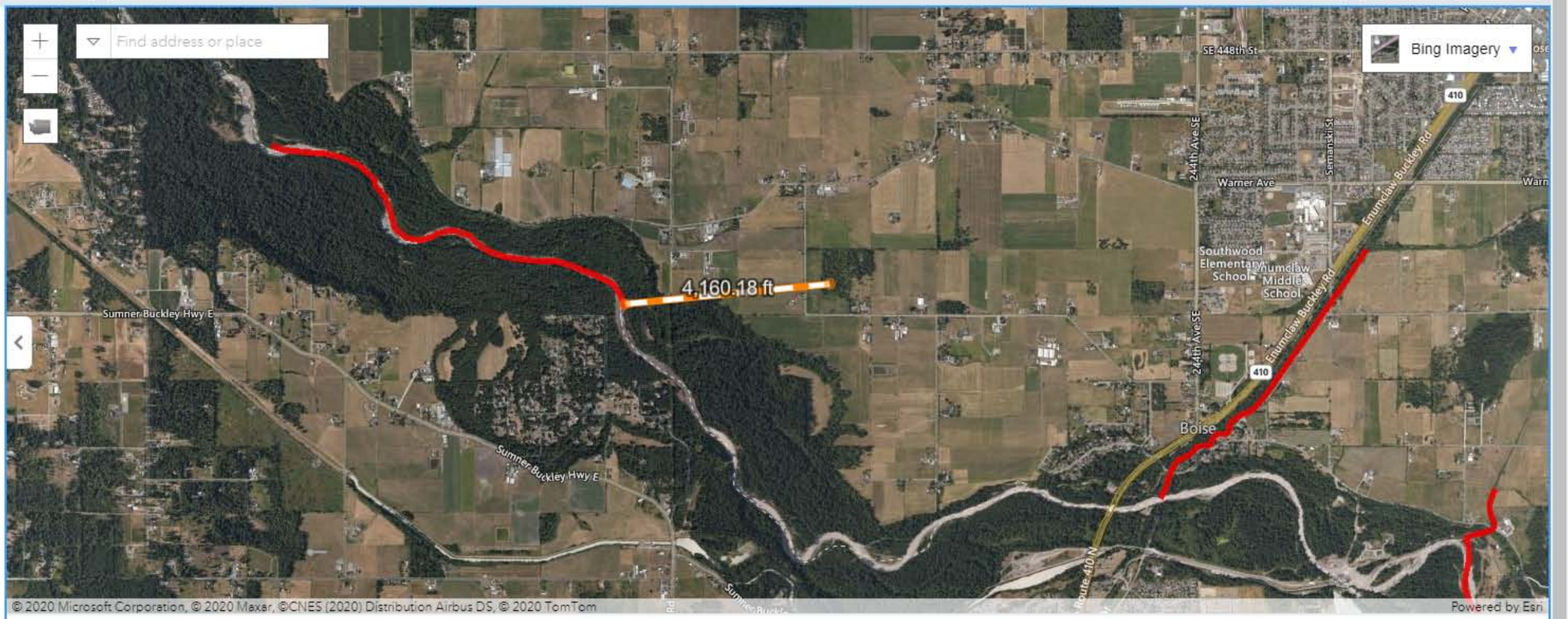
Unit

Feet

Distance

4,160.18 ft

New measurement

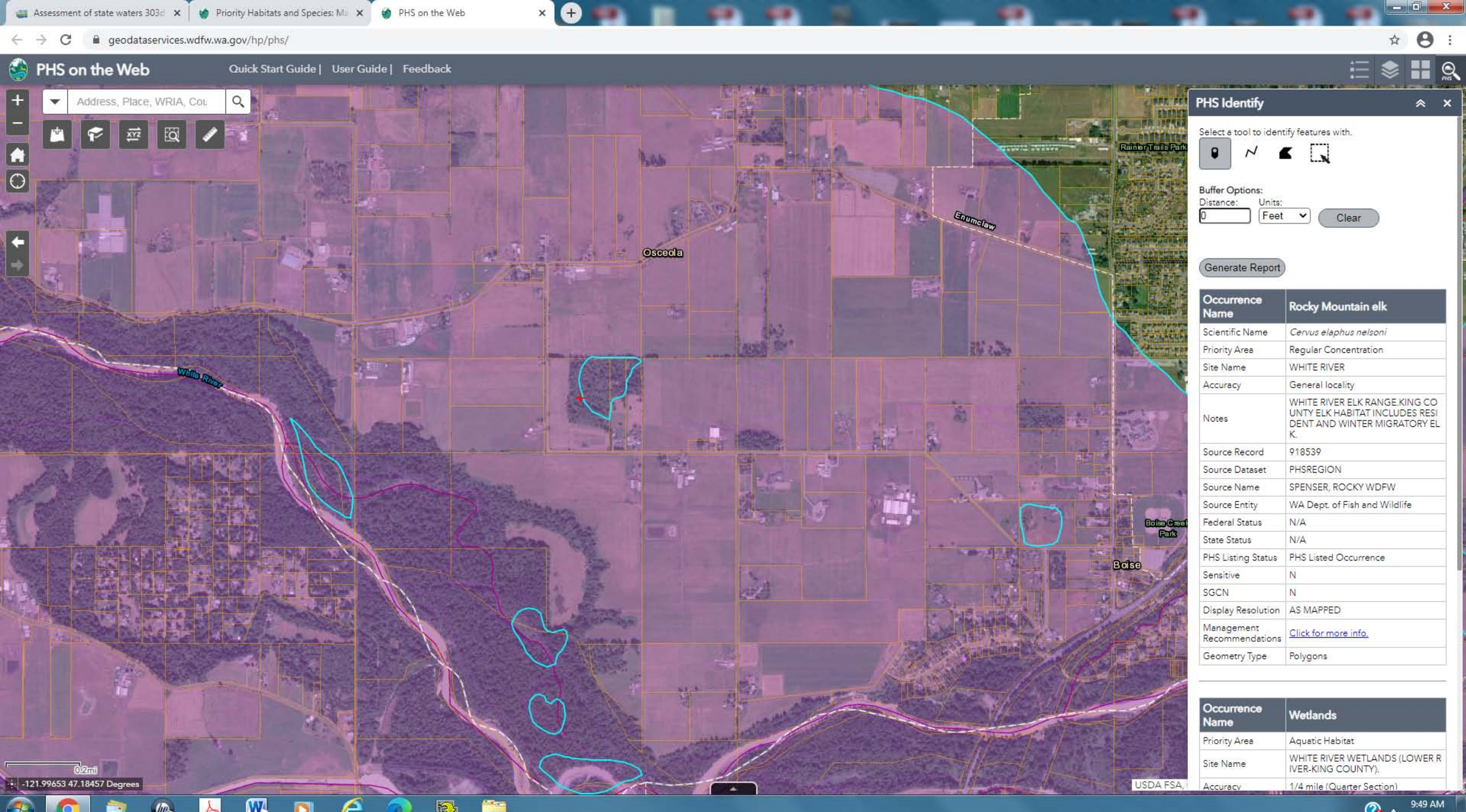


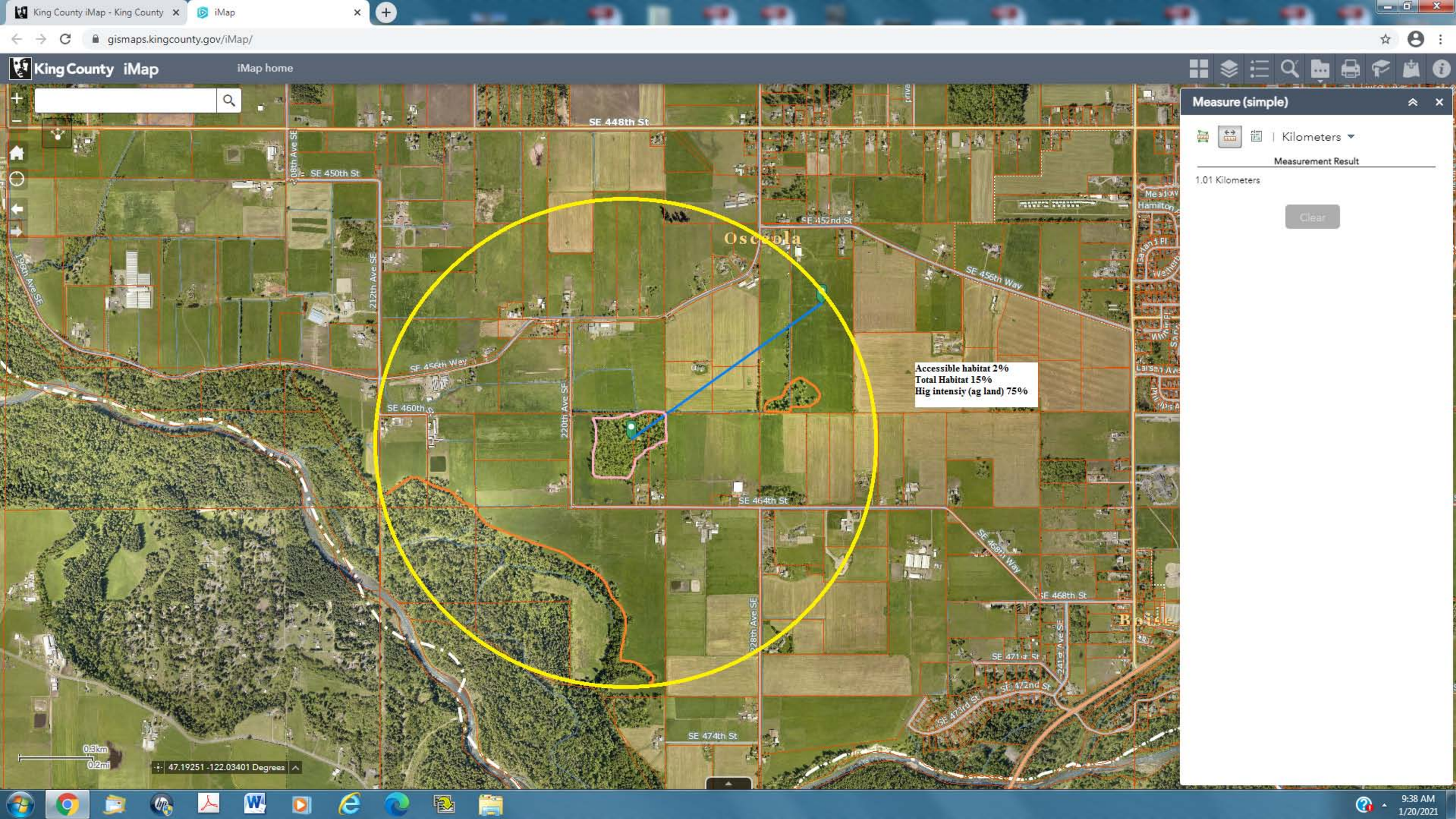
Assessed Water/Sediment | Filter Applied | Clear filters | Zoom to selection | Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	66746	170200011202_01_01	5	Water	Dissolved Oxygen	View
	11253	170200050203_01_01	5	Water	Temperature	View
	42784	170200050203_01_01	5	Water	Dissolved Oxygen	View

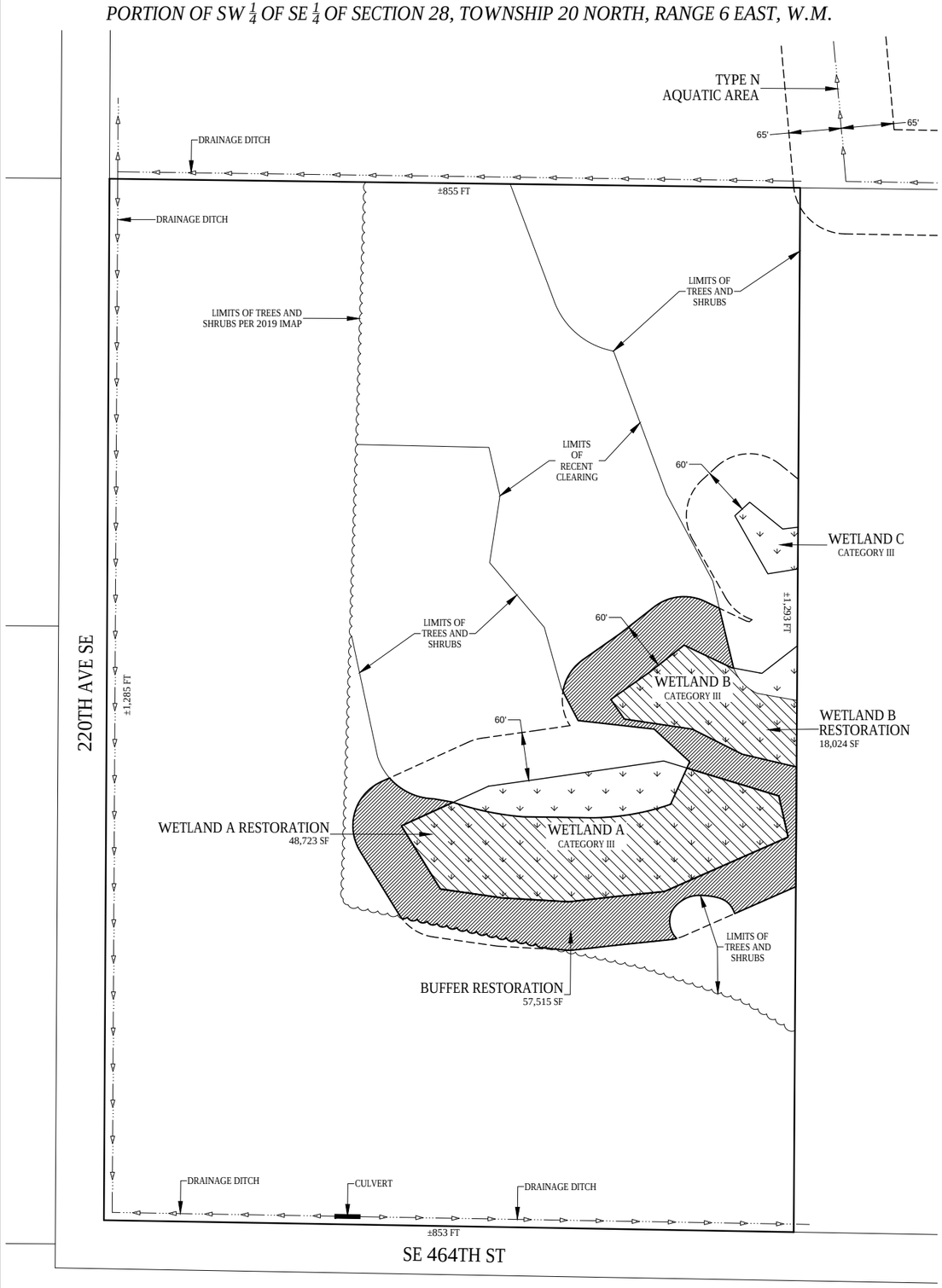
Show 5 entries | Showing 1 to 5 of 4,548 entries | First | Previous | Next | Last

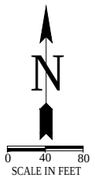
9:46 AM 1/20/2021


Assessment of state waters 303d
Priority Habitats and Species: Ma
PHS on the Web
geodataservices.wdfw.wa.gov/hp/phs/
PHS on the Web
Quick Start Guide | User Guide | Feedback
Address, Place, WRIA, Cou
Osceola
Enumclaw
Rainier Trails Park
White River
Boise Creek Park
Boise
0.2mi
-121.99653 47.18457 Degrees
USDA FSA,
PHS Identify
Select a tool to identify features with.
Buffer Options:
Distance:
0
Units:
Feet
Clear
Generate Report
Occurrence Name
Rocky Mountain elk
Scientific Name
Cervus elaphus nelsoni
Priority Area
Regular Concentration
Site Name
WHITE RIVER
Accuracy
General locality
Notes
WHITE RIVER ELK RANGE.KING COUNTY ELK HABITAT INCLUDES RESIDENT AND WINTER MIGRATORY ELK.
Source Record
918539
Source Dataset
PHSREGION
Source Name
SPENSER, ROCKY WDFW
Source Entity
WA Dept. of Fish and Wildlife
Federal Status
N/A
State Status
N/A
PHS Listing Status
PHS Listed Occurrence
Sensitive
N
SGCN
N
Display Resolution
AS MAPPED
Management Recommendations
Click for more info.
Geometry Type
Polygons
Occurrence Name
Wetlands
Priority Area
Aquatic Habitat
Site Name
WHITE RIVER WETLANDS (LOWER RIVER-KING COUNTY).
Accuracy
1/4 mile (Quarter Section)
9:49 AM
1/20/2021


King County iMap - King County
iMap
gismaps.kingcounty.gov/iMap/
King County iMap
iMap home
Measure (simple)
Kilometers
Measurement Result
1.01 Kilometers
Clear
SE 448th St
SE 450th St
SE 452nd St
SE 456th Way
SE 460th St
SE 464th St
SE 468th St
SE 471st St
SE 472nd St
SE 473rd St
SE 474th St
208th Ave SE
212th Ave SE
196th Ave SE
220th Ave SE
228th Ave SE
241st Ave SE
Osceola
Accessible habitat 2%
Total Habitat 15%
Hig intensiy (ag land) 75%
0.3km
0.2mi
47.19251 -122.03401 Degrees
9:38 AM
1/20/2021

PORTION OF SW $\frac{1}{4}$ OF SE $\frac{1}{4}$ OF SECTION 28, TOWNSHIP 20 NORTH, RANGE 6 EAST, W.M.

