

October 2022 Freeman Logistics



# **Critical Areas Report**

Prepared for Vector Development Company

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#### **Prepared for**

Vector Development Company 11411 NE 124th Street Kirkland, Washington 98034

#### Prepared by

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- Appendix B Study Area Photographs
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# **ABBREVIATIONS**

2010 Regional Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region
BFE	base flood elevation
BMP	best management practice
CAR	Critical Areas Report
City	City of Puyallup
DP	data plot
Ecology	Washington State Department of Ecology
ESA	Endangered Species Act
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
HGM	hydrogeomorphic
NAVD88	North American Vertical Datum of 1988
NMFS	National Marine Fisheries Service
NRCS	National Resources Conservation Service
OBL	obligate wetland
PEM	palustrine emergent
PFO	palustrine forested
PHS	Priority Habitats and Species
PMC	Puyallup Municipal Code
Project	Freeman Logistics project
PSS	palustrine scrub-shrub
redox	redoximorphic
Third-Party Report	Third-Party Review of Critical Areas Report
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation

# 1 Introduction

Vector Development Company is proposing construction of new industrial buildings as part of the Freeman Logistics project (Project), east of Freeman Road and west of the future Washington State Department of Transportation (WSDOT) SR 167 Extension project. The Project includes redevelopment of 15 adjacent parcels (parcel numbers 0420174075, 0420201040, 0420201039, 0420201045, 0420201066, 0420201101, 0420205003, 0420205017, 0420201027, 0420201052, 0420201034, 0420201036, 0420201042, 0420205004, 0420205016) in Puyallup, Washington. A vicinity map is shown in Figure 1, and an aerial photograph of the Project area and relevant adjoining parcels is shown in Figure 2.

The proposed development would include two commercial warehouses, vehicle and truck parking, widening of access roads, stormwater management, landscaping, and improvements along Freeman Road (Appendix A). The Project has been designed to be consistent with local regulations.

This Critical Areas Report (CAR) has been prepared by Anchor QEA, LLC, ecologists to support the local permitting and land use review of the Project. The CAR evaluates the presence of critical areas within the Project area and potential impacts to existing critical areas and associated regulated buffers, as defined in the City of Puyallup (City) Municipal Code (PMC) Chapter 21 (City of Puyallup 2022a). The format of this CAR has been prepared consistent with PMC 21.06. Critical areas regulated under PMC Chapter 21 include wetlands, streams, fish and wildlife habitat conservation areas, frequently flooded areas, and minor lakes.

Anchor QEA ecologists gathered and reviewed existing information consistent with PMC Chapter 21 to identify and assess existing critical areas. To support this review, Anchor QEA ecologists performed critical areas site visits to the Project site on April 1 and September 28, 2021, and March 11, 2022. The information provided in this CAR has been prepared by professional ecologists using the best available science to provide an accurate evaluation of critical areas and potential impacts. This CAR identifies no wetlands or streams present within the Project area.

## 1.1 Review of Existing Information

As part of the analysis to identify critical areas, Anchor QEA ecologists reviewed the following sources of information to support field observations:

- PMC (City of Puyallup 2022a)
- City of Puyallup GIS Portal Wetland and Stream Maps (City of Puyallup 2022b)
- Pierce County PublicGIS Interactive Mapping Tool (Pierce County 2022a)
- U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey (NRCS 2022)

- National Marine Fisheries Service (NMFS) Endangered Species Act (ESA) status reviews and listing information (NMFS 2022)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Wetlands Mapper (USFWS 2022a)
- USFWS ESA Status Reviews and Listing Information (USFWS 2022b)
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) Maps (WDFW 2022a)
- WDFW SalmonScape Mapping System (WDFW 2022b)
- Aerial photographs publicly available
- Third-Party Review of Critical Areas Report (Third-Party Report) produced by Confluence Environmental Company (Confluence Environmental Group 2022)

### 1.2 Qualifications

This CAR was prepared following site visits conducted by Anchor QEA on the following dates:

- April 1, 2021
- September 28, 2021
- March 11, 2022

Personnel who contributed to the surveys and preparation of this CAR are listed below:

- Calvin Douglas: Former Anchor QEA wetland scientist, now serving as Senior Ecologist at Confluence Environmental Company responsible for field investigations and reporting; BS Wildlife Biology, University of Washington; Pierce County Certified Wetland Scientist and Wildlife Biologist; Qualified Senior Writer for Biological Assessment, WSDOT, through 2024.
- Laura Caron: Staff 2 Wetland Biologist responsible for field investigations and reporting; BA Environmental Studies and Geology, University of Colorado; MNRS Natural Resource Management and Ecological Restoration, Colorado State University; Certified Wetland Delineator, USACE, 2021; Certified Wetland Rater, Ecology, 2022; Qualified Junior Author for Biological Assessment, WSDOT, through 2028; Qualified Biologist for Preliminary Hydraulic Stream Design and Restoration, WSDOT, 2022.
- Jakob Rowny: Senior Wetland Biologist and Environmental Scientist responsible for reporting; BS Ecology and Evolutionary Biology, University of California; MS Environmental Sciences and Engineering, University of North Carolina; 7 years of wetland delineation, categorization, and critical area assessment and reporting experience in Washington State and Oregon.
- Josh Jensen: Senior Managing Planner responsible for field oversight and code compliance; BS Economics and Environmental Studies, 2007, Western Washington University; MEM 2017, Duke University.

• Dan Berlin, PWS: Principal Scientist responsible for directing and reviewing all field work and documentation; BA Biology, Kalamazoo College; MEM Wetland Science, Duke University.

# 2 Study Area Description

The Study Area for this CAR includes the 15 adjacent parcels where the Project is located. The Project site encompasses 23.68 acres along Freeman Road (Figure 2). The Project site consists of open lawn areas, residential housing, active livestock and agricultural fields, and gravel roadways. A portion of the eastern boundary is developed; within the undeveloped portion, an agricultural drainage ditch is adjacent to the property on the northeast corner. The west boundary of the Project site is bounded by Freeman Road East. The project site is currently developed for residential and agricultural uses. Photographs of the Study Area are included in Appendix B. No wetlands or streams are located in the Project site. However, WSDOT is working with WDFW to provide a jurisdictional determination for the agricultural ditch and possible wetland boundary delineations and categorizations immediately off-site to the east. Depending on the findings, riparian and wetland habitat buffers may extend into the Study Area (per PMC 21.06).

### 2.1 Soils

The underlying soils in the Study Area consist of Sultan silt loam and Puyallup fine sandy loam (NRCS 2022). Natural Resources Conservation Service (NRCS) mapped soils are shown in Figure 3.

## 2.2 Hydrology

The Study Area is located within the Puyallup-White Watershed, Water Resource Inventory Area 10 (Ecology 2022). Hydrologic characteristics in the Study Area are influenced by the areas that drain to the Puyallup River, which originates on Mount Rainier, and Wapato Creek, which is located several thousand feet to the north.

No stream channels or seeps were identified within the Study Area's existing conditions during site visits. During our March 2022 field investigation, a small, disturbed area containing ponded water approximately 3 inches deep was identified at the east side of parcel number 0420174075. WDFW PHS and SalmonScape data do not identify any freshwater surface stream channels to the Puyallup River or Wapato Creek within the Study Area (WDFW 2022a, 2022b).

## 2.3 Plant Communities

Some undisturbed native vegetation communities are located within the Study Area, but most of the vegetation is composed of open lawn areas, residential homes, active livestock grazing pastures, and gravel roads, with small patches of planted native and ornamental trees and shrubs. The majority of the plantings are shrubs and ground cover species, which appear to receive regular maintenance. Areas of native vegetation are present along the central and eastern border of the Study Area. Photographs of the Study Area are included in Appendix B. Existing plant species within the Study Area are described in Section 3.4.1.

The USFWS National Wetlands Inventory Wetlands Mapper (USFWS 2022a), Pierce County critical area maps (Pierce County 2022), and City sensitive areas maps (City of Puyallup 2022b) do not identify any freshwater wetland habitat within the Study Area (see Figures 4, 5, and 6). Anchor QEA ecologists did not identify any freshwater wetlands in the Study Area during the field investigation in October 2021. During our March 2022 field investigation, Anchor QEA ecologists identified and delineated an artificial wetland in a disturbed area at the east side of parcel number 0420174075. It is our best professional opinion that this wetland is not jurisdictional. Additional information is provided in Section 3.2. Buffers in association with the off-site wetlands and potential riparian area in the WSDOT right-of-way are depicted in Figure 7.

# 3 Critical Areas Assessment

This section describes and assesses critical areas within and near the Study Area as defined per PMC Chapter 21 (City of Puyallup 2022a) including wetlands, streams, fish and wildlife habitat conservation areas, and frequently flooded areas.

### 3.1 Methods

To document and describe wetlands, streams, fish and wildlife habitat conservation areas, and frequently flooded areas within the Study Area, Anchor QEA reviewed existing information (Section 1.1) and performed an aerial photograph assessment. Anchor QEA ecologists performed critical areas site visits to the Study Area on April 1 and September 28, 2021, and March 11, 2022, as part of the analysis for the Project. The entire Study Area was accessible during the investigation. During the Project site visits, Anchor QEA ecologists documented general information regarding habitats and dominant plant species and communities. Potential wetland features were evaluated according to methods presented in the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987); the Regional Supplement to the Corps of Engineers Wetland Delineation Manual (Environmental Laborators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, Version 8.1, 2017 (USDA and NRCS 2016). Soil colors were classified by their numerical description as identified on a Munsell Soil Color Chart (Munsell 2000).

The ordinary high water mark of the agricultural ditch—located outside of the Study Area to the east—was not delineated during the Project site visit but was estimated using aerial photos because it is artificially created and the low and high water elevations are dependent upon irrigation in the adjacent agricultural fields east of the Study Area. All wildlife species, tracks, and other signs observed during the Project site visit were documented. All observations were qualitative; no quantitative wildlife surveys were performed. Photographs taken to document vegetation and habitat conditions are included in Appendix B.

This CAR evaluates terrestrial and aquatic habitats and plant communities based on physical observations. Existing information described in WDFW-documented species and priority habitats and ESA-listed species and critical habitats, within and near the Study Area, are also evaluated.

### 3.2 Wetlands

### 3.2.1 On-Site Areas

No on-site wetland conditions were observed by Anchor QEA ecologists within the Study Area during the Project site visits, except for the artificial wetland at the east side of parcel number 0420174075 identified in March 2022. Wetland data sheets completed during the September 2021

and March 2022 Project site visits are provided in Appendix C, corresponding to the locations shown in Figure 6. Test plot locations (Figure 6) were collected from the areas that contained an unverified wetland layer (Figure 5) according to City sensitive areas maps (City of Puyallup 2022b), but wetland conditions related to this unverified wetland area were not present anywhere within the Study Area. Additionally, USFWS National Wetlands Inventory data (Figure 4; USFWS 2022a), WDFW PHS data (WDFW 2022a), and Pierce County critical area maps (Pierce County 2022) do not identify wetland areas within at least 1,500 feet of the Study Area, except to the south of 19th Avenue Northwest.

During our March 2022 field investigation, a small disturbed and inundated area was identified at the east side of parcel number 04020174075 (Figures 1 and 7). A total of three Data Plots (DPs) were explored, and our results are included in Appendix C. At DP-9, located at the center and at the lowest elevation of the inundated area, we identified hydric soil and wetland hydrology, but the area had no vegetation. However, at the other two DPs (DP-10 and DP-11) we did not observe all three criteria. In a signed letter dated March 20, 2022 (Appendix D), the previous property owner writes:

My wife and I have owned this property for over 20 years at the time of selling it in November 2021. During that time, there were two old barns as it was used as an animal farm. At no point in our ownership period was there standing water on the property. We had torn down the shed structures [...] In addition to this work, we had begun to relocate soil from the northeast corner of the property (adjacent to the WSDOT shared property line) to the location of the sheds, with the intent of raising the elevation in the footprint of the sheds. While excavating soil from the northeast, we noticed groundwater seeping up, which led us to stop using material from that location. We left the source material for the soil relocation bare and flat, which resulted in slightly lower elevations than surrounding areas. At no point during our 20+ year ownership was there ponding on-site or even puddles forming during heavy rain events.

Based on this information, and on our observations of site vegetation, soils, and hydrology, it is Anchor QEA's best professional opinion that the disturbed and partially inundated area is a created or artificial wetland and would be non-jurisdictional.

The same definition of wetlands is used in all three of the Washington State laws that regulate wetlands: the Growth Management Act, the Shoreline Management Act, and the Water Pollution Control Act. This definition distinguishes between "natural" and "artificial" wetlands:

"Wetlands" means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.

Washington Department of Ecology provided additional guidance on artificial wetlands in a July 2010 memo titled Focus on Irrigation-Influenced Wetlands (Publication No. 10-06-015; Appendix F) and provides the following test for artificial wetlands:

In order for a wetland to be considered artificial, it must meet both of the following characteristics:

- a. It was intentionally created; and
- b. It is in a formerly non-wetland (upland) site.

Our best professional judgment is that the on-site wetland meets both criteria and is therefore artificial and should be treated as exempt from regulation. The excavation was constructed intentionally. Additionally, the development proposed at the Project site may eliminate surface water runoff to the location of the artificial wetland, and this change may permanently deprive the area of the necessary hydrological input to support the artificial wetland's continuance. Even in cases where wetlands are found to have been unintentionally created—such as those resulting from a leaking irrigation or drainage pipe—repairs made to improve water conservation are not regulated, even if the repair or change in water regime results in the loss of the artificial wetlands.

Our review of Pierce soil mapping in this location (Figure 3) supports the determination that the wetlands are located in a formerly non-wetland area, with moderately well-drained soils typically associated with upland plant communities. NRCS maps soils across this portion of the Study Area as Sultan silt loam series and hydric soils are not indicated in close proximity by Pierce County PublicGIS. Because NRCS mapping does not include hydric soils in this area, it is unlikely that the Project site supported any wetlands prior to the excavation. Therefore, being both intentionally created and found in a formerly non-wetland (upland) site, the wetlands observed at the site are artificial and should be treated as exempt from regulation.

## 3.2.2 Southern Utility Easement Area

Adjacent properties south of 19th Avenue Northwest contain wetlands and associated buffers. These buffers do not extend onto the development area north of 19th Avenue Northwest, because the buffers are interrupted by the roadway. Regulatory buffers only occur on the same side of an existing roadway as the wetland and do not extend to the opposite side from the sensitive area. However, sewer and water lines will be installed in an easement just south of 19th Avenue Northwest that extends to the east and then south to North Levee Road East. During our March 2022 site investigation, Anchor QEA conducted additional wetland delineation work at the northern and eastern sides of the off-site wetland located south of 19th Avenue Northwest to confirm the utility easement would not extend into the wetland area. We recorded our findings in six Wetland Determination Data Forms (Appendix C). The wetland delineation is depicted in Figure 5. A preliminary rating is provided in Appendix C. Off-site Wetland A buffers will be temporarily impacted south of 19th Avenue Northwest during the construction of sewer and water utilities. Potential impacts to off-site Wetland A and associated buffers will be mitigated by construction stormwater best management practices following Pierce County's current Stormwater and Site Development Manual (Pierce County 2022b).

## 3.2.3 Eastern WSDOT Right-of-Way

As discussed, an agricultural ditch is present east of the Study Area. No wetlands were found to the west of the agricultural ditch during our March 2022 site visit that are in proximity to the Study Area. The Third-Party Report indicated the presence of potential wetland soils west of the ditch; however, our March 2022 site visit determined those soils to be side-cast soils from ditch maintenance that contained hydric soils. These soils are representative of the saturated condition of the ditch sediments prior to being side cast and do not qualify as wetland because they were relocated from the ditch.

However, our communications with the City and our review of the Third-Party Report indicate the presence of off-site wetlands to the east of the Study Area located at parcel numbers 0420201110 and 0420201111 within the WSDOT right-of-way. These two wetlands include Wetland 87, which is a small wetland east of the ditch, and Wetland 85, which is a large wetland located within active agricultural areas east of the ditch. These areas were not directly assessed as they are presumed to be delivered as part of the WSDOT SR 167 Extension project, currently in planning and design stages. Preliminary estimated wetland boundaries and associated buffers are presented in this report, which will be updated once those findings are finalized and made available.

## 3.2.4 Northwest of Study Area

The Third-Party Report also indicates an additional off-site wetland located to the northwest of the Study Area on the western edge of Freeman Road at parcel number 0420174032. As we did not have

permission to access the property, no delineation or rating information is provided in this report. A review of historical aerial imagery and observations from Freeman Road made during the March 2022 site investigation support the likely presence of wetlands at this location. The wetlands likely cover much of the central portion of the parcel and likely has PM1C and PSS1C Cowardin components. Any wetland buffers associated with this wetland are interrupted by Freeman Road, which lies between the off-site wetland and the Study Area.

### 3.3 Streams

No streams, drainage channels, seeps, or associated riparian habitats were observed by Anchor QEA ecologists within the Study Area during the September or March Project site visits. Additionally, WDFW PHS data (WDFW 2022a), SalmonScape data (WDFW 2022b), and City sensitive areas maps (City of Puyallup 2022b) do not identify any stream channels within 2,000 feet of the Study Area. Pierce County critical area maps (Pierce County 2022) identify Wapato Creek north of the Study Area and the Puyallup River south of the Project site, but they are not located within the Study Area and will not be affected by the Project.

An agricultural ditch is located adjacent to the Study Area to the northeast. This appears to be an artificially created linear feature that may not be regulated as a stream or fish and wildlife habitat conservation area or a shoreline of statewide significance, per PMC Chapter 21 (City of Puyallup 2022a). However, our conversation with the City and review of the Third-Party Report indicates that this status may change based on the findings of WSDOT and WDFW in their critical area assessment related to the WSDOT SR 167 Extension project. For the purposes of this report, a stream buffer has been applied to the ditch, but it is preliminary and conservative in order to support the critical area review for this project. This report will be updated when those findings are made available to us.

### 3.4 Fish and Wildlife Habitat Conservation Areas

Per PMC 21.06, fish and wildlife habitat conservation areas are areas that provide important nesting territory, as well as spawning and protection areas, for state and federally listed endangered, threatened, and sensitive species that have a primary association with the habitat area and state priority habitats (including species of local importance). No fish and wildlife habitat conservation areas are located within the Study Area.

### 3.4.1 Vegetation

Some undisturbed native vegetation communities are located within the Study Area. Areas of native vegetation occur along the eastern border of the Project site but are primarily east of the Study Area. Native plant species observed include black cottonwood (*Populus balsamifera*), red alder (*Alnus rubra*), red osier dogwood (*Cornus sericea*), Oregon ash (*Fraxinus latifolia*), Pacific crabapple (*Malus fusca*), common snowberry (*Symphoricarpos albus*), Nootka rose (*Rosa nutkana*), salal (*Gaultheria*)

*shallon*), northern bracken fern (*Pteridium aquilinum*), English holly (*Ilex aquifolium*), and field horsetail (*Equisetum arvense*). Many invasive species or noxious weeds were also noted as present, including include English ivy (*Hedera helix*), Himalayan blackberry (*Rubus armeniacus*), Evergreen blackberry (*Rubus laciniatus*), Canada thistle (*Cirsium arvense*), and reed canary grass (*Phalarais arundinacea*).

Areas located west of the fence line in the agricultural pastures included varieties of *Agrostis* and *Fescue* grasses, which were regularly mowed or grazed by sheep and llamas. Photographs of vegetation in the Project area are included in Appendix B.

### *3.4.2 Wildlife and Habitat*

The majority of the Study Area includes a managed landscape with mowed grass and ornamental vegetation. Potential habitat is limited to the small patches of native vegetation along the eastern property boundary. Wildlife use of the terrestrial habitat is likely dominated by disturbance-tolerant species typical of urban areas. Habitat surrounding the Project site includes fragmented and disturbed areas associated with residential and commercial development. Wildlife species observed during the September 2021 Project site visit included bird species common in urban areas of Pierce County, including crows (*Corvus brachyrhynchos*), house sparrows (*Passer domesticus*), and gull species (*Larus* spp.). No amphibian, reptile, or mammal species; tracks; or signs were observed during the Project site visits.

The on-site hydrology of the Study Area provides no habitat for aquatic species. The habitat within the agricultural ditch east of the Study Area is dominated by shallow standing water with little to no noticeable flow.

Our review of the Third-Party Report suggests that the off-site ditch may be reclassified from a non-jurisdictional ditch to a stream. According to PMC 21.06.1050, Type I, II, III, and IV streams require buffers widths of 150, 100, 50, and 35 feet, respectively. If the ditch is regulated as a stream, it would be categorized as a Type III stream with a 50-foot-wide buffer because it is not used by anadromous fish (no fish species have been documented in the ditch according to the WDFW PHS and SalmonScape websites) and it is wider than 2 feet (Figure 7).

## 3.4.3 Priority Species and Habitats

The WDFW PHS data (WDFW 2022a) do not document occurrences of any terrestrial species or priority habitats in the Study Area or within 3,000 feet of the Project site. No fish species have been documented in the off-site ditch according to the WDFW PHS and SalmonScape (WDFW 2022b) websites.

### 3.4.3.1 ESA-Listed Species and Critical Habitat

The assessment for ESA-listed species and critical habitats for this Project was performed based on data provided for the Project site. The following subsections describe ESA-listed species and critical habitats that may occur in the vicinity of the Study Area.

ESA-listed species and critical habitats under NMFS and USFWS jurisdiction in Western Washington are referenced on the agencies' websites. NMFS identifies ESA-listed species that occur or may occur within a broad geographic area, such as an evolutionarily significant unit or a distinct population segment, rather than a project-specific location (NMFS 2022). The USFWS identifies ESA-listed species that occur or may occur within a specific location where a project is proposed (USFWS 2021b).

### 3.4.3.2 Federally Listed Species That May Occur in the Study Area

The September 2022 status of federally listed species and critical habitats protected under the ESA that occur or may occur within the Study Area is presented in Table 1. As shown in Table 1, three ESA-listed bird species occur or may occur within the Study Area. One ESA-listed insect species is identified as potentially occurring within the Study Area. Four ESA-listed fish species are present in the nearby Puyallup River, and steelhead trout (*Oncorhynchus mykiss*), Chinook salmon (*Oncorhynchus tshawytscha*), bull trout (*Salvelinus confluentus*), and Dolly Varden (*S. malma*). All four have a designated critical habitat in the Puyallup River. However, these species do not occur or are very unlikely to occur in the Study Area based on the species' life history and habitat requirements. No ESA-listed plant or mammal species are identified as potentially occurring within the Study Area. Fish species listed in Table 1 are located within the Puyallup River but not in the agricultural ditch. These species would not be susceptible to impacts related to construction, as no in-water work is proposed, but they are relevant considering the Project is located within the Puyallup River floodplain.

Table 1Federally Listed Species That May Occur in Study Area

Species	Status	Agency	Critical Habitat	
Birds				
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )	Threatened	USFWS	Designated (does not include Study Area)	
Streaked horned lark ( <i>Eremophila alpestris strigata</i> )	Threatened	USFWS	Designated (does not include Study Area)	
Yellow-billed cuckoo (Cocczyus americanus)	Threatened USFWS		Designated (does not include Study Area)	
Insects				
Monarch butterfly (Danaus plexippus)	Candidate	USFWS	Designated (does not include Study Area)	
Fish				
Steelhead trout (Oncorhynchus mykiss)	Threatened	NMFS	Designated – Puyallup River	
Chinook salmon (Oncorhynchus tshawytscha)	Threatened	NMFS	Designated – Puyallup River	
Bull trout (Salvelinus malma/S. confluentus)	Threatened	USFWS	Designated – Puyallup River	
Dolly Varden (S. malma/S. confluentus)	Threatened USFWS		Designated – Puyallup River	

Marbled murrelets are more commonly associated with marine habitat instead of the freshwater habitat in the Study Area. The urbanized and industrial areas within the Project site are unfavorable to marbled murrelets, streaked horned larks, and yellow-billed cuckoos.

## 3.5 Special Flood Hazard Areas

The Puyallup River flows approximately 1,200 feet south of the Study Area, south of North Levee Road East. The Study Area is located within the 100-year floodplain of the Puyallup River within FEMA Flood Zone AE (FEMA 1999). The base flood elevation (BFE) for the Puyallup River is 33 feet North American Vertical Datum of 1988 (NAVD88); however, the levee along North Levee Road East is not officially certified, meaning the floodplain is mapped as extending onto the Study Area. Per PMC 21.07, the floodplain within the Study Area is a special flood hazard area and a habitat assessment should be prepared by a qualified professional to evaluate the effects and/or indirect effects of the proposed development (during both construction and operation) on floodplain functions. Section 5 of this report documents that the proposed development will not result in impacts to any species listed as threatened or endangered under the ESA.

## 4 Wetland Delineation

Anchor QEA wetland scientists performed wetland delineation field work on March 11, 2022. One wetland was delineated off-site: Wetland A, a category III emergent scrub-shrub and forested depressional wetland located to the south of 19th Avenue Northwest. One artificial wetland was delineated on-site: Wetland B, an unrated emergent depressional wetland located on the eastern portion of parcel number 0420174075. Following our review of the Third-Party Report, we also identified four other off-site wetlands, with three located on the WSDOT owned properties to the east and one located to the west of Freeman Road. Once the results of the WSDOT SR 167 Extension CAR are provided, this report will be updated to include the off-site wetland's final ratings and associated wetland buffer widths. Figure 7 provides a preliminary depiction of the wetlands and how their anticipated buffers may extend onto the eastern side of the Study Area.

The following sections describe the methodology and results of the wetland delineation. Critical areas figures are attached to this CAR, including wetland delineation results in Figure 5. Site photos are included in Appendix B, wetland determination data forms and wetland rating forms are provided in Appendix C.

### 4.1 Methodology

This section describes the methodology used to perform the wetland delineation, including the review of existing information and field investigation procedures. These methods are consistent with current federal and state agency requirements, as well as local jurisdiction requirements, for performing wetland delineations and identifying protective wetland buffer widths.

Field work was conducted according to methods presented in the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987); 2010 Regional Supplement (USACE 2010); and Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, Version 8.1, 2017 (USDA and NRCS 2016). Soil colors were classified by their numerical description as identified on a Munsell Soil Color Chart (Munsell 2000).

The U.S. Army Corps of Engineers defines wetlands as follows:

Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. (Environmental Laboratory 1987)

The method for delineating wetlands is based on the presence of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. Hydrophytic vegetation is "the macrophytic plant life

that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987). Hydric soils are "formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Environmental Laboratory 1987). Wetland hydrology "encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season" (Ecology 1997). Data collection methods for each of these parameters are described in the following subsections.

A total of 12 data plots were sampled and recorded. Vegetation, soils, and hydrology information were collected at each of the plots and recorded on field data sheets (Appendix C). Wetland boundaries were determined based upon plot data and visual observations of the wetland. The wetland location, wetland boundary, and data plot locations were flagged and recorded by Anchor QEA wetland scientists using a Trimble Geo7x GPS unit.

### 4.1.1 Vegetation

Plant species occurring in each plot were recorded on field data forms, with one data form per plot. Percent cover for each plant species was estimated in the plot, and dominant plant species were identified. At each plot, trees within a 30-foot radius, shrubs and saplings within a 15-foot radius, and herb and forb species within a 5-foot radius from the center of the plot were identified and recorded. Plant indicator status was determined using the National Wetland Plant List: 2016 Wetland Ratings (Lichvar et al. 2016), and a determination was made as to whether the vegetation in the plot was hydrophytic. To meet the hydrophytic parameter, more than 50% of the dominant species, with 20% or greater cover, must have an indicator of obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC). Table 2 shows the definitions for each wetland indicator status category.

Indicator Status	Description				
Obligate Wetland (OBL)	Plant species occur almost always in wetlands (estimated probability greater than 99%) under natural conditions.				
Facultative Wetland (FACW)	Plant species usually occur in wetlands (estimated probability 67% to 99%) but are occasionally found in non-wetlands.				
Facultative (FAC)	Plant species are equally likely to occur in wetlands or non-wetlands (estimated probability 34% to 66%).				
Facultative Upland (FACU)	Plant species usually occur in non-wetlands (estimated probability 67% to 99%) but are occasionally found in wetlands.				
Obligate Upland (UPL)	Plant species occur almost always in non-wetlands (estimated probability greater than 99%) under natural conditions.				

# Table 2Wetland Plant Indicator Status Definitions

Source: Reed 1988

## 4.1.2 Soils

Soils were sampled in each plot and evaluated for hydric soil indicators. Soil pits were dug to a depth of 18 inches, unless a restrictive layer was present. Hydric soil indicators include low soil matrix chroma, gleying, and redoximorphic (redox) features. Redox features are spots of contrasting color that occur within the soil matrix (the predominant soil color). Gleyed soils are predominantly bluish, greenish, or grayish in color.

## 4.1.3 Hydrology

Wetland hydrology was evaluated at each plot to determine whether it "encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season" (Ecology 1997). Field observations of saturation, inundation, and other indicators of wetland hydrology, such as water-stained leaves and drainage patterns in wetlands, were recorded.

## 4.1.4 Wetland Community Types

Wetland community types are discussed according to the USFWS classification developed by Cowardin et al. (1979) for use in the National Wetlands Inventory (Cowardin system). This system, published in 1979 by a team of USFWS scientists led by L.M. Cowardin, bases the classification of wetlands on their physical characteristics, such as the general type of vegetation in the wetland (e.g., trees, shrubs, grass) and how much, and where, water is present in the wetland. The Cowardin system provides a classification for every known wetland type that occurs throughout the United States, and under this system a wetland can be classified as having one or more wetland community types. The community types found during this investigation included the following:

- **Palustrine emergent (PEM):** These wetlands have erect, rooted, herbaceous vegetation present for most of the growing season in most years.
- **Palustrine scrub-shrub (PSS):** These wetlands have 30% cover of woody vegetation that is less than 20 feet high.
- **Palustrine forested (PFO):** These wetlands have at least 30% cover of woody vegetation that is at least 20 feet high.

### 4.1.5 Wetland Ratings

Wetland ratings were determined using the most current version of the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Washington rating system; Hruby 2014) and according to the City of Puyallup wetland rating criteria, as defined in the PMC. The Washington rating system was updated by Ecology as of January 1, 2015.

The system developed by Ecology is used to differentiate wetlands based on their sensitivity to disturbance, their significance in the watershed, their rarity, our ability to replace them, and the

beneficial functions they provide to society. The Washington rating system requires the user to collect specific information about the wetland in a step-by-step process. Three major functions are analyzed: water quality improvement, hydrologic functions, and wildlife habitat. Ratings are based on a point system, where points are given if a wetland meets specific criteria related to the wetland's potential and opportunity to provide certain benefits.

Per the Washington rating system, wetlands are categorized according to the following criteria and associated point system where points are awarded to three functional value categories (water quality improvement, hydrologic functions, and habitat):

- **Category I wetlands** (23 or more points) represent a unique or rare wetland type, are more sensitive to disturbance, or are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime.
- **Category II wetlands** (20 to 22 points) are difficult, though not impossible, to replace and provide high levels of some functions.
- **Category III wetlands** (16 to 19 points) have moderate levels of functions. They have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than category II wetlands.
- **Category IV wetlands** (less than 16 points) have the lowest levels of functions and are often heavily disturbed.

PMC classifies wetlands into four categories (categories I, II, III, and IV) based on the Washington rating system.

### 4.1.6 Wetlands Function Assessment

The functions of wetlands were rated according to the Washington rating system. Using this system, wetlands were rated based on points awarded to three categories of functions: water quality, hydrologic functions, and wildlife habitat. Detailed scoring, based on Washington wetland rating forms, is provided in Appendix C.

## 4.1.7 State Hydrogeomorphic Classification System

Scientists have come to understand that wetlands can perform functions in different ways. The way a wetland functions depends to a large degree on hydrologic and geomorphic conditions. To recognize these differences among wetlands, a way to group or classify them has been developed. This classification system, called the hydrogeomorphic (HGM) classification, groups wetlands into categories based on the geomorphic and hydrologic characteristics that control many functions.

The Washington rating system incorporates the HGM classification as part of the questionnaire for characterizing a wetland's functions. The Washington rating system uses only the highest grouping in the HGM classification: wetland class. Wetland classes are based on geomorphic settings, such as

riverine, slope, lake fringe, or depressional. A classification key is provided within the rating form to help identify which of the following HGM classifications apply to the wetland: riverine, depressional, slope, lake fringe, tidal fringe, or flats.

### 4.2 Results

Anchor QEA wetland scientists delineated one wetland (Wetland A; off-site) and one artificial wetland (Wetland B; on-site) within the Study Area (Figure 7). These wetlands are summarized in Tables 3 and 4 and described in more detail in the following subsections. Site photographs showing these features are included in Appendix B. Wetland determination data forms are provided in Appendix C.

#### Table 3 Wetlands Delineated Within the Study Area

				Total Wetland Area	
Wetland	Cowardin Class <sup>1</sup>	HGM Class	Category	Square Feet	Acres
А	PEM1C, PSS1C PFO1C	Depressional	III	323,650	7.43
В	PEM1C	Depressional	Artificial	1,218	0.03

Notes:

1. PEM1C: palustrine, emergent, persistent, seasonally flooded; PSS1: palustrine, scrub-shrub, persistent, seasonally flooded: PFO1C: palustrine, forested, persistent, seasonally flooded

For the Washington rating system, a low, moderate, or high rating is based on three functions: improving water quality, hydrologic, and habitat. Within each of these three functions are three subfunction categories: site potential, landscape potential, and value. Each of these subfunction categories is rated as low, moderate, or high. Wetland functions and scores for Wetland A using the Washington rating system are shown in Table 5. The Washington wetland rating forms are provided in Appendix C.

# Table 4Summary of Scores for Wetland Functions and Values

Wetland and Function	Improving Water Quality	Hydrologic	Habitat	Total Functions Score <sup>1</sup>	Washington State Rating	Puyallup Rating
			Wetland A			
Site Potential	Moderate	Moderate	Moderate			
Landscape Potential	Moderate	High	Low			
Value	Moderate	Moderate	Low			
Score Based on Rating <sup>1</sup>	6	7	4	17	Ш	III

Wetland and Function	Improving Water Quality	Hydrologic	Habitat	Total Functions Score <sup>1</sup>	Washington State Rating	Puyallup Rating
			Wetland B			
Site Potential	NA	NA	NA			
Landscape Potential	NA	NA	NA			
Value	NA	NA	NA			
Score Based on Rating <sup>1</sup>	-	-	-	-	-	-

Notes: Potential total score per function is 9, for a potential total score of 27. Wetland B rating is not applicable (NA), as it is an artificial wetland.

The following sections describe the wetlands identified during our field investigations and wetland delineation. The wetland is classified and rated according to the Cowardin system and the Washington rating system.

### 4.2.1 Wetland A

Wetland A is 7.43 acres (323,650 square feet) with PEM, PSS, and PFO vegetation classes and has a depressional HGM classification. The approximate wetland position is mapped on Pierce County's PublicGIS wetland inventory (Pierce County 2022). In March 2022, Anchor QEA ecologists provided an additional delineation along the northern and eastern boundaries and the current extent was confirmed (Figure 7).

### 4.2.1.1 Vegetation

Wetland A is dominated by forest vegetation species such as black cottonwood (*Populus trichocarpa*; FAC), red alder (*Alnus rubra*; FAC), and red osier dogwood (*cornus sericea*; FACW), interspersed with a few patches of Himalayan blackberry (*Rubus armeniacus*; FAC). Other species found along the eastern edge of the wetland include Sitka spruce (*Picea sitchensis*; FAC), osoberry (*Oemleria cerasiformis*; FACU), snowberry (*Symphoricarpos albus*; FACU), red current (*Ribes sanguineum*; FACU), salmonberry (*Rubus spectabilis*; FAC), and common ivy (*Hedera helix*; FACU).

Overall, the vegetation in Wetland A meets the dominance test hydrophytic vegetation indicator and satisfies the hydrophytic vegetation criteria of the 2010 Regional Supplement (USACE 2010).

### 4.2.1.2 Soils

Soils in Wetland A are mapped as Pilchuck fine sand, a soil type that is classified as hydric. The soils observed in Wetland A were generally dark at the surface, with a depleted matrix below and redoximorphic features increasing with depth. Upon inspection, the predominant textures were confirmed to be silt loam and sandy loam.

Overall, soil samples met the Depleted Below Dark Surface (A11) hydric soil indicator, satisfying the hydric soil criteria of the 2010 Regional Supplement.

### 4.2.1.3 Hydrology

Wetland hydrology was confirmed in Wetland A at two data points by a surface water (A1), high water table (A2), saturation (A3), inundation visible on aerial imagery (B7), sparsely vegetated concave surface (B8), and water-stained leaves (B9). The primary water regimes of Wetland A were determined to be permanently flooded, seasonally flooded, and saturated.

### 4.2.1.4 Boundary Determination

The eastern and northern wetland and upland boundaries of Wetland A were determined by an abrupt change in topography and the presence of hydric soils, wetland hydrology, and hydrophytic vegetation. The southern boundary was estimated from publicly available aerial imagery and the Pierce County GIS Wetlands Layer. The southern boundary was not delineated during the March 11, 2022, site visit.

### 4.2.1.5 Wetland Functions Scores and Rating

Wetland A is rated as a category III wetland, with a score of six for water quality functions, a score of seven for hydrologic functions, and a score of four for habitat functions. The ratings are discussed in more detail in the following sections, and the wetland rating form for Wetland A is provided in Appendix C. Wetland B was not rated as it is artificial and likely non-jurisdictional.

### 4.2.1.5.1 Water Quality Functions

Wetland A has moderate functions for improving water quality based on the Washington rating system for all three components: site potential, landscape potential, and value. Contributing factors to this function rating include that the wetland is in a depression with no surface water leaving it (no outlet), persistent not grazed plants covering more than 50% of the wetland, the absence of septic systems within 150 feet, and the presence of a 303(d)-listed aquatic resource within the subbasin.

### 4.2.1.5.2 Hydrologic Functions

Wetland A has moderate, high, and moderate hydrologic functions based on the Washington rating system for site potential, landscape potential, and value, respectively. Factors that contribute to this function include marks of ponding greater than 3 feet deep, intensive land uses within the subbasin, stormwater discharging directly into the wetland, and surface flooding problems in a subbasin further down-gradient from the wetland.

### 4.2.1.5.3 Habitat Functions

Wetland A has moderate, moderate, and low habitat functions based on the Washington rating system for site potential, landscape potential, and value, respectively. Factors that contribute to this

function include: the presence of three Cowardin plant classes and three hydroperiods; large, downed woody debris; standing snags; stable steep banks of fine material; thin-stemmed persistent plants for amphibian habitat; adjacent high land use intensity; and the lack of nearby undisturbed habitat.

### 4.2.1.6 Puyallup Wetland Buffer Guidance

Required wetland buffers have been identified according to the current PMC. PMC identifies minimum protective buffer widths for category III wetlands based on the Ecology habitat rating score, per the Washington rating system, and land use intensity. Per PMC 21.06.930 2 (D), the minimum proposed buffer width for a category III wetland with a habitat score of 3 to 5 points and high land use intensity on the upland side of the buffer is 80 feet, measured from the wetland boundary as delineated in the field. Therefore, the proposed buffer width for Wetland A is 80 feet. However, any Wetland A buffer that may project onto the Study Area is interrupted by a roadway (19th Avenue Northwest) that lies between the wetland and the Study Area. The temporary impacts from the proposed sewer easement through the northern and eastern buffer are discussed in Section 5.

### 4.2.2 Wetland B

As discussed in Section 3.2.1, Wetland B is an artificial wetland and is not regulated.

### 4.2.3 Eastern WSDOT Right-of-Way

A small wetland, identified as Wetland 87, was delineated on the WSDOT right-of-way property by WSDOT consultants. It is located east of the ditch. The preliminary rating is a category III wetland with a low habitat score, which is based on field reconnaissance nearby the wetland from the west side of the ditch. Per PMC 21.06.930 2 (D), the minimum proposed buffer width for a category III wetland with a habitat score of 3 to 5 points and high land use intensity on the upland side of the buffer is 80 feet, measured from the wetland boundary as delineated in the field. This buffer does not extend onto the Study Area.

A larger wetland, identified as Wetland 85, was delineated on the WSDOT right-of-way property by WSDOT consultants. It is located east of the ditch and is in an active agricultural area. The preliminary rating is a category IV wetland with a low habitat score, based on field reconnaissance near the wetland from the west side of the ditch. Per PMC 21.06.930 2 (E), the minimum proposed buffer width for a category IV wetland with a high land use intensity on the upland side of the buffer is 50 feet, measured from the wetland boundary as delineated in the field. This buffer does not extend onto the Study Area.

# 5 Critical Areas Impact Assessment

This section provides a summary of potential impacts to wetlands and fish and wildlife habitat conservation areas.

Project construction activities will not occur in stream or regulated wetland areas. The Project will not have measurable short-term or long-term impacts on wildlife species. Noise associated with construction activities could result in avoidance behavior by some wildlife species, if they are present. However, the Study Area is an industrial, agricultural, and residential area that experiences ongoing human disturbance. Noise levels associated with operation of the Project site after construction are expected to be consistent with current ambient noise levels.

### 5.1 On-Site Wetlands and Buffers

A sewer line is proposed to be installed within the Wetland A buffer. This will result in a temporary impact to the buffer, which will be restored following construction. The easement is 40 feet wide and is located south of 19th Avenue Northwest, extending to the east on parcel 0420201114 for about 640 feet and south for about 310 feet until it meets the O'Reilly Auto Parts property (total easement area is 37,973 square feet). Temporary impacts will result from removal of black cottonwood, red alder, and red osier dogwood trees, along with removal of Himalayan blackberry and a few native shrubs. Large trees within the 40-foot easement will be avoided, to the extent feasible. The temporary impact area will be restored with installation of native shrubs, such as osoberry, snowberry, red current, and salmonberry, and a native grass seed mix.

Buffers for wetlands located around the Study Area do not extend onto the proposed development area. Therefore, no permanent impacts are anticipated for wetland buffers. This includes buffers for Wetlands 85 and 87 located in the WSDOT right-of-way and for the off-site wetland located east of Freeman Road.

## 5.2 On-Site Stream Buffer

The agricultural ditch may be classified as a class III stream, which would carry a 50-foot buffer, pending final determination from WDFW. A 50-foot buffer projected onto the Study Area results in approximately 1,540 square feet, with 1319 square feet on parcel 0420174075 and 221.10 square feet on parcel 0420205016. We estimate the maximum width of the on-site buffer to be approximately 29 feet. The proposed development has been reduced to avoid impacts to this stream buffer, as shown in the Preliminary Site Plans included in Appendix A.

### 5.3 Special Flood Hazard Areas Habitat Assessment

The Study Area is located within the 100-year floodplain of the Puyallup River and within a Pierce County designated special flood hazard area. As discussed in Section 3.5, the Puyallup River flows approximately 1,200 feet south of the Study Area, south of North Levee Road East. The proposed Project includes construction activities within the 100-year floodplain (Appendix A). The Project will be constructed within the footprint of current low-density residential lots and agricultural fields that experience ongoing human use and disturbance from automobiles, livestock, and agricultural activities.

The BFE varies across the Study Area between 32 and 33.7 feet NAVD88, and the two warehouse buildings will be elevated so that the finished floor is elevated approximately 1 foot above the BFE. This will place all electrical and other equipment at least 1 foot above the BFE as well. These design features will avoid or minimize potential impacts to the floodplain, reduce the potential for inundation during flood events, and meet City of Puyallup requirements. The orientation of the proposed warehouses will be situated in line with one another (the northern warehouse will be within the hydraulic shadow of the southern building to align with anticipated flood flows through the property when they occur). This design is intended to minimize potential impacts on floodwater velocity.

To construct the proposed structures, a net cut of material will be achieved within the floodplain through proposed final grades and by the use of compensatory storage west of the northern building (Building A). The proposed grading will result in an increase of local floodwater storage volume. Material removed from the floodplain will be located within the same floodplain cross section and perpendicular to the flow. These mitigation measures are anticipated to result in zero net fill and will not cause any rise to the BFE within the floodplain, consistent with PMC 21.07.

The federal habitat assessment guidelines require an analysis of other potential impacts to the floodplain environment. The following includes an analysis of habitat assessment elements per the minimum habitat assessment standards:

- **Project and action area description, maps, and site plans have been provided.** See Project Description and figures in Appendix A.
- Methods of work are described. See Project Description and figures in Appendix A.
- **Projects in the Protected Area are designed to inherently avoid detrimental impacts without mitigation**. The Project is located within the footprint of residential and agricultural fields that experience ongoing human use and disturbance. The Project is designed to avoid or minimize potential detrimental impacts through the orientation of the buildings relative to flood flows, stormwater facilities, and removal of soils from other properties within the floodplain.
- **Direct and indirect impacts.** Direct impacts include minor impacts to the floodplain from construction as described in this CAR. Long-term impacts include the presence of structures within the floodplain in an area previously used for residences and agriculture. The long-term environmental benefits from the Project, including improved water quality from runoff, are

anticipated to offset any potential short-term impacts from construction and operation of the facility. Indirect impacts from the Project may include improved downstream water quality in the Puyallup River and reductions in nutrient loads to the Puyallup River from runoff and during flood events.

- Interrelated and interdependent activities. All development impacts associated with this Project are described in this CAR. No other projects are known that would result in interrelated and interdependent activities.
- **Cumulative impacts.** Cumulative impacts are those that could result in the combination of effects from individual project actions occurring over time. If left unmitigated, the cumulative or incremental effects of these actions have the potential to result in significant environmental impacts. The Project is located within an area characterized by residences, agricultural fields and associated structures, and industrial buildings, such as warehouses. At the time of publication, there are no nearby projects that are anticipated to contribute to cumulative impacts at this time. However, it is anticipated that future projects in the area would be required to conduct a separate, project-specific environmental review, as appropriate. It is anticipated that mitigation measures implemented for each project would decrease the potential for cumulative adverse effects on the environment.
- Other habitat assessment elements include the following:
  - 1. Water quantity and quality. As described previously, the Project is anticipated to result in a net improvement to water quality from runoff and during flood events due to the construction of stormwater facilities. During construction, stormwater control measures will be implemented to avoid or minimize potential short-term construction impacts on water quality to be shown in a Stormwater Pollution Prevention Plan and Temporary Erosion and Soil Control Plan. A Stormwater Site Plan will also be prepared, describing the stormwater control best management practices (BMPs) incorporated into the Project to meet the requirements of the City of Puyallup stormwater regulations. The Project will have no impact on water quantity.
  - 2. Flood velocities and volumes. As described previously, the Project has been designed to accommodate flood velocities through orientation of the structures (with the north warehouse designed to be within the hydraulic shadow of south warehouse) and to align them with floodwaters. The Project will not create any rapid water runoff conditions and therefore will not impact flood flows downstream. The Project will have a negligible impact on flood volumes.
  - **3. Flood storage capacity.** Earthwork cuts and fills will be balanced at the site to the extent possible. The construction of improvements at the proposed stormwater facilities will provide no net loss to flood storage capacity.
  - **4. Riparian vegetation.** The Project is located over 1,200 feet from the Puyallup River and associated riparian buffers. No riparian vegetation will be impacted by the Project.

- 5. Measures to preserve habitat forming processes. No in-water work is proposed, and no impacts to habitat forming processes will occur from the Project; therefore, no measures to preserve habitat forming processes are proposed.
- 6. Refuge from higher velocity floodwaters is provided. The presence of the structures within the floodplain may provide limited refuge from higher velocity floodwaters. No additional measures are proposed.
- 7. Spawning substrate is provided or protected. No in-water work or work in the vicinity of salmonid spawning habitat is proposed, and no impacts to spawning substrate will occur from the Project; therefore, no spawning substrate needs to be provided by the Project.
- 8. No adverse effects from habitat isolation, bank armoring, channel straightening, construction effects (transport of sediment from the work area, noise, etc.), or direct effects. No habitat isolation, bank armoring, or channel straightening is proposed as part of the Project. To avoid or minimize potential construction effects from the Project, stormwater control measures will be implemented to avoid or minimize potential construction impacts on water quality and will be shown in the Stormwater Pollution Prevention Plan and Temporary Erosion and Soil Control Plan. As described above, a Stormwater Site Plan will also be prepared describing the stormwater control BMPs incorporated into the Project to meet the requirements of the City of Puyallup stormwater regulations. Overall, the long-term environmental benefits from the Project, including improved water quality from runoff, are anticipated to offset any potential short-term impacts from construction and operation of the facility.

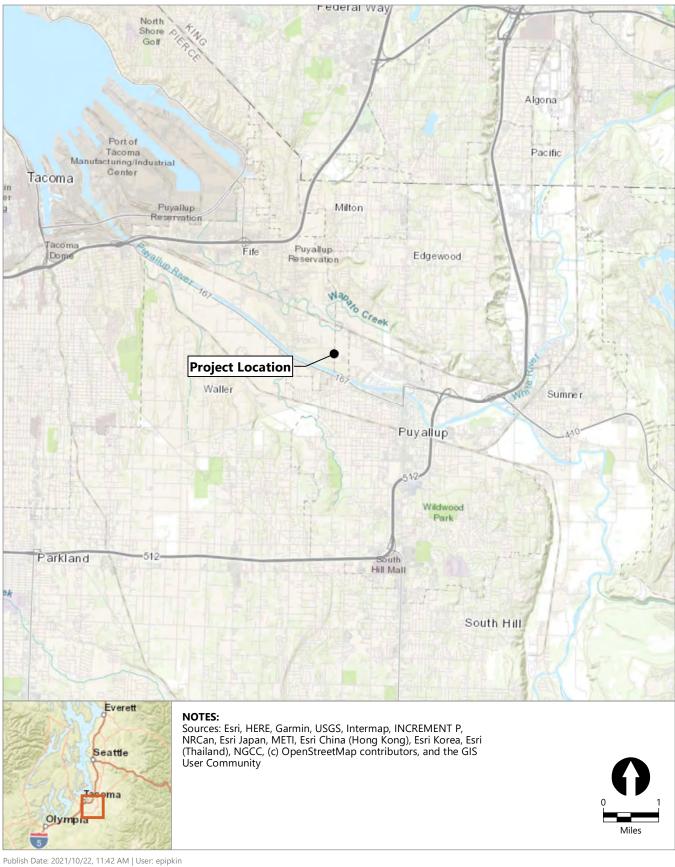
For the reasons stated above, the proposed project may affect, but is not likely to adversely affect, listed fish NMFS species, as evaluated per the NMFS Biological Opinion for the NFIP (NMFS 2008), or listed USFWS species.

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# Figures



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Figure 1 Vicinity Map Critical Area Report Freeman Road Logistics

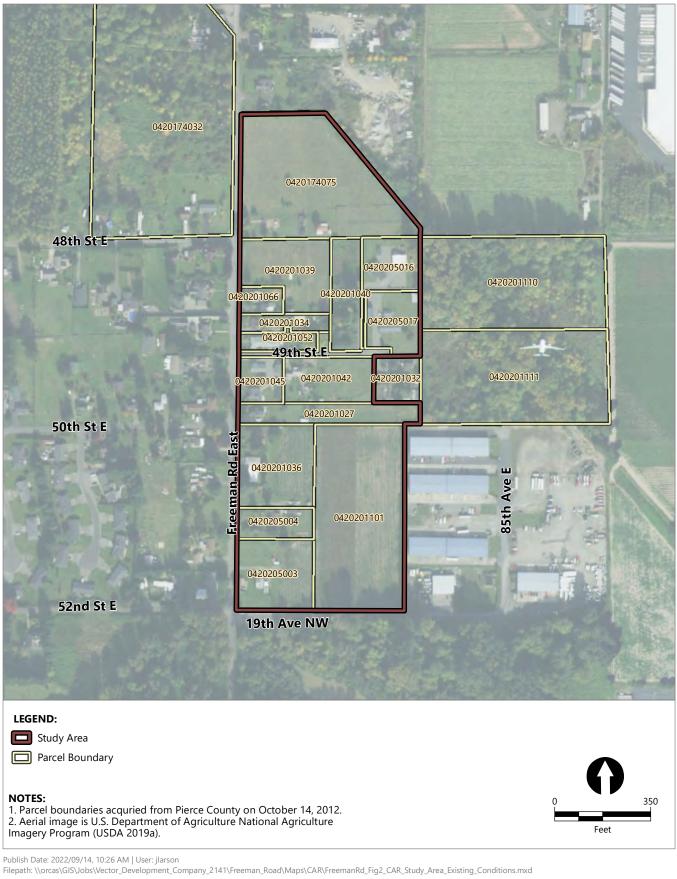
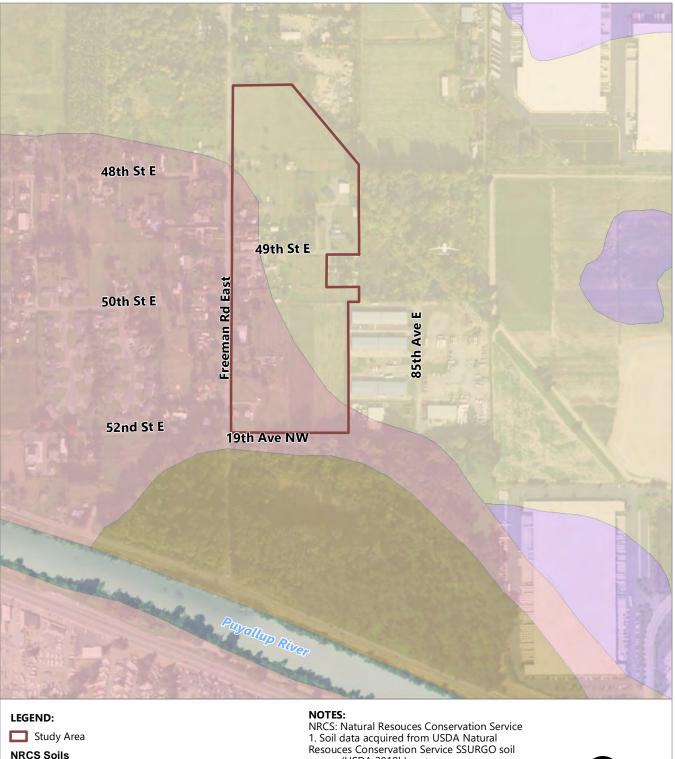




Figure 2 **Study Area and Existing Conditions** 

> Critical Area Report Freeman Road Logistics



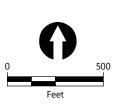
Briscot loam

Pilchuck fine sand

Puyallup fine sandy loam

Sultan silt loam

NRCS: Natural Resouces Conservation Service 1. Soil data acquired from USDA Natural Resouces Conservation Service SSURGO soil survey (USDA 2019b). 2. Aerial image is U.S. Department of Agriculture National Agriculture Imagery Program (USDA 2019).