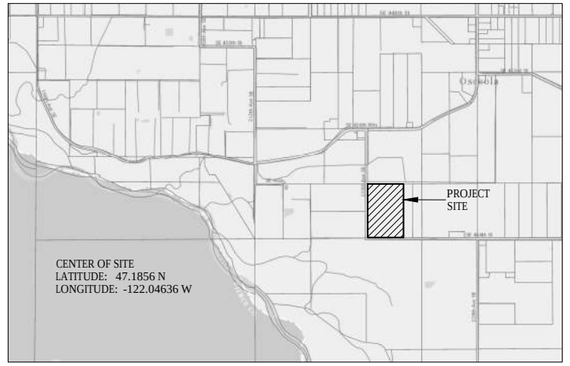




SITE PLAN LEGEND:

- WETLAND
- UNREGULATED DITCH/AQUATIC AREA
- WETLAND RESTORATION (57,515 SF)
- WETLAND BUFFER RESTORATION (66,747 SF)

VICINITY MAP:



RECOMMENDED CONSTRUCTION SEQUENCE:

1. FLAG WORK AREA LIMITS.
2. REQUEST AND ATTEND A PRE-CONSTRUCTION MEETING WITH OWNER.
3. INSTALL NATIVE PLANTS (124,626 SF).
4. INSTALL MULCH.
5. INSTALL TEMPORARY IRRIGATION SYSTEM (124,262 SF).
6. CLEAN-UP AND DEMOBILIZE FROM SITE.
7. REQUEST FROM AND ATTEND INSPECTION WITH OWNER.
8. CONTRACTOR TO PROVIDE 1 YEAR OF MAINTENANCE UNDER DIRECTION OF OWNER.
9. OWNER TO COMPLETE 3 YEARS OF MONITORING.

GENERAL CONSTRUCTION NOTES:

1. CONSTRUCTION SHALL CONFORM TO ALL KING COUNTY CODES, ORDINANCES, AND REGULATIONS.
2. BEFORE THE START OF ANY CONSTRUCTION, A PRE-CONSTRUCTION MEETING MUST BE HELD BETWEEN KING COUNTY, THE OWNER, AND THE PLAN DESIGNER.
3. A COPY OF THESE APPROVED DRAWINGS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
4. SITE CONDITIONS MAY VARY BASED ON SEASON AND/OR TIME OF YEAR. THE CONSTRUCTION CONTRACTOR SHALL ACCOMMODATE REALIZED AND ANTICIPATED SITE CONDITIONS WHEN COMPLETING THE WORK SHOWN ON THESE DRAWINGS.
5. THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF THE WORK SHOWN ON THESE DRAWINGS. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE TRAFFIC CONTROL IN ACCORDANCE WITH ANY AND ALL KING COUNTY STANDARDS.
6. THE TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) MEASURES SHOWN ON THESE DRAWINGS, IF ANY, ARE THE MINIMUM REQUIRED. ADJUST, AMEND, AND/OR ADD TO THE TESC MEASURES SHOWN TO ACCOMMODATE SITE AND WEATHER CONDITIONS AND/OR AS OTHERWISE DIRECTED BY OWNER OR PER KING COUNTY.

DRAWING REFERENCES:

1. RECORD OF SURVEY FOR JAMES L TREAT PREPARED BY HOLMVIG, WASELL AND ASSOCIATES, DATED 12/92, RECORDING NUMBER 199303039013.
2. "SE 464TH STREET - EXISTING CONDITIONS MAP" SOUNDVIEW CONSULTANTS, LLC DATED 6/23/2020.

Sewall Wetland Consulting, Inc.
PO Box 880 - Fall City, Washington 98024 Phone: 253-859-0515

PROJECT:
CRITICAL AREA RESTORATION PLAN
- SCHMIDT RESTORATION -

SITE ADDRESS:
KING COUNTY TAX PARCEL NUMBER 2820060-9034

Know what's below.
Call before you dig.

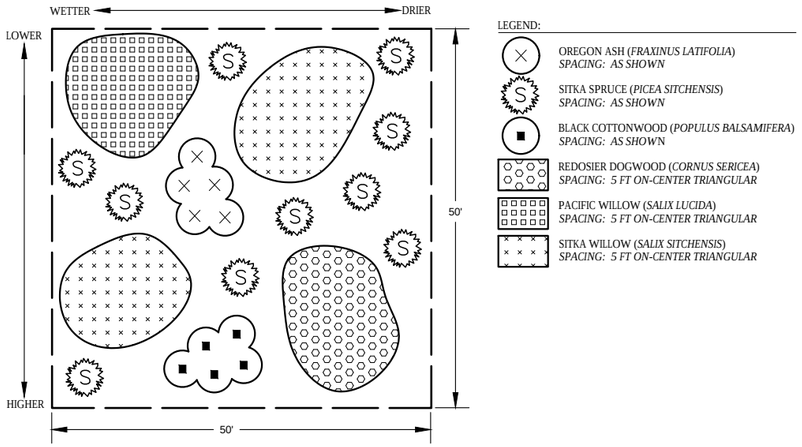
UTILITY LOCATIONS AND CHARACTERISTICS SHOWN ON THIS DRAWING, IF ANY, ARE BASED ON THE FIELD LOCATION OF THE APPARENT SURFACE EVIDENCE OF EXISTING STRUCTURES. THE UNDERGROUND ROUTING AND CONDITION OF BURIED UTILITIES HAS NOT BEEN VERIFIED OR CONFIRMED. ADDITIONAL UTILITY LOCATION AND MAPPING MAY BE REQUIRED. FIELD LOCATE, VERIFY DEPTH OF, AND ADEQUATELY PROTECT ALL UTILITIES PRIOR TO THE START OF WORK.

NO.	DATE	NOTES

DATE: 01/19/2021
JOB NUMBER: 20-163

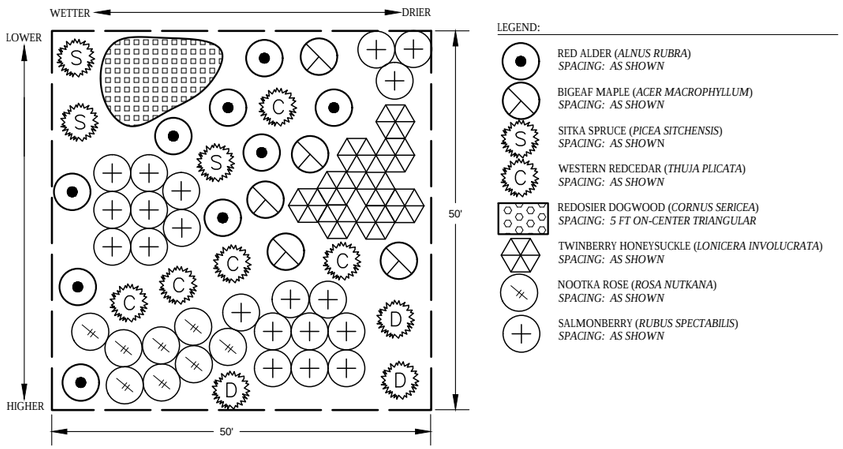
SITE PLAN

SHEET: 1 OF 2



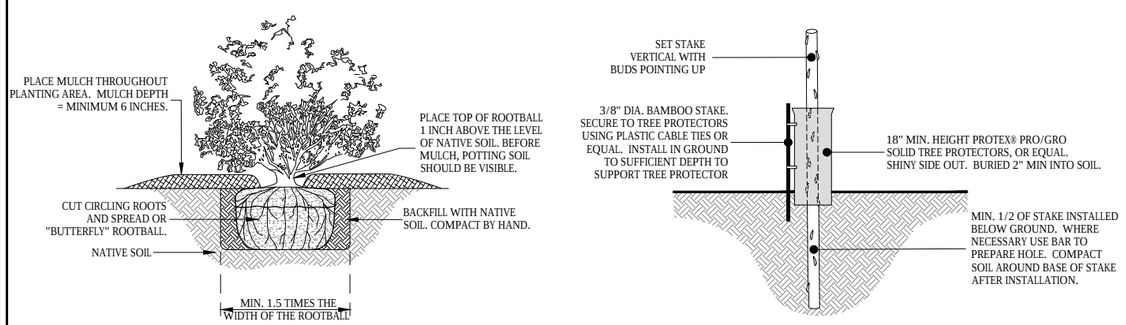
1/2 PLANTING SCHEMATIC - WETLAND

SCALE - 1:10



2/2 PLANTING SCHEMATIC WETLAND BUFFER

SCALE - 1:10



3/2 PLANT INSTALLATION DETAILS

RECOMMENDED CONSTRUCTION SEQUENCE:

1. FLAG WORK AREA LIMITS.
2. REQUEST AND ATTEND A PRE-CONSTRUCTION MEETING WITH OWNER.
3. INSTALL NATIVE PLANTS.
4. INSTALL MULCH.
5. INSTALL TEMPORARY IRRIGATION SYSTEM.
6. CLEAN-UP AND DEMOBILIZE FROM SITE.
7. REQUEST FROM AND ATTEND INSPECTION WITH OWNER.
8. CONTRACTOR TO PROVIDE 1 YEAR OF MAINTENANCE UNDER DIRECTION OF OWNER.
9. OWNER TO COMPLETE 3 YEARS OF MONITORING.

GENERAL CONSTRUCTION NOTES:

1. CONSTRUCTION SHALL CONFORM TO ALL KING COUNTY CODES, ORDINANCES, AND REGULATIONS.
2. BEFORE THE START OF ANY CONSTRUCTION, A PRE-CONSTRUCTION MEETING MUST BE HELD BETWEEN KING COUNTY, THE OWNER, AND THE PLAN DESIGNER.
3. A COPY OF THESE APPROVED DRAWINGS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
4. SITE CONDITIONS MAY VARY BASED ON SEASON AND/OR TIME OF YEAR. THE CONSTRUCTION CONTRACTOR SHALL ACCOMMODATE REALIZED AND ANTICIPATED SITE CONDITIONS WHEN COMPLETING THE WORK SHOWN ON THESE DRAWINGS.
5. THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF THE WORK SHOWN ON THESE DRAWINGS. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE TRAFFIC CONTROL IN ACCORDANCE WITH ANY AND ALL KING COUNTY STANDARDS.
6. THE TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) MEASURES SHOWN ON THESE DRAWINGS, IF ANY, ARE THE MINIMUM REQUIRED. ADJUST, AMEND, AND/OR ADD TO THE TESC MEASURES SHOWN TO ACCOMMODATE SITE AND WEATHER CONDITIONS AND/OR AS OTHERWISE DIRECTED BY OWNER OR PER KING COUNTY.

PLANT MATERIAL SPECIFICATIONS:

1. PLANTS SHALL BE DERIVED FROM STOCK ACCLIMATED TO WESTERN WASHINGTON ENVIRONMENTAL CONDITIONS,
2. PLANTS SHALL BE NATIVE TO THE PACIFIC NORTHWEST, PREFERABLY THE PUGET SOUND REGION OF WASHINGTON STATE. PLANTS SHALL BE PROPAGATED FROM NATIVE STOCK. SALVAGED PLANTS ARE ACCEPTABLE.
3. SEE FOLLOWING WEBSITE FOR NATIVE PLANT SUPPLIERS: HTTPS://KINGCOUNTY.GOV/SERVICES/ENVIRONMENT/STEWARDSHIP/NW-YARD-AND-GARDEN/NATIVE-PLANT-NURSERIES-WASHINGTON.ASPX
4. PLANTS SHALL BE NORMAL IN PATTERN OF GROWTH, HEALTHY, WELL-BRANCHED AND HAVE ALL LEADERS AND BUDS INTACT. TREES SHALL NOT HAVE SUNSCALDS, DISFIGURING KNOTS, FRESH CUTS OF LIMBS, DAMAGED LEADERS, AND/OR DEFORMED TRUNKS.
5. CONTAINERIZED PLANT STOCK SHALL BE GROWN IN A CONTAINER LONG ENOUGH TO DEVELOP A ROOT SYSTEM THAT REACHES THE EDGES OF THE CONTAINER IN WHICH IT HAS GROWN. TREES AND SHRUBS SHALL BE WELL ROOTED AND SHALL HAVE SUFFICIENT ROOT MASS TO HOLD TOGETHER THE SOIL, IN WHICH PLANT IS GROWING, WHEN REMOVED FROM THE POT.

PLANT INSTALLATION NOTES:

1. PLANT MATERIAL QUALITY AND LOCATIONS SHALL BE INSPECTED BY PLAN DESIGNER OR OWNER PRIOR TO INSTALLATION.
2. PLANT LOCATIONS SHOWN ARE APPROXIMATE. ADJUST PLANT LOCATIONS TO ACCOMMODATE SITE CONDITIONS, TO PRESERVE AND PROTECT EXISTING NATIVE VEGETATION, AND/OR PER PLAN DESIGNER AT TIME OF INSTALLATION.
3. FOLLOWING PLANT INSTALLATION, PLACE MULCH THROUGHOUT PLANTING AREA.