Publish Date: 2022/09/14, 10:41 AM | User: jlarson Filepath: \\orcas\GIS\Jobs\Vector\_Development\_Company\_2141\Freeman\_Road\Maps\CAR\FreemanRd\_Fig3\_CAR\_NRCS\_Soils.mxd



Figure 3 NRCS Soils Map

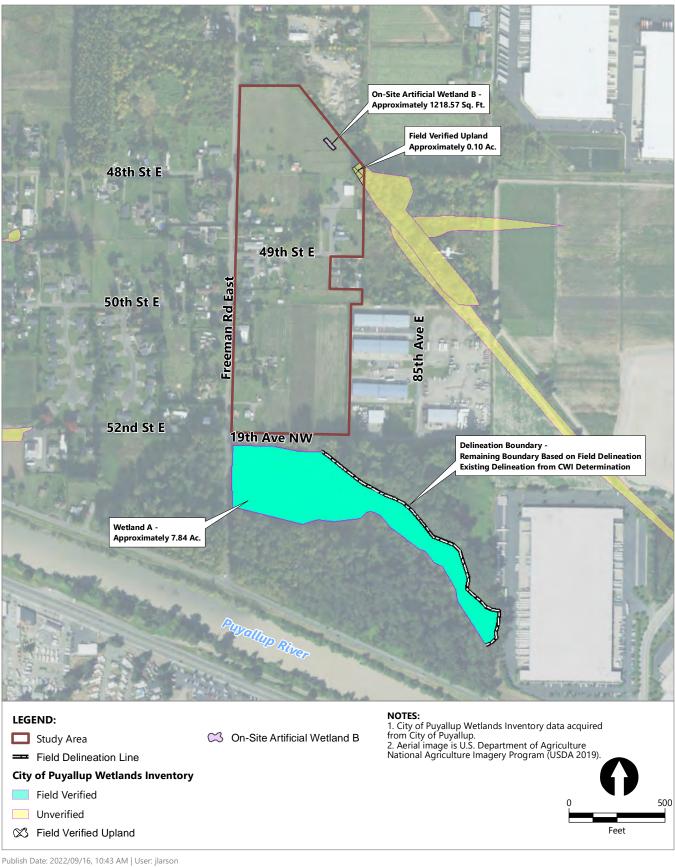
Critical Area Report Freeman Road Logistics



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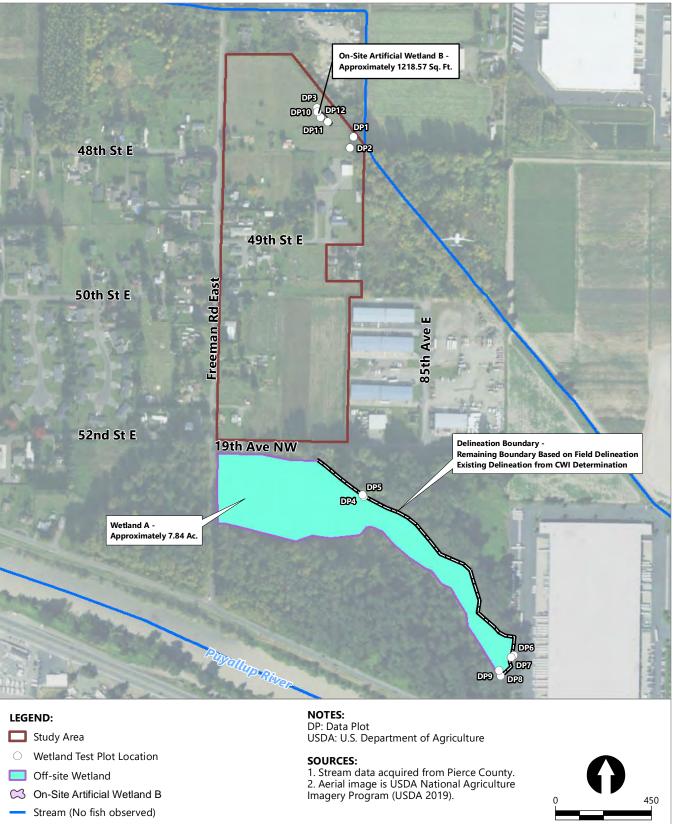
### Figure 4 USFWS National Wetlands Inventory Map



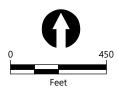
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### Figure 5 City of Puyallup Wetlands Inventory Map



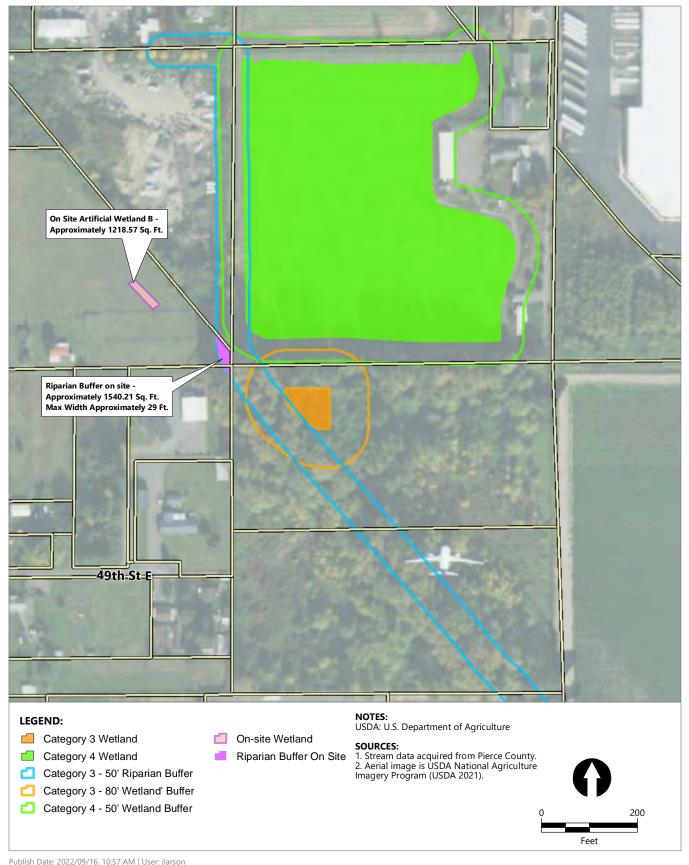
Field Delineation Line



Publish Date: 2022/09/16, 9:17 AM | User: jlarson  $\label{eq:constraint} Filepath: \label{eq:constraint} Vorcas \label{eq:constraint} GS \label{eq:constraint} Vorcas \label{eq:constraint} Vorcas \label{eq:constraint} GS \label{eq:constraint} Vorcas \label{eq:constraint} GS \label{eq:constraint} Vorcas \label{eq:constraint} GS \label{eq:constraint} Vorcas \label{eq:constraint} GS \label{eq:constraint} Vorcas \label{eq:constraint} Vorc$ 



Figure 6 **Critical Area Results** 

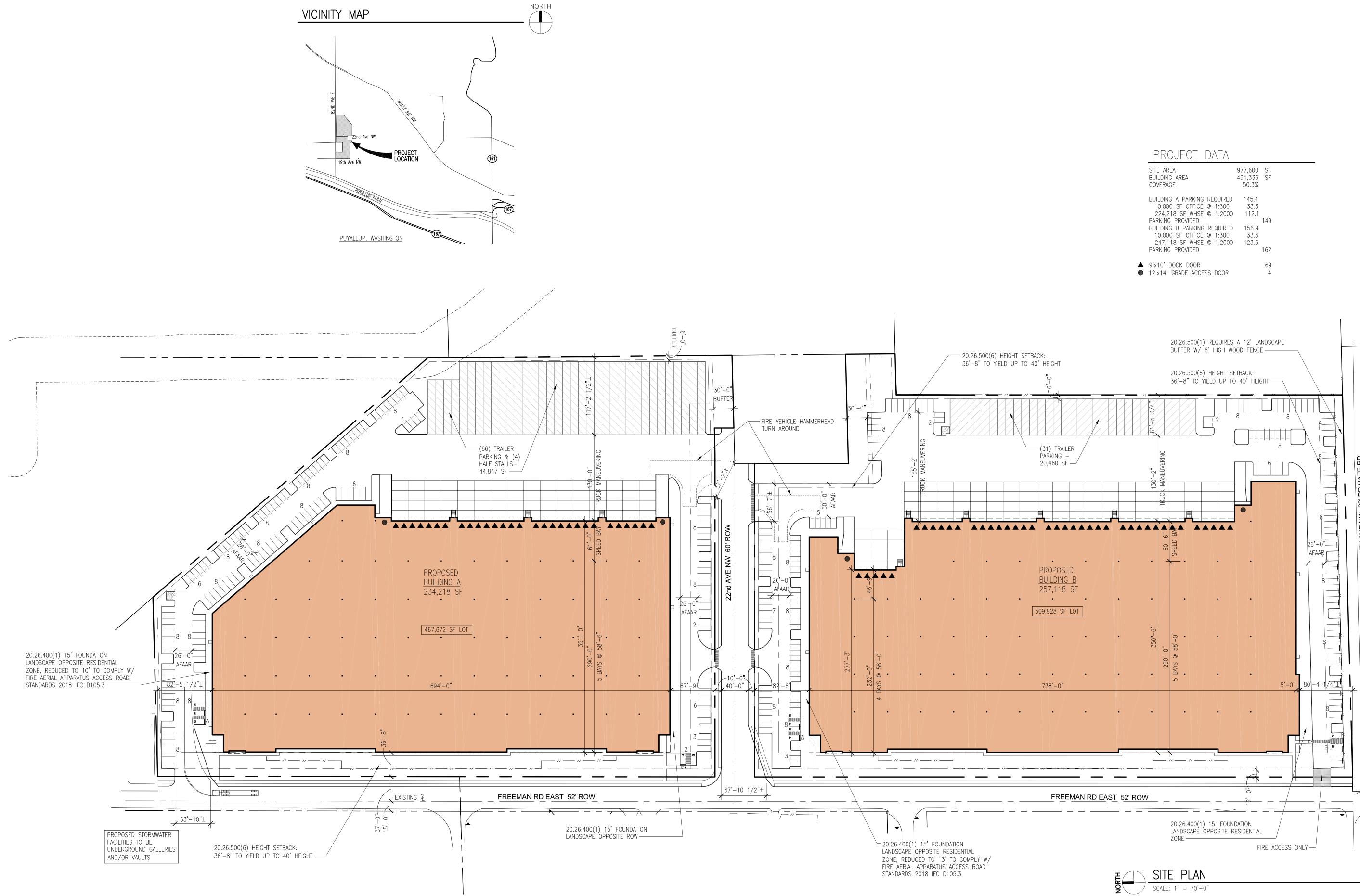


Publish Date: 2022/09/16, 10:57 AM | User: jlarson Filepath: \\orcas\GIS\Obs\Vector\_Development\_Company\_2141\Freeman\_Road\Maps\CAR\FreemanRd\_Fig7\_CAR\_Critical\_Areas\_and\_Buffers.mxd



### Figure 7 Off-Site WSDOT Parcels Critical Areas and Buffers

Appendix A Preliminary Plan Set

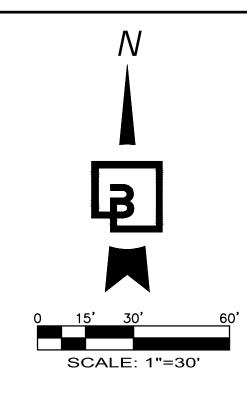


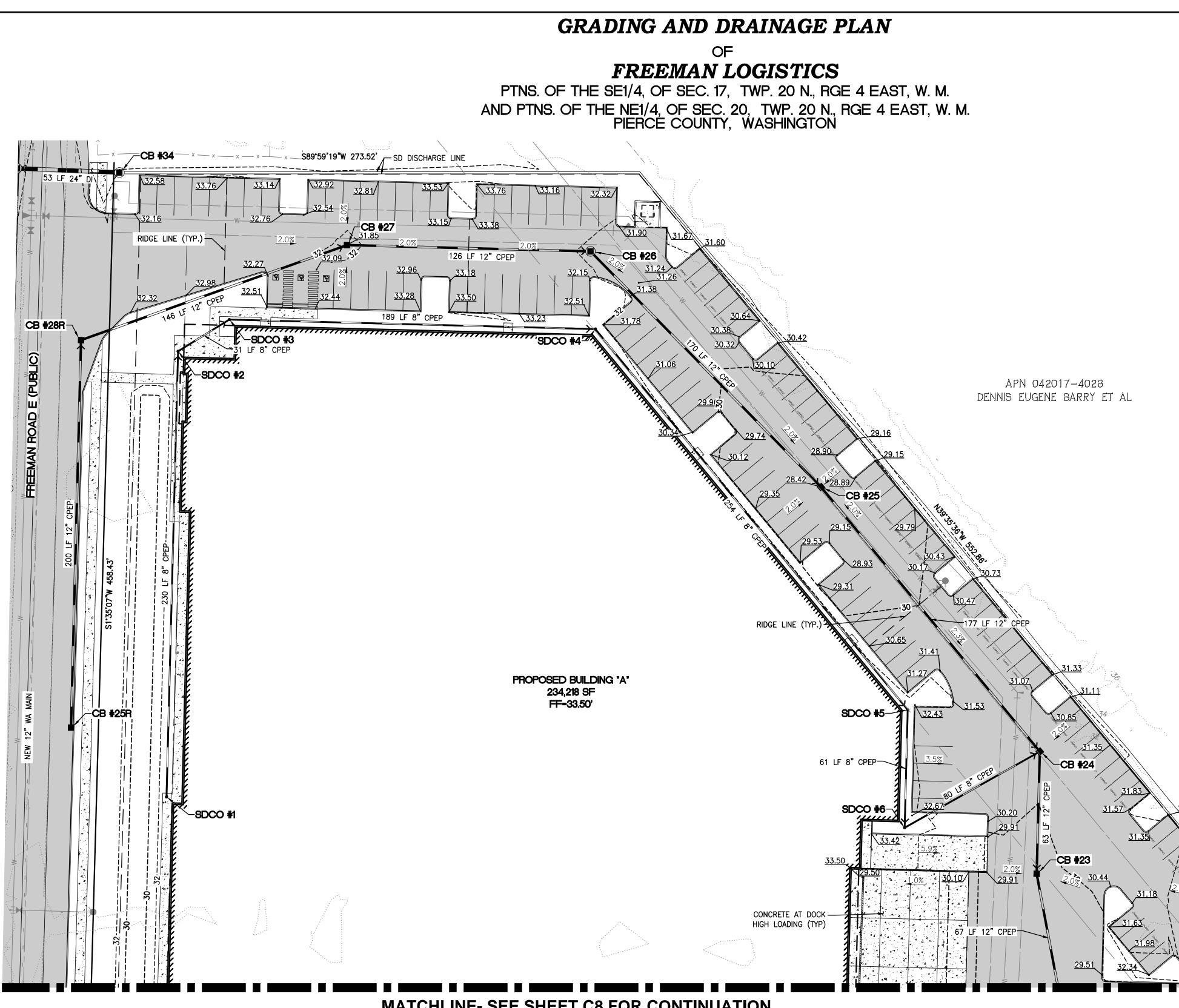
	THE FUSION OF ARCHITECTURE, DESIGN TECHNOLOGY & PEOPLE
	12503 Bel-Red Road, Suite 100 Bellevue, WA 98005 p 425 646 1818   f 425 646 4141
	VECTOR
	Development Company 11411 NE 124th Street Suite 190
	Kirkland, WA 98034
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	1 08 10 22 SEPA RESUBMITTAL D 10 19 21 DESIGN REVIEW APPLICATION
	C091521PRELIMINARYBIDB031921SEPAAPPLICATIONA010521PRE-APPLICATION
	PROFESSIONAL STAMP
	PROGRESS PRINTING
	August 30, 2022
	NOT FOR CONSTRUCTION
	FREEMAN ROAD LOGISTICS
	Puyallup, WA — 98371
	SHEET INFORMATION
	release for: SEPA RESUBMITTAL title: <b>SITE PLAN</b>
	DESIGNED BY: DRAWN BY:
<b>•</b> )	REVIEWED BY: APPROVED BY: DATE: 01 05 21 SHEET NO: APPROVED BY: APPROVED BY: DATE: 01 05 21 SHEET NO:
	PROJECT NO: 201401.13.031 www.synthesisplic.com

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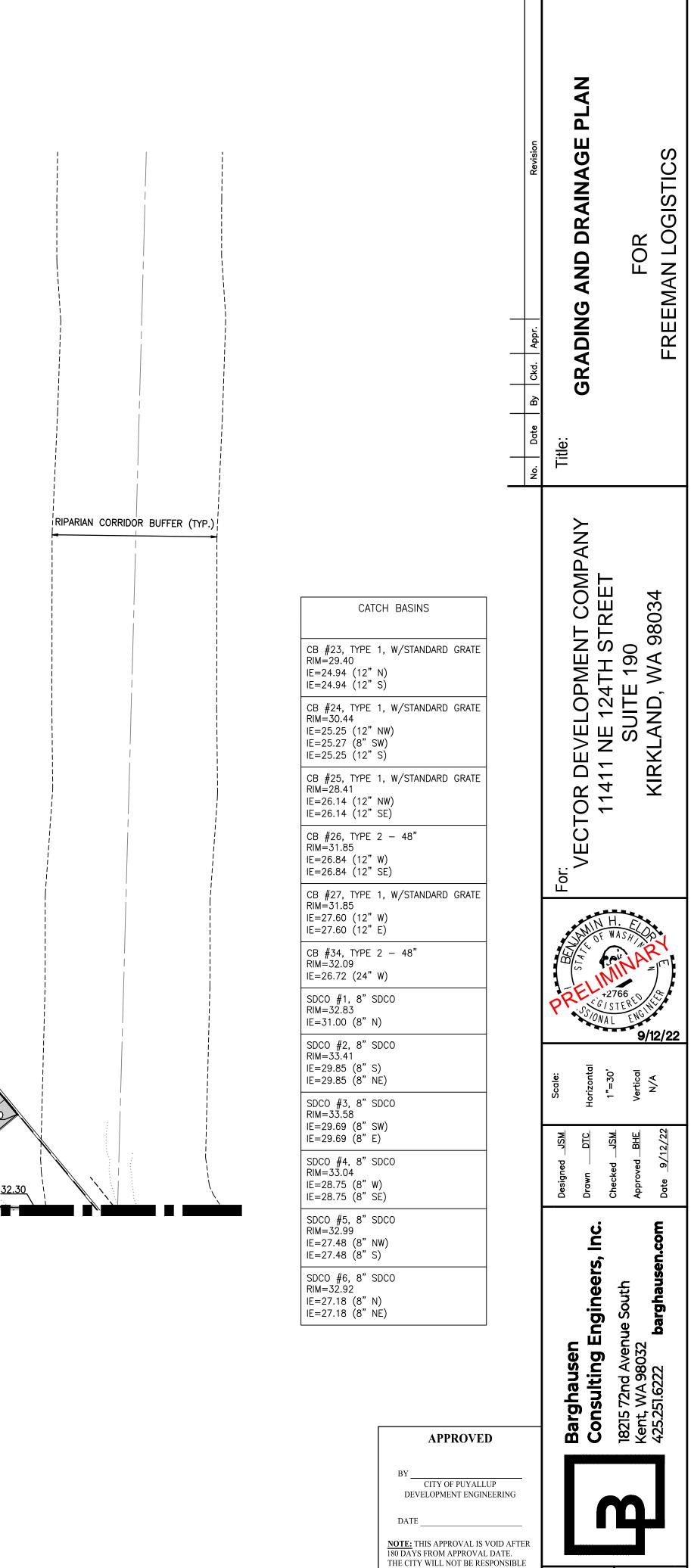
INULLI DATA		
SITE AREA BUILDING AREA COVERAGE	977,600 SF 491,336 SF 50.3%	
BUILDING A PARKING REQUIRED 10,000 SF OFFICE @ 1:300 224,218 SF WHSE @ 1:2000 PARKING PROVIDED BUILDING B PARKING REQUIRED 10,000 SF OFFICE @ 1:300 247,118 SF WHSE @ 1:2000 PARKING PROVIDED	149 156.9 33.3	
0'-10' DOOK DOOD	00	

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**MATCHLINE- SEE SHEET C8 FOR CONTINUATION** 



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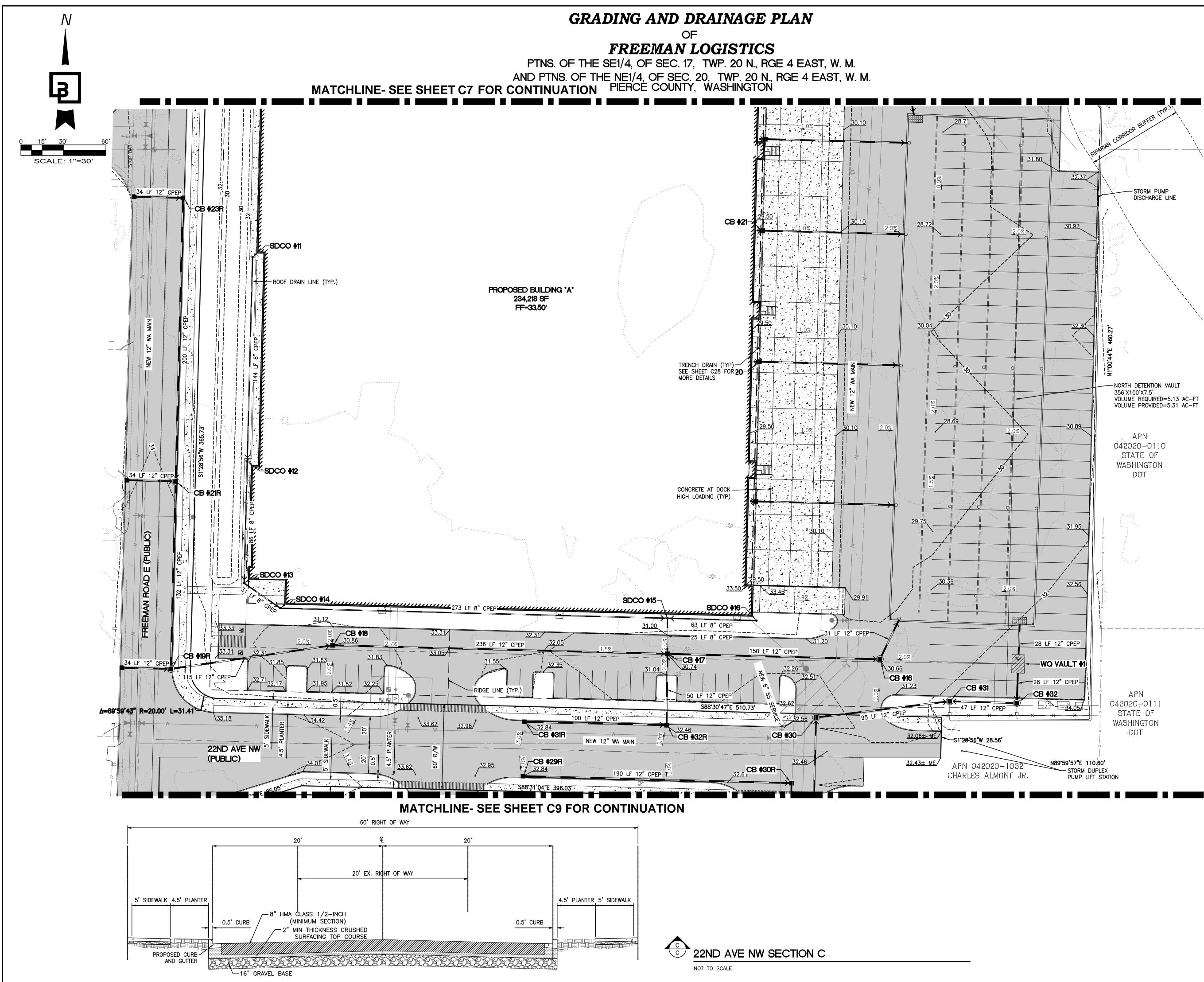
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FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS

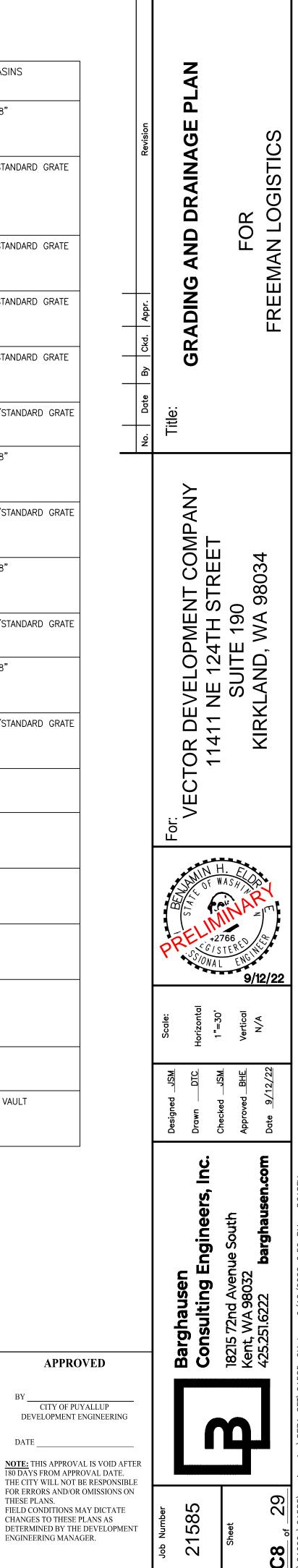
DETERMINED BY THE DEVELOPMENT

ENGINEERING MANAGER.

21585



CATCH BASINS
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CB #17, TYPE 1, W/STANDARD GRATE RIM=30.74 IE=25.57 (12" W) IE=25.57 (12" S) IE=25.90 (8" N) IE=25.57 (12" E)
CB #18, TYPE 1, W/STANDARD GRATE RIM=30.86 IE=26.50 (12" W) IE=26.75 (12" E)
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SDCO #12, 8" SDCO RIM=32.88 IE=30.28 (8" N) IE=30.28 (8" S)
SDCO #13, 8" SDCO RIM=33.32 IE=29.85 (8" N) IE=29.85 (8" SE)
SDCO #14, 8" SDCO RIM=33.31 IE=29.69 (8" NW) IE=29.69 (8" E)
SDCO #15, 8" SDCO RIM=33.36 IE=28.33 (8" W) IE=28.33 (8" E) IE=28.33 (8" S)
SDCO #16, 8" SDCO RIM=33.12 IE=29.00 (8" W)
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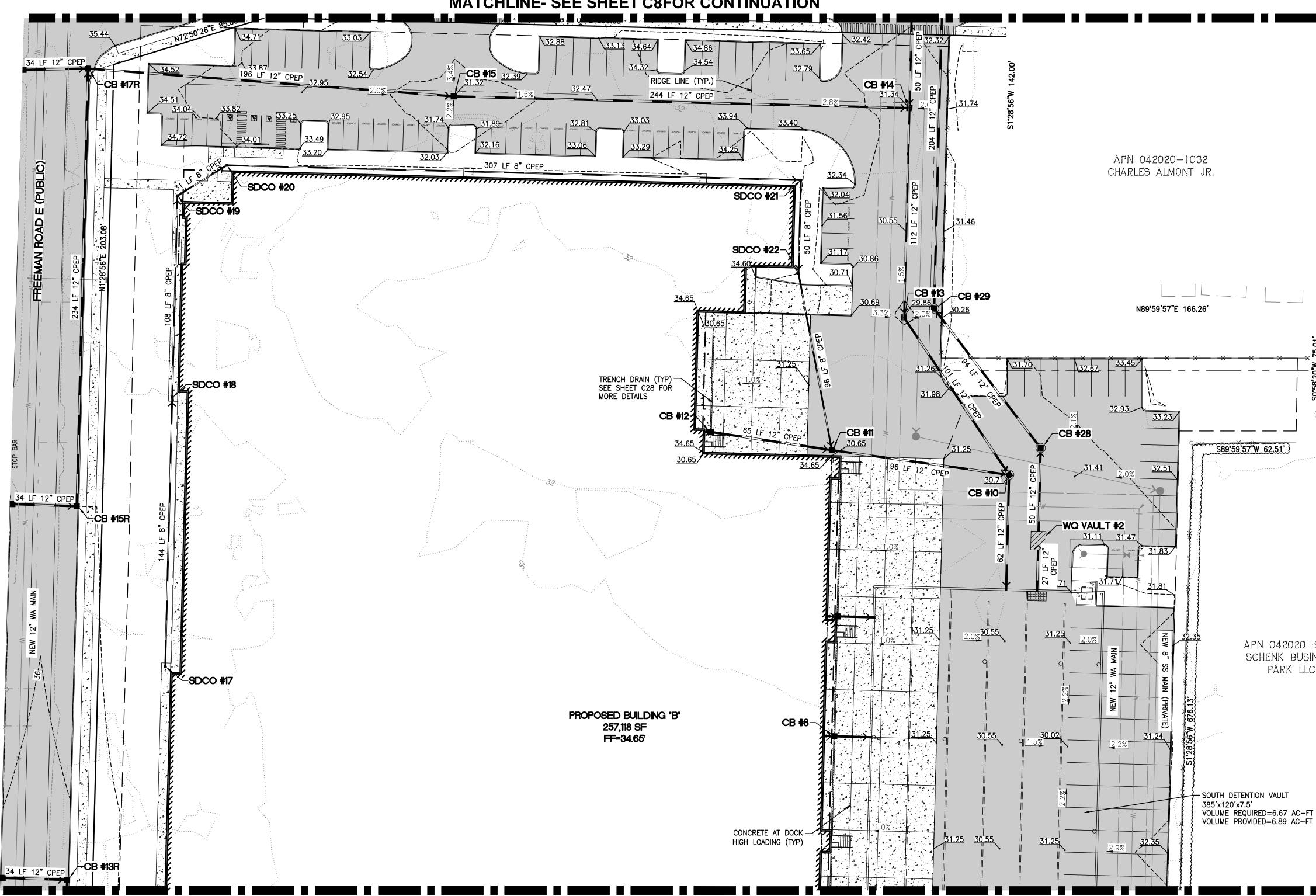


APPROVED

DATE

THESE PLANS.

ENGINEERING MANAGER.



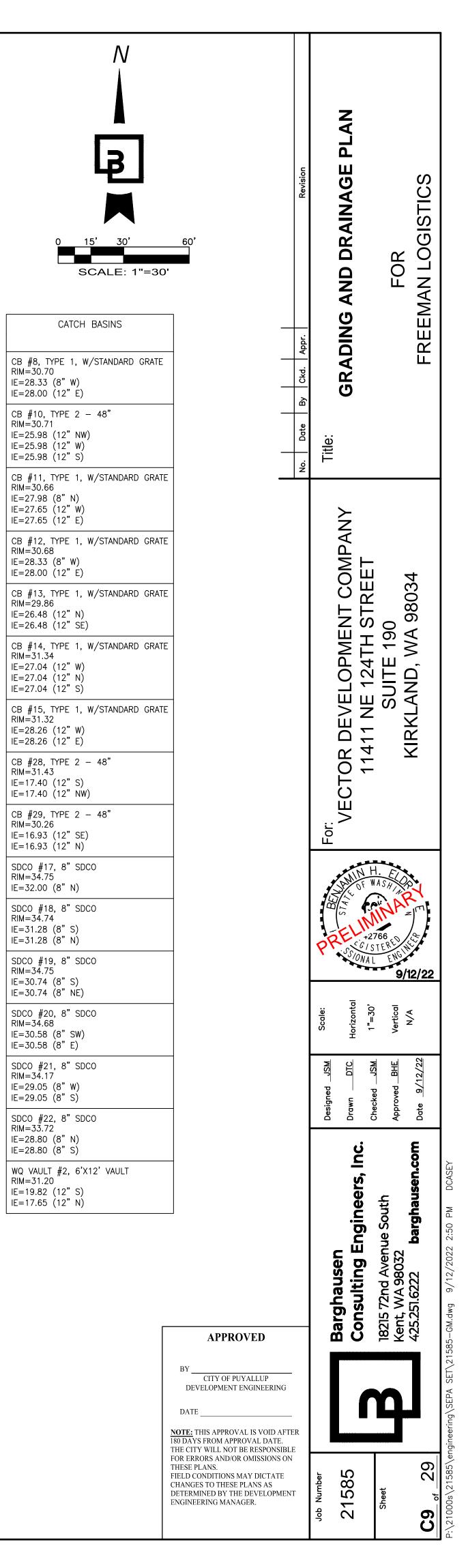
# **GRADING AND DRAINAGE PLAN**

## OF FREEMAN LOGISTICS

PTNS. OF THE SE1/4, OF SEC. 17, TWP. 20 N., RGE 4 EAST, W. M. AND PTNS. OF THE NE1/4, OF SEC. 20, TWP. 20 N., RGE 4 EAST, W. M. PIERCE COUNTY, WASHINGTON

# **MATCHLINE- SEE SHEET C8FOR CONTINUATION**

**MATCHLINE- SEE SHEET C10 FOR CONTINUATION** 



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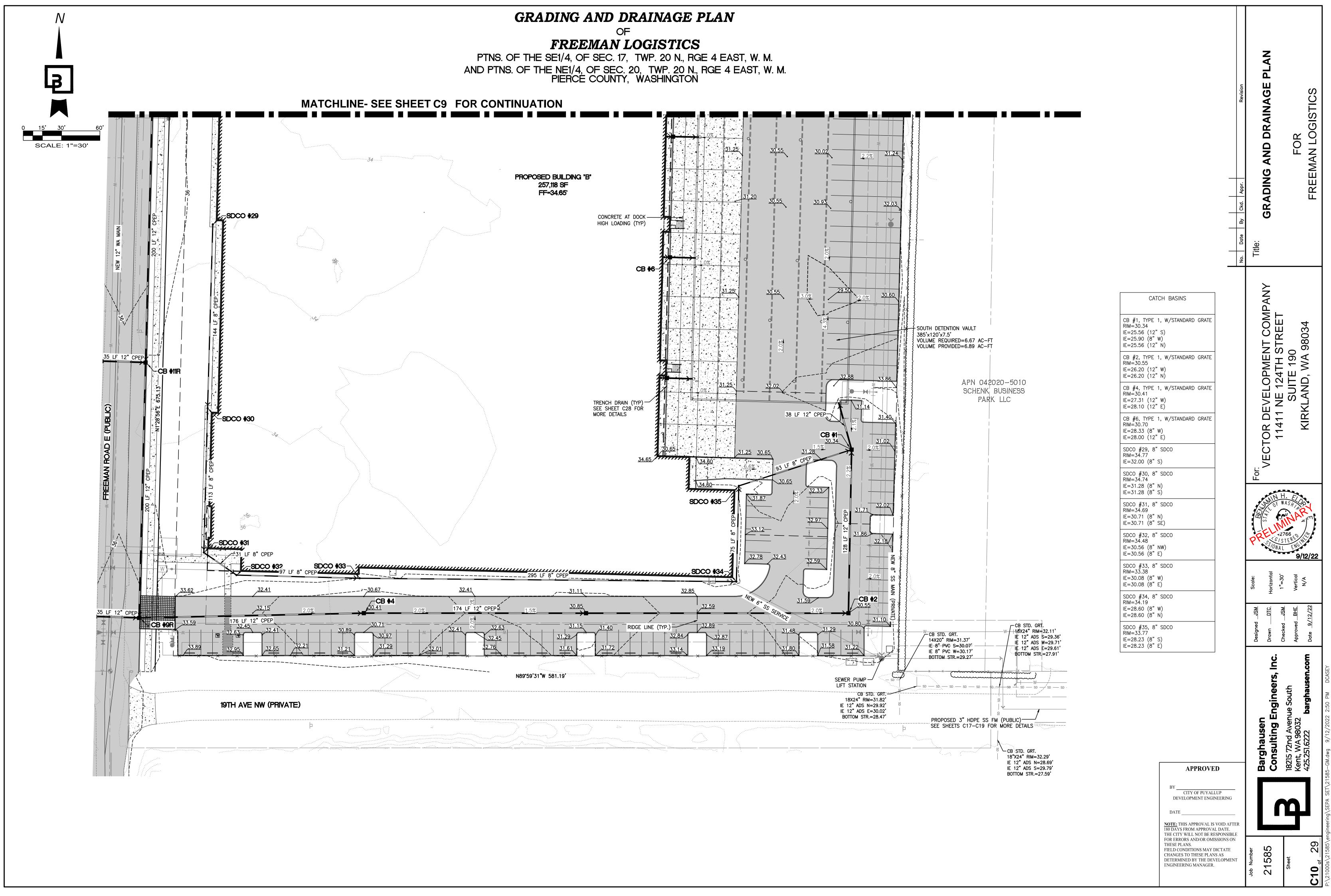
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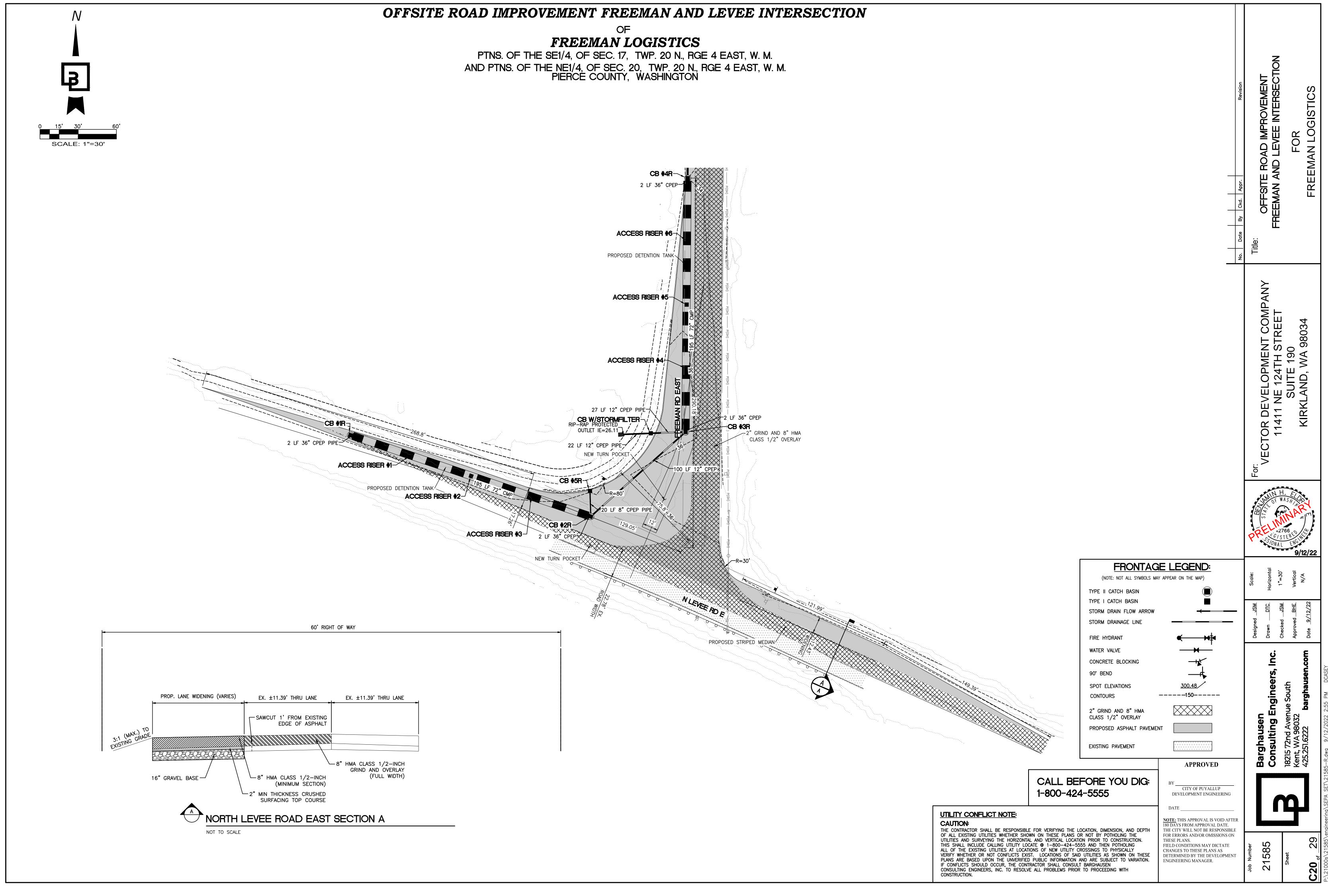
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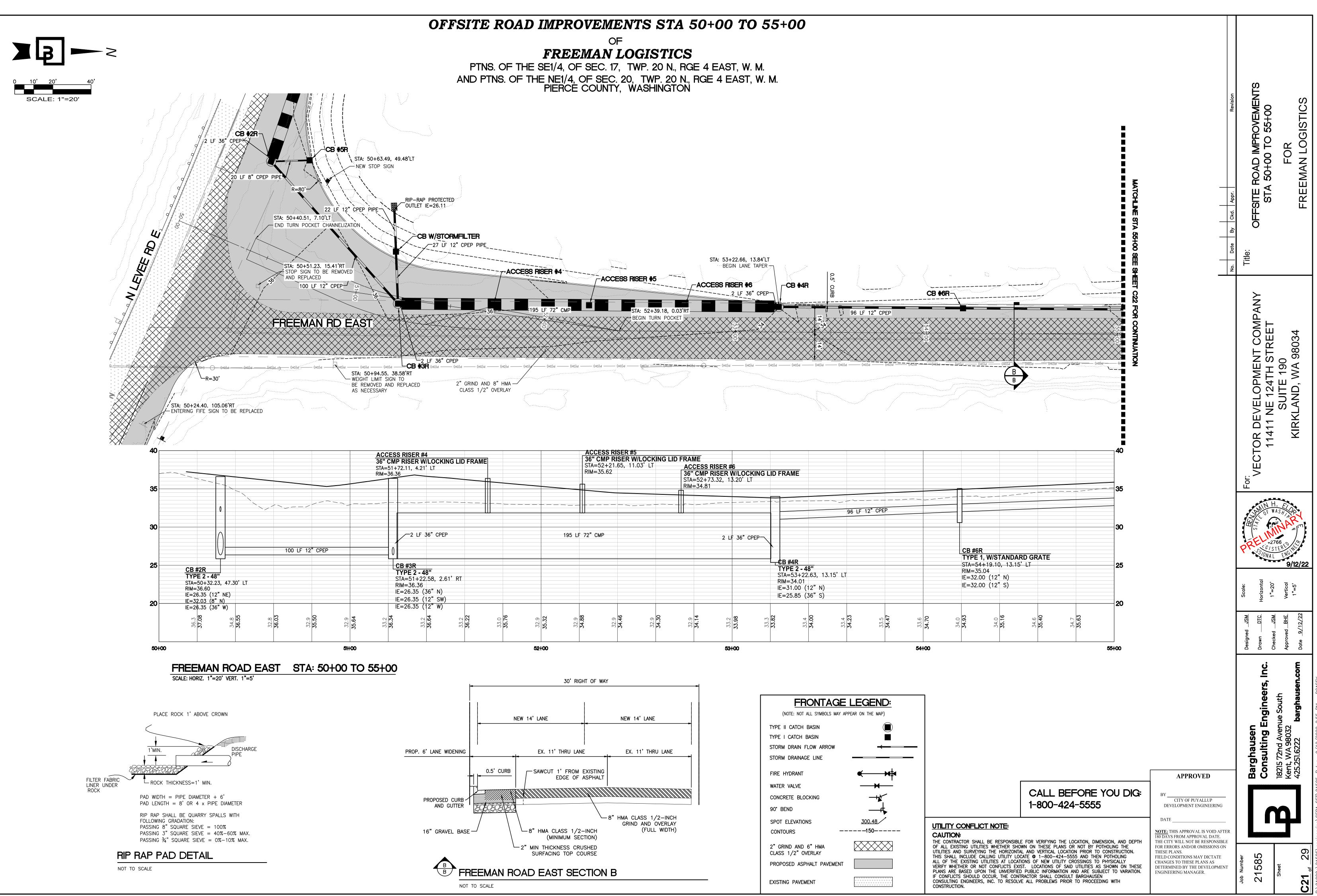
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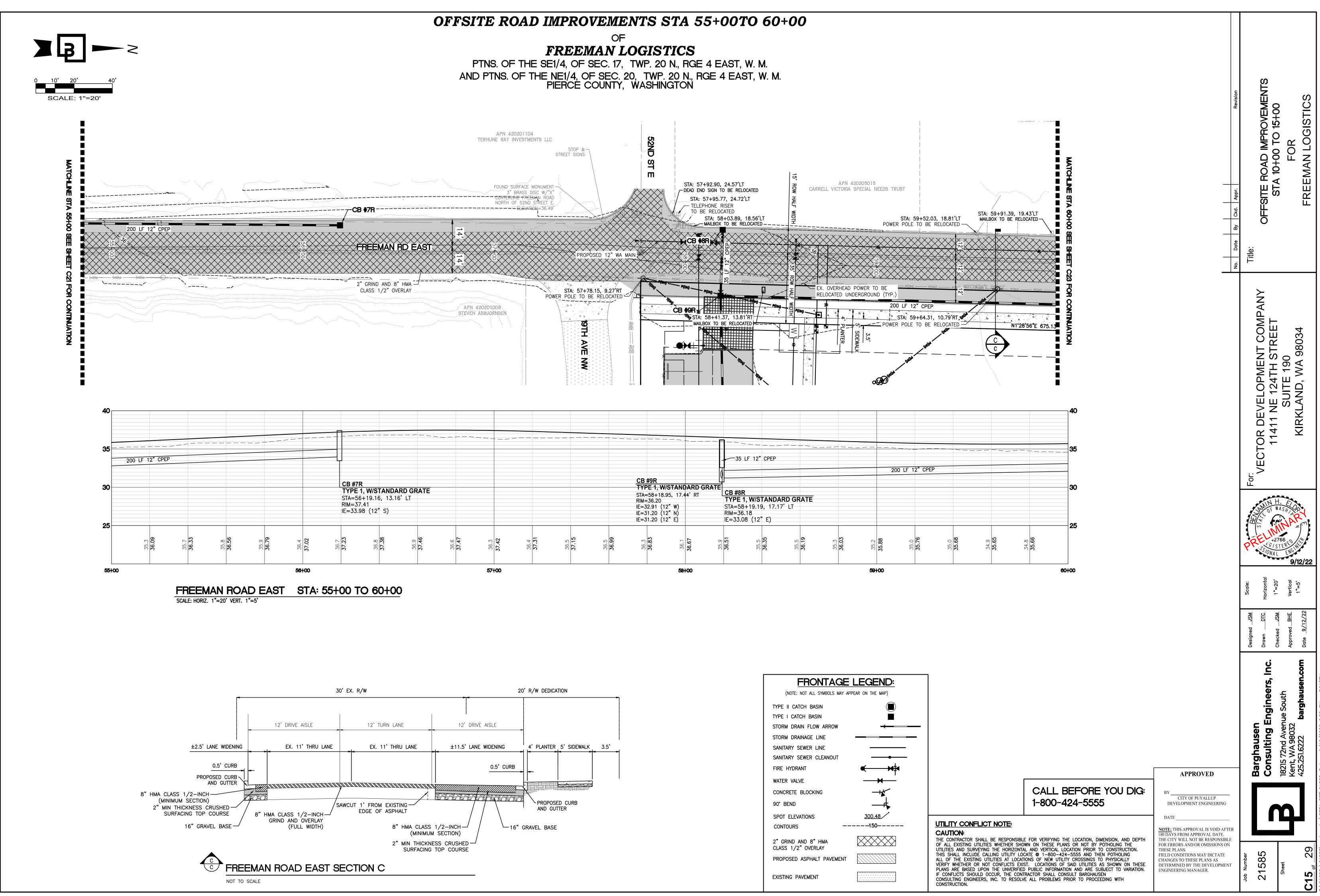
APN 042020-5013 SCHENK BUSINESS park LLC



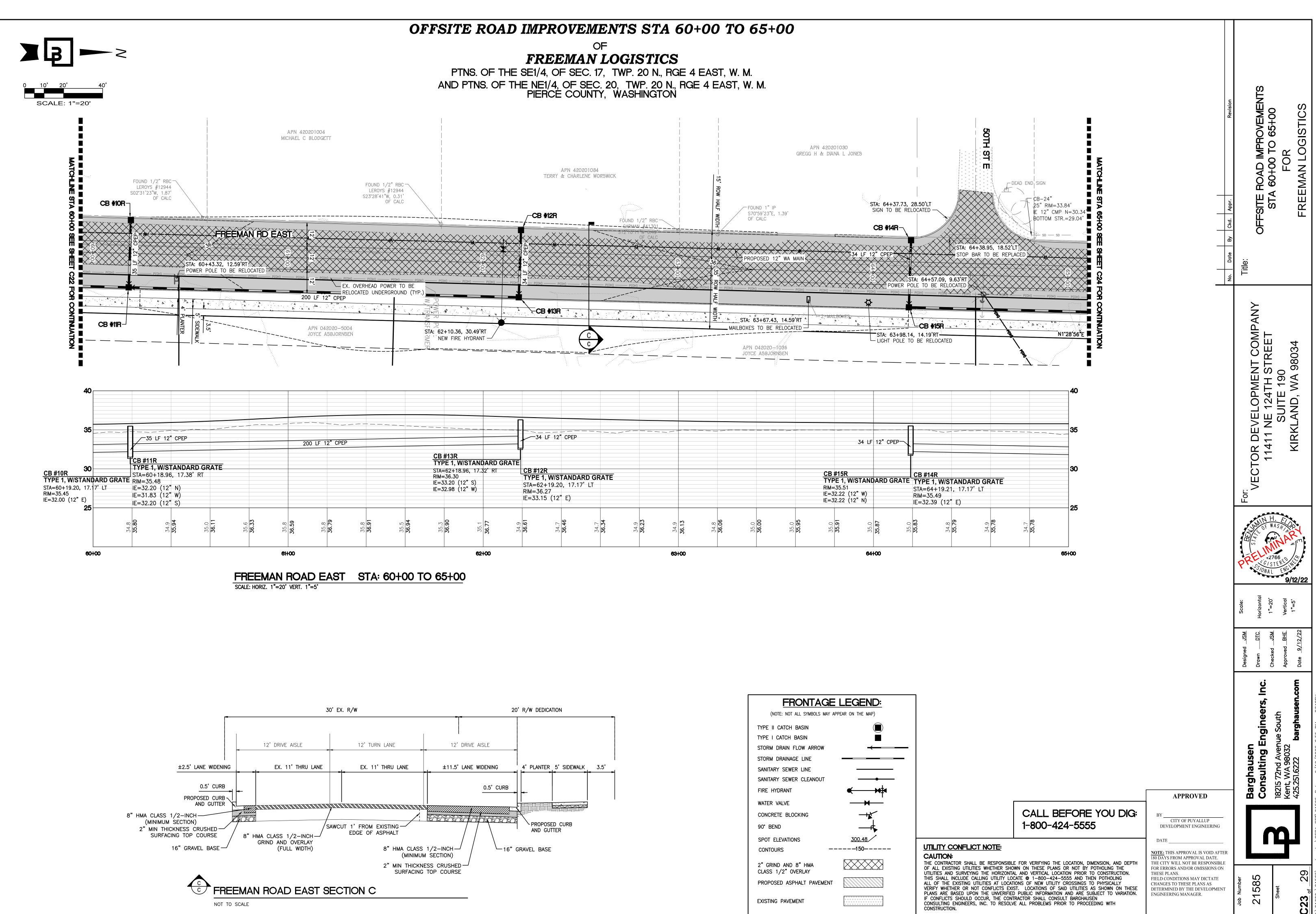


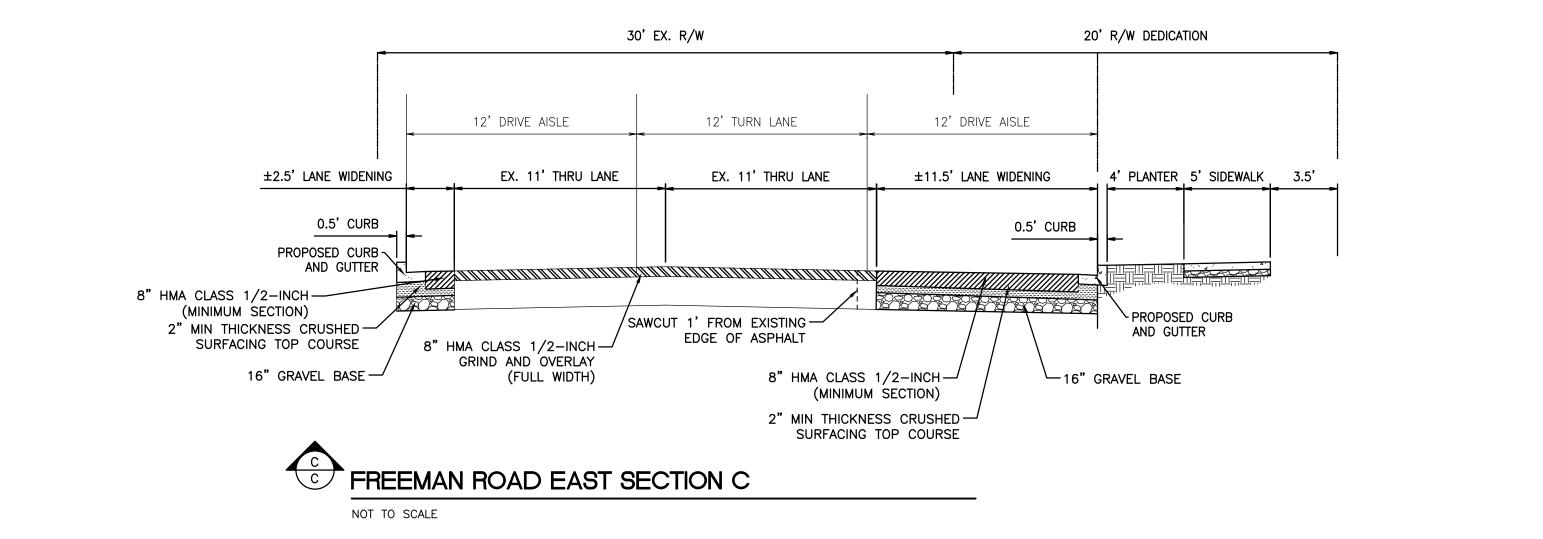


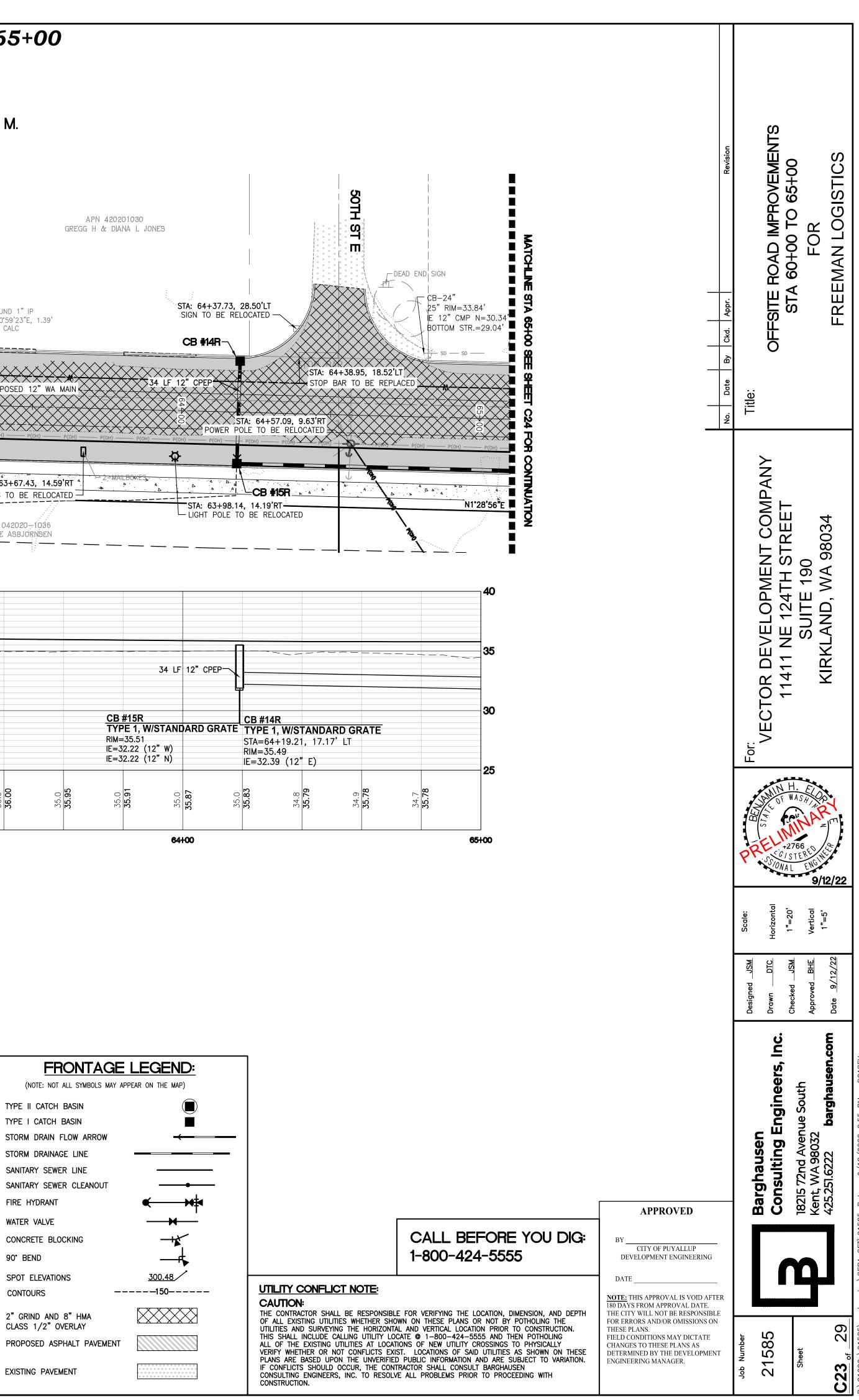
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(NOTE: NOT ALL SYMBOLS MAY APPEAR ON THE MAP)			
TYPE II CATCH BASIN			
TYPE I CATCH BASIN			
STORM DRAIN FLOW ARROW	<del>~                                    </del>		
STORM DRAINAGE LINE			
FIRE HYDRANT	≪ ₩		
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CONCRETE BLOCKING			
90° BEND			
SPOT ELEVATIONS	300.48		
CONTOURS	150		
2" GRIND AND 6" HMA CLASS 1/2" OVERLAY			
PROPOSED ASPHALT PAVEMENT			
EXISTING PAVEMENT			