PLANT SCHEDULE - WETLAND PLANTING SCHEMATIC:

COMMON NAME	SCIENTIFIC NAME	SIZE/FORM	QTY
OREGON ASH	*FRAXINUS LATIFOLIA*	2 GALLON	160
SITKA SPRUCE	*PICEA SITCHENSIS*	2 GALLON	230
BLACK COTONWOOD	*POPULUS BALSAMIFERA*	2 GALLON	160
REDOSIER DOGWOOD	*CORNUS SERICEA*	4' LIVE STAKE	230
PACIFIC WILLOW	*SALIX LUCIDA*	4' LIVE STAKE	414
SITKA WILLOW	*SALIX SITCHENSIS*	4' LIVE STAKE	230
		TOTAL =	1,424

PLANT SCHEDULE - BUFFER PLANTING SCHEMATIC:

COMMON NAME	SCIENTIFIC NAME	SIZE/FORM	QTY
RED ALDER	*ALNUS RUBRA*	2 GALLON	241
BIGLEAF MAPLE	*ACER MACROPHYLLUM*	2 GALLON	134
SITKA SPRUCE	*PICEA SITCHENSIS*	2 GALLON	81
DOUGLAS FIR	*PSEUDOTSUGA MENZIESII*	2 GALLON	81
WESTERN REDCEDAR	*THUJA PLICATA*	2 GALLON	134
REDOSIER DOGWOOD	*CORNUS SERICEA*	4' LIVE STAKE	161
TWINBERRY HONESUCKLE	*LONICERA INVOLUCRATA*	2 GALLON	241
NOOTKA ROSE	*ROSA NUTKANA*	2 GALLON	214
SALMONBERRY	*RUBUS SPECTABILIS*	2 GALLON	534
		TOTAL =	1,821

MULCH SPECIFICATION:

MULCH SHALL BE COMMERCIALLY AVAILABLE "MEDIUM MULCH" (WWW.PACIFICTOPSOILS.COM; 425-337-2700), ARBORIST CHIPS, OR APPROVED EQUAL. MULCH SHALL NOT CONTAIN RESIN, TANNIN, OR OTHER COMPOUNDS IN QUANTITIES THAT WOULD BE DETRIMENTAL TO PLANT LIFE. MULCH SHALL NOT BE DERIVED FROM STUMP GRINDINGS AND SHALL NOT CONTAIN SOIL. HOG FUEL OR EQUAL IS NOT ACCEPTABLE. SUBJECT TO REVIEW BY THE PLAN DESIGNER, LOCAL ARBORIST AND/OR COMMERCIAL TREE TRIMMING COMPANIES MAY BE ALTERNATIVE ACCEPTABLE MATERIAL SOURCES.

TEMPORARY IRRIGATION:

TEMPORARY IRRIGATION SHALL BE PROVIDED FOR TWO (2) GROWING SEASONS FOLLOWING PLANT INSTALLATION. IRRIGATION SHALL PROVIDE A MINIMUM RAINFALL EQUIVALENT OF 1 INCH PER WEEK FROM JUNE 15 THROUGH SEPTEMBER 15. IRRIGATION SHALL BE APPLIED IN A MANNER THAT MAINTAINS PLANT HEALTH, PREVENTS WILTING, AND PROMOTES DEEP PLANT ROOT SYSTEMS.

MONITORING PLAN:

THE 3 YEAR MONITORING PLAN OUTLINED BELOW WILL ENSURE AND DOCUMENT THAT THE PERFORMANCE STANDARDS ESTABLISHED FOR THIS PLAN HAVE BEEN MET. THE LOT OWNER IS RESPONSIBLE FOR SUCCESSFUL COMPLETION OF THE WORK DESCRIBED ON THIS PLAN. IF THE PROPERTY IS SOLD OR PROPERTY OWNERSHIP IS OTHERWISE TRANSFERRED, RESPONSIBILITY FOR ANY REMAINING WORK SHALL BE TRANSFERRED TO THE NEW OWNER AND RECORDED WITH KING COUNTY.

PLAN GOALS, OBJECTIVES, AND PERFORMANCE STANDARDS

MITIGATION PLAN GOALS, MONITORING SCHEDULE, AND PERFORMANCE STANDARDS ARE OUTLINED BELOW. THE GOALS OF THIS PLAN ARE CONSIDERED ACHIEVED WHEN THE PERFORMANCE STANDARDS ARE SATISFIED.

GOAL #1 - RESTORE TEMPORARY BUFFER IMPACTS PER KING COUNTY STANDARDS
OBJECTIVE #1 - INSTALL NATIVE PLANTINGS WITHIN THE BUFFER RESTORATION AREAS SHOWN ON THIS DRAWING
PERFORMANCE STANDARD #1 - PLANT SURVIVAL
YEAR 1 - 100% SURVIVAL
YEAR 2 THROUGH YEAR 3 - 80% SURVIVAL
THIS STANDARD CAN BE ACHIEVED THROUGH PLANT ESTABLISHMENT OR THROUGH PLANT REPLACEMENT.

GOAL #2 - MAINTAIN LIMITED NOXIOUS WEED COVERAGE WITHIN PLANTING AREAS.
OBJECTIVE #2 - MINIMIZE NOXIOUS WEED COVERAGE WITHIN BUFFER RESTORATION AREAS DURING THE MONITORING PERIOD.
PERFORMANCE STANDARD #2 - NOXIOUS WEED COVERAGE
ALL YEARS - LESS THAN 10% COVERAGE BY CLASS "A", "B", AND "C" NOXIOUS WEEDS INCLUDING NON-REGULATED "B" AND "C" NOXIOUS WEEDS AND "WEEDS OF CONCERN".

AS-BUILT

FOLLOWING COMPLETION OF THE WORK SHOWN ON THIS PLAN, A QUALIFIED PROFESSIONAL SHALL PREPARE AN AS-BUILT OF THE COMPLETED WORK. THE AS-BUILT SHALL SUMMARIZE THE COMPLETED WORK AS WELL AS ANY DEVIATIONS FROM THE APPROVED VERSION OF THIS PLAN.IN ADDITION TO THE AS-BUILT, BASELINE MONITORING DATA SHALL BE COLLECTED AND PERMANENT PHOTO POINTS SHALL BE ESTABLISHED TO PHOTOGRAPHICALLY DOCUMENT REPRESENTATIVE CONDITIONS WITHIN THE PLANTING AREAS SHOWN ON THIS DRAWING. BASELINE MONITORING DATA COLLECTED AND REPORTED AS PART OF THE AS-BUILT SHALL BE CONSISTENT WITH THAT DESCRIBED FOR "ANNUAL MONITORING" (SEE BELOW). THE AS-BUILT AND BASELINE MONITORING DATA SHALL BE SUBMITTED TO KING COUNTY NO LATER THAN 30 DAYS FROM THE DATE THAT THE WORK SHOWN ON THIS PLAN HAS BEEN COMPLETED.

ANNUAL MONITORING (3 YEARS)

ANNUAL MONITORING SHALL BE COMPLETED FOR A PERIOD OF THREE (3) YEARS. UNLESS OTHERWISE ALLOWED BY KING COUNTY, ANNUAL MONITORING SHALL BE COMPLETED BY A QUALIFIED PROFESSIONAL AND SHALL COMPRISE A SITE INVESTIGATION IN AUGUST OR SEPTEMBER AND REPORTING TO KING COUNTY NO LATER THAN 30 DAYS FOLLOWING EACH MONITORING. THE PURPOSE OF THE SITE INVESTIGATION IS TO EVALUATE CONDITIONS WITHIN THE PLANTING AREAS PER THE CURRENT YEAR'S PERFORMANCE STANDARDS. THE FOLLOWING INFORMATION SHALL BE COLLECTED AND ASSESSED RELATIVE TO THE PERFORMANCE STANDARDS ESTABLISHED FOR THE PROJECT:

- THE PERCENT SURVIVAL. A DIRECT COUNT INVENTORY AND ASSESSMENT OF ALL INSTALLED PLANTS SHALL BE USED TO EVALUATE PERCENT SURVIVAL. THE RATIONALE FOR POOR CONDITIONS, IF PRESENT, WILL BE DETERMINED TO THE EXTENT FEASIBLE.
- THE PERCENT COVERAGE. NOXIOUS WEED PERCENT COVERAGE SHALL BE ASSESSED USING APPROPRIATELY SIZED SAMPLE PLOTS OR LINE INTERCEPT TRANSECTS.

IN ADDITION TO THE ABOVE INFORMATION, PHOTOGRAPHS SHALL BE TAKEN FROM THE PERMANENT PHOTO POINTS ESTABLISHED DURING THE AS-BUILT.

MAINTENANCE PLAN:

INSTALLED PLANTS SHALL BE MAINTAINED AT REGULAR INTERVALS DURING THE MONITORING PERIOD TO PROMOTE THE SUCCESSFUL ESTABLISHMENT AND VIGOROUS GROWTH OF THE INSTALLED PLANT STOCK. GENERAL MAINTENANCE SHALL INCLUDE:

1. RE-APPLYING BARK MULCH TO MAINTAIN A 6" MINIMUM APPLIED THICKNESS - YEAR 1 ONLY.
3. THE PRUNING OF INSTALLED PLANTS TO REMOVE DEAD WOOD AND PROMOTE VIGOROUS PLANT GROWTH AND PROPER FORM.
4. THE REPLACEMENT OF PLANTS THAT APPEAR TO BE IN DISTRESS AND/OR DISEASED.
5. THE REMOVAL OF TRASH, LITTER, AND/OR OTHER NON-DECOMPOSING DEBRIS.

GENERAL MAINTENANCE WORK SHALL OCCUR MONTHLY DURING THE GROWING SEASON AND/OR AT A FREQUENCY OTHERWISE NECESSARY TO ENSURE THE SUCCESSFUL ESTABLISHMENT AND VIGOROUS GROWTH OF THE INSTALLED PLANTS.

CONTINGENCY PLAN:

SHOULD ANY MONITORING ASSESSMENT REVEAL THAT THE PERFORMANCE STANDARDS FOR THE RESPECTIVE YEAR ARE NOT SATISFIED, THE PERMITTEE SHALL WORK WITH KING COUNTY TO DEVELOP A CONTINGENCY PLAN TO ADDRESS THE DEFICIENCY(IES). CONTINGENCY PLANS CAN INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING ACTIONS: 1) ADDITIONAL PLANT INSTALLATION; 2)EROSION CONTROL; 3) HERBIVORY PROTECTION; 4) MODIFICATION TO THE IRRIGATION REGIME; AND/OR 5) PLANT SUBSTITUTIONS OF TYPE, SIZE, QUANTITY, AND LOCATION. SUCH CONTINGENCY PLAN SHALL BE SUBMITTED TO KING COUNTY WITHIN 30 DAYS OF WHEN DEFICIENCIES ARE DISCOVERED. UNLESS OTHERWISE APPROVED BY KING COUNTY, ACTIONS SPECIFIED ON AN APPROVED CONTINGENCY PLAN MUST BE COMPLETED WITHIN 60 DAYS. IF THE FAILURE IS SUBSTANTIAL, KING COUNTY MAY EXTEND THE COMPLIANCE MONITORING PERIOD FOR THE ENHANCEMENT WORK.

Sewall Wetland Consulting, Inc.
PO Box 880 - Fall City, Washington 98024 Phone: 253-859-0515

PROJECT: CRITICAL AREA RESTORATION PLAN - SCHMIDT RESTORATION -

SITE ADDRESS: KING COUNTY TAX PARCEL NUMBER 2820060-9034

Know what's below. Call before you dig.

UTILITY LOCATIONS AND CHARACTERISTICS SHOWN ON THIS DRAWING, IF ANY, ARE BASED ON THE FIELD LOCATION OF THE APPARENT SURFACE EVIDENCE OF EXISTING STRUCTURES. THE UNDERGROUND ROUTING AND CONDITION OF BURIED UTILITIES HAS NOT BEEN VERIFIED OR CONFIRMED. ADDITIONAL UTILITY LOCATION AND MAPPING MAY BE REQUIRED. FIELD LOCATE, VERIFY DEPTH OF, AND ADEQUATELY PROTECT ALL UTILITIES PRIOR TO THE START OF WORK.

NO.	DATE	NOTES

DATE: 01/19/2021
JOB NUMBER: 20-163

PLANTING NOTES & DETAILS

SHEET: 2 OF 2

Appendix D Construction SWPPP

Construction Stormwater Pollution Prevention Plan

Schmidt Residence

February 4, 2021

PREPARED FOR:
Peter & Lisa Schmidt
36515 249th Avenue SE
Enumclaw, WA 98022

Construction Stormwater Pollution Prevention Plan (SWPPP)

for

Schmidt Residence

Prepared for:
Peter & Lisa Schmidt
King County, Washington

Permittee / Owner	Developer	Operator / Contractor
Peter & Lisa Schmidt 36515 249th Avenue SE Enumclaw, WA 98022	Same as owner	TBD

10500 SW 228th Street, Vashon, WA 98070
King Co. Tax Parcel 1822039116

Erosion and Sediment Control Inspector

Name	Organization	Contact Phone Number
TBD	TBD	TBD

SWPPP Prepared By

Name	Organization	Contact Phone Number
Eric Pilcher, PE	Eric Pilcher 19209 Evergreen Dr. Bonney Lake, WA 98391	(253) 237-7932

SWPPP Preparation Date
February 4, 2021

Project Construction Dates (Tentative)

Activity / Phase	Start Date	End Date
Residential Construction	Summer 2021	Fall 2021

Table of Contents

List of Attachments

A. EROSION AND SEDIMENT CONTROL PLAN

1. General Information

Peter and Lisa Schmidt intend to build a single family residence at 22306 SE 464th Street, Enumclaw, WA 98022. The proposed development will add a total of 31,150 square feet new hard surface, consisting of 7,500 square feet of rooftop areas, 18,500 square feet of concrete patios and sideways, and 21,800 square feet of asphalt driveway. The area in which the work is being performed is limited to 8.75 acres within the 25.11-acre site.

Earthwork activities associated with the single family residence and associated driveways and utilities require approximately 500 cubic yards of soil removal (including topsoil), and import of roughly 3,000 cubic yards. No export is planned from the site.

Concentrated stormwater from rooftop areas will converted back to sheet flow through the use of dispersion trenches, upstream of agricultural land. Runoff from driveways will similarly be managed through dispersion.

a. Potential Erosion Problems

No known erosion problems are present.

b. TESC Details

Please refer to drawing sheet C3.1 (Attachment A).

c. TESC Measures

Please refer to drawing sheet C2.0 (Attachment A).

d. Construction Sequence

Please refer to drawing sheet C3.1 (Attachment A).

e. Standard TESC Notes

Please refer to drawing sheet C3.1 (Attachment A).

f. Inspection and Maintenance Program

The project will be completed within a single phase. The site will be stabilized following completion of the residence.

All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. Inspections and monitoring shall be performed weekly, and within 24-hours following a significant storm event.

This SWPPP shall be maintained and updated as necessary to provided continued protection. In the event that BMPs shown on the drawings or listed within this SWPPP are not sufficient, additional BMPs shall be deployed. If needed, additional BMPs may be selected from the SWDM, or be site-specific.

More than 1-acre of total area has previously been disturbed, therefore it is required that site inspections be conducted by a Certified Erosion and Sediment Control Lead (CESCL). The CESCL shall:

- Examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen
- Evaluate the effectiveness of BMPs and determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges
- Review the SWPPP for compliance with the 12 construction SWPPP elements and make appropriate revisions within 7 days of an inspection, if necessary
- Immediately begin the process of fully implementing and maintaining appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than within 10 days of an inspection, when necessary. If installation of necessary treatment BMPs is not feasible within 10 days, the inspector may request an extension within the initial 10-day response period.
- Document BMP implementation and maintenance in a site log book (see Attachment B)
- Inspect all areas disturbed by construction activities, all BMPs, and all stormwater discharge points at least once every calendar week and within 24 hours of any discharge from the site. The inspector may reduce the inspection frequency for temporary stabilized, inactive sites to once every calendar month.

A copy of this SWPPP (modified as necessary), and copies of all monitoring and inspection logs shall be maintained on site during construction activities, and made available for review by the owner, tenant, engineer, County, and/or Ecology, upon request.

g. Basis and Calculations

Given the stormwater management within this site is handled through on-site dispersion, formal BMP calculations have not been performed.

2. Measure-Specific Information

The following are standard elements of the Construction SWPPP, addressed as relevant to the work to be performed to accommodate the BARC Pump Track.

a. Clearing Limits

Prior to land disturbing activities, including clearing and grading, the limit of disturbance (i.e., clearing limits) shall be clearly demarcated with plastic, metal, or fabric fence. High visibility silt fence may be used as demarcation as well as for erosion control purposes, provided it is installed in a manner that serves both functions.

Clearing shall be limited to the extents necessary to perform the work. Trees and vegetation outside the limit of work shall remain protected during installation of the skate park.

There are no critical areas on site that require buffer zones; however, a mature stand of trees to the northeast of the site shall be protected, as indicated on the construction drawings.

Best management practices (BMPs) to be deployed include:

- D.3.1.1 Plastic or Metal Fence
- D.3.3.1 Silt Fence

b. Cover Measures

Exposed and unworked soils, including stockpiles, shall be stabilized within 7 days during the dry season (i.e., May 1 –September 30), and within 2 day days the wet season (i.e., October 1 – April 30). In addition, soils shall be stabilized by end of shift prior to holidays and weekends, as needed based on weather forecasts.

BMPs to be deployed include:

- D.3.2.2 Mulching
- D.3.2.4 Plastic Covering
- D.3.2.6 Temporary and Permanent Seeding
- D.3.2.7 Sodding
- D.3.8: Dust Control

c. Perimeter Protection

Effective erosion and sediment controls are necessary to minimize the discharge of sediment to undisturbed portions of the site, and existing and proposed stormwater management facilities.

Sediment control BMPs shall be installed as one of the first steps during clearing and grading. They shall be fully functional prior to other land disturbing activities.

The proposed work will disturb less than 1.0 acre. Therefore, a temporary sediment trap has not been designed. In the event that it becomes necessary to control sediment-laden runoff, a Baker tank shall be deployed. Runoff shall be collected at a localized sump within the footprint of the pump track and activity loop path, and a sump pump shall discharge water to the Baker tank for pre-settling, prior to controlled discharge to the parking lot swale.

BMPs to be deployed include:

- D.3.3.1 Silt Fence
- D.3.2.5 Wattles

d. Traffic Area Stabilization

All construction vehicles shall access the site via the adjacent parking lot. A stabilized construction entrance/exit shall be installed at the access point. Access point conditions shall be monitored for track-out. In the event that soil is tracked out of the site, the soil shall be removed by shoveling, sweeping, etc.

In addition, the parking lot may be subject to street washing, following soil removal. In the event of street washing, wash water will be collected and disposed off-site.

BMPs to be deployed include:

- D.3.4.1 Stabilized Construction Entrance/Exit

e. Sediment Retention

All existing storm drain inlets within and immediately downstream of construction limits shall be protected from sediment-laden runoff. No known inlets exist; however, if discovered in the field or otherwise installed, the following shall be applicable.

Sediment shall be cleaned and washed from paved areas that are upstream of inlets, as needed. Inlets shall be inspected at least weekly, and immediately following a storm event. Inlet protection devices shall be removed and replaced in the event that sediment has filled one-third of the available storage.

BMPs to be deployed include:

- D.3.5.3 Storm Drain Inlet Protection

f. Surface Water Control

Stormwater management within this site is handled through on-site dispersion. Therefore, a temporary sediment pond has not been designed.

In the event that it becomes necessary to control sediment-laden runoff, a sediment pond shall be constructed in accordance with the King County Stormwater Pollution Prevention Manual (King Co. 2016a).

g. Wet Season Requirements

Work is expected to occur between April 30 and October 1, in the dry season. In the event that construction activities are still on going after October 1, the following wet season special provisions shall apply:

1. The allowed time that a disturbed area may remain unworked without cover measures is reduced to two consecutive working days, rather than seven (Section D.3.2).
2. Stockpiles, and steep cut and fill slopes are to be protected if unworked for more than 12 hours (Section D.3.2).

3. Cover materials sufficient to cover all disturbed areas shall be stockpiled on site (Section D.3.2).
4. All areas that are to be unworked during the wet season shall be seeded within one week of the beginning of the wet season (Section D.3.2.5).
5. Mulch is required to protect all seeded areas (Section D.3.2.1).
6. Fifty linear feet of silt fence (and the necessary stakes) per acre of disturbance must be stockpiled on site (Section D.3.3.1).
7. Construction road and parking lot stabilization are required for all sites unless the site is underlain by coarse-grained soil (Section D.3.4.2).
8. Sediment retention is required unless no offsite discharge is anticipated for the specified design flow (Section D.3.5).
9. Surface water controls are required unless no offsite discharge is anticipated for the specified design flow (Section D.3.6).
10. Phasing and more conservative BMPs must be evaluated for construction activity near surface waters (Section D.5.3).
11. Any runoff generated by dewatering may be required to discharge to the sanitary sewer (with appropriate discharge authorization), portable sand filter systems, or holding tanks.
12. The frequency of maintenance review increases from monthly to weekly (Section D.5.4).h.

h. Critical Area Restrictions

There are no critical areas that will be disturbed or created during construction.

B. STORMWATER POLLUTION PREVENTION AND SPILL PLAN

1. Activity-Specific Information

a. Storage and Handling of Liquids

Bulk liquids and chemicals will not be stored on-site. Small amounts of liquids, petroleum products, paint, etc. (such as fuel and oil for small gas-powered tools) may be kept in containers within truck beds or stored within a Conex box.

b. Storage and Stockpiling of Construction Materials and Wastes

Generally, construction materials and wastes will not be stockpiled on site.

c. Fueling

Small quantities of petroleum products (e.g., 5-gallon gas can, quart of oil) for use with powered hand tools may be stored on-site in a designated area, such as a Conex box or truck bed. However, refueling of vehicles shall occur either off-site, or by means of a fueling service.

A spill kit shall be kept within the material staging area in the event that cleanup becomes necessary.

d. Maintenance, Repairs, and Storage of Vehicles and Equipment

Routine maintenance and repairs will not be performed on site. Vehicles remaining on-site will be staged in a designated area within the BARC site when not in use.

e. Concrete Saw Cutting, Slurry, and Washwater Disposal

The proposed work includes foundation work for 7,500 square feet of residential dwelling and garage spaces, and 18,500 square feet of concrete patios and sidewalks. Excess concrete material shall not be disposed on site, nor shall rinse water from concrete handling equipment be discharged on site. Wash water (i.e., from tool rinsing) may be generated in a contained area, collected, and transferred for off-site disposal.

In the event that any sawcutting is performed, sawcuts shall be wetted during sawing operations. The resulting slurry shall be vacuumed and collected for off-site disposal at an appropriate site.

f. Handling of pH Elevated Water

Stormwater runoff from newly poured concrete surfaces shall be monitored for pH. In the event that pH levels rise above 8.5, stormwater pumping shall be redirected form the on-site vegetated swale to a Baker tank where it shall either be treated (such as through dry ice neutralization) or disposed at a facility authorized to accept high pH water.

g. Applications of Chemicals including Pesticides and Fertilizers

Fertilizers (and pesticides) may be applied during establishment of new grass and vegetation. Specific chemicals used will be consistent with those currently allowed by King County and the Washington Dept. of Ecology.

Fertilizers (and pesticides) shall be applied in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturer label requirements for application rates and procedures shall be followed.

2. SWPPS Site Plan

Please refer to drawing sheet C2.0 (Attachment A).

3. Pollution Prevention Report

Please refer to CWSPPP Worksheet Forms (Attachment B).

4. Spill Prevention and Cleanup Report

Please refer to CSWPPP Worksheet Forms (Attachment B).

REFERENCES

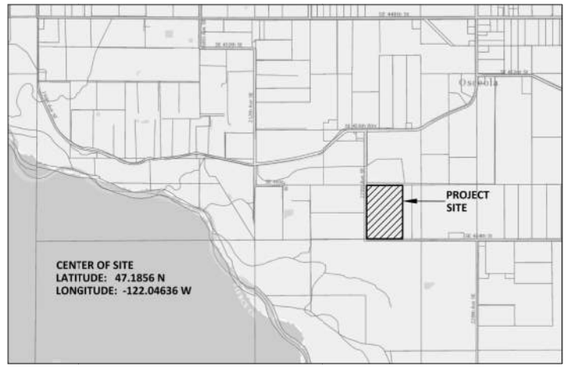
NRCS 2019. Custom Soil Resource Report for King County Area, Washington, Burton Adventure Recreation Center. U.S. Department of Agriculture, Natural Resources Conservation Service, Washington, D.C. Download: November 12.

King Co. 2016a. Stormwater Pollution Prevention Manual. King County Department of Natural Resources and Parks, Seattle, WA. April.

King Co. 2016b. Surface Water Design Manual (SWDM). King County Department of Natural Resources and Parks, Seattle, WA. April 24.

Attachment A Construction Drawings

VICINITY MAP:



OWNER/APPLICANT:
PETER & LISA SCHMIDT
22306 SE 464TH STREET
ENUMCLAW, WA 98022

ENGINEER:
ERIC PILCHER, PE
12902 EVERGREEN DR.
BONNEY LAKE, WA 98391
(253) 370-5894

TAX PARCEL:
2820069034

LEGAL DESCRIPTION:
SW 1/4 OF SE 1/4 LESS E 442.02 FT LESS CO RD – CLASSIFIED AS OPEN SPACE "FARM & AGRICULTURAL" PURSUANT TO RCW 84.34

HORIZONTAL AND VERTICAL DATUM:
THESE PLANS HAVE BEEN PREPARED WITHOUT THE BENEFIT OF A BOUNDARY OR TOPOGRAPHIC SURVEY

PROPERTY LINES ARE APPROXIMATE AND ARE NOT TIED TO A HORIZONTAL DATUM.

PROPOSED CONTOURS ARE BASED ON AN ASSUMED LOCAL DATUM OF 680 PER KING COUNTY GIS.

WETLANDS
WETLAND DELINEATION PER CRITICAL AREA REPORT – PARCEL #2820069034 BY SEWALL WETLAND CONSULTING, INC., DATED JANUARY 25 2021.

PROPERTY IS UNDEVELOPED.

THERE ARE NO BUILDINGS OR STRUCTURES ON THE PROPERTY.

SITE PLAN INFORMATION

TOTAL SITE AREA:	25.11 ACRES	
RESIDENTIAL DWELLING:	6,700 SF	
DETACHED SHOP:	800 SF	
DETACHED BARN:	5,760 SF	
DETACHED TOOLSHED:	400 SF	
WALKWAYS/PORCHES/DECKS:	1,850 SF	
TOTAL NPGHS:	15,5100 SF	(0.36 ACRES; 1.4%)
ON-SITE DRIVEWAYS:	24,450 SF	
TOTAL PGHS:	24,450 SF	(0.56 ACRES; 2.2%)
TOTAL HARD SURFACE:	39,960 SF	(0.92 ACRES; 3.7%)
PREVIOUSLY CLEARED AREA:	368,390 SF	
ADDITIONAL TO BE CLEARED:	57,450 SF	
TOTAL DISTURBED AREA*:	425,840 SF	(9.78 ACRES; 38.9%)
WETLAND RESTORATION AREA:	124,260 SF	(2.85 ACRES; 11.4%)

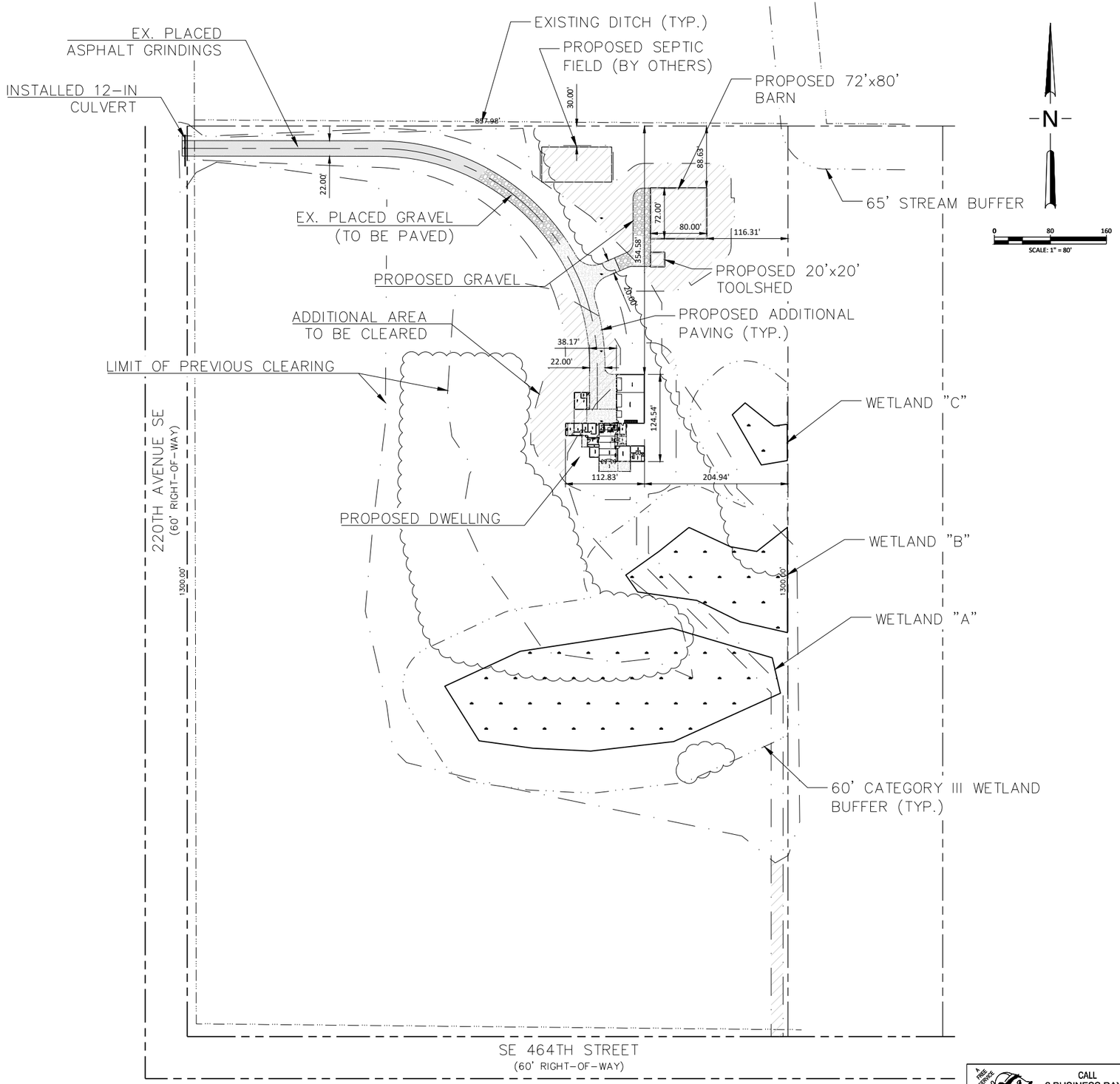
* DOES NOT INCLUDE AREAS PREVIOUSLY CLEARED FOR AGRICULTURE PURPOSES

EARTHWORK
EARTHWORK IS LIMITED TO AS NEEDED FOR BUILDING FOUNDATIONS, DRIVEWAY SUBGRADE, AND UTILITY TRENCHING.