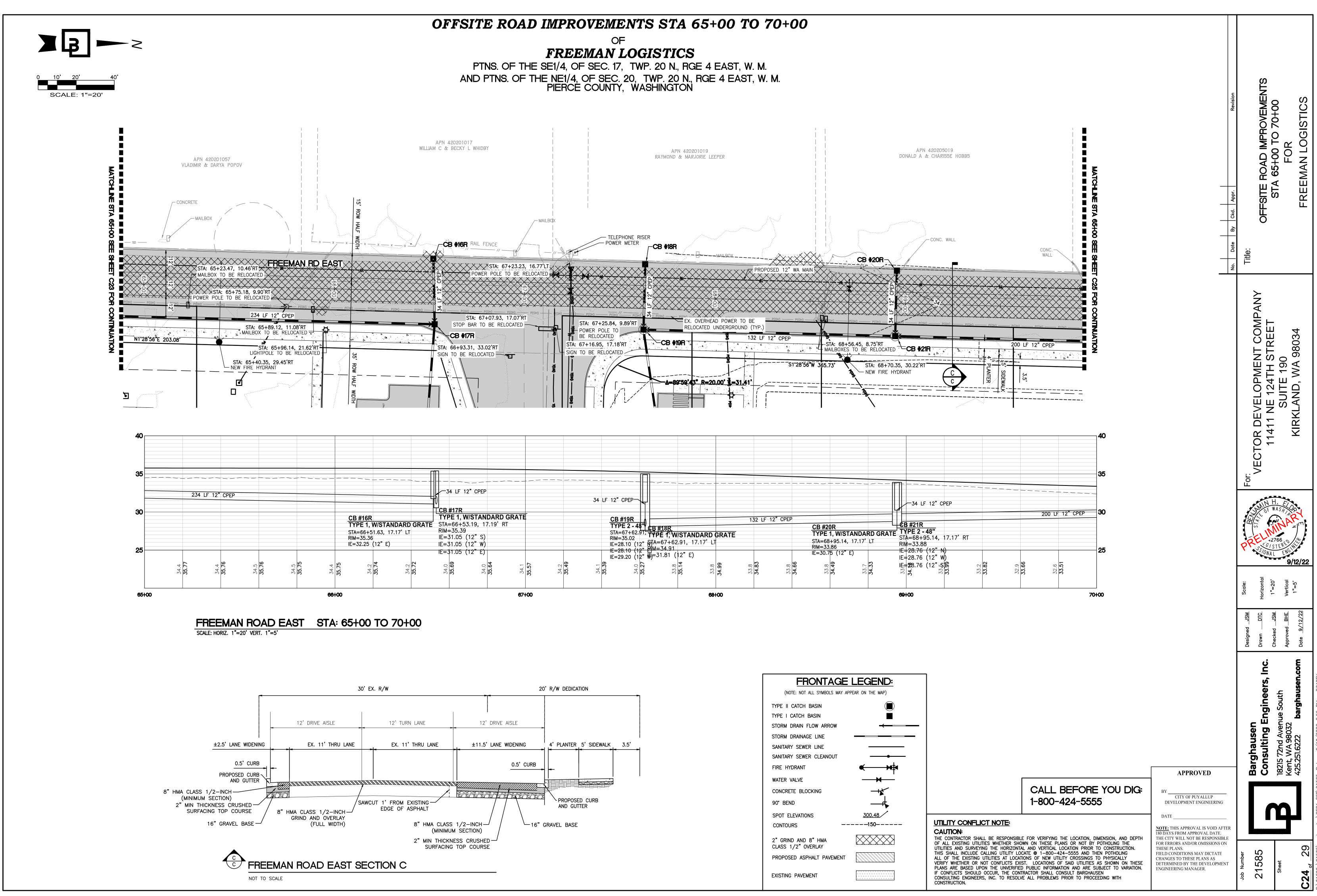


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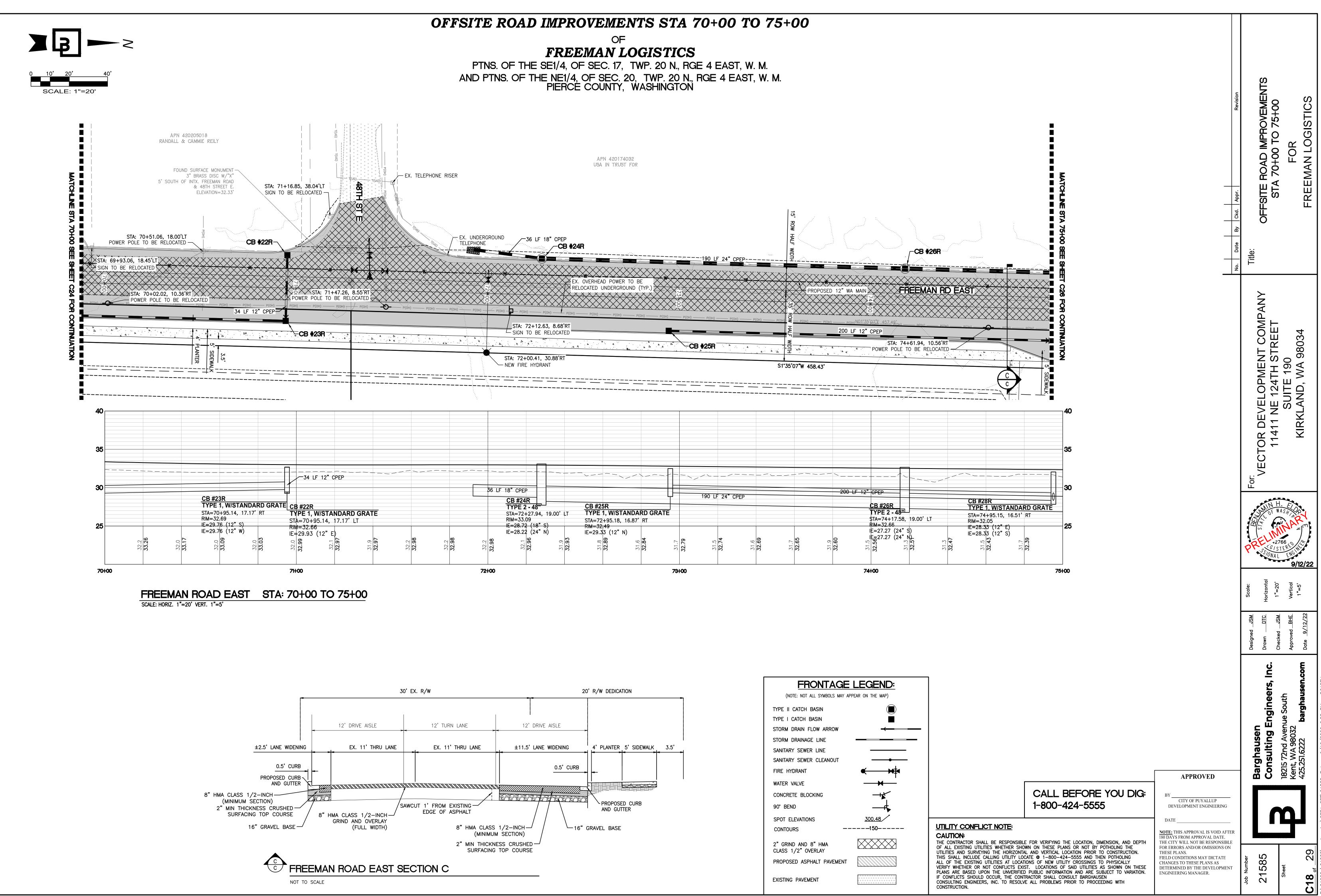


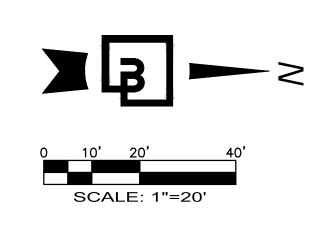


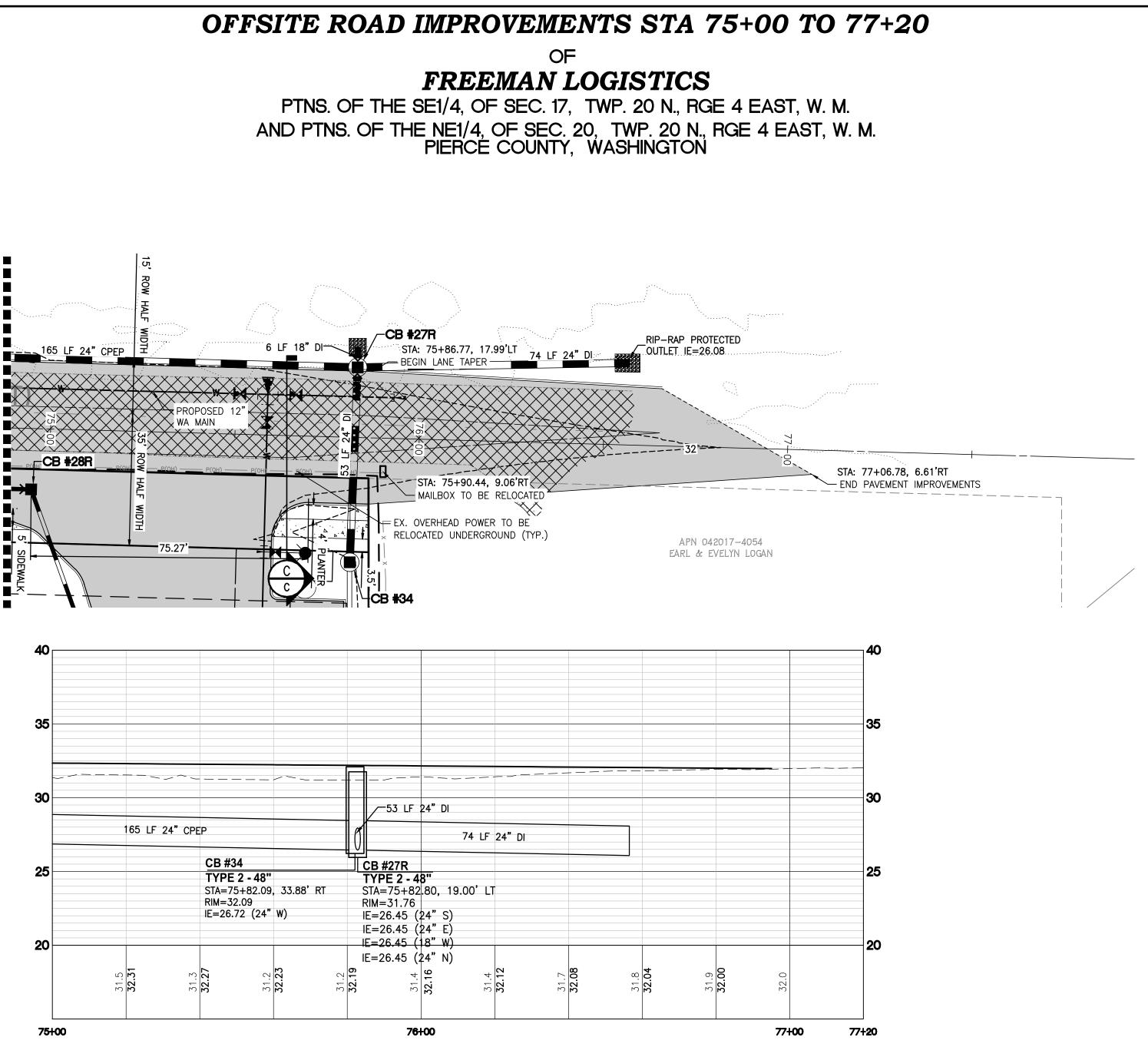




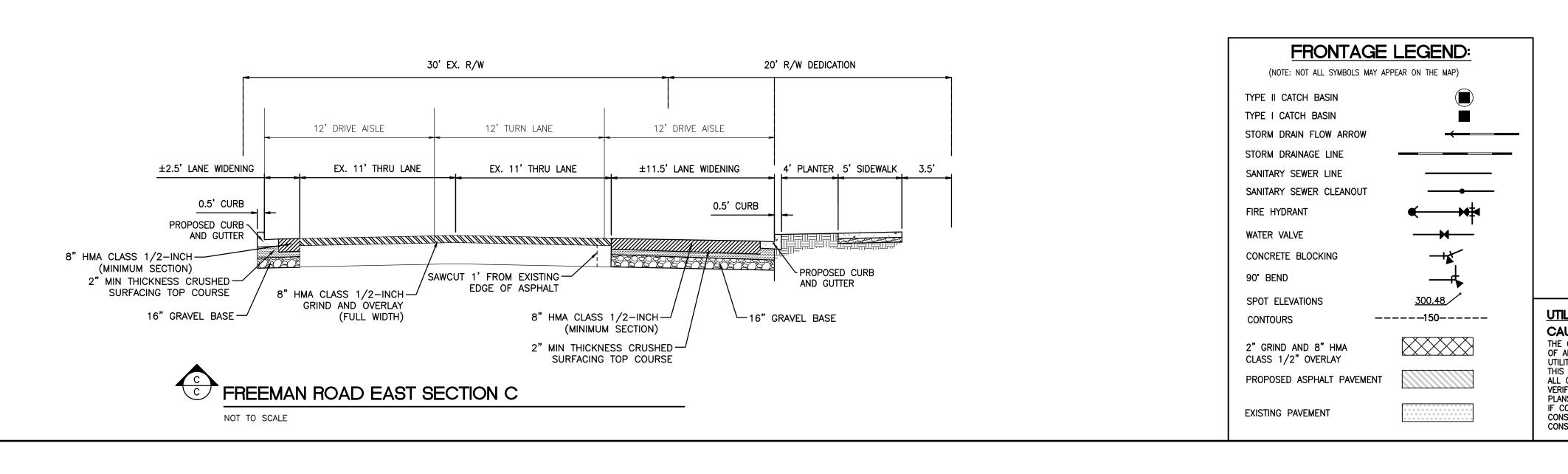
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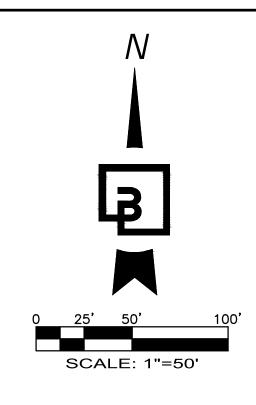


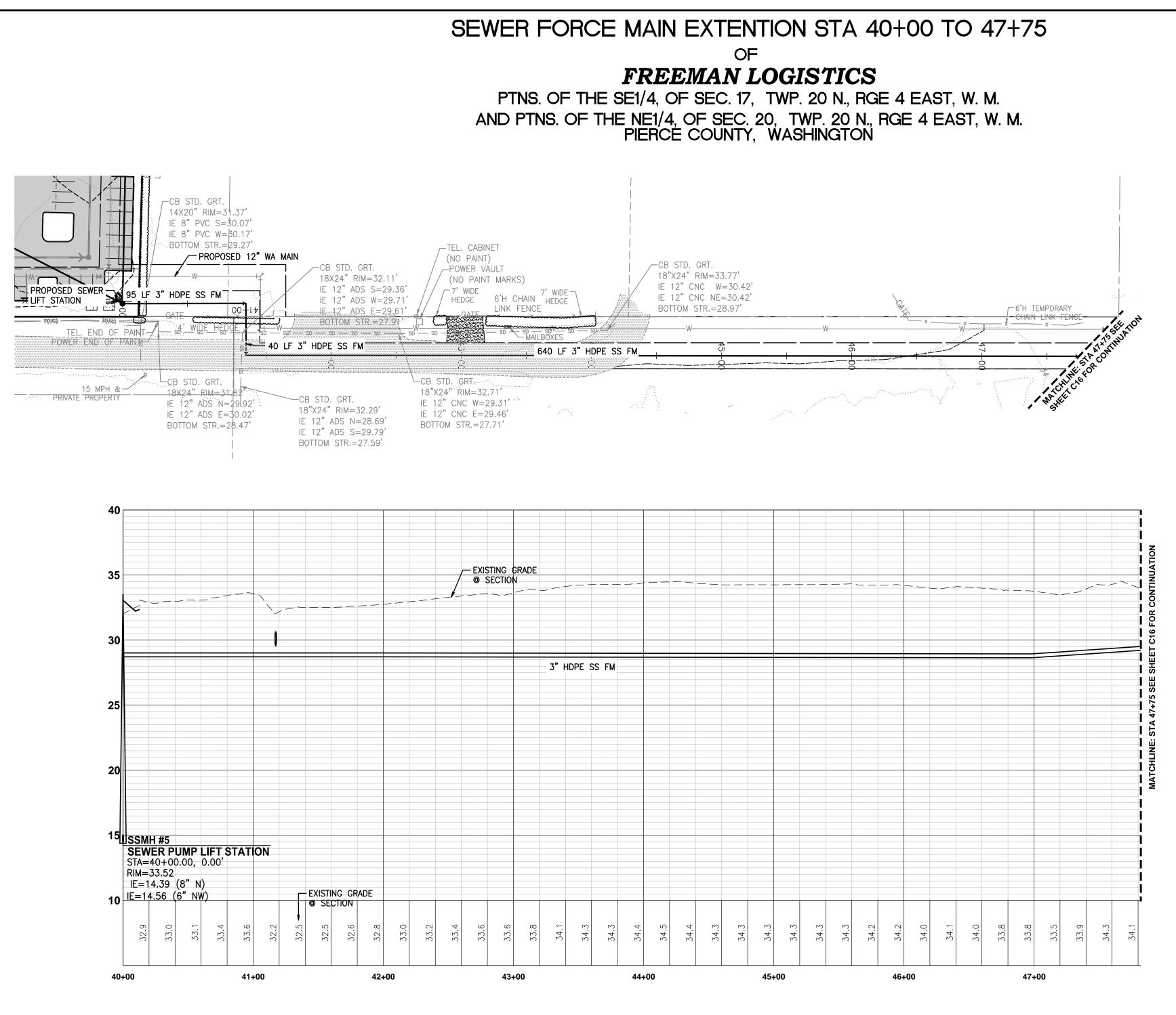
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# FREEMAN ROAD EAST STA: 75+00 TO 77+20

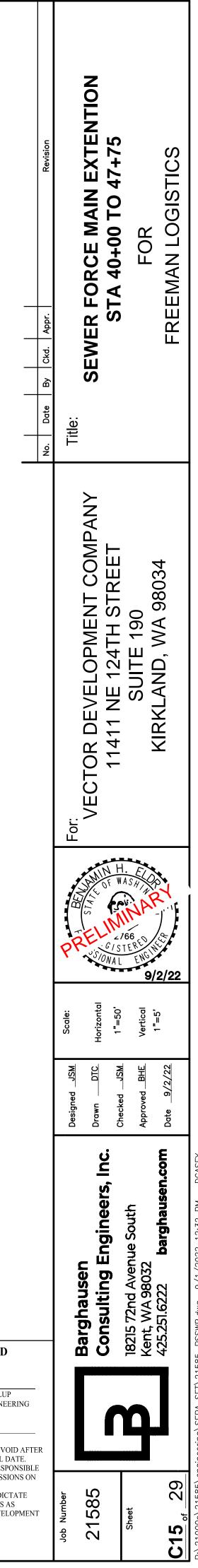
			No.   Date   By   Ckd.   Appr.   Title: OFFSITE ROAD IMPROVEMENTS	STA 75+00 TO 77+20 FOR	FREEMAN LOGISTICS
			ΡΑΝΥ	11411 NE 124TH STREET SUITE 190 KIRKLAND, WA 98034	、
PLACE ROCK	1' ABOVE CROWN		DIAL PROVIDENCE	H. I.=20' H. ENG H.	
RIP RAP SHALL BE FOLLOWING GRADA PASSING 8" SQUAF PASSING 3" SQUAF	PIPE ESS=1' MIN. EDIAMETER + 6' OR 4 × PIPE DIAMETER E QUARRY SPALLS WITH TION: RE SIEVE = 100% RE SIEVE = 40%-60% M RE SIEVE = 0%-10% M	HARGE	Barghausen	Parghausen.com	Date _
CALL BEFOR 1–800–424–555 ILITY CONFLICT NOTE: AUTION: E CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT B LITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOF S SHALL INCLUDE CALLING UTILITY LOCATE @ 1–800–424–5555 AND OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS	DIMENSION, AND DEPTH BY POTHOLING THE R TO CONSTRUCTION.	BY CITY OF PUYALLUP DEVELOPMENT ENGINEERING DATE NOTE: THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE		<b>M</b>	29
OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS RIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIE ANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT BARGHA NSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PRO INSTRUCTION.	S AS SHOWN ON THESE SUBJECT TO VARIATION. AUSEN	CHANGES TO THESE PLANS AS DETERMINED BY THE DEVELOPMENT ENGINEERING MANAGER.	Job Number 21585	heet	C19 °





## **SEWER FORCE MAIN EXTENTION STA: 40+00 TO 47+75**

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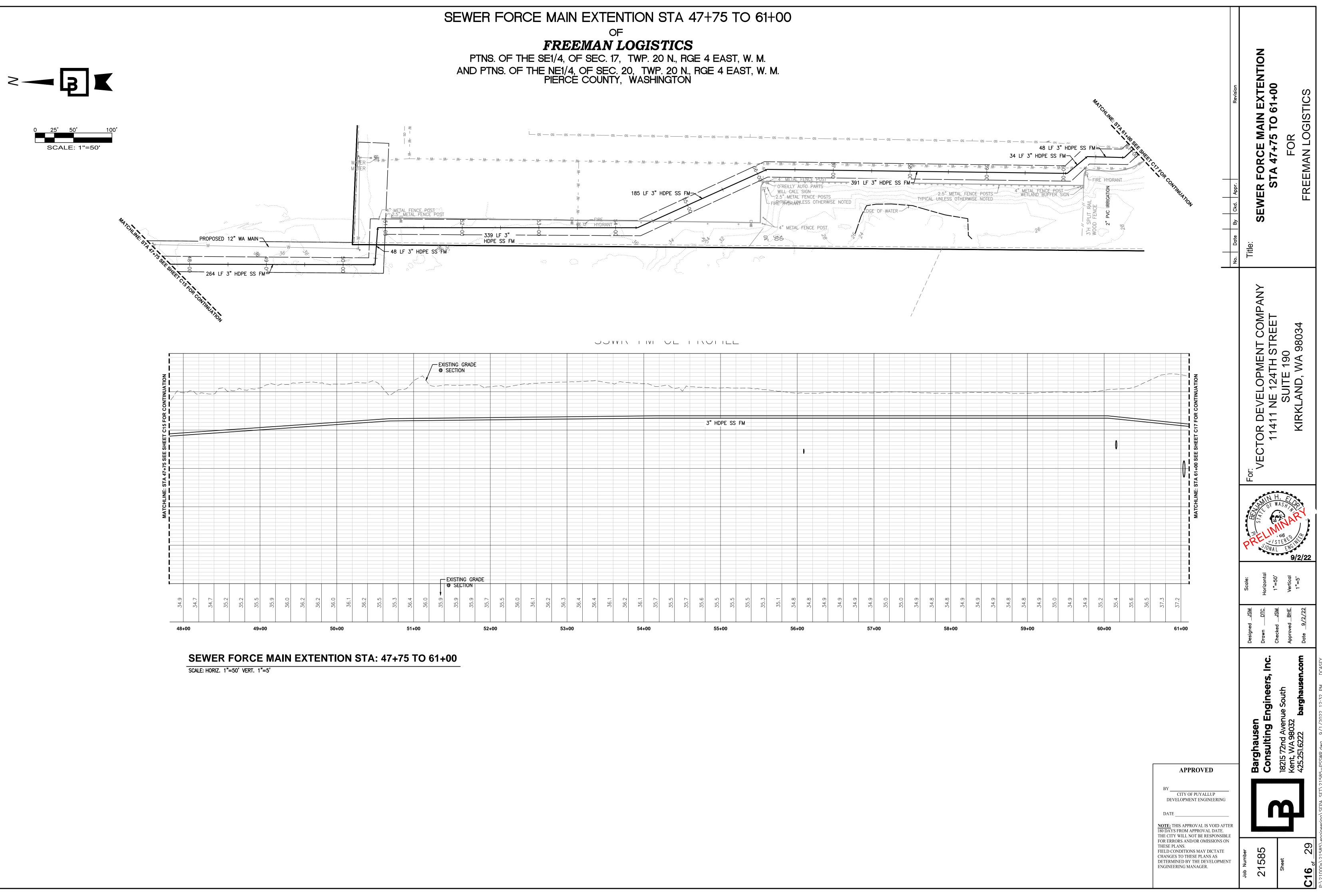


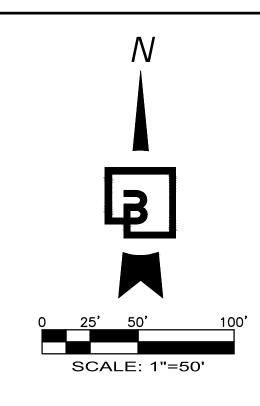
APPROVED BY CITY OF PUYALLUP DEVELOPMENT ENGINEERING

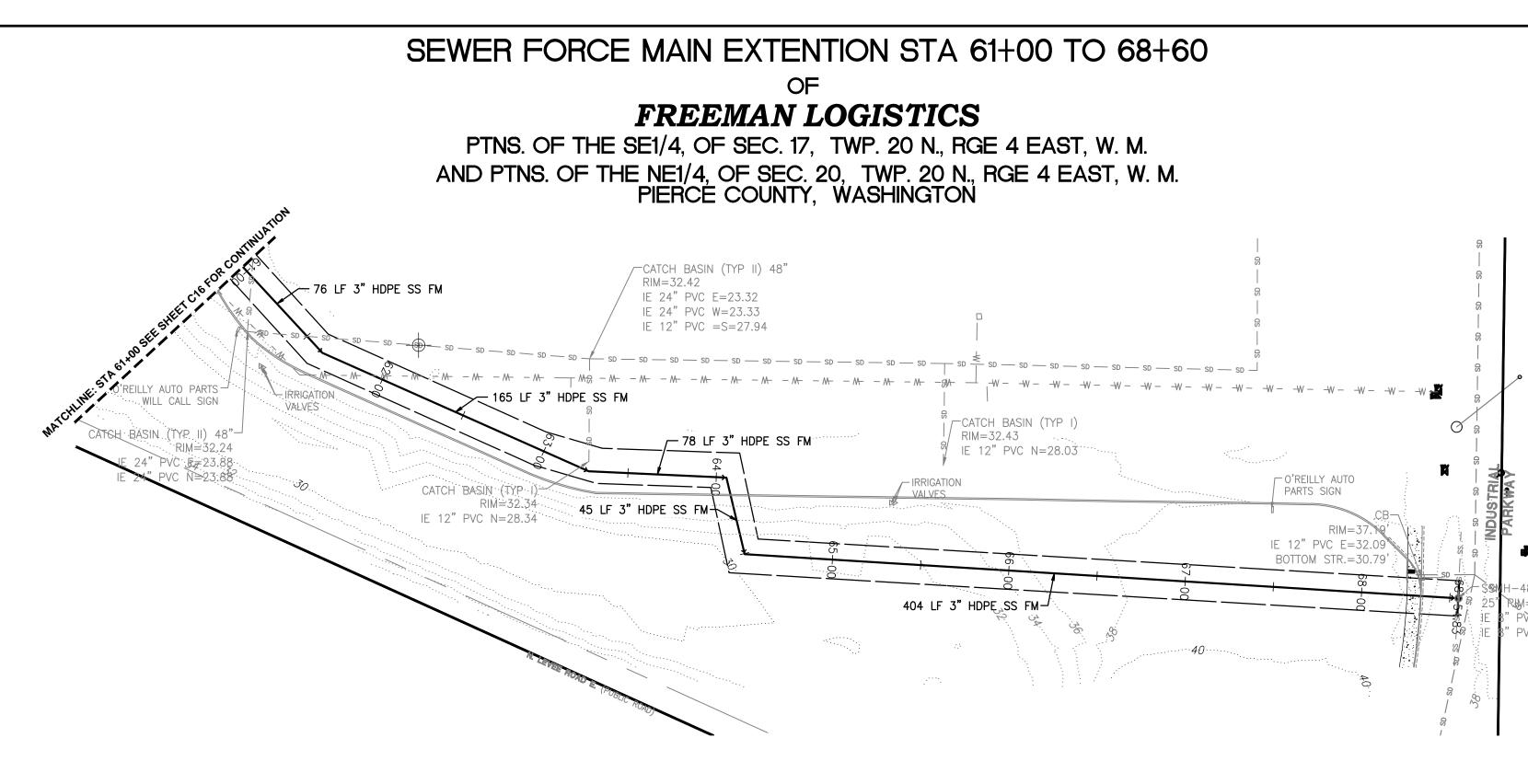
NOTE: THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS

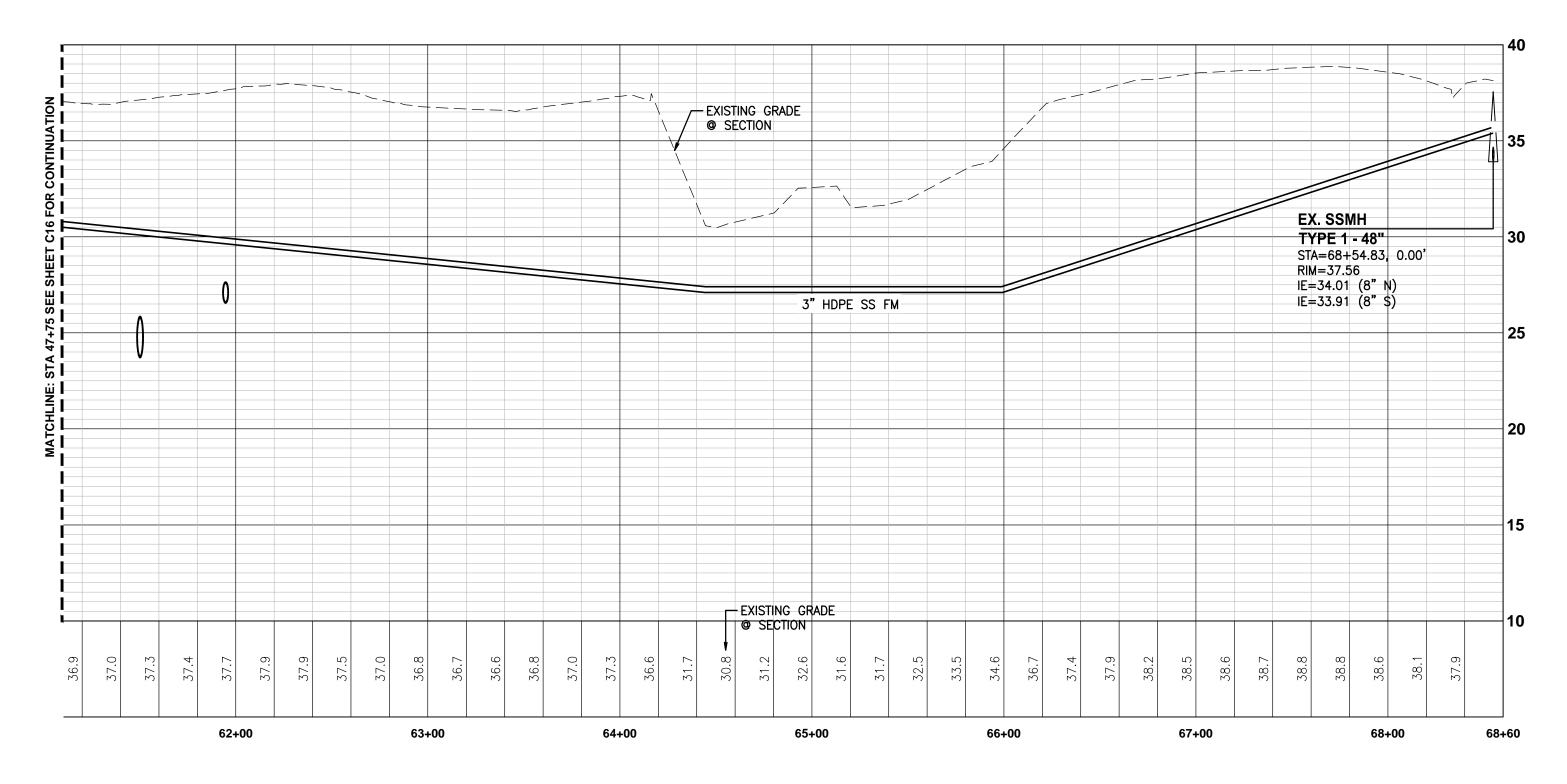
DATE

DETERMINED BY THE DEVELOPMENT ENGINEERING MANAGER.









**SEWER FORCE MAIN EXTENTION STA: 61+00 TO 68+60** SCALE: HORIZ. 1"=50' VERT. 1"=5'

48" 1=37.56' Q1'E Ye St.01' VC S 33.91'	No. Date By Ckd. Appr. Revision	Title: SEWER FORCE MAIN EXTENTION STA 61+00 68+60 FOR FOR FOR FREEMAN LOGISTICS
		For: VECTOR DEVELOPMENT COMPANY 11411 NE 124TH STREET SUITE 190 KIRKLAND, WA 98034
		Designed JSM     Scale:       Drawn     DTC     Horizontal       Checked     JSM     1"=50'       Approved     BHE     Vertical       Date     9/2/22     1"=5'
	APPROVED BY DEVELOPMENT ENGINEERING	usen ting Engineers, Inc. d Avenue South 98032 22 barghausen.com
	DATE	21585 21585 Sheet Sheet Consult Kent, WA Kent, WA Kent, WA 425.251.62



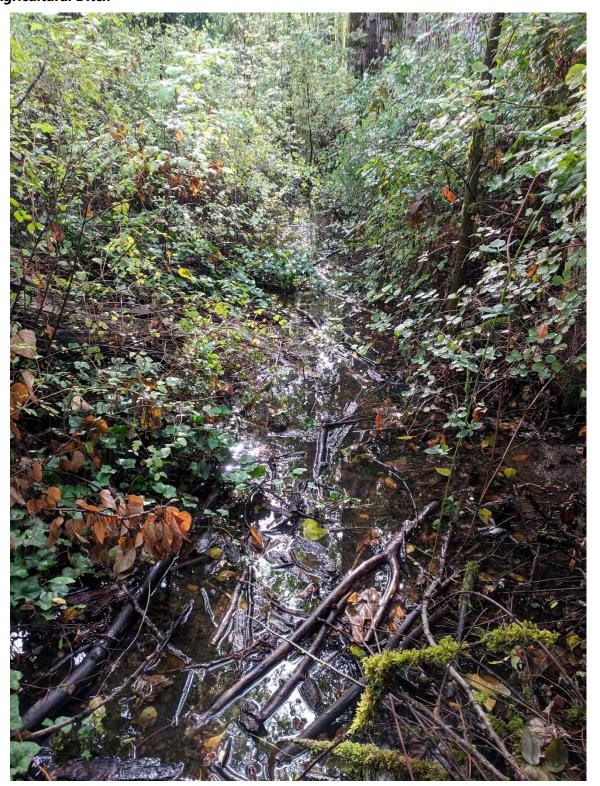
Appendix B Study Area Photographs

## Appendix B Study Area Photographs

Photograph 1 Parcels 0420174075 and 0420205016



## Photograph 2 Agricultural Ditch



## Photograph 3 Agricultural Ditch and Adjacent Agricultural Field

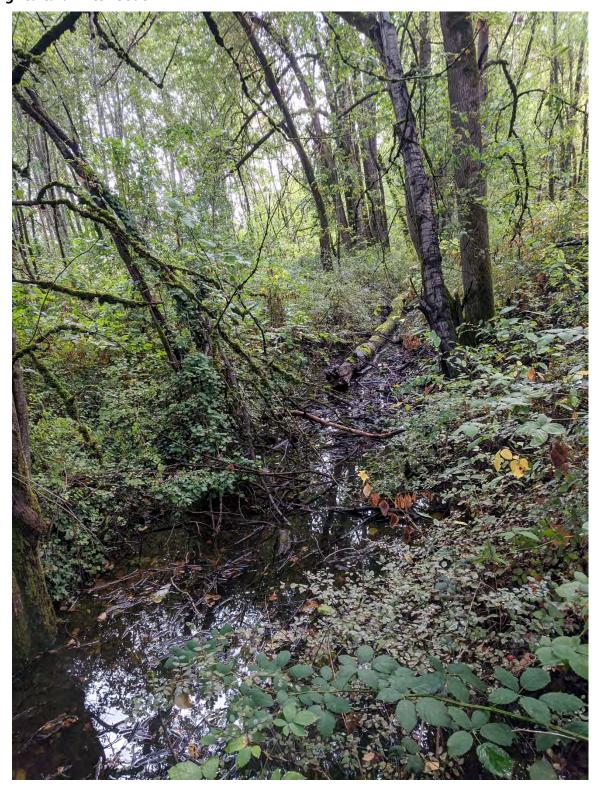


## Photograph 4 Adjacent Agricultural Fields

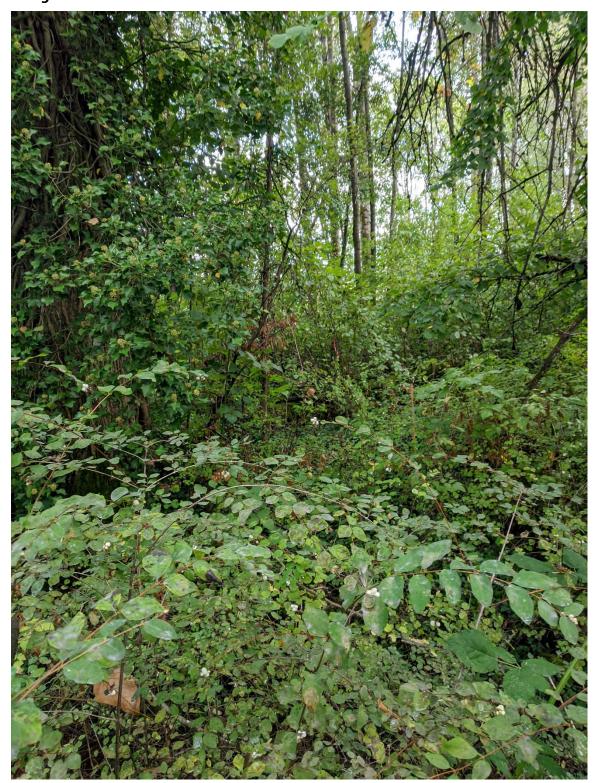


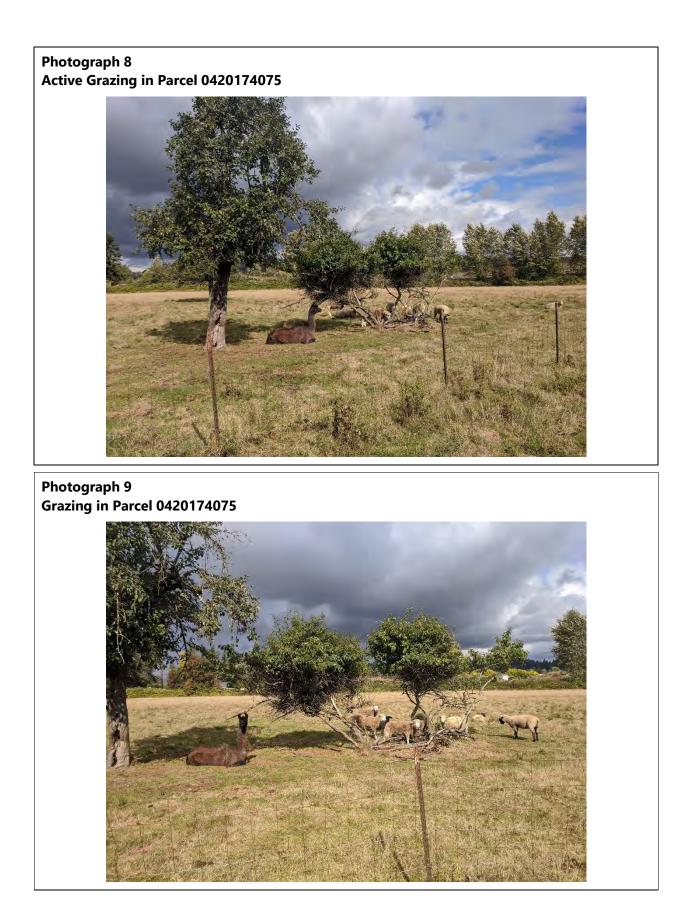


## Photograph 6 Agricultural Ditch South

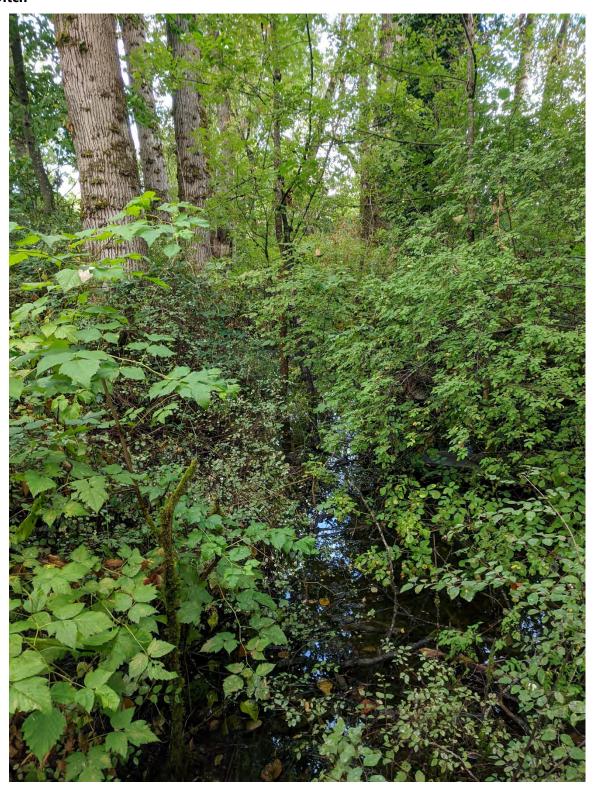


## Photograph 7 East Edge of Parcel 0420205016





## Photograph 10 Ditch



## Photograph 11 Field Adjacent to DP2



Photograph 12 Landscape View of DP3









Photograph 16 Wetlands Mapped South of 52nd Street East



## Photograph 17 Wetlands Mapped South of 52nd Street East



## Photograph 18 Vegetation in Wetlands Mapped South of 52nd Street East



## Photograph 19 Wetland B on Parcel 0420174075 (March 11, 2022)



## Photograph 20 Wetland B on Parcel 0420174075 (March 11, 2022)



## Photograph 21 Wetland B on Parcel 0420174075 (March 11, 2022)



# Appendix C Wetland Forms

Project/Site:	Freeman Road Logistics			City/County:	Puyallup/Pi	ierce Cou	inty		Sam	pling Date:	3/1	1/2022
Applicant/Owner:	Vector Development Com	pany					State:	WA	Sam	pling Point:	Wet	A DP1 W
Investigator(s):	C. Douglas, M. Curran			Section	n, Township,	Range:	S17 &	20 R4E T2	20N			
Landform (hillslope	e, terrace, etc.): Fore	sted		Local re	lief (concave	e, convex	, none):	concave			Slope:	1-5
Subregion (LRR):	Northwest Forests and Co	ast (LRR A)	Lat:	47.12'33			Long:	122.19'03	3	[	Datum:	NAD83
Soil Map Unit Nam	ne: Pilchuck fine sand						NWI Cla	assification	: <u>PFO, F</u>	PSS, POW		
Are climatic / hydro	ologic conditions on the site	e typical for th	is time of y	ear?	Yes	х	No		(If no, e	explain in Re	marks)	
Are Vegetation	, Soil, or H	-lydrology		significantly	disturbed?	Are "N	lormal C	Circumstan	ces" Pres	sent? Yes	Х	No
Are Vegetation	, Soil, or H	Hydrology		naturally pro	oblematic?	(If nee	ded, ex	plain any a	answers ir	n Remarks.)		
SUMMARY OF	FINDINGS – Attach	site map sl	howing s	ampling p	point locat	tions, ti	ransec	ts, impo	ortant fe	atures, et	:C.	
	votion Dropont? Voo	V No										
Hydrophytic Veget Hydric Soil Presen		X No X No			ampled Area	a	Yes	х	No			
Wetland Hydrolog		X No		within a	Wetland?				_ ""_		-	
wettand hydrolog		<u> </u>										
VEGETATION												
						Domina	nce Tes	st workshe	oot.			
			Absolute	Dominant	Indicator	Domina		St WOLKSIN				
Tree Stratum	(Plot size:	)	% Cover	Species?	Status?			inant Spec				
1. Populus balsar	nifera ssp. Trichocarpa		70	Yes	FAC	That Are	OBL, F	ACW, or I	-AC:	2		(A)
2								Dominant				
3						Species	Across	All Strata:		2		(B)
4		<u> </u>				Percent	of Domi	inant Spec	ies			
5		<u> </u>				That Are	e OBL, F	ACW, or I	FAC:	100%		(A/B)
50%=		Total Cover:	70		-							
Sapling/Shrub Stra	atum (Plot size:	)				Prevale	nce Ind	ex Works	heet:			
1. <u>Cornus sericea</u>			85	Yes	FACW		al % Co			Multiply b	iy:	
2. Rubus armenia		<u> </u>	20	No	FAC	OBL spe		0	x1 =	0		
3. <u>Symphoricarpo</u>	os albus	<u> </u>	20	No	FACU	FACW s			x2 =	170		
4						FAC spe		<u>90</u> 20	x3 =	270		
5	62.5 20%= 25	Total Cover:	125			FACU s UPL spe		0	x4 = x5 =	0		
Herb Stratum	(Plot size:		125			Column		195	(A)	520		(B)
1.	(1 101 3126.	)						dex = B/A	_ · · _			(0)
2		<u> </u>				11000				2.7		
3.						Hvdrop	hvtic Ve	eqetation I	ndicator	s:		
4.						,	-	0		nytic Vegetat	ion	
5.						X		minance To	• •			
6.						Х	3 - Pre	valence In	dex is ≤3	3.0 <sup>1</sup>		
7							4 - Moi	rnhologica	l Adaptati	on <sup>1</sup> (Provide	sunnor	rtina
										a separate s		ung
9.							5 - We	tland Non-	Vascular	Plants <sup>1</sup>		
50%=	0_20%=_0_	Total Cover:	0				Proble	matic Hydi	rophytic V	/egetation <sup>1</sup> (	Explain)	)
Woody Vine Stratu	um (Plot size:	)								d hydrology	must	
		<u> </u>				ne hiese	ni, une	ess disturbe		nematic.		
2		Tatal Oaver				Hydrop	•					
		Total Cover:		tio Cruct		Vegetat			Ver	v		
	re Ground in Herb Stratum	<u>100</u> %C	Over Of BIO			Present	ſ		res	X No		<u> </u>
Remarks: 100% F	AC vegetation											

#### SOIL

Profile Deso Depth	Matrix		R	edox Feat	ures			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>(incrics)</u> 0-4	10YR 3/1	100		/0	Турс	LUC	SiL	Kemana
4-9	10YR 3/1	90	10YR 5/4	10	D	М	SIL SL	
	-			5	 		LS	w/group
9-18	10YR 2/1	95	10YR 4/1	5		M	L3	w/gravel
·					·			
. <u> </u>					·			
<sup>1</sup> Type: C=C	oncentration. D=Dep	letion. RM	=Reduced Matrix.	CS=Cov	ered or Co	ated San	d Grains. <sup>2</sup> Lo	Docation: PL=Pore Lining, M=Matrix.
	•							
-	Indicators: (Applic	able to all			-		Indicators	for Problematic Hydric Soils <sup>3</sup> :
Histoso	( )			Redox (S	-		-	2 cm Muck (A10) ( <b>LRR B</b> )
	Epipedon (A2)			d Matrix (			-	Red Parent Material (TF2)
	Histic (A3)			-	ineral (F1)	(except I	MLRA 1)	Very Shallow Dark Surface (TF12)
	gen Sulfide (A4)	~~ (\ 1 1)		-	fatrix (F2)		-	Other (Explain in Remarks)
	ed Below Dark Surfa	ce (ATT)		ed Matrix			<sup>3</sup> India	store of hydrophytic vegetation and
	Dark Surface (A12)			Dark Surf				ators of hydrophytic vegetation and
	Muck Mineral (S1)				urface (F7)	)		land hydrology must be present,
Sandy	gleyed Matrix (S4)		Redox	Depressio	ons (F8)		u	nless disturbed or problematic.
Restrictive	Layer (if present):							
Туре:								
Danth (in also	20):					Hy	dric Soil Pre	sent? Yes X No
Depth (inche marks: 1 chro	ma with redox							
marks: 1 chro	ma with redox							
marks: 1 chro	ma with redox							
marks: 1 chro /DROLOG Wetland Hy	ma with redox							
marks: 1 chro (DROLOG) Wetland Hy Primary Indi	ma with redox / /drology Indicators: cators (minimum one			• ·				Secondary Indicators (2 or more required)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi <u>x</u> Surface	ma with redox f drology Indicators: cators (minimum one e Water (A1)		x Water-	Stained L		(except	MLRA	x Water-Stained Leaves (B9) (MLRA 1, 2,
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi <u>x</u> Surfac <u>x</u> High W	ma with redox ( drology Indicators: cators (minimum one e Water (A1) /ater Table (A2)		<u>x</u> Water- 1, 2	Stained L , <b>4A and</b>		(except	MLRA	x       Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi X Surface X High W X Satura	ma with redox ma with redox drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3)		<u>x</u> Water- 1, 2 Salt Cr	Stained L , <b>4A and</b> ust (B11)	<b>4B</b> )		MLRA	x       Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B)         Drainage Patterns (B10)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi X Surface X High W X Satura Water	ma with redox f drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1)		x Water- 1, 2 Salt Cr Aquatio	Stained L , <b>4A and</b> ust (B11) c Inverteb	<b>4B</b> ) rates (B13)	)	MLRA _	x       Water-Stained Leaves (B9) (MLRA 1, 2,         4A and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi <u>x</u> Surfact <u>x</u> High W <u>x</u> Satura Water Sedime	ma with redox ma with redox f drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		x Water- 1, 2 Salt Cr Aquatio Hydrog	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide	<b>4B</b> ) rates (B13) e Odor (C1	)	-	x       Water-Stained Leaves (B9) (MLRA 1, 2,         4A and 4B)       Drainage Patterns (B10)         Dry-Season Water Table (C2)       Saturation Visible on Aerial Imagery (C9)
marks: 1 chro         (DROLOG)         Wetland Hy         Primary Indi         x       Surfact         x       High W         x       Satura         Water       Sedime         Drift De       Drift De	ma with redox ( drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		x Water- 1, 2 Salt Cr Aquatic Hydrog Oxidize	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizosj	<b>4B</b> ) rates (B13) e Odor (C1 pheres alor	) ) ng Living	MLRA _ - - Roots (C3)	x       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)
marks: 1 chro         (DROLOG)         Wetland Hy         Primary Indii         x       Surface         x       High W         x       Satura         Water       Sedime	ma with redox ( drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4)		x Water- 1, 2 Salt Cr Aquatic Hydrog Oxidize Presen	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizos ce of Rec	<b>4B</b> ) rates (B13) e Odor (C1 pheres alor duced Iron	) ) ng Living (C4)	Roots (C3)	<ul> <li>x Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> </ul>
marks: 1 chro         (DROLOG)         Wetland Hy         Primary Indi         x         Surfac:         x         High W         x         Satura         Water         Sedime         Drift De         Algal M         Iron De	ma with redox ( (drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5)		x Water- 1, 2 Salt Cr Aquatio Hydrog Oxidize Presen Recent	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizosj ce of Rec c Iron Red	<b>4B</b> ) rates (B13) e Odor (C1 pheres alor duced Iron uction in P	) ng Living (C4) lowed So	Roots (C3)	<ul> <li>x Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> </ul>
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi X Surface X High W X Satura Water Sedime Drift De Algal M Iron De Surface	ma with redox (drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6)	e required;	x Water- 1, 2 Salt Cr Aquatio Hydrog Oxidize Presen Recent Stunted	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizos ce of Rec c Iron Red d or Stres	<b>4B</b> ) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants	) )ng Living (C4) lowed So (D1) ( <b>LR</b>	Roots (C3)	X 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)
marks: 1 chro         (DROLOG)         Wetland Hy         Primary Indi         x       Surfact         x       High W         x       Satura         Water       Sedime         Drift De       Algal M         Iron De       Surfact         x       Inunda	ma with redox ma with redox drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial	e required;	x Water- 1, 2 Salt Cr Aquation Hydrog Oxidize Presen Recent Stunted B7) Other (	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizos ce of Rec c Iron Red d or Stres	<b>4B</b> ) rates (B13) e Odor (C1 pheres alor duced Iron uction in P	) )ng Living (C4) lowed So (D1) ( <b>LR</b>	Roots (C3)	<ul> <li>x Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> </ul>
marks: 1 chro         (DROLOG)         Wetland Hy         Primary Indi         x       Surfact         x       High W         x       Satura         Water       Sedime         Drift De       Algal M         Iron De       Surfact         x       Inunda	ma with redox (drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6)	e required;	x Water- 1, 2 Salt Cr Aquation Hydrog Oxidize Presen Recent Stunted B7) Other (	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizos ce of Rec c Iron Red d or Stres	<b>4B</b> ) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants	) )ng Living (C4) lowed So (D1) ( <b>LR</b>	Roots (C3)	X 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)
marks: 1 chro         (DROLOG)         Wetland Hy         Primary Indi         x       Surfact         x       High W         x       Satura         Water       Sedime         Drift De       Algal M         Iron De       Surfact         x       Inunda	ma with redox drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concar	e required;	x Water- 1, 2 Salt Cr Aquation Hydrog Oxidize Presen Recent Stunted B7) Other (	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizos ce of Rec c Iron Red d or Stres	<b>4B</b> ) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants	) )ng Living (C4) lowed So (D1) ( <b>LR</b>	Roots (C3)	X 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)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi X Surface X High W X Satura Water Sedime Drift De Algal M Iron De Surface X Inunda X Sparse	ma with redox ma with redox drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav rvations:	e required;	x Water- 1, 2 Salt Cr Aquatic Hydrog Oxidize Presen Recent Stunter B7) Other ( (B8)	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizos ce of Rec c Iron Red d or Stres	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants n Remarks)	) ng Living (C4) lowed So (D1) (LR	Roots (C3)	X 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)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi X Surfact X High W X Satura Water Sedime Drift De Algal M Iron De Surfact X Inunda X Sparse Field Obser	ma with redox ma with redox drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concar rvations: ter Present? Ye	e required; Imagery ( /e Surface	x Water- 1, 2 Salt Cr Aquation Hydrog Oxidize Presen Recent Stunter (B8) No Dept	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizos ce of Rec i Iron Red d or Stres Explain in	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants n Remarks)	) ng Living (C4) lowed So (D1) ( <b>LR</b>	Roots (C3)	X 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)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi X Surface X High W X Satura Water Sedime Drift De Algal M Iron De Surface X Sparse	ma with redox ( drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav vations: ter Present? Yei Present? Yei	e required; Imagery ( ve Surface	x Water- 1, 2 Salt Cr Aquatio Hydrog Oxidize Presen Recent Stunter B7) Other ( (B8)	Stained L , <b>4A and</b> ust (B11) c Inverteb en Sulfide ed Rhizos ce of Rec c Iron Red d or Stres Explain in h (inches)	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants h Remarks) ): <u>1 incl</u>	) ng Living (C4) lowed So (D1) (LR	Roots (C3) ils (C6) R A)	X 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)
marks: 1 chro <b>(DROLOG)</b> Wetland Hy         Primary Indi         x         Surface         x         High W         x         Satura         Water         Drift De         Algal N         Iron De         Surface         x         Inunda         x         Sparse         Field Obser         Sutface Wat         Water table         Saturation P         (includes ca)	ma with redox ma with redox drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav rvations: ter Present? Yes Present? Yes pillary fringe)	Imagery ( ve Surface	x Water-     1, 2     Salt Cr     Aquatic     Hydrog     Oxidize     Presen     Recent     Stunted B7) Other ( (B8)      No Dept     No Dept     No Dept	Stained L , <b>4A and</b> ust (B11) c Inverteb len Sulfide ed Rhizos ce of Rec lon Red d or Stres Explain in h (inches) h (inches)	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants n Remarks) : <u>1 incl : at surfa</u>	) ng Living (C4) lowed So (D1) (LR	Roots (C3) ils (C6) R A)	x       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)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi X Surface X High W X Satura Water Sedime Orift De Algal M Iron De Surface X Inunda X Sparse Field Obser Surface Water Surface Water Saturation P (includes ca scribe Record	ma with redox ma with redox drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav rvations: ter Present? Ye: Present? Ye: pillary fringe) ed Data (Unnamed 1	Imagery ( /e Surface s <u>x</u> s <u>x</u>	x Water-     1, 2     Salt Cr     Aquatic     Hydrog     Oxidize     Presen     Recent     Stunted B7) Other ( (B8)  No Dept No Dept auge, monitoring v	Stained L , <b>4A and</b> ust (B11) c Inverteb len Sulfide ed Rhizos ce of Rec lon Red d or Stres Explain in h (inches) h (inches)	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants n Remarks) : <u>1 incl : at surfa</u>	) ng Living (C4) lowed So (D1) (LR	Roots (C3) ils (C6) R A)	x       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)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi X Surface X High W X Satura Water Sedime Orift De Algal M Iron De Surface X Inunda X Sparse Field Obser Surface Water Surface Water Saturation P (includes ca scribe Record	ma with redox ma with redox drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav rvations: ter Present? Yes Present? Yes pillary fringe)	Imagery ( /e Surface s <u>x</u> s <u>x</u>	x Water-     1, 2     Salt Cr     Aquatic     Hydrog     Oxidize     Presen     Recent     Stunted B7) Other ( (B8)  No Dept No Dept auge, monitoring v	Stained L , <b>4A and</b> ust (B11) c Inverteb len Sulfide ed Rhizos ce of Rec lon Red d or Stres Explain in h (inches) h (inches)	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants n Remarks) : <u>1 incl : at surfa</u>	) ng Living (C4) lowed So (D1) (LR	Roots (C3) ils (C6) R A)	x       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)
Marks: 1 chro (DROLOG) Wetland Hy Primary Indi X Surface X High W X Satura Water Sedime Orift De Algal M Iron De Surface X Inunda X Sparse Field Obser Surface Water Surface Water Saturation P (includes ca scribe Record	ma with redox ma with redox drology Indicators: cators (minimum one e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav rvations: ter Present? Ye: Present? Ye: pillary fringe) ed Data (Unnamed 1	Imagery ( /e Surface s <u>x</u> s <u>x</u>	x Water-     1, 2     Salt Cr     Aquatic     Hydrog     Oxidize     Presen     Recent     Stunted B7) Other ( (B8)  No Dept No Dept auge, monitoring v	Stained L , <b>4A and</b> ust (B11) c Inverteb len Sulfide ed Rhizos ce of Rec lon Red d or Stres Explain in h (inches) h (inches)	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants n Remarks) : <u>1 incl : at surfa</u>	) ng Living (C4) lowed So (D1) (LR	Roots (C3) ils (C6) R A)	x       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)