STRIPPINGS	±3,000 CY
CUT	±500 CY
FILL	±15,500 CY

ABOVE EARTHWORK NUMBERS ARE AN ESTIMATE FOR PERMITTING PURPOSES ONLY AND SHALL NOT BE RELIED UPON FOR CONSTRUCTION COST ESTIMATING.

SHEET LEGEND



22306 SE 464TH STREET
KING COUNTY, WASHINGTON

SITE PLAN

REVISIONS:

JOB NO.:	2020-01
DATE:	02/05/2021
SCALE:	AS SHOWN
DESIGNED BY:	ELP
DRAWN BY:	ELP

CLEARING AND GRADING SET

C1.0

NO. 1 OF 4

FLOW DISPERSION

RESIDENCE

MAIN ROOF AREA = 6,700 SF

OUTBUILDING ROOF AREA = 800 SF

TOTAL ROOF AREA = 7,500 SF

10 LF / 700 SF = 107.2 LF TOTAL TRENCH LENGTH REQUIRED

3X 40 LF = 120 LF TOTAL TRENCH LENGTH PROVIDED

BARN AND SHED

BARN ROOF AREA = 5,760 SF

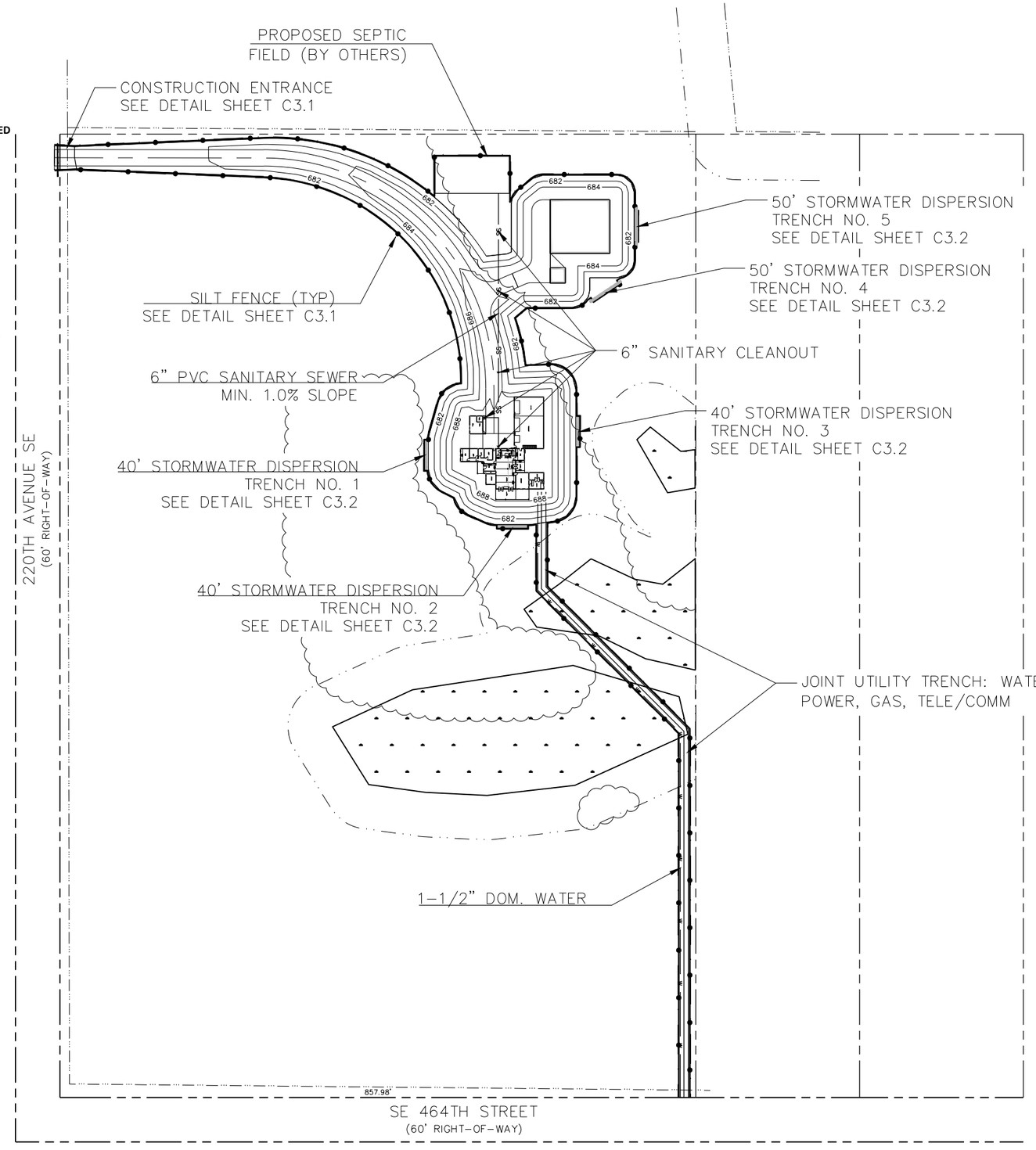
SHED ROOF AREA = 400 SF

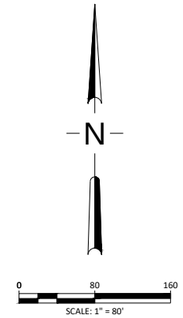
TOTAL ROOF AREA = 6,160 SF

10 LF / 700 SF = 88 LF TOTAL TRENCH LENGTH REQUIRED

2X 50 LF = 100 LF TOTAL TRENCH LENGTH PROVIDED

TRENCHES SHALL BE 24 INCHES WIDE BY 24 INCHES DEEP AND BACKFILLED WITH ¾" TO 1½" WASHED ROCK.





22306 SE 464TH STREET
KING COUNTY, WASHINGTON

GRADING, DRAINAGE, AND UTILITY PLAN

REVISIONS:

JOB NO.:	2020-01
DATE:	02/05/2021
SCALE:	AS SHOWN
DESIGNED BY:	ELP
DRAWN BY:	ELP

CLEARING AND GRADING SET

C2.0

NO. 2 OF 4

CALL 2 BUSINESS DAYS BEFORE YOU DIG 811 "It's the Law" www.callbeforeyoudig.com

FILE: \\WFS1\REDIRECTIONS\EPILCHER\DESKTOP\ERIC WORK\TAZCO\SCHMIDT\CIVIL\1.0 SITE 2.0 GRADING PLAN.DWG 2/5/2021 3:49 PM Epilcher

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY SURVEY TAPE OR FENCING, IF REQUIRED, PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.
4. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN AND TRACK OUT TO ROAD RIGHT OF WAY DOES NOT OCCUR FOR THE DURATION OF THE PROJECT.
5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.) AS DIRECTED BY THE CITY OF NORTH BEND.
7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES.
8. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
9. ANY AREA NEEDING ESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.
10. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH DURING THE DRY SEASON, BI-MONTHLY DURING THE WET SEASON, OR WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT.
11. ~~AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.~~
12. ~~ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION SYSTEM, THE TEMPORARY FACILITY MUST BE ROUGH GRADED SO THAT THE BOTTOM AND SIDES ARE AT LEAST THREE FEET ABOVE THE FINAL GRADE OF THE PERMANENT FACILITY.~~
13. COVER MEASURES SHALL BE APPLIED IN CONFORMANCE WITH APPENDIX D OF THE KING COUNTY 2009 SURFACE WATER DESIGN MANUAL.
14. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE CITY INSPECTOR.

CONSTRUCTION SEQUENCE

1. ATTEND THE PRE-CONSTRUCTION MEETING.
2. POST SIGN WITH NAME AND PHONE NUMBER OF ESC SUPERVISOR (MAY BE CONSOLIDATED WITH THE REQUIRED NOTICE OF CONSTRUCTION SIGN).
3. FLAG OR FENCE CLEARING LIMITS.
4. ~~INSTALL CATCH BASIN PROTECTION.~~
5. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).
6. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).
7. ~~CONSTRUCT SEDIMENT PONDS AND TRAPS.~~
8. GRADE AND STABILIZE CONSTRUCTION ROADS.
9. ~~CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.~~
10. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH CITY OF NORTH BEND AND KING COUNTY STANDARDS, AND MANUFACTURER'S RECOMMENDATIONS.
11. RELOCATE EROSION CONTROL MEASURES, OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH THE CITY OF NORTH BEND AND KING COUNTY EROSION AND SEDIMENT CONTROL STANDARDS.

SEEDING NOTES (NOT IN CONTRACT)

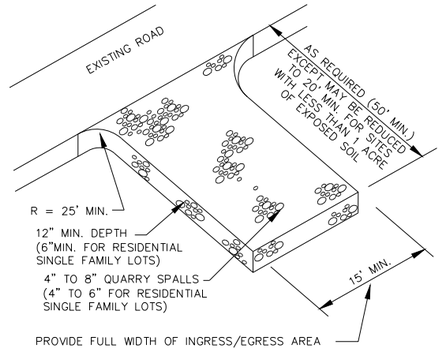
1. SEED MIXTURE SHALL BE AS SHOWN BELOW, AND SHALL BE APPLIED AT THE RATE OF 120 POUNDS PER ACRE.

NAME	PROPORTION BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION
RED TOP	10%	92	90
ANNUAL RYE	40%	98	90
CHEWING FESCUE	40%	97	80
WHITE DUTCH CLOVER	10%	96	90

2. SEED BEDS PLANTED BETWEEN MAY 1 AND OCTOBER 31 WILL REQUIRE IRRIGATION AND OTHER MAINTENANCE AS NECESSARY TO FOSTER AND PROTECT THE ROOT STRUCTURE.
3. FOR SEED BEDS PLANTED BETWEEN OCTOBER 31 AND APRIL 30, ARMORING OF THE SEED BED WILL BE NECESSARY. (E.G., GEOTEXTILES, JUTE MAT, CLEAR PLASTIC COVERING).
4. BEFORE SEEDING, INSTALL NEEDED SURFACE RUNOFF CONTROL MEASURES SUCH AS GRADIENT TERRACES, INTERCEPTOR DIKES, SWALES, LEVEL SPREADERS AND SEDIMENT BASINS.
5. THE SEEDBED SHALL BE FIRM WITH A FAIRLY FINE SURFACE, FOLLOWING SURFACE ROUGHENING. PERFORM ALL OPERATIONS ACROSS OR AT RIGHT ANGLES TO THE SLOPE.
6. FERTILIZERS ARE TO BE USED ACCORDING TO SUPPLIERS RECOMMENDATIONS. AMOUNTS USED SHOULD BE MINIMIZED, ESPECIALLY ADJACENT TO WATER BODIES AND WETLANDS.

SILT FENCE NOTES

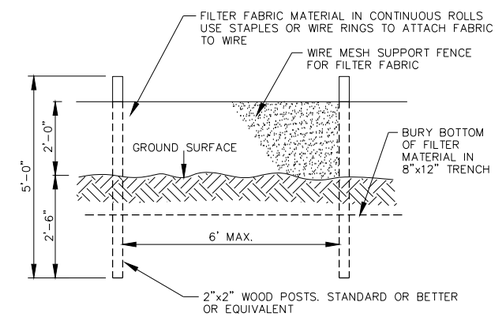
1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY FASTENED AT BOTH ENDS TO POSTS.
2. POSTS SHALL BE SPACED SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 30 INCHES)
3. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER. THIS TRENCH SHALL BE BACKFILLED WITH WASHED GRAVEL.
4. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 24 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
5. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 24 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
6. WHEN EXTRA-STRENGTH FABRIC AND CLOSER POST SPACING IS USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ABOVE NOTES APPLYING.
7. FILTER FABRIC FENCES SHALL NOT BE REMOVED BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
8. FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
9. SILT FENCES WILL BE INSTALLED PARALLEL TO ANY SLOPE CONTOURS.
10. CONTRIBUTING LENGTH TO FENCE WILL NOT BE GREATER THAN 100 FEET.
11. DO NOT INSTALL BELOW AND OUTLET PIPE OR WEIR.
12. INSTALL DOWNSLOPE OF EXPOSED AREAS.
13. DO NOT DRIVE OVER OR FILL OVER SILT FENCES.

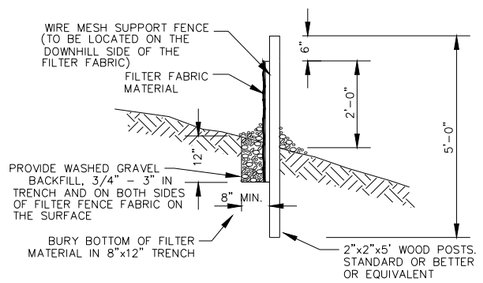


CONSTRUCTION ENTRANCES NOTES

1. MATERIAL SHALL BE 4 INCH TO 8 INCH QUARRY SPALLS AND MAY BE TOP-DRESSED WITH 4 INCH TO 6 INCH ROCK.
2. THE ROCK PAD SHALL BE AT LEAST 12 INCHES THICK AND 50 FEET LONG (20 FEET FOR SITES WITH LESS THAN 1 ACRE OF DISTURBED SOIL). WIDTH SHALL BE THE FULL WIDTH OF THE VEHICLE INGRESS AND EGRESS AREA. SMALLER PADS MAY BE APPROVED FOR SINGLE-FAMILY RESIDENTIAL AND SMALL COMMERCIAL SITES.
3. ADDITIONAL ROCK SHALL BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF THE PAD.
4. IF THE PAD DOES NOT ADEQUATELY REMOVE THE MUD FROM THE VEHICLE WHEELS, THE WHEELS SHALL BE HOSED OFF BEFORE THE VEHICLE ENTERS A PAVED STREET. THE WASHING SHALL BE DONE ON AN AREA COVERED WITH CRUSHED ROCK AND WASH WATER SHALL DRAIN TO A SEDIMENT RETENTION FACILITY OR THROUGH A SILT FENCE.