Project/Site:	Freeman Road	Logistics	City/County:	Puyallup/Pie	erce Cou	nty	Sampling Date:	3/1	1/2022
Applicant/Owner:	Vector Develop	ment Company				State: WA	Sampling Point:	Wet A	A DP2 Up
Investigator(s):	C. Douglas, M.	Curran	Section	n, Township,	Range:	S17 & 20 R4E T2	0N		
Landform (hillslope	e, terrace, etc.):	Forested	Local re	lief (concave	, convex	, none): <u>concave</u>		Slope:	1-5
Subregion (LRR):	Northwest Fore	sts and Coast (LRR A)	Lat: <u>47.12'33</u>			Long: <u>122.19'03</u>		Datum:	NAD83
Soil Map Unit Nam	ie: <u>Pilchuck</u>	fine sand				NWI Classification:	PFO, PSS, POW		
Are climatic / hydro	ologic conditions	on the site typical for this	time of year?	Yes	х	No	_(If no, explain in Re	emarks)	
Are Vegetation	, Soil	, or Hydrology	significantly	disturbed?	Are "N	ormal Circumstand	ces" Present? Yes	х	No
Are Vegetation	, Soil	, or Hydrology	naturally pro	oblematic?	(If nee	ded, explain any a	nswers in Remarks.)		
								-	

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	NoNoNoNo	X X	- Is the Sampled Area - within a Wetland? -	Yes	No	x	
Remarks: Delineated northern and e	eastern bound	dary of larg	ge wetlan	d system to identify potential bu	ffer impacts for ut	tility line const	ruction	

	Absolute % Cover	Dominant Species?	Indicator Status?	Dominance Test worksheet:
Tree Stratum (Plot size:)		<u> </u>	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:
1. <u>Populus balsamifera ssp. Trichocarpa</u>	80	Yes	FAC FAC	(A)
2. <u>Picea sitchensis</u> 3.	10	No	FAC	Total Number of Dominant         Species Across All Strata:       2         (B)
				、,
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC: <b>50%</b> (A/B)
50%= <u>45</u> 20%= <u>18</u> Total Cover:	90			
Sapling/Shrub Stratum (Plot size:)				Prevalence Index Worksheet:
1. <u>Cornus sericea</u>	30	No	FACW	Total % Cover of: Multiply by:
2. Rubus armeniacus	20	No	FAC	OBL species 0 x1 = 0
3. Symphoricarpos albus	90	Yes	FACU	FACW species x2 = 60
4. Ribes sanguineum	20	No	FACU	FAC species 110 x3 = 330
5				FACU species 110 x4 = 440
50%= <u>80</u> 20%= <u>32</u> Total Cover:	160			UPL species 0 x5 = 0
Herb Stratum (Plot size:)				Column Totals: <b>250</b> (A) <b>830</b> (B)
1				Prevalence Index = B/A = 3.3
2				
3				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation <sup>1</sup> (Provide supporting
8.				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
50%= <u>0</u> 20%= <u>0</u> Total Cover:	0			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: )				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Hedera helix	20		FACU	be present, unless disturbed or problematic.
2.				Hydrophytic
Total Cover:	20			Vegetation
% Bare Ground in Herb Stratum 100 % C	Cover of Bio	tic Crust		Present? Yes No X
Remarks: 50% FAC vegetation				
-				

SOIL

(inches) Color (m			Re	dox Feat	ures			
	oist) %	Colo	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-8 10YR 3	3/2 100						SiL	w/gravel
8-18 10YR	/2 100						SL	w/gravel
		·						
<sup>1</sup> Type: C=Concentration	D=Depletion, F	M=Reduc	ced Matrix,	CS=Cov	ered or Co	ated Sand	Grains. <sup>2</sup> Loca	tion: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	(Applicable to	all LRRs,	unless oth	erwise	noted.)		Indicators for	Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)			Sandy F	Redox (S	5)			2 cm Muck (A10) ( <b>LRR B</b> )
Histic Epipedon (A2	)			l Matrix (				Red Parent Material (TF2)
Black Histic (A3)			-		ineral (F1)	(except N	/ILRA 1)	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A	•		-	-	latrix (F2)		. <u> </u>	Other (Explain in Remarks)
Depleted Below Date				d Matrix			3	
Thick Dark Surface					ace (F6)			rs of hydrophytic vegetation and
Sandy Muck Minera					urface (F7	)		d hydrology must be present,
Sandy gleyed Matri	(S4)		Redox [	Depressio	ons (F8)		unle	ss disturbed or problematic.
Restrictive Layer (if pre	•							
<b>T</b>								
Depth (inches):						Нус	dric Soil Prese	nt? Yes <u>NoX</u>
Depth (inches):	dox					Нус	dric Soil Prese	nt? Yes NoX
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi	dox cators:		all that anni			Нус	dric Soil Prese	
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin	dox cators:				eaves (BQ			Secondary Indicators (2 or more required)
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1)	dox cators: num one require		Water-S	tained L	eaves (B9)			Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b>
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/	dox cators: num one require		Water-S 1, 2,	tained L 4A and				Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> )
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minim Surface Water (A1) High Water Table ( <i>i</i> x Saturation (A3)	dox cators: num one require		Water-S 1, 2, Salt Cru	tained L <b>4A and</b> st (B11)	<b>4B</b> )	(except		Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10)
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/	dox cators: ium one require		Water-S 1, 2, Salt Cru Aquatic	itained L <b>4A and</b> st (B11) Inverteb		)		Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> )
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/ x Saturation (A3) Water Marks (B1)	dox cators: ium one require		Water-S <b>1, 2,</b> Salt Cru Aquatic Hydroge	tained L 4A and st (B11) Inverteb en Sulfide	<b>4B</b> ) rates (B13 e Odor (C1	) )		Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2)
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table ( <i>i</i> x Saturation (A3) Water Marks (B1) Sediment Deposits	dox cators: ium one require \2) (B2)		Water-S <b>1, 2,</b> Salt Cru Aquatic Hydroge Oxidized	tained L 4A and st (B11) Inverteb n Sulfide d Rhizosj	<b>4B</b> ) rates (B13 e Odor (C1	) ) ng Living I	MLRA	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/ x Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (	dox cators: ium one require \2) (B2)		Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presence	tained L 4A and st (B11) Inverteb n Sulfide d Rhizos e of Rec	<b>4B</b> ) rates (B13 e Odor (C1 pheres alo	) ) (C4)	MLRA	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/ x Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (	dox cators: num one require x2) (B2) B4)		Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent	tained L 4A and st (B11) Inverteb n Sulfide d Rhizos re of Rec Iron Red	4B) rates (B13 e Odor (C1 pheres alou luced Iron	) )) ng Living I (C4) lowed Soi	MLRA	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)
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/ x Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust ( Iron Deposits (B5)	dox cators: num one require h2) (B2) B4) (B6)	d; check /	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted	tained L 4A and st (B11) Inverteb en Sulfide d Rhizos e of Rec iron Red or Stres	4B) rates (B13 e Odor (C1 oheres aloo luced Iron uction in P	) )) ng Living I (C4) lowed Soi (D1) (LRI	MLRA	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/ x Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust ( Iron Deposits (B5) Surface Soil Cracks	dox cators: num one require h2) (B2) 34) (B6) n Aerial Imager	d; check /	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted	tained L 4A and st (B11) Inverteb en Sulfide d Rhizos e of Rec iron Red or Stres	<b>4B</b> ) rates (B13 e Odor (C1 pheres alou luced Iron uction in P sed Plants	) )) ng Living I (C4) lowed Soi (D1) (LRI	MLRA	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) 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) ( <b>LRR A</b> )
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table ( <i>r</i> x Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust ( Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated Field Observations:	dox cators: ium one require 12) (B2) 34) (B6) n Aerial Imager Concave Surfa	d; check : 	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted Other (E	tained L 4A and st (B11) Inverteb en Sulfide d Rhizosj e of Rec Iron Red or Stres Explain in	4B) rates (B13 e Odor (C1 oheres aloo luced Iron uction in P sed Plants n Remarks)	) )ng Living I (C4) lowed Soi (D1) (LRI	MLRA	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) 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) ( <b>LRR A</b> )
Depth (inches): harks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/ x Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust ( Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated Field Observations: Surface Water Present?	dox cators: ium one require A2) (B2) 34) (B6) n Aerial Imager Concave Surfa Yes	d; check ; 	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	(inches)	4B) rates (B13 e Odor (C1 pheres alor luced Iron uction in P sed Plants a Remarks)	) ng Living l (C4) lowed Soi (D1) (LRI	MLRA	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) 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) ( <b>LRR A</b> )
Depth (inches): arks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/ x Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust ( Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated Field Observations: Surface Water Present? Water table Present?	dox cators: ium one require 12) (B2) B4) (B6) n Aerial Imager Concave Surfa Yes Yes	d; check / 	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E Depth Depth	(inches) (inches) (inches)	4B) rates (B13 e Odor (C1 pheres alor luced Iron uction in P sed Plants Remarks)	) ng Living I (C4) lowed Soi (D1) (LRI	MLRA	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) 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) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
Depth (inches): harks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/ x Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust ( Iron Deposits (B3) Surface Soil Cracks Inundation Visible of Sparsely Vegetated Field Observations: Surface Water Present? Water table Present? Saturation Present? (includes capillary fringe)	dox cators: ium one require 12) (B2) 34) (B6) n Aerial Imager Concave Surfa Yes Yes Yes Yes	d; check ; 	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted Other (E Depth Depth Depth	tained L 4A and st (B11) Inverteb en Sulfide d Rhizosj e of Rec Iron Red or Stres Explain ir (inches) (inches)	4B) rates (B13 e Odor (C1 oheres aloo luced Iron uction in P sed Plants Remarks)	) )) ng Living I (C4) lowed Soi (D1) (LRI	MLRA	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)
Depth (inches): harks: 2 chroma with no re DROLOGY Wetland Hydrology Indi Primary Indicators (minin Surface Water (A1) High Water Table (/ x Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust ( Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated Field Observations: Surface Water Present? Water table Present?	dox cators: ium one require 12) (B2) 34) (B6) n Aerial Imager Concave Surfa Yes Yes Yes Yes	d; check ; 	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted Other (E Depth Depth Depth	tained L 4A and st (B11) Inverteb en Sulfide d Rhizosj e of Rec Iron Red or Stres Explain ir (inches) (inches)	4B) rates (B13 e Odor (C1 oheres aloo luced Iron uction in P sed Plants Remarks)	) )) ng Living I (C4) lowed Soi (D1) (LRI	MLRA	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)

Project/Site:	Freeman Road Logistics			City/County:	Puyallup/Pi	ierce Cou	nty		Sam	npling Date:	3/1	1/2022
Applicant/Owner:	Vector Development Con	npany					State:	WA	Sam	npling Point:	Wet	A DP3 W
Investigator(s):	C. Douglas, M. Curran			Section	n, Township,	Range:	S17 &	20 R4E T2	20N			
Landform (hillslope	e, terrace, etc.): Fore	ested		Local re	lief (concave	e, convex	, none):	concave			Slope:	1-5
Subregion (LRR):	Northwest Forests and Co	oast (LRR A)	Lat:	47.12'33			Long:	122.19'03	3	[	Datum:	NAD83
Soil Map Unit Nam	ne: Pilchuck fine sand	1					NWI Cla	assificatior	n: <u>PFO, F</u>	PSS, POW		
Are climatic / hydro	ologic conditions on the sit	e typical for th	nis time of y	ear?	Yes	х	No		(If no,	explain in Re	emarks)	
Are Vegetation	, Soil, or	Hydrology		significantly	disturbed?	Are "N	lormal C	Circumstan	ices" Pres	sent? Yes	Х	No
Are Vegetation	, Soil, or	Hydrology		naturally pro	oblematic?	(If nee	ded, ex	plain any a	answers i	n Remarks.)		
SUMMARY OF	FINDINGS – Attach	site map s	howing s	ampling p	point locat	tions, ti	ansec	ts, impo	ortant fe	eatures, et	c.	
		<b>X</b> N										
Hydrophytic Veget		X No			ampled Area	a	Yes	х	No			
Hydric Soil Presen		<u>X</u> No X No		within a	Wetland?		162				-	
Wetland Hydrolog	y Present? Yes	<u> </u>										
VEGETATION												
						Domina	nco Tos	st worksh	oot.			
			Absolute	Dominant	Indicator	Domina		St WORKSIN				
Tree Stratum	(Plot size:	)	% Cover	Species?	Status?			inant Spec				
1. Populus balsar	nifera ssp. Trichocarpa		60	Yes	FAC	That Are	OBL, F	ACW, or	FAC:	3		(A)
2								Dominan				
3						Species	Across	All Strata:		3		(B)
4						Percent	of Dom	inant Spec	ies			
5						That Are	e OBL, F	ACW, or	FAC:	100%		(A/B)
	30 20%= 12	Total Cover:	60		-							
Sapling/Shrub Stra	atum (Plot size:	)						ex Works	heet:			
1. <u>Cornus sericea</u>			80	Yes	FACW		al % Co			Multiply b	y:	
2. Rubus armenia			20	No	FAC	OBL spe		0	x1 =	0		
3. <u>Rubus spectab</u>	DIIIS		30	Yes	FAC	FACW s	•		x2 =	160		
4 5.						FAC spe FACU s		<u>110</u> 0	x3 =	330		
	65 20%= 26	Total Cover:	130			UPL spe		0	x4 = x5 =	0		
Herb Stratum	(Plot size:		150			Column		190	(A)	490		(B)
1.	(1 101 3126.	)						dex = B/A				(D)
2						11010				2.0		
3.						Hvdrop	nvtic Ve	getation	Indicator	's:		
4.							•	•		hytic Vegetat	ion	
5.						х		minance T	• •			
6.						Х	3 - Pre	valence Ir	ndex is ≤	3.0 <sup>1</sup>		
-							4 - Mo	rphologica	l Adaptat	ion <sup>1</sup> (Provide		rtina
8.										a separate s		
9.							5 - We	tland Non-	Vascular	Plants <sup>1</sup>		
50%=	0_20%=_0_	Total Cover:	0				Proble	matic Hyd	rophytic \	/egetation <sup>1</sup> (	Explain)	)
Woody Vine Stratu	um (Plot size:							dric soil a ss disturb		d hydrology blematic.	must	
2						Hydrop	nytic					
		Total Cover:				Vegetat	ion					
% Ba	re Ground in Herb Stratum	<u>100</u> %C	over of Bio	tic Crust		Present	?		Yes	X No		<u> </u>
Remarks: 100% F	AC vegetation											

SOIL

Depth	Matrix		Re	dox Feat	ures			
0-5	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
				/0	турс	200	SiL	Tentano
5-18	10YR 3/1	100						
	10YR 4/1	85	10YR 5/4	15	D	М	SiL	
<sup>1</sup> Type: C=Cor	ncentration, D=Depl	etion, RM=	Reduced Matrix,	CS=Cov	ered or Coa	ated San	d Grains. <sup>2</sup> Loc	cation: PL=Pore Lining, M=Matrix.
Hydric Soil In	dicators: (Applica	able to all	I RRs unless of	herwise	noted )		Indicators fr	or Problematic Hydric Soils <sup>3</sup> :
Histosol				Redox (S				2 cm Muck (A10) ( <b>LRR B</b> )
	ipedon (A2)			d Matrix (	•			Red Parent Material (TF2)
Black His					ineral (F1)	except	MLRA 1)	Very Shallow Dark Surface (TF12)
	n Sulfide (A4)				latrix (F2)	overbi		Other (Explain in Remarks)
; 0	( )	o (A11)						
	Below Dark Surfac	e (ATT)		d Matrix			<sup>3</sup> Indiaat	ore of hydrophytic vegetation and
	rk Surface (A12)			Dark Surf				ors of hydrophytic vegetation and
	uck Mineral (S1)				urface (F7)		wetla	and hydrology must be present,
Sandy gl	eyed Matrix (S4)		Redox I	Depressio	ons (F8)		unl	ess disturbed or problematic.
Restrictive La	ayer (if present):							
Туре:								
Depth (inches)	):					Hy	dric Soil Prese	ent? Yes X No
DROLOGY Wetland Hydr	ology Indicators:							
-	itors (minimum one	required:	check all that appl	IV)				Secondary Indicators (2 or more required)
	Water (A1)		x Water-S		eaves (R9)	(excent	MIRA N	Water-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)			4A and				4A and 4B)
						<b>(</b>		
<ul> <li>x Saturatio</li> </ul>			Salt Cru				_	
				ist (B11)	,		-	Drainage Patterns (B10)
Water Ma	t Donooito (P2)		Aquatic	Inverteb	rates (B13)		-	Drainage Patterns (B10) Dry-Season Water Table (C2)
	it Deposits (BZ)		Aquatic	Inverteb	,			Drainage Patterns (B10)
Water Ma Sedimen	iosits (B3)		Aquatic	Inverteb en Sulfide	rates (B13) e Odor (C1)	)	  Roots (C3)	Drainage Patterns (B10) Dry-Season Water Table (C2)
Water Ma Sedimen Drift Dep			Aquatic x Hydroge Oxidize	Inverteb en Sulfide d Rhizosp	rates (B13) e Odor (C1)	ig Living	Roots (C3)	Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Water Ma Sedimen Drift Dep Algal Ma	osits (B3) t or Crust (B4)		Aquatic X Hydroge Oxidize Presend	Inverteb en Sulfide d Rhizosp ce of Red	rates (B13) e Odor (C1) oheres alor luced Iron (	ng Living C4)		Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Water Ma Sedimen Drift Dep Algal Ma Iron Dep	osits (B3) t or Crust (B4) osits (B5)		Aquatic X Hydroge Oxidize Presene Recent	Inverteb en Sulfide d Rhizosp ce of Red Iron Red	rates (B13) Odor (C1) oheres alor luced Iron ( uction in Pl	ng Living C4) owed So	ils (C6)	<ul> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> </ul>
Water Ma Sedimen Drift Dep Algal Ma Iron Depo	osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)	Imageny (F	Aquatic Aquatic Aquatic Automatic Au	Inverteb en Sulfide d Rhizosp ce of Red Iron Red or Stress	rates (B13) Odor (C1) oheres alor luced Iron ( uction in Pl sed Plants	ng Living C4) owed So	ils (C6)	<ul> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S x Inundatic	osits (B3) t or Crust (B4) osits (B5)		Aquatic x Hydroge Oxidized Presend Recent Stunted 37) Other (B	Inverteb en Sulfide d Rhizosp ce of Red Iron Red or Stress	rates (B13) Odor (C1) oheres alor luced Iron ( uction in Pl	ng Living C4) owed So	ils (C6)	<ul> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> </ul>
Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S x Inundatic	osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concave		Aquatic x Hydroge Oxidized Presend Recent Stunted 37) Other (B	Inverteb en Sulfide d Rhizosp ce of Red Iron Red or Stress	rates (B13) Odor (C1) oheres alor luced Iron ( uction in Pl sed Plants	ng Living C4) owed So	ils (C6)	<ul> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Water Ma Sedimen Drift Dep Algal Ma Iron Depo Surface S X Inundatic X Sparsely	osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concave	e Surface	Aquatic Aquatic Aquatic Advatic Advati	Inverteb en Sulfide d Rhizosp ce of Red Iron Red or Stres Explain in	rates (B13) e Odor (C1) oheres alor luced Iron ( uction in Pl sed Plants Remarks)	ng Living C4) owed So	ils (C6)	<ul> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
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Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S X Inundatic X Sparsely Field Observa Surface Water Water table Pr Saturation Pre	osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concave ations: r Present? Yes resent? Yes	e Surface	Aquatic X Hydrogo Oxidize Presend Recent Stunted 37) Other (B (B8)	Inverteb en Sulfide d Rhizosı ce of Red Iron Red or Stres: Explain in (inches) o (inches)	ates (B13) odor (C1) oheres alor luced Iron ( uction in Pl sed Plants Remarks)	g Living C4) owed So (D1) (LR	ils (C6) (R A)	<ul> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S x Inundatic x Sparsely Field Observa Surface Water Water table Pr Saturation Pre (includes capil	osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concave ations: r Present? Yes resent? Yes	e Surface	Aquatic     X     Hydroge     Oxidize     Presend     Recent     Stunted 37) Other (B (B8)	Inverteb en Sulfide d Rhizosi ce of Red Iron Red or Stres: Explain in (inches) h (inches)	rates (B13) e Odor (C1) oheres alor luced Iron ( uction in Pl sed Plants Remarks) :	g Living C4) owed So (D1) (LR <u>ce</u>	ils (C6)	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)
Water Ma Sedimen Drift Dep Algal Ma Iron Depu Surface S X Inundatic X Sparsely Field Observa Surface Water Water table Pr Saturation Pre (includes capil cribe Recorded	osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concave ations: r Present? Yes resent? Yes llary fringe) d Data (Unnamed Ti	e Surface	Aquatic Aquatic Aquatic Aquatic Arrow Hydroge Oxidize Presend Recent Stunted To the (I B8) No <u>x</u> Depth No Depth No Depth uge, monitoring w	Inverteb en Sulfide d Rhizosi ce of Red Iron Red or Stres: Explain in (inches) h (inches)	rates (B13) e Odor (C1) oheres alor luced Iron ( uction in Pl sed Plants Remarks) :	g Living C4) owed So (D1) (LR <u>ce</u>	ils (C6)	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)
Water Ma Sedimen Drift Dep Algal Ma Iron Depu Surface S X Inundatic X Sparsely Field Observa Surface Water Water table Pr Saturation Pre (includes capil cribe Recorded	osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav ations: r Present? Yes resent? Yes esent? Yes llary fringe)	e Surface	Aquatic Aquatic Aquatic Aquatic Arrow Hydroge Oxidize Presend Recent Stunted To the (I B8) No <u>x</u> Depth No Depth No Depth uge, monitoring w	Inverteb en Sulfide d Rhizosi ce of Red Iron Red or Stres: Explain in (inches) h (inches)	rates (B13) e Odor (C1) oheres alor luced Iron ( uction in Pl sed Plants Remarks) :	g Living C4) owed So (D1) (LR <u>ce</u>	ils (C6)	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)
Water Ma Sedimen Drift Dep Algal Ma Iron Depu Surface S X Inundatic X Sparsely Field Observa Surface Water Water table Pr Saturation Pre (includes capil cribe Recorded	osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concave ations: r Present? Yes resent? Yes llary fringe) d Data (Unnamed Ti	e Surface	Aquatic Aquatic Aquatic Aquatic Arrow Hydroge Oxidize Presend Recent Stunted To the (I B8) No <u>x</u> Depth No Depth No Depth uge, monitoring w	Inverteb en Sulfide d Rhizosi ce of Red Iron Red or Stres: Explain in (inches) h (inches)	rates (B13) e Odor (C1) oheres alor luced Iron ( uction in Pl sed Plants Remarks) :	g Living C4) owed So (D1) (LR <u>ce</u>	ils (C6)	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)
Water Ma Sedimen Drift Dep Algal Ma Iron Depu Surface S X Inundatic X Sparsely Field Observa Surface Water Water table Pr Saturation Pre (includes capil cribe Recorded	osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concave ations: r Present? Yes resent? Yes llary fringe) d Data (Unnamed Ti	e Surface	Aquatic Aquatic Aquatic Aquatic Arrow Hydroge Oxidize Presend Recent Stunted To the (I B8) No <u>x</u> Depth No Depth No Depth uge, monitoring w	Inverteb en Sulfide d Rhizosi ce of Red Iron Red or Stres: Explain in (inches) h (inches)	rates (B13) e Odor (C1) oheres alor luced Iron ( uction in Pl sed Plants Remarks) :	g Living C4) owed So (D1) (LR <u>ce</u>	ils (C6)	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)

Project/Site:	Freeman Road Log	istics	C	ity/County: P	uyallup/Pie	rce Cou	unty		Sampling Date	e: <u>3/1</u>	1/2022
Applicant/Owner:	Vector Developmen	nt Company					State: W	'A	Sampling Poir	nt: Wet A	A DP4 Up
Investigator(s):	C. Douglas, M. Cur	ran		Section,	Township, F	Range:	S17 & 20	R4E T20	N		
Landform (hillslope	, terrace, etc.):	Forested		Local relie	f (concave,	conve	x, none): <u>co</u>	oncave		Slope:	1-5
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat: 4	7.12'33			Long: 12	22.19'03		Datum:	NAD83
Soil Map Unit Nam	e: Pilchuck fine	e sand					NWI Class	ification:	PFO, PSS, POW	1	
Are climatic / hydro	ologic conditions on t	he site typical for this	time of ye	ar?	Yes	х	No		(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly di	sturbed?	Are "I	Normal Circ	umstance	es" Present? Ye	es <u>x</u>	No
Are Vegetation	, Soil	, or Hydrology	r	naturally probl	ematic?	(If ne	eded, expla	in any an	swers in Remarks	s.)	