1 CONSTRUCTION ENTRANCE
NOT TO SCALE





2 FILTER FABRIC FENCE
NOT TO SCALE

22306 SE 464TH STREET
KING COUNTY, WASHINGTON

TEMPOARY EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS

REVISIONS:

JOB NO.:	2020-01
DATE:	02/05/2021
SCALE:	NTS
DESIGNED BY:	ELP
DRAWN BY:	ELP

CLEARING AND GRADING SET

C3.1

NO. 3 OF 4

SOIL PRESERVATION

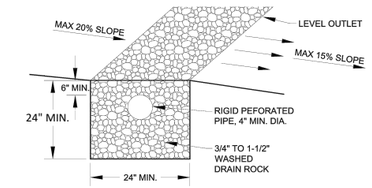
1. VEGETATION AND SOIL TO BE LEFT UNDISTURBED SHALL BE PROTECTED FROM COMPACTION THROUGH PLACEMENT OF TEMPORARY FENCING AND/OR FLAGGING. EQUIPMENT AND MATERIAL STOCKPILES SHALL NOT BE PLACED WITHIN SOIL PROTECTION AREAS.
2. TOPSOIL DISTURBED DURING GRADING AND EXCAVATION OPERATIONS SHALL BE STOCKPILED AND REPLACED PRIOR TO PLANTING. REMOVE AND STOCKPILE THE DUFF LAYER AND TOPSOIL ON SITE IN A DESIGNATED, CONTROLLED AREA, WHICH IS NOT ADJACENT TO PUBLIC RESOURCES AND CRITICAL AREAS. REAPPLY TO OTHER PORTIONS OF THE SITE WHERE FEASIBLE.
3. THE DEPTH OF UPPER NATIVE TOPSOIL REQUIRED TO BE STOCKPILED AND REPLACED SHALL BE THE ENTIRE DEPTH OF THE NATIVE TOPSOIL HORIZON UP TO A MAXIMUM OF 3 FEET.
4. STOCKPILED TOPSOIL SHALL BE REPLACED IN LIFTS NO GREATER THAN 1-FOOT-DEEP AND COMPACTED BY ROLLING TO A DENSITY THAT MATCHES EXISTING CONDITIONS.

SOIL AMENDMENT

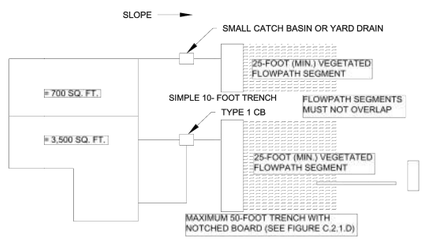
1. SOIL SHALL BE AMENDED WHERE COMPACTION OR REMOVAL OF SOME OR ALL OF THE DUFF LAYER OR UNDERLYING TOPSOIL HAS OCCURRED. AMENDED TOPSOIL SHALL HAVE A MINIMUM THICKNESS OF 8 INCHES, ORGANIC CONTENT OF 5-10% BY DRY WEIGHT, AND A PH SUITABLE FOR THE PROPOSED SURFACE VEGETATION. 4 INCHES OF WELL-ROTTED COMPOST TILLED INTO THE TOP 8 INCHES OF SOIL IS SUFFICIENT TO ACHIEVE THIS STANDARD. AMENDMENT SHALL TAKE PLACE BETWEEN MAY 1 AND OCTOBER 1.
2. COMPOST SHALL BE PRODUCED AT A FACILITY THAT IS PERMITTED BY THE JURISDICTIONAL HEALTH AUTHORITY. PERMITTED COMPOST FACILITIES IN WASHINGTON ARE INCLUDED ON A LIST AVAILABLE AT HTTP://WWW.ECY.WA.GOV/PROGRAMS/SWFA/ORGANICS/SOIL.HTML .
3. COMPOST SHALL MEET THE DEFINITION OF "COMPOSTED MATERIAL" IN WAC 173-350-100, AND MUST COMPLY WITH TESTING PARAMETERS AND OTHER STANDARDS INCLUDING NOT EXCEEDING CONTAMINANT LIMITS IDENTIFIED IN TABLE 220-B. TESTING PARAMETERS, IN WAC 173-350-220; AND "PHYSICAL CONTAMINANTS" (AS DEFINED IN WAC 173-350-100) CONTENT LESS THAN 1% BY WEIGHT (TMECC 03.08-A) TOTAL, NOT TO EXCEED 0.25 PERCENT FILM PLASTIC BY DRY WEIGHT.
4. THE COMPOST PRODUCT SHALL ORIGINATE A MINIMUM OF 65 PERCENT BY VOLUME FROM RECYCLED PLANT WASTE COMPRISED OF "YARD DEBRIS," "CROP RESIDUES," AND "BULKING AGENTS" AS THOSE TERMS ARE DEFINED IN WAC 173-350-100. A MAXIMUM OF 35 PERCENT BY VOLUME OF "POST-CONSUMER FOOD WASTE" AS DEFINED IN WAC 173-350-100 MAY BE SUBSTITUTED FOR RECYCLED PLANT WASTE. BIOSOLIDS, MANURE, AND/OR BEDDING STRAW OR WOOD CHIPS OR SHAVINGS CONTAINING ANIMAL EXCRETA ARE NOT ALLOWED.
5. WOOD WASTE FROM CHEMICALLY TREATED LUMBER AND MANUFACTURED WOOD PRODUCTS CONTAINING ADHESIVES OR ANY OTHER CHEMICAL IS NOT ALLOWED; PAINTED AND STAINED WOOD ARE NOT ALLOWED; AND ONLY SAWDUST FROM VIRGIN LUMBER ALLOWED. NO OTHER TOXIC OR OTHERWISE HARMFUL MATERIALS ARE ALLOWED.
6. COMPOST SHALL HAVE A MOISTURE CONTENT THAT HAS NO VISIBLE FREE WATER OR DUST PRODUCED WHEN HANDLING THE MATERIAL.
7. COMPOST SHALL HAVE AN ORGANIC MATTER CONTENT OF 40 PERCENT TO 65 PERCENT BY DRY WEIGHT AS DETERMINED BY LOSS OF IGNITION TEST METHOD ASTM D 2974, OR BY U.S. COMPOSTING COUNCIL TMECC 05.07A "LOSS-ON-IGNITION ORGANIC MATTER METHOD (LOI)".
8. COMPOST SHALL HAVE A CARBON TO NITROGEN RATIO BELOW 25:1, ALTHOUGH THE CARBON TO NITROGEN RATIO MAY BE AS HIGH AS 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PLANTS NATIVE TO THE PUGET SOUND LOWLANDS REGION. THE CARBON TO NITROGEN RATIO SHALL BE CALCULATED ON A DRY WEIGHT BASIS USING TMECC 5.02A ("CARBON TO NITROGEN RATIO"), WHICH USES TMECC 04.01A, "ORGANIC CARBON" DIVIDED BY THE DRY WEIGHT OF "TOTAL N" (TMECC 04.02D).
9. COMPOST PH SHALL BE BETWEEN 6.0 AND 8.5 WHEN TESTED IN ACCORDANCE WITH U.S. COMPOSTING COUNCIL TMECC 04.11-A, "1:5 SLURRY PH"
10. SOLUBLE SALT CONTENT SHALL BE LESS THAN 4.0 DS/M (MMHOS/CM) WHEN TESTED IN ACCORDANCE WITH U.S. COMPOSTING COUNCIL TMECC 04.10 "ELECTRICAL CONDUCTIVITY, 1:5 SLURRY METHOD, MASS BASIS".
11. COMPOST MATURITY INDICATORS FROM A CUCUMBER BIOASSAY (TMECC 05.05-A "GERMINATION SEEDLING EMERGENCE AND RELATIVE GROWTH) MUST BE GREATER THAN 80%FOR BOTH EMERGENCE AND VIGOR").
12. STABILITY SHALL BE 7-MG CO2 – C/G OM/DAY OR BELOW IN AS DETERMINED BY U.S. COMPOSTING COUNCIL TMECC 05.08-B "CARBON DIOXIDE EVOLUTION RATE", TO ESTABLISH LOW OXYGEN USE AND LOW CO2 GENERATION RATES.
13. FINE COMPOST SHALL MEET THE FOLLOWING GRADATION BY DRY WEIGHT:

MINIMUM PERCENT PASSING 2" SIEVE	100%
MINIMUM PERCENT PASSING 1" SIEVE	99%
MINIMUM PERCENT PASSING 5/8" SIEVE	90%
MINIMUM PERCENT PASSING ¼" SIEVE	75%

FIGURE C.2.4.B TYPICAL GRAVEL-FILLED DISPERSION TRENCH FOR BASIC DISPERSION

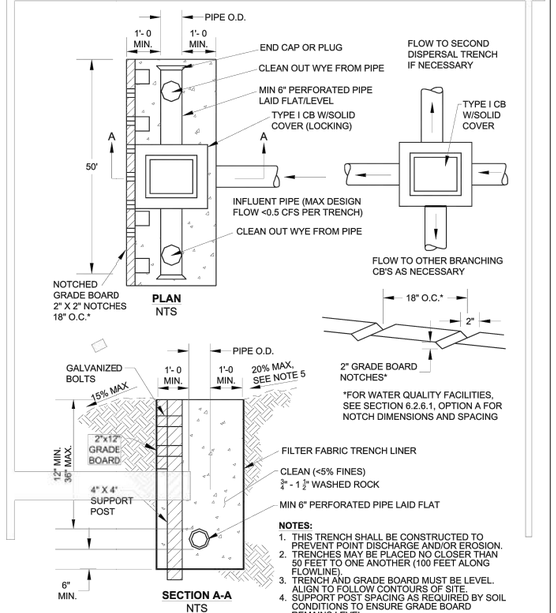


TRENCH SECTION
NTS



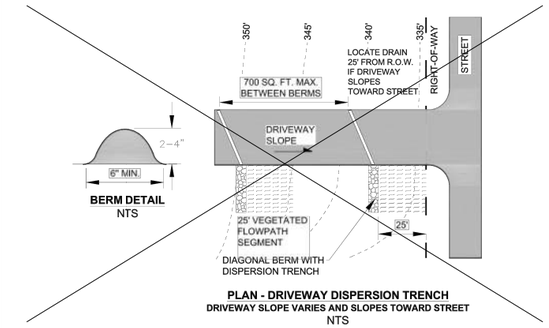
PLAN VIEW OF ROOF
NTS

FIGURE C.2.1.D 50-FOOT DISPERSION TRENCH WITH NOTCHED BOARD

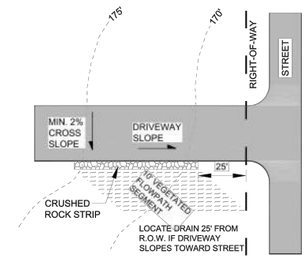


NOTES:
1. THIS TRENCH SHALL BE CONSTRUCTED TO PREVENT POINT DISCHARGE AND/OR EROSION.
2. TRENCHES MAY BE PLACED NO CLOSER THAN 50 FEET TO ONE ANOTHER (100 FEET ALONG FLOWLINE).
3. TRENCH AND GRADE BOARD MUST BE LEVEL. ALIGN TO FOLLOW CONTOURS OF SITE.
4. SUPPORT POST SPACING AS REQUIRED BY SOIL CONDITIONS TO ENSURE GRADE BOARD REMAINS LEVEL.
5. 15% MAX UNLESS OTHERWISE EVALUATED AND APPROVED, SEE SECTION C.2.1.1

FIGURE C.2.4.D EXAMPLES OF BASIC DISPERSION FOR DRIVEWAYS



PLAN - DRIVEWAY DISPERSION TRENCH
DRIVEWAY SLOPE VARIES AND SLOPES TOWARD STREET
NTS



PLAN - SHEET FLOW DISPERSION FROM A DRIVEWAY
FLAT TO MODERATELY STOPING DRIVEWAYS
NTS

22306 SE 464TH STREET
KING COUNTY, WASHINGTON

DRAINAGE NOTES AND DETAILS

REVISIONS:

JOB NO.:	2020-01
DATE:	02/05/2021
SCALE:	NONE
DESIGNED BY:	ELP
DRAWN BY:	ELP

CLEARING AND GRADING SET

C3.2

NO. 4 OF 4

CALL 2 BUSINESS DAYS BEFORE YOU DIG 811 "It's the Law"
www.callbeforeyoudig.com

FILE: \\VFS1\REDIRECTIONS\EPILCHER\DESKTOP\ERIC WORK\TAZCO\SCHMIDT\CIVIL\3.2 DRAINAGE NOTES AND DETAILS.DWG 2/5/2021 3:52 PM Epilcher

Attachment B CSWPPP Worksheet Forms

BMP Implementation	Completed by: Title: Date:		
Develop a plan for implementing each BMP. Describe the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates), and the person(s) responsible for implementation.			
BMPs	**Description of Action(s) Required for Implementation**	**Scheduled Milestone and Completion Date(s)**	**Person Responsible for Action**
Good Housekeeping	1.		
	2.		
	3		
Preventive Maintenance	1.		
	2.		
	3.		
	4.		
Spill Prevention and Emergency Cleanup	1.		
	2.		
	3.		
Inspections	1.		
	2.		
	3.		

BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Source Control BMPs	1.		
	2.		
	3		
	4.		
	5.		
	6.		
	7.		
	8.		
Treatment BMPs	1.		
	2.		
	3.		
	4.		
Emerging technologies	1.		
	2.		
Flow Control BMPs	3.		
	4.		

Material Inventory

Completed by:_____

Title:_____

Date:_____

List materials handled, treated, stored, or disposed of at the project site that may potentially be exposed to precipitation or runoff.

Material	Purpose/Location	Quantity (Units) (indicate per/wk. or yr.)				Likelihood of contact with stormwater If Yes, describe reason		Past Spill or Leak	
		Used	Produced	Stored				Yes	No

Potential Pollutant Source Identification	Completed by:_____ Title:_____ Date:_____

List all potential stormwater pollutants from materials handled, treated, or stored on-site.

Potential Stormwater Pollutant	Stormwater Pollutant Source	Likelihood of pollutant being present in your stormwater discharge. If yes, explain

List of Significant Spills and Leaks	Completed by:_____ Title:_____ Date:_____

List all spills and leaks of toxic or hazardous pollutants that were significant but are not limited to, release of oil or hazardous substances in excess of reportable quantities. Although not required, we suggest you list spills and leaks of non-hazardous materials.

Date (month/day/year)	Location (as indicated on site map)	Description				Response Procedure		Preventive Measure Taken
		Type of Material	Quantity	Source, If Known	Reason for Spill/Leak	Amount of Material Recovered	Material No longer exposed to Stormwater (Yes/No)	

Employee Training		Completed by:_____ Title:_____ Date:_____	
Describe the annual training of employees on the SWPPP, addressing spill response, good housekeeping, and material management practices.			
Training Topics 1.) LINE WORKERS	Brief Description of Training Program/Materials (e.g., film, newsletter course)	Schedule for Training (list dates)	Attendees
Spill Prevention and Response			
Good Housekeeping			
Material Management Practices			
2.) P2 TEAM:			
SWPPP Implementation			
Monitoring Procedures			

Pollution Prevention Team	Completed by: _____ Title: _____ Date: _____
Responsible Official:_____ Team Leader:_____ Responsibilities: _____ _____ _____	Title:_____ Office Phone:_____ Cell Phone #:_____ Pager #:_____
(1)_____ Responsibilities: _____ _____ _____	Title:_____ Office Phone:_____ Pager #:_____ Cell Phone:_____
(2)_____ Responsibilities: _____ _____ _____	Title:_____ Office Phone:_____ Pager #:_____ Cell Phone #:_____

Appendix E Bond, Declaration, et al.

1. **Bond Quantity Worksheet (Draft)**
2. **Declaration of Covenant for Privately Maintained Flow Control BMPs (Draft)**
3. **Maintenance Instructions for Full Dispersion**

Site Improvement Bond Quantity Worksheet

King County

Department of Permitting & Environmental Review
35030 SE Douglas Street, Suite 210
Snoqualmie, Washington 98065-9266
206-296-6600 TTY Relay 711

For alternate formats, call 206-296-6600.

Project Name: Schmidt Residence
Location: 22306 SE 464th Street, Enumclaw, WA 98022
Date: 2/5/2021
Project No.:
Activity No.:

Clearing greater than or equal to 5,000 board feet of timber?

yes X no

If yes,
Forest Practice Permit Number:
(RCW 76.09)

Note: All prices include labor, equipment, materials, overhead and profit. Prices are from RS Means data adjusted for the Seattle area or from local sources if not included in the RS Means database.

Unit prices updated: 3/2/2015
Version: 3/2/2015
Report Date: 2/5/2021

Site Improvement Bond Quantity Worksheet

		Reference #	Unit Price	Unit	Quantity	# of Applications	Cost
EROSION/SEDIMENT CONTROL	**Number**						
Backfill & compaction-embankment	**ESC-1**		$ 6.00	CY	-	-	$ -
Check dams, 4" minus rock	**ESC-2**	SWDM 5.4.6.3	$ 80.00	Each	-	-	$ -
Crushed surfacing 1 1/4" minus	**ESC-3**	WSDOT 9-03.9(3)	$ 95.00	CY	-	-	$ -
Ditching	**ESC-4**		$ 9.00	CY	-	-	$ -
Excavation-bulk	**ESC-5**		$ 2.00	CY	-	-	$ -
Fence, silt	**ESC-6**	SWDM 5.4.3.1	$ 1.50	LF	2,670	1	$ 4,005.00
Fence, Temporary (NGPE)	**ESC-7**		$ 1.50	LF	-	-	$ -
Hydroseeding	**ESC-8**	SWDM 5.4.2.4	$ 0.80	SY	11,150	1	$ 8,920.00
Jute Mesh	**ESC-9**	SWDM 5.4.2.2	$ 3.50	SY	-	-	$ -
Mulch, by hand, straw, 3" deep	**ESC-10**	SWDM 5.4.2.1	$ 2.50	SY	-	-	$ -
Mulch, by machine, straw, 2" deep	**ESC-11**	SWDM 5.4.2.1	$ 2.00	SY	-	-	$ -
Piping, temporary, CPP, 6"	**ESC-12**		$ 12.00	LF	-	-	$ -
Piping, temporary, CPP, 8"	**ESC-13**		$ 14.00	LF	-	-	$ -
Piping, temporary, CPP, 12"	**ESC-14**		$ 18.00	LF	-	-	$ -
Plastic covering, 6mm thick, sandbagged	**ESC-15**	SWDM 5.4.2.3	$ 4.00	SY	-	-	$ -
Rip Rap, machine placed; slopes	**ESC-16**	WSDOT 9-13.1(2)	$ 45.00	CY	-	-	$ -
Rock Construction Entrance, 50'x15'x1'	**ESC-17**	SWDM 5.4.4.1	$ 1,800.00	Each	1	1	$ 1,800.00
Rock Construction Entrance, 100'x15'x1'	**ESC-18**	SWDM 5.4.4.1	$ 3,200.00	Each	-	-	$ -
Sediment pond riser assembly	**ESC-19**	SWDM 5.4.5.2	$ 2,200.00	Each	-	-	$ -
Sediment trap, 5' high berm	**ESC-20**	SWDM 5.4.5.1	$ 19.00	LF	-	-	$ -
Sed. trap, 5' high, riprapped spillway berm section	**ESC-21**	SWDM 5.4.5.1	$ 70.00	LF	-	-	$ -
Seeding, by hand	**ESC-22**	SWDM 5.4.2.4	$ 1.00	SY	-	-	$ -
Sodding, 1" deep, level ground	**ESC-23**	SWDM 5.4.2.5	$ 8.00	SY	-	-	$ -
Sodding, 1" deep, sloped ground	**ESC-24**	SWDM 5.4.2.5	$ 10.00	SY	-	-	$ -
TESC Supervisor	**ESC-25**		$ 110.00	HR	-	-	$ -
Water truck, dust control	**ESC-26**	SWDM 5.4.7	$ 140.00	HR	-	-	$ -
WRITE-IN-ITEMS ** (see page 9)**							
				Each			

ESC SUBTOTAL:	$ 14,725.00
30% CONTINGENCY & MOBILIZATION:	$ 4,417.50
ESC TOTAL:	$ 19,142.50
COLUMN:	**A**

Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-Way		Future Public Right of Way & Drainage Facilities		Private Improvements		
		Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
GENERAL ITEMS	**No.**									
Backfill & Compaction- embankment	GI - 1	$ 6.00	CY					-	$ -	
Backfill & Compaction- trench	GI - 2	$ 9.00	CY					-	$ -	
Clear/Remove Brush, by hand	GI - 3	$ 1.00	SY					-	$ -	
Clearing/Grubbing/Tree Removal	GI - 4	$ 10,000.00	Acre					9.8	$ 97,800.00	
Excavation - bulk	GI - 5	$ 2.00	CY					500	$ 1,000.00	
Excavation - Trench	GI - 6	$ 5.00	CY					-	$ -	
Fencing, cedar, 6' high	GI - 7	$ 20.00	LF					-	$ -	
Fencing, chain link, vinyl coated, 6' high	GI - 8	$ 20.00	LF					-	$ -	
Fencing, chain link, gate, vinyl coated, 2(	GI - 9	$ 1,400.00	Each					-	$ -	
Fencing, split rail, 3' high	GI - 10	$ 15.00	LF					-	$ -	
Fill & compact - common barrow	GI - 11	$ 25.00	CY					14,760	$ 369,000.00	
Fill & compact - gravel base	GI - 12	$ 27.00	CY					740	$ 19,980.00	
Fill & compact - screened topsoil	GI - 13	$ 39.00	CY					-	$ -	
Gabion, 12" deep, stone filled mesh	GI - 14	$ 65.00	SY					-	$ -	
Gabion, 18" deep, stone filled mesh	GI - 15	$ 90.00	SY					-	$ -	
Gabion, 36" deep, stone filled mesh	GI - 16	$ 150.00	SY					-	$ -	
Grading, fine, by hand	GI - 17	$ 2.50	SY					-	$ -	
Grading, fine, with grader	GI - 18	$ 2.00	SY					-	$ -	
Monuments, 3' long	GI - 19	$ 250.00	Each					-	$ -	
Sensitive Areas Sign	GI - 20	$ 7.00	Each					-	$ -	
Sodding, 1" deep, sloped ground	GI - 21	$ 8.00	SY					-	$ -	
Surveying, line & grade	GI - 22	$ 850.00	Day					-	$ -	
Surveying, lot location/lines	GI - 23	$ 1,800.00	Acre					-	$ -	
Traffic control crew (2 flaggers)	GI - 24	$ 120.00	HR					-	$ -	
Trail, 4" chipped wood	GI - 25	$ 8.00	SY					-	$ -	
Trail, 4" crushed cinder	GI - 26	$ 9.00	SY					-	$ -	
Trail, 4" top course	GI - 27	$ 12.00	SY					-	$ -	
Wall, retaining, concrete	GI - 28	$ 55.00	SF					-	$ -	
Wall, rockery	GI - 29	$ 15.00	SF					-	$ -	
		SUBTOTAL							487,780.00	

*KCC 27A authorizes only one bond reduction.

1_KC Bond Calc_UPDATE

Unit prices updated: 03/02/2015
Version: 03/02/2015
Report Date: 2/5/2021

Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-way		Future Public Right of Way & Drainage Facilities		Private Improvements		
		Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
ROAD IMPROVEMENT	**No.**									
AC Grinding, 4' wide machine < 1000sy	RI - 1	$ 30.00	SY					-	$ -	
AC Grinding, 4' wide machine 1000-2000	RI - 2	$ 16.00	SY					-	$ -	
AC Grinding, 4' wide machine > 2000sy	RI - 3	$ 10.00	SY					-	$ -	
AC Removal/Disposal	RI - 4	$ 35.00	SY					-	$ -	
Barricade, type III (Permanent)	RI - 6	$ 56.00	LF					-	$ -	
Curb & Gutter, rolled	RI - 7	$ 17.00	LF					-	$ -	
Curb & Gutter, vertical	RI - 8	$ 12.50	LF					-	$ -	
Curb and Gutter, demolition and disposal	RI - 9	$ 18.00	LF					-	$ -	
Curb, extruded asphalt	RI - 10	$ 5.50	LF					-	$ -	
Curb, extruded concrete	RI - 11	$ 7.00	LF					-	$ -	
Sawcut, asphalt, 3" depth	RI - 12	$ 1.85	LF					-	$ -	
Sawcut, concrete, per 1" depth	RI - 13	$ 3.00	LF					-	$ -	
Sealant, asphalt	RI - 14	$ 2.00	LF					-	$ -	
Shoulder, AC, (see AC road unit price)	RI - 15	$ -	SY					-	$ -	
Shoulder, gravel, 4" thick	RI - 16	$ 15.00	SY					-	$ -	
Sidewalk, 4" thick	RI - 17	$ 38.00	SY						$ -	
Sidewalk, 4" thick, demolition and disposa	RI - 18	$ 32.00	SY					-	$ -	
Sidewalk, 5" thick	RI - 19	$ 41.00	SY					-	$ -	
Sidewalk, 5" thick, demolition and disposa	RI - 20	$ 40.00	SY					-	$ -	
Sign, handicap	RI - 21	$ 85.00	Each					-	$ -	
Striping, per stall	RI - 22	$ 7.00	Each					-	$ -	
Striping, thermoplastic, (for crosswalk)	RI - 23	$ 3.00	SF					-	$ -	
Striping, 4" reflectorized line	RI - 24	$ 0.50	LF					-	$ -	

SUBTOTAL _____ _____ _____

*KCC 27A authorizes only one bond reduction.

1_KC Bond Calc_UPDATE

Unit prices updated: 03/02/2015
Version: 03/02/2015
Report Date: 2/5/2021

Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-way		Future Public Right of Way & Drainage Facilities		Private Improvements		
		Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
ROAD SURFACING	**No.**	(4" Rock = 2.5 base & 1.5" top course) 9 1/2" Rock= 8" base & 1.5" top course)								
Additional 2.5" Crushed Surfacing	RS - 1	$ 3.60	SY					-	$ -	
HMA 1/2" Overlay, 1.5"	RS - 2	$ 14.00	SY					-	$ -	
HMA 1/2" Overlay 2"	RS - 3	$ 18.00	SY					-	$ -	
HMA Road, 2", 4" rock, First 2500 SY	RS - 4	$ 28.00	SY					-	$ -	
HMA Road, 2", 4" rock, Qty. over 2500 SY	RS - 5	$ 21.00	SY					-	$ -	
HMA Road, 3", 9 1/2" Rock, First 2500 SY	RS - 6	$ 42.00	SY					-	$ -	
HMA Road, 3", 9 1/2" Rock, Qty Over 250	RS - 7	$ 35.00	SY					-	$ -	
Not Used	RS - 8							-	$ -	
Not Used	RS - 9							-	$ -	
HMA Road, 6" Depth, First 2500 SY	RS - 10	$ 33.10	SY					-	$ -	
HMA Road, 6" Depth, Qty. Over 2500 SY	RS - 11	$ 30.00	SY					-	$ -	
HMA 3/4" or 1", 4" Depth	RS - 12	$ 20.00	SY					-	$ -	
Gravel Road, 4" rock, First 2500 SY	RS - 13	$ 15.00	SY					-	$ -	
Gravel Road, 4" rock, Qty. over 2500 SY	RS - 14	$ 10.00	SY					-	$ -	
PCC Road (Add Under Write-Ins w/Desig	RS - 15							-	$ -	
Thickened Edge	RS - 17	$ 8.60	LF					-	$ -	

SUBTOTAL

*KCC 27A authorizes only one bond reduction.

1_KC Bond Calc_UPDATE

Unit prices updated: 03/02/2015
Version: 03/02/2015
Report Date: 2/5/2021

Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-way		Future Public Right of Way & Drainage Facilities		Private Improvements		
		Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
DRAINAGE (CPP = Corrugated Plastic Pipe, N12 or Equivalent)		For Culvert prices, Average of 4' cover was assumed. Assume perforated PVC is same price as solid pipe.								
Access Road, R/D	D - 1	$ 21.00	SY					-	$ -	
Bollards - fixed	D - 2	$ 240.74	Each					-	$ -	
Bollards - removable	D - 3	$ 452.34	Each					-	$ -	
* (CBs include frame and lid)										
CB Type I	D - 4	$ 1,500.00	Each					-	$ -	
CB Type IL	D - 5	$ 1,750.00	Each					-	$ -	
CB Type II, 48" diameter	D - 6	$ 2,300.00	Each					-	$ -	
for additional depth over 4'	D - 7	$ 480.00	FT					-	$ -	
CB Type II, 54" diameter	D - 8	$ 2,500.00	Each					-	$ -	
for additional depth over 4'	D - 9	$ 495.00	FT					-	$ -	
CB Type II, 60" diameter	D - 10	$ 2,800.00	Each					-	$ -	
for additional depth over 4'	D - 11	$ 600.00	FT					-	$ -	
CB Type II, 72" diameter	D - 12	$ 3,600.00	Each					-	$ -	
for additional depth over 4'	D - 13	$ 850.00	FT					-	$ -	
Through-curb Inlet Framework (Add)	D - 14	$ 400.00	Each					-	$ -	
Cleanout, PVC, 4"	D - 15	$ 150.00	Each					-	$ -	
Cleanout, PVC, 6"	D - 16	$ 170.00	Each					-	$ -	
Cleanout, PVC, 8"	D - 17	$ 200.00	Each					-	$ -	
Culvert, PVC, 4"	D - 18	$ 10.00	LF					-	$ -	
Culvert, PVC, 6"	D - 19	$ 13.00	LF					-	$ -	
Culvert, PVC, 8"	D - 20	$ 15.00	LF					-	$ -	
Culvert, PVC, 12"	D - 21	$ 23.00	LF					-	$ -	
Culvert, CMP, 8"	D - 22	$ 19.00	LF					-	$ -	
Culvert, CMP, 12"	D - 23	$ 29.00	LF					-	$ -	
Culvert, CMP, 15"	D - 24	$ 35.00	LF					-	$ -	
Culvert, CMP, 18"	D - 25	$ 41.00	LF					-	$ -	
Culvert, CMP, 24"	D - 26	$ 56.00	LF					-	$ -	
Culvert, CMP, 30"	D - 27	$ 78.00	LF					-	$ -	
Culvert, CMP, 36"	D - 28	$ 130.00	LF					-	$ -	
Culvert, CMP, 48"	D - 29	$ 190.00	LF					-	$ -	
Culvert, CMP, 60"	D - 30	$ 270.00	LF					-	$ -	
Culvert, CMP, 72"	D - 31	$ 350.00	LF					-	$ -	

SUBTOTAL _____ _____ _____

*KCC 27A authorizes only one bond reduction.

1_KC Bond Calc_UPDATE

Unit prices updated: 03/02/2015
Version: 03/02/2015
Report Date: 2/5/2021

Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

DRAINAGE CONTINUED				Existing Right-of-way		Future Public Right of Way & Drainage Facilities		Private Improvements		
	No.	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
Culvert, Concrete, 8"	D - 32	$ 25.00	LF						$ -	
Culvert, Concrete, 12"	D - 33	$ 36.00	LF					-	$ -	
Culvert, Concrete, 15"	D - 34	$ 42.00	LF					-	$ -	
Culvert, Concrete, 18"	D - 35	$ 48.00	LF					-	$ -	
Culvert, Concrete, 24"	D - 36	$ 78.00	LF					-	$ -	
Culvert, Concrete, 30"	D - 37	$ 125.00	LF					-	$ -	
Culvert, Concrete, 36"	D - 38	$ 150.00	LF					-	$ -	
Culvert, Concrete, 42"	D - 39	$ 175.00	LF					-	$ -	
Culvert, Concrete, 48"	D - 40	$ 205.00	LF					-	$ -	
Culvert, CPP, 6"	D - 41	$ 14.00	LF					-	$ -	
Culvert, CPP, 8"	D - 42	$ 16.00	LF					-	$ -	
Culvert, CPP, 12"	D - 43	$ 24.00	LF					-	$ -	
Culvert, CPP, 15"	D - 44	$ 35.00	LF					-	$ -	
Culvert, CPP, 18"	D - 45	$ 41.00	LF					-	$ -	
Culvert, CPP, 24"	D - 46	$ 56.00	LF					-	$ -	
Culvert, CPP, 30"	D - 47	$ 78.00	LF					-	$ -	
Culvert, CPP, 36"	D - 48	$ 130.00	LF					-	$ -	
Ditching	D - 49	$ 9.50	CY					-	$ -	
Flow Dispersal Trench (1,436 base+)	D - 50	$ 28.00	LF					-		
French Drain (3' depth)	D - 51	$ 26.00	LF					-	$ -	
Geotextile, laid in trench, polypropylene	D - 52	$ 3.00	SY					-	$ -	
Mid-tank Access Riser, 48" dia, 6' deep	D - 54	$ 2,000.00	Each					-	$ -	
Pond Overflow Spillway	D - 55	$ 16.00	SY					-	$ -	
Restrictor/Oil Separator, 12"	D - 56	$ 1,150.00	Each					-	$ -	
Restrictor/Oil Separator, 15"	D - 57	$ 1,350.00	Each					-	$ -	
Restrictor/Oil Separator, 18"	D - 58	$ 1,700.00	Each					-	$ -	
Riprap, placed	D - 59	$ 42.00	CY					-	$ -	
Tank End Reducer (36" diameter)	D - 60	$ 1,200.00	Each					-	$ -	
Trash Rack, 12"	D - 61	$ 350.00	Each					-	$ -	
Trash Rack, 15"	D - 62	$ 410.00	Each					-	$ -	
Trash Rack, 18"	D - 63	$ 480.00	Each					-	$ -	
Trash Rack, 21"	D - 64	$ 550.00	Each					-	$ -	

SUBTOTAL _____ _____ _____

*KCC 27A authorizes only one bond reduction.

1_KC Bond Calc_UPDATE

Unit prices updated: 03/02/2015
Version: 03/02/2015
Report Date: 2/5/2021

Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-way		Future Public Right of Way & Drainage Facilities		Private Improvements		
		Unit Price	Unit	Quant.	Price	Quant.	Cost	Quant.	Cost	
PARKING LOT SURFACING							Not To Be Used For Roads Or Shoulders			
	No.									
2" AC, 2" top course rock & 4" borrow	PL - 1	$ 21.00	SY	NA		NA		-	$ -	
2" AC, 1.5" top course & 2.5" base cours	PL - 2	$ 28.00	SY	NA		NA		2,720	$ 76,160.00	
4" select borrow	PL - 3	$ 5.00	SY	NA		NA		-	$ -	
1.5" top course rock & 2.5" base course	PL - 4	$ 14.00	SY	NA		NA		-	$ -	
UTILITY POLES & STREET LIGHTING					Utility pole relocation costs must be accompanied by **Franchise Utility's Cost Estimate**					
Utility Pole(s) Relocation	UP-1	Lump Sum						-	$ -	
Street Light Poles w/Luminaires	UP-2	$ 7,500.00	Each					-	$ -	
WRITE-IN-ITEMS										
(Such as detention/water quality vaults.)	No.									
Stormwater Vault	WI - 1	$ 380,000.00	Each					-	$ -	
Block Wall	WI - 2	$ 16.00	SY					-	$ -	
Yard Drain	WI - 3	$ 225.00	CY					-	$ -	
	WI - 4		LF						$ -	
	WI - 5		FT						$ -	
	WI - 6								$ -	
	WI - 7								$ -	
	WI - 8								$ -	
	WI - 9								$ -	
	WI - 10								$ -	

SUBTOTAL				
SUBTOTAL (SUM ALL PAGES):				563,940.00
30% CONTINGENCY & MOBILIZATION:				169,182.00
GRANDTOTAL:				733,122.00
COLUMN:	**B**	**C**	**D**	

*KCC 27A authorizes only one bond reduction.

1_KC Bond Calc_UPDATE

Unit prices updated: 03/02/2015
Version: 03/02/2015
Report Date: 2/5/2021

Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

Original bond computations prepared by:

Name:	Eric Pilcher	**Date:**	2/5/2021
PE Registration Number:	43952	**Tel. #:**	(253) 237-7932
Firm Name:	MacKay Sposito		
Address:	33810 Weyerhaeuser Way S, Suite 130, Federal Way, WA 98001	**Project No:**	MSI #17325

FINANCIAL GUARANTEE REQUIREMENTS

		PERFORMANCE BOND* AMOUNT	MINIMUM BOND* AMOUNT REQUIRED FOR RECORDING OR TEMPORARY OCCUPANCY AT SUBSTANTIAL COMPLETION ***	PUBLIC ROAD & DRAINAGE MAINTENANCE/DEFECT BOND*
Stabilization/Erosion Sediment Control (ESC)	(A)	$ 19,142.5		
Existing Right-of-Way Improvements	(B)	$ -		
Future Public Right of Way & Drainage Facilities	(C)	$ -		
Private Improvements	(D)	$ 733,122.0		
Calculated Quantity Completed				
Total Right-of Way and/or Site Restoration Bond*/** (First $7,500 of bond* shall be cash.)	(A+B)	$ 19,142.5		
Performance Bond* Amount (A+B+C+D) = TOTAL	(T)	$ 752,264.5 (Minimum is $2000.)	T x 0.30 $ 225,679.4 (Minimum is $2000.)	
Maintenance/Defect Bond* Total				(B+C) x 0.25 = $ - (Minimum is $2000.)

NAME OF PERSON PREPARING BOND* REDUCTION: Eric Pilcher Date: 2/5/2021

*** NOTE:** The word "bond" as used in this document means a financial guarantee acceptable to King County.

**** NOTE:** KCC 27A authorizes right of way and site restoration bonds to be combined when both are required. The restoration requirement shall include the total cost for all TESC as a minimum, not a maximum. In addition, corrective work, both on- and off-site needs to be included. Quantities shall reflect worse case scenarios not just minimum requirements. For example, if a salmonid stream may be damaged, some estimated costs for restoration needs to be reflected in this amount. The 30% contingency and mobilization costs are computed in this quantity.

***** NOTE:** Per KCC 27A, total bond amounts remaining after reduction shall not be less than 30% of the original amount (T) or as revised by major design changes.

REQUIRED BOND* AMOUNTS ARE SUBJECT TO REVIEW AND MODIFICATION BY KING COUNTY

Check out the DDES Web site at www.kingcounty.gov/permits

Unit prices updated: 03/02/2015
Version: 03/02/2015
Report Date: 2/5/2021

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

_____

_____

_____

_____

DRAINAGE EASEMENT

Grantor: _____

Grantee: King County

Legal Description: _____

_____

_____

Additional Legal(s) on: _____

Assessor's Tax Parcel ID#: _____

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, the Grantor(s), the owner(s) in fee of that certain parcel of land, described above, hereby grant and convey a(an) [exclusive/non-exclusive] easement (attached and incorporated as Exhibit "A") to Grantee, King County, a political subdivision of the state of Washington and its municipal successors in interest and assigns ("King County" and "the County", or "its municipal successor"), for the purpose of conveying, storing, managing, and facilitating surface and storm water per an engineering plan approved by King County for the project known as: _____

_____,

together with the right for King County to enter said drainage easement at reasonable times for the purpose of inspecting, operating, maintaining, repairing, and improving the drainage facilities contained herein. Note that except for facilities which have been formally accepted for maintenance by King County, maintenance and repair of drainage facilities on private property is the responsibility of the property owner.

The Grantor(s) of said parcel is (are) required to obtain prior written approval from the Water and Land Resources Division of the King County Department of Natural Resources prior to filling, piping, cutting, or removing vegetation (except for routine landscape maintenance such as lawn mowing) in open vegetated drainage facilities (such as swales, channels, ditches, ponds, etc.), or performing any alterations or modifications to the drainage facilities, contained within said drainage easement.

This easement is intended to facilitate reasonable access to the drainage facilities. It is binding upon the Grantor(s), its heirs, successors, and assigns.

IN WITNESS WHEREOF, this Drainage Easement is executed this _____ day of

_____, 20_____.

_____
GRANTOR, owner of the Property

_____
GRANTOR, owner of the Property

STATE OF WASHINGTON)
COUNTY OF KING)ss.

On this day personally appeared before me:

_____, to me known to be the individual(s) described in and who executed the within and foregoing instrument and acknowledged that they signed the same as their free and voluntary act and deed, for the uses and purposes therein stated.

Given under my hand and official seal this _____ day of _____, 20_____.

_____

_____
Printed name
Notary Public in and for the State of Washington, residing at

_____

My appointment expires _____

MAINTENANCE INSTRUCTIONS FOR FULL DISPERSION

Your property contains a stormwater management flow control BMP (best management practice) called ***"full dispersion."***

Full dispersion is a strategy for minimizing the area disturbed by development (i.e., impervious or non-native pervious surfaces, such as concrete areas, roofs, and lawns) relative to native vegetated areas (e.g., forested surface) together with the application of dispersion techniques that utilize the natural capacity of the native vegetated areas to mitigate the stormwater runoff quantity and quality impacts of the developed surfaces.

This flow control BMP has two primary components that must be maintained:

(1) the devices that disperse runoff from the developed surfaces, and

(2) the native vegetated area and flowpath receiving the dispersed runoff.

Dispersion Devices

The **dispersion devices** used on your property include the following as indicated on the flow control BMP site plan (CHECK THE BOX(ES) THAT APPLY):

❑ splash blocks, ❑ rock pads, ❑ gravel filled trenches, ❑ sheet flow.

MAINTENANCE RESTRICTIONS

The size, placement, composition, and downstream flowpaths of these devices as depicted by the flow control BMP site plan and design details must be maintained and may not be changed without written approval either from the King County Water and Land Resources Division or through a future development permit from King County.

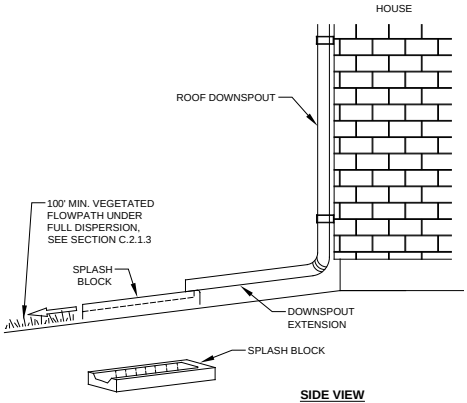
INSPECTION FREQUENCY AND MAINTENANCE GUIDELINES

- Dispersion devices must be inspected annually and after major storm events to identify and repair any physical defects.
- When native soil is exposed or erosion channels are present, the sources of the erosion or concentrated flow need to be identified and mitigated.
- Bare spots should be re-vegetated with native vegetation.
- Concentrated flow can be mitigated by leveling the edge of the pervious area and/or regrading or replenishing the rock in the dispersion device, such as in rock pads and gravel-filled trenches.

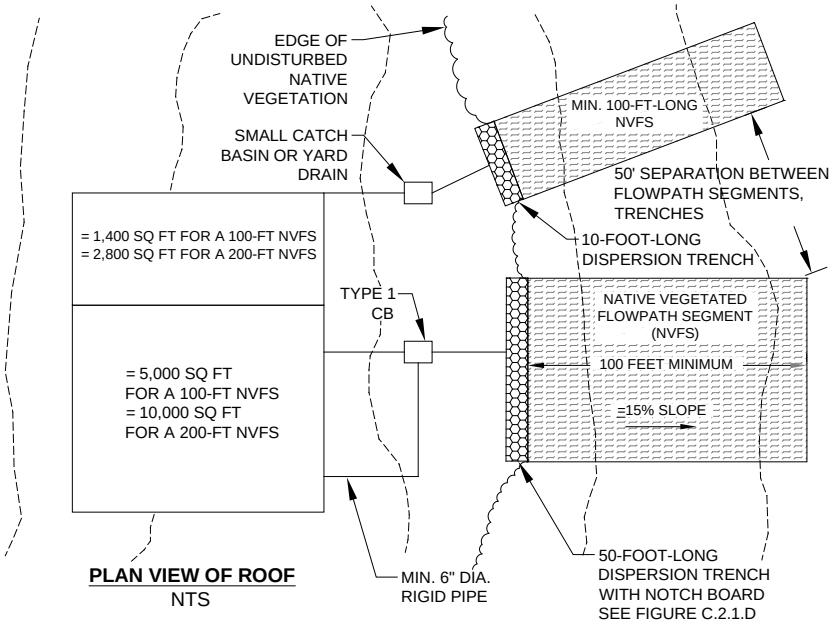
RECORDING REQUIREMENT

These full dispersion flow control BMP maintenance and operation instructions must be recorded as an attachment to the required **declaration of covenant and grant of easement** per Requirement 3 of Section C.1.3.4 of the King County *Surface Water Design Manual*. The intent of these instructions is to explain to future property owners, the purpose of the BMP and how it must be maintained and operated. These instructions are intended to be a minimum; the King County Department of Permitting and Environmental Services (DPER) may require additional instructions based on site-specific conditions. See King County's Surface Water Design Manual website for additional information and updates.

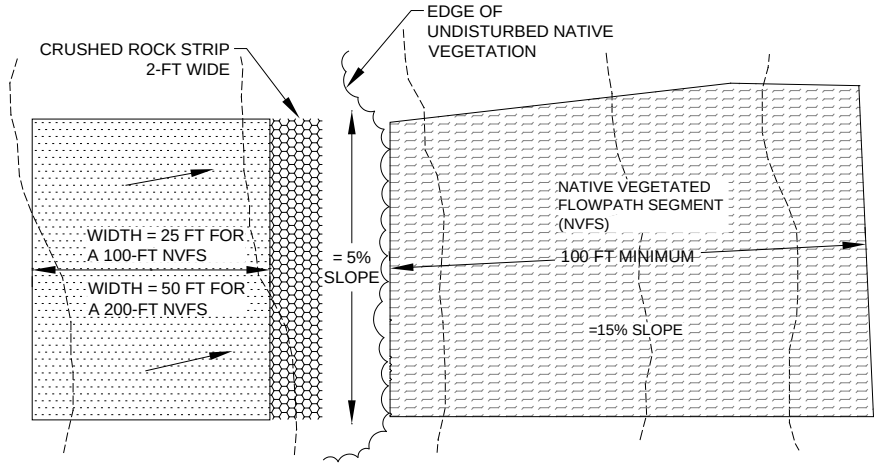
TYPICAL FULL DISPERSION APPLICATIONS



SIDE VIEW
NTS



PLAN VIEW OF ROOF
NTS



PLAN VIEW
NTS