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status?	Dominance Test worksheet: Number of Dominant Species
1. Populus balsamifera ssp. Trichocarpa	80	Yes	FAC	That Are OBL, FACW, or FAC:(A)
2. <u>Picea sitchensis</u> 3.	10	No	FAC	Total Number of Dominant         Species Across All Strata:         2         (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)
$50\% = \frac{45}{20\%} = \frac{18}{18}$ Total Cover:	90			Describence Index Workshoet
Sapling/Shrub Stratum (Plot size:)			FACW	Prevalence Index Worksheet:
1. <u>Cornus sericea</u>	30	<u>No</u>	FAC	Total % Cover of: Multiply by:
2. Rubus armeniacus	20	No		OBL species         0         x1 =         0
3. Symphoricarpos albus	90	Yes	FACU	FACW species $30 \times 2 = 60$
4. Ribes sanguineum	20	No	FACU	FAC species 110 x3 = 330
5				FACU species <u>110</u> x4 = <u>440</u>
50%= <u>80</u> 20%= <u>32</u> Total Cover:	160			UPL species x5 = 0
Herb Stratum (Plot size:)				Column Totals: 250 (A) 830 (B)
1				Prevalence Index = B/A = 3.3
2				Hydrophytic Vegetation Indicators:         1 - Rapid Test for Hydrophytic Vegetation         2 - Dominance Test is >50%         3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptation <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)         5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<ol> <li>Total Cover:</li> <li>% Bare Ground in Herb Stratum <u>100</u>% C</li> </ol>		otic Crust		Hydrophytic Vegetation Present? Yes <u>No X</u>
		tic Crust		

Depth	Matri			Net	dox Featu								
(inches)	Color (moist)	%	Color	(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			Remar	ks	
0-8	10YR 3/2	100						SiL	w/g	ravel			
8-18	10YR 4/2	100						SL	w/g	ravel			
<sup>1</sup> Type: C=C	concentration, D=	Depletion, F	RM=Redu	ced Matrix	, CS=Co	vered or C	oated Sa	nd Grains. <sup>2</sup>	Location:	PL=Pore	Lining, M=	=Matrix.	
Hydric Soil	Indicators: (Ap	plicable to	all LRRs	, unless o	therwise	e noted.)		Indicators f	for Proble	matic Hy	dric Soils	3:	
Histoso	ol (A1)			Sandy F	Redox (S	5)			2 cm I	Muck (A10	D) (LRR B	)	
Histic E	Epipedon (A2)			Stripped	d Matrix (	(S6)			Red P	arent Mat	erial (TF2	2)	
Black H	Histic (A3)			Loamy I	Mucky M	lineral (F1)	(except	MLRA 1)	Very S	Shallow Da	ark Surfac	e (TF12)	
	gen Sulfide (A4)					Aatrix (F2)		_	Other	(Explain i	n Remark	s)	
	ed Below Dark S		)		d Matrix			2					
	Dark Surface (A1	,		-		face (F6)			tors of hyd		•		
	Muck Mineral (S	,				Surface (F7	)		and hydrole	•••		it,	
Sandy	gleyed Matrix (S	4)		_ Redox [	Depressio	ons (F8)		un	less disturl	bed or pro	blematic.		
Restrictive	Layer (if preser	it):											
Type:													
· · ·													
Depth (inche	es): ma with no redo:	(					Нус	Iric Soil Pres	sent?	Y	es	No	<u> </u>
Depth (inche harks: 2 chro	ma with no redo:						Нус	Iric Soil Pres	sent?	Y	es	No	<u> </u>
Depth (inche harks: 2 chro DROLOG Wetland Hy	ma with no redo: / /drology Indicat	ors:	ed: check	all that app			Hyo	Iric Soil Pres					
Depth (inche narks: 2 chro DROLOG) Wetland Hy Primary Indi	ma with no redo: / /drology Indicat icators (minimum	ors:	d; check			eaves (B9			Second	ary Indica	ators (2 or	more rec	quired)
Depth (inche arks: 2 chro DROLOG) Wetland Hy Primary Indi Surfac	ma with no redo: / /drology Indicat	ors:	d; check	Water-S	Stained L	eaves (B9			Second Water	ary Indica		more rec	quired)
Depth (inche arks: 2 chro DROLOGY Wetland Hy Primary Indi Surfac High W	ma with no redo: //drology Indicat icators (minimum e Water (A1) //ater Table (A2)	ors:	ed; check	Water-S		<b>4B</b> )			Second Water 4A	ary Indica -Stained I <b>and 4B</b> )	ators (2 or ∟eaves (B	more rec	quired)
Depth (inche narks: 2 chro DROLOG Wetland Hy Primary Indi Surfac High W x Satura	ma with no redo: / /drology Indicat icators (minimum e Water (A1)	ors:		Water-S 1, 2, Salt Cru	Stained L 4A and Ist (B11)	<b>4B</b> )	) (except		Second Water 4A Draina	lary Indica -Stained I and 4B) age Patter	ators (2 or ∟eaves (B	more rec 9) (MLRA	quired)
Depth (inche narks: 2 chro DROLOGY Wetland Hy Primary Indi Surfac High W x Satura Water	ma with no redo rdrology Indicat icators (minimum e Water (A1) Vater Table (A2) tion (A3)	ors: one require	ed; check	Water-S 1, 2, Salt Cru Aquatic	Stained L 4A and Ist (B11) Inverteb	<b>4B</b> )	) (except		Second Water 4A Draina Dry-Se	ary Indica -Stained I and 4B) age Patter eason Wa	ators (2 or ∟eaves (B ns (B10)	more rec 9) (MLRA (C2)	quired) <b>A 1, 2</b> ,
Depth (inche harks: 2 chro DROLOG) Wetland Hy Primary Indi Surface High W x Satura Water Sedime	ma with no redo: f rdrology Indicat icators (minimum e Water (A1) Vater Table (A2) tion (A3) Marks (B1)	ors: one require		Water-S 1, 2, Salt Cru Aquatic Hydroge	Stained L 4A and Ist (B11) Inverteb	<b>4B</b> ) prates (B13 e Odor (C1	) (except		Second Water 4A Draina Dry-Se Satura	lary Indica -Stained I and 4B) age Patter eason Wa ation Visib	ators (2 or ∟eaves (B ns (B10) tter Table	more rec 9) (MLRA (C2) al Imagen	quired) <b>A 1, 2</b> ,
Depth (inche marks: 2 chro DROLOG) Wetland Hy Primary Indi Surface High W x Satura Water Sedime Drift De	ma with no redo: // /drology Indicat icators (minimum e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)	ors: one require	ed; check	Water-S <b>1, 2,</b> Salt Cru Aquatic Hydroge Oxidized	Stained L 4A and Ist (B11) Inverteb en Sulfide d Rhizos	<b>4B</b> ) prates (B13 e Odor (C1	) (except ) ) ng Living	MLRA	Second Water 4A Draina Dry-Se Satura Geom	lary Indica -Stained I and 4B) age Patter eason Wa ation Visib	ators (2 or _eaves (B ms (B10) tter Table le on Aeri sition (D2	more rec 9) (MLRA (C2) al Imagen	quired) <b>A 1, 2</b> ,
Depth (inche marks: 2 chroo Metland Hy Primary Indi Surface High W x Satura Water Sedime Algal M	ma with no redo: ////////////////////////////////////	ors: one require	ed; check	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend	Stained L 4A and list (B11) Inverteb en Sulfide d Rhizos	<b>4B</b> ) prates (B13 e Odor (C1 pheres alo	) (except ) ) ng Living (C4)	MLRA	Second Water 4A Draina Dry-Se Satura Geom Shallo	lary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po	ators (2 or Leaves (B Ins (B10) Iter Table Ile on Aeri sition (D2) d (D3)	more rec 9) (MLRA (C2) al Imagen	quired) <b>A 1, 2</b> ,
Depth (inche marks: 2 chroo DROLOGY Wetland Hy Primary Indi Surface High W x Satura Water Sedime Drift De Algal M Iron De	ma with no redo: // /drology Indicat icators (minimum e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4)	ors: one require	ed; check	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent	Stained L 4A and 1st (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red	<b>4B</b> ) orates (B13 e Odor (C1 pheres alo duced Iron	) (except ) ng Living (C4) lowed Sc	MLRA	Second Water 4A Draina Dry-Se Satura Geom Shallo FAC-N	lary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po w Aquitar leutral Te	ators (2 or Leaves (B Ins (B10) Iter Table Ile on Aeri sition (D2) d (D3)	more rec 9) (MLRA (C2) al Imager )	quired) <b>A 1, 2</b> ,
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Depth (inche marks: 2 chro DROLOGY Wetland Hy Primary Indi Surfac High W X Satura Water Sedime Drift De Algal M Iron De Surfac Inunda	ma with no redox ma with no redox for a consecutive redrology Indicat icators (minimum e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B	ors: one require	y (B7)	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted	Stained L 4A and 1st (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres	<b>4B</b> ) rates (B13 e Odor (C1 pheres alo duced Iron luction in F sed Plants	) (except ) ng Living (C4) 'lowed Sc (D1) (LF	MLRA	Second Water Draina Dry-Se Satura Geom Shallo FAC-N Raised	ary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po w Aquitar Jeutral Te d Ant Mou	ators (2 or _eaves (B ns (B10) tter Table le on Aeri sition (D2 d (D3) st (D5) unds (D6)	more rec 9) (MLRA (C2) al Imager ) (LRR A)	quired) <b>A 1, 2,</b>
Depth (inche marks: 2 chro DROLOGY Wetland Hy Primary Indi Surfac High W X Satura Water Sedime Drift De Algal M Iron De Surfac Inunda	ma with no redo: // /drology Indicat icators (minimum e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B tion Visible on A ely Vegetated Co	ors: one require	y (B7)	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted	Stained L 4A and 1st (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres	<b>4B</b> ) rates (B13 e Odor (C1 pheres alo duced Iron luction in F sed Plants	) (except ) ng Living (C4) 'lowed Sc (D1) (LF	MLRA	Second Water Draina Dry-Se Satura Geom Shallo FAC-N Raised	ary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po w Aquitar Jeutral Te d Ant Mou	ators (2 or _eaves (B ns (B10) tter Table le on Aeri sition (D2 d (D3) st (D5) unds (D6)	more rec 9) (MLRA (C2) al Imager ) (LRR A)	quired) <b>A 1, 2,</b>
Depth (inche marks: 2 chro DROLOG) Wetland Hy Primary Indi Surface High W X Satura Water Sedime Drift De Algal M Iron De Surface Inunda Sparse	ma with no redo: // /drology Indicat icators (minimum e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B tion Visible on A ely Vegetated Co	ors: one require	y (B7) ce (B8)	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	Stained L 4A and Ist (B11) Inverteb en Sulfide d Rhizos d Rhizos ce of Rec Iron Red or Stres Explain in	<b>4B</b> ) rates (B13 e Odor (C1 pheres alo duced Iron luction in F sed Plants	) (except ) ng Living (C4) lowed Sc (D1) (LF	MLRA	Second Water Draina Dry-Se Satura Geom Shallo FAC-N Raised	ary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po w Aquitar Jeutral Te d Ant Mou	ators (2 or _eaves (B ns (B10) tter Table le on Aeri sition (D2 d (D3) st (D5) unds (D6)	more rec 9) (MLRA (C2) al Imager ) (LRR A)	quired) <b>A 1, 2,</b>
Depth (inche marks: 2 chro DROLOG) Wetland Hy Primary Indi Surface High W x Satura Water Sedime Drift De Algal M Iron De Surface Inunda Sparse	ma with no redo: // /drology Indicat icators (minimum e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B tion Visible on A ely Vegetated Co rvations: ter Present?	ors: one require ) ) erial Imager ncave Surfa	y (B7) ce (B8)	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	Stained L 4A and Ist (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres Explain ir (inches)	4B) rrates (B13 e Odor (C1 pheres alo duced Iron luction in F sed Plants n Remarks	) ) (except ) ) ng Living (C4) 'lowed Sc (D1) (LF	MLRA	Second Water Draina Dry-Se Satura Geom Shallo FAC-N Raised	ary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po w Aquitar Jeutral Te d Ant Mou	ators (2 or _eaves (B ns (B10) tter Table le on Aeri sition (D2 d (D3) st (D5) unds (D6)	more rec 9) (MLRA (C2) al Imager ) (LRR A)	quired) <b>A 1, 2,</b>
Depth (inche marks: 2 chro Metland Hy Primary Indi Surface High W x Satura Water Sedime Algal M Iron De Surface Sparse Field Obset Surface Wa	ma with no redo: // // // // // // // // // /	ors: one require ) )) erial Imager ncave Surfa Yes	y (B7) ce (B8) No	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	Stained L 4A and Ist (B11) Inverteb en Sulfide d Rhizos e of Rec Iron Red or Stres Explain ir (inches) (inches)	4B) rrates (B13 e Odor (C1 pheres alo duced Iron luction in F sed Plants n Remarks	) (except ) ) ng Living (C4) lowed Sc (D1) (LF	MLRA	Second Water 4A Draina Dry-Se Satura Geom Shallo FAC-N Raised Frost-I	ary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po w Aquitar Veutral Te d Ant Mou Heave Hu	ators (2 or _eaves (B ns (B10) tter Table le on Aeri sition (D2 d (D3) st (D5) inds (D6) immocks (	more rec 9) (MLRA (C2) al Imager ) (LRR A)	quired] <b>A 1, 2,</b> ry (C9
Depth (inche marks: 2 chro Metland Hy Primary Indi Surface High W X Satura Water Drift De Algal M Iron De Surface Sparse Field Obser Surface Wa Water table Saturation F (includes ca	ma with no redox rdrology Indicat icators (minimum e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B tion Visible on A ely Vegetated Co rvations: ter Present? Present? Present? pillary fringe)	ors: one require ) ) erial Imagen ncave Surfa Yes Yes Yes	y (B7) ce (B8) No No	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (B Depth Depth Depth	Stained L 4A and Ist (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres Explain ir (inches) (inches)	4B) rrates (B13 e Odor (C1 pheres alo duced Iron luction in F sed Plants n Remarks :	) (except ) ng Living (C4) lowed Sc (D1) (LF ) es	MLRA Roots (C3) iils (C6) (R A) Wetland Hyd	Second Water 4A Draina Dry-Se Satura Geom Shallo FAC-N Raisee Frost-I	ary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po w Aquitar Jeutral Te d Ant Mou Heave Hu	ators (2 or _eaves (B ns (B10) tter Table le on Aeri sition (D2 d (D3) st (D5) inds (D6) immocks (	more rec 9) ( <b>MLR</b> (C2) al Imager ) ( <b>LRR A</b> ) (D7)	quired <b>A 1, 2</b> , ry (C9
Depth (inche marks: 2 chro Metland Hy Primary Indi Surface High W X Satura Water Sedime Drift De Algal M Iron De Surface Surface Surface Surface Wa Water table Saturation F (includes ca cribe Record	ma with no redox rdrology Indicat icators (minimum e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) Mat or Crust (B4) eposits (B5) e Soil Cracks (B tion Visible on A ely Vegetated Co rvations: ter Present? Present? pillary fringe) led Data (Unnam	ors: one require	y (B7)  ce (B8) No No No gauge, n	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E Depth Depth Depth Depth	Stained L 4A and Ist (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres Explain ir (inches) (inches)	4B) rrates (B13 e Odor (C1 pheres alo duced Iron luction in F sed Plants n Remarks :	) (except ) ng Living (C4) lowed Sc (D1) (LF ) es	MLRA Roots (C3) iils (C6) (R A) Wetland Hyd	Second Water 4A Draina Dry-Se Satura Geom Shallo FAC-N Raisee Frost-I	ary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po w Aquitar Jeutral Te d Ant Mou Heave Hu	ators (2 or _eaves (B ns (B10) tter Table le on Aeri sition (D2 d (D3) st (D5) inds (D6) immocks (	more rec 9) ( <b>MLR</b> (C2) al Imager ) ( <b>LRR A</b> ) (D7)	quired) <b>A 1, 2,</b> ry (C9)
Depth (inche marks: 2 chro Metland Hy Primary Indi Surface High W X Satura Water Sedime Drift De Algal M Iron De Surface Surface Surface Surface Wa Water table Saturation F (includes ca cribe Record	ma with no redox rdrology Indicat icators (minimum e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B tion Visible on A ely Vegetated Co rvations: ter Present? Present? Present? pillary fringe)	ors: one require	y (B7)  ce (B8) No No No gauge, n	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E Depth Depth Depth Depth	Stained L 4A and Ist (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres Explain ir (inches) (inches)	4B) rrates (B13 e Odor (C1 pheres alo duced Iron luction in F sed Plants n Remarks :	) (except ) ng Living (C4) lowed Sc (D1) (LF ) es	MLRA Roots (C3) iils (C6) (R A) Wetland Hyd	Second Water 4A Draina Dry-Se Satura Geom Shallo FAC-N Raisee Frost-I	ary Indica -Stained I and 4B) age Patter eason Wa ation Visib orphic Po w Aquitar Jeutral Te d Ant Mou Heave Hu	ators (2 or _eaves (B ns (B10) tter Table le on Aeri sition (D2 d (D3) st (D5) inds (D6) immocks (	more rec 9) ( <b>MLR</b> (C2) al Imager ) ( <b>LRR A</b> ) (D7)	quired) <b>A 1, 2,</b> ry (C9)

Project/Site:	Freeman Road Lo	ogistics	City/County:	Puyallup/Pie	rce Cou	unty	Sampling Date:	3/1	1/2022
Applicant/Owner:	Vector Developm	ent Company				State: WA	Sampling Point:	Wet A	A DP5 W
Investigator(s):	C. Douglas, M. C	urran	Section	n, Township,	Range:	S17 & 20 R4E T20	N		
Landform (hillslope	e, terrace, etc.):	Forested	Local re	lief (concave,	, conve	x, none): <u>concave</u>		Slope:	1-5
Subregion (LRR):	Northwest Forest	s and Coast (LRR A)	Lat: 47.12'33			Long: <u>122.19'03</u>	I	Datum:	NAD83
Soil Map Unit Nam	e: Pilchuck f	ne sand				NWI Classification:	PFO, PSS, POW		
Are climatic / hydro	ologic conditions of	n the site typical for this	time of year?	Yes	х	No	(If no, explain in Re	emarks)	
Are Vegetation	, Soil	, or Hydrology	significantly	disturbed?	Are "	Normal Circumstance	es" Present? Yes	<u>x</u>	No
Are Vegetation	, Soil	, or Hydrology	naturally pro	blematic?	(If ne	eded, explain any ans	swers in Remarks.)		

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes_	X	No		Vaa	v	Na
Hydric Soil Present?	Yes_	X	No	within a Wetland?	Yes	Χ.	No
Wetland Hydrology Present?	Yes	Х	No				
Remarks: Delineated northern and e	eastern bo	undar	v of large we	and system to identify potential buff	fer impacts fo	or utility	ine construction

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status?	Dominance Test worksheet: Number of Dominant Species
1. Populus balsamifera ssp. Trichocarpa	70	Yes	FAC	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
50%= <u>35</u> 20%= <u>14</u> Total Cover:	70			
Sapling/Shrub Stratum (Plot size:)			<b>FA 014</b>	Prevalence Index Worksheet:
1. <u>Cornus sericea</u>	85	Yes	FACW	Total % Cover of: Multiply by:
2. Rubus armeniacus	20	No	FAC	OBL species 0 x1 = 0
3. <u>Symphoricarpos albus</u>	20	No	FACU	FACW species x2 = 170
4				FAC species 90 x3 = 270
5				FACU species <u>20</u> x4 = <u>80</u>
50%= <u>62.5</u> 20%= <u>25</u> Total Cover:	125			UPL species x5 =
Herb Stratum (Plot size:)				Column Totals: 195 (A) 520 (B)
1				Prevalence Index = B/A =
2	 0			Hydrophytic Vegetation Indicators:         1 - Rapid Test for Hydrophytic Vegetation         X       2 - Dominance Test is >50%         X       3 - Prevalence Index is ≤3.01         4 - Morphological Adaptation1 (Provide supporting data in Remarks or on a separate sheet)         5 - Wetland Non-Vascular Plants1         Problematic Hydrophytic Vegetation1 (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         Hydrophytic Vegetation1
% Bare Ground in Herb Stratum <u>100</u> % C	Cover of Bio	tic Crust		Present? Yes X No
Remarks: 100% FAC vegetation				

Wet A DP5 W

Profile Des Depth	scription: (Describ Matrix	e to the de	•	ocument dox Feat		ator or	confirm the ab	osence of indicators.)
(inches)		0/		%	Type <sup>1</sup>	Loc <sup>2</sup>	 Texture	Remarks
· · · · ·	Color (moist)		Color (moist)	70	Туре	LOC		Remains
0-4	10YR 3/1	100		- 10			SiL	<u> </u>
4-9	10YR 3/1	90	10YR 5/4		<u> </u>	M		
9-18	10YR 2/1	95	10YR 4/1	5	D	M	LS	w/gravel
					<u> </u>			
<sup>1</sup> Type: C=0	Concentration, D=De	pletion, RN	I=Reduced Matrix	, CS=Co	overed or C	Coated	Sand Grains. <sup>2</sup>	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soi	I Indicators: (Appli	cable to a	ll LRRs, unless o	therwis	e noted.)		Indicators	for Problematic Hydric Soils <sup>3</sup> :
Histos	sol (A1)		Sandy F	Redox (S	S5)			2 cm Muck (A10) ( <b>LRR B</b> )
Histic	Epipedon (A2)		Stripped	d Matrix	(S6)		_	Red Parent Material (TF2)
Black	Histic (A3)		Loamy	Mucky N	/lineral (F1)	) (exce	pt MLRA 1)	Very Shallow Dark Surface (TF12)
Hydro	gen Sulfide (A4)		Loamy	Gleyed I	Matrix (F2)	)	_	Other (Explain in Remarks)
x Deple	ted Below Dark Surf	ace (A11)	Deplete	d Matrix	: (F3)			
Thick	Dark Surface (A12)		Redox I	Dark Sur	rface (F6)		<sup>3</sup> Indica	tors of hydrophytic vegetation and
Sandy	/ Muck Mineral (S1)		Deplete	d Dark S	Surface (F7	7)	wetl	and hydrology must be present,
Sandy	/ gleyed Matrix (S4)		Redox I	Depressi	ions (F8)		un	less disturbed or problematic.
Restrictive	e Layer (if present):							
Туре:								
Depth (inch	nes):					H	Hydric Soil Pres	sent? Yes <u>X</u> No
Remarks: 1 chro	oma with redox							
HYDROLOG								
	ydrology Indicators							
	licators (minimum or	ne required		/				Secondary Indicators (2 or more required)
	ce Water (A1)		x Water-S			9) ( <b>exce</b>	ept MLRA	x Water-Stained Leaves (B9) (MLRA 1, 2,
<u>x</u> High \	Nater Table (A2)		1, 2,	4A and	l <b>4B</b> )		_	4A and 4B)
	ation (A3)		Salt Cru	ust (B11)	)		_	Drainage Patterns (B10)
Water	r Marks (B1)		Aquatic	Invertet	orates (B13	3)	_	Dry-Season Water Table (C2)
	nent Deposits (B2)		Hydroge	en Sulfid	le Odor (C	1)	_	Saturation Visible on Aerial Imagery (C9)
Drift D	Deposits (B3)		Oxidize	d Rhizos	spheres alc	ong Livi	ing Roots (C3)	Geomorphic Position (D2)
Algal	Mat or Crust (B4)		Presend	ce of Re	duced Iron	(C4)	_	Shallow Aquitard (D3)
Iron D	eposits (B5)		Recent	Iron Red	duction in F	Plowed	Soils (C6)	FAC-Neutral Test (D5)
Surfac	ce Soil Cracks (B6)		Stunted	l or Stres	ssed Plants	s (D1) (	(LRR A)	Raised Ant Mounds (D6) (LRR A)
x Inund	ation Visible on Aeria	al Imagery	(B7) Other (B	Explain i	n Remarks	5)	_	Frost-Heave Hummocks (D7)
<u>x</u> Spars	ely Vegetated Conca	ave Surface	e (B8)					
Field Obse	ervations:							
Surface Wa	ater Present? Ye	s x	No Depth	(inches)	): 1 incl	h		
Water table	e Present? Ye	s x	No Depth	(inches	): at surfa	ace		
Saturation		s x		•	): at surfa		Wetland Hy	drology Present? Yes X No
	apillary fringe) ded Data (Unnamed	Tributary	auge, monitoring	well. aer	rial photos	previo	us inspections)	if available:
	ling water >1 ft deep					P. 5110		
Kemarka. Oldrik								

Project/Site:	Freeman Road Log	istics	C	City/County: P	uyallup/Pier	rce Cou	unty		Sampling Date	: 3/1	1/2022
Applicant/Owner:	Vector Developmen	nt Company					State: WA		Sampling Point	t: Wet A	A DP6 Up
Investigator(s):	C. Douglas, M. Cur	ran		Section,	Township, F	Range:	S17 & 20 R4E	T20N			
Landform (hillslope	, terrace, etc.):	Forested		Local relie	f (concave,	conve	x, none): <u>concav</u>	ve		Slope:	1-5
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat: 4	7.12'33			Long: <u>122.19</u>	9'03		Datum:	NAD83
Soil Map Unit Nam	e: Pilchuck fine	e sand					NWI Classificat	tion: P	FO, PSS, POW		
Are climatic / hydro	ologic conditions on t	he site typical for this	time of ye	ar?	Yes	х	No	(1	f no, explain in F	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly dis	sturbed?	Are "I	Normal Circums	tances	" Present? Ye	s <u>x</u>	No
Are Vegetation	, Soil	, or Hydrology	r	naturally proble	ematic?	(If ne	eded, explain ar	ny ansv	ers in Remarks	.)	

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

lydrophytic Vegetation Present?	Yes		No		Is the Sampled Area	Yes	N	v	
Hydric Soil Present?	Yes		No	X	within a Wetland?	res	No No	X	
Wetland Hydrology Present?	Yes		No _	Х					
Remarks: Delineated northern and e	eastern bou	Indary (	of larg	e wetlanc	system to identify potential but	fer impacts for u	tility line const	ruction	

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status?	Dominance Test worksheet: Number of Dominant Species
1. <u>Alnus rubra</u>	10	No	FAC	That Are OBL, FACW, or FAC:(A)
<ol> <li><u>Populus balsamifera ssp. Trichocarpa</u></li> <li>3.</li> </ol>	60	Yes	FAC	Total Number of Dominant Species Across All Strata: 3 (B)
4 5 50%= 35 20%= 14 Total Cover:	70			Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)
Sapling/Shrub Stratum         (Plot size:)				Prevalence Index Worksheet:
1. Oemleria cerasiformis	30	Yes	FACU	Total % Cover of: Multiply by:
2. Rubus armeniacus	70	Yes	FAC	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
3.				FACW species $0$ x2 = $0$
4.				FAC species $140 \times 3 = 420$
5.				FACU species $30 \times 4 = 120$
50%= 50 20%= 20 Total Cover:	100			UPL species $0$ x5 = $0$
Herb Stratum (Plot size:)				Column Totals: <b>170</b> (A) <b>540</b> (B)
<u> </u>				Prevalence Index = $B/A = 3.2$
2.				
3.				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation <sup>1</sup> (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
50%= <u>0</u> 20%= <u>0</u> Total Cover:	0			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size:)				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Hedera helix	30		FACU	be present, unless disturbed or problematic.
2.				Hydrophytic
Total Cover:	30			Vegetation
% Bare Ground in Herb Stratum 100 % 0	Cover of Bio	tic Crust		Present? Yes X No
Remarks: 67% FAC vegetation				·
_				

Profile Description: (De	scribe to the dept	h needed to do	cument	the indica	ator or	confirm the at	osence of indicato	ors.)		
Depth Ma	trix	Red	dox Feat	ures						
(inches) Color (moi	st) % (	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks		
0-18 10YR 3/3	3 100					SiL	w/gravel			
										—
· · · · · · · · · · · · · · · · · · ·	<u> </u>									
· · · · · · · · · · · · · · · · · · ·	<u> </u>									
<sup>1</sup> Type: C=Concentration,	D=Depletion_RM=	Reduced Matrix	CS=Co	overed or C	Coated	Sand Grains	<sup>2</sup> Location: PI =Por	e Linina, M=M	atrix	
.,,	,		,							
Hydric Soil Indicators: (	Applicable to all L			-		Indicators	for Problematic H	•		
Histosol (A1)			Redox (S	-		-	2 cm Muck (A			
Histic Epipedon (A2)			d Matrix	. ,		-	Red Parent M	. ,		
Black Histic (A3)						ept MLRA 1)		Dark Surface (	TF12)	
Hydrogen Sulfide (A4	•		•	Aatrix (F2)	)	-	Other (Explain	n in Remarks)		
Depleted Below Dark			d Matrix			3				
Thick Dark Surface (	•			face (F6)			ators of hydrophytic	-	d	
Sandy Muck Mineral				Surface (F7	7)		land hydrology mus			
Sandy gleyed Matrix	(S4)	Redox I	Depressi	ons (F8)		ur	nless disturbed or p	oroblematic.		
Restrictive Layer (if pres	sent):									
Type:	-									
Depth (inches):					E I	Hydric Soil Pre	sent?	Yes	No >	x
· · · · · · ·										
HYDROLOGY										
Wetland Hydrology Indic										
Primary Indicators (minim	um one required; cl	heck all that ap	ply)				Secondary Indi	cators (2 or mo	ore required	(t
Surface Water (A1)		Water-S	Stained L	eaves (B9	) (exc	ept MLRA		d Leaves (B9)	(MLRA 1, 2	<u>²</u> ,
High Water Table (A	2)		4A and	,		-	4A and 4B	,		
Saturation (A3)			ıst (B11)			-	Drainage Patt			
Water Marks (B1)				orates (B13		-	Dry-Season V	Vater Table (Ca	2)	
Sediment Deposits (I	B2)	Hydroge	en Sulfid	e Odor (C	1)	-	Saturation Vis	ible on Aerial I	magery (CS	9)
Drift Deposits (B3)		Oxidize	d Rhizos	pheres alo	ong Liv	ing Roots (C3)	Geomorphic F	Position (D2)		
Algal Mat or Crust (B	64)	Presend	ce of Red	duced Iron	(C4)	_	Shallow Aquita	ard (D3)		
Iron Deposits (B5)		Recent	Iron Red	luction in F	Plowed	Soils (C6)	FAC-Neutral 1	Fest (D5)		
Surface Soil Cracks	(B6)	Stunted	or Stres	sed Plants	s (D1)	(LRR A)	Raised Ant M	ounds (D6) ( <b>LF</b>	RR A)	
Inundation Visible on	Aerial Imagery (B7	7) Other (I	Explain ir	n Remarks	)	_	Frost-Heave H	lummocks (D7	")	
Sparsely Vegetated	Concave Surface (E	B8)								
Field Observations:										
Surface Water Present?	Yes No	Depth	(inches)	:						
Water table Present?				:						
Saturation Present?				:		Wetland Hy	drology Present?	Yes	No >	<u>x</u>
(includes capillary fringe)		·	. ,							
Describe Recorded Data (Unna	amed Tributary gau	ge, monitoring	well, aeri	ial photos,	previo	ous inspections),	if available:			
Remarks: No hydric indicators			_							

Project/Site:	Freeman Roa	ad Logistics	City/Coun	ty: Puyallup/Pie	erce Co	unty	Sampling Date:	3/1	1/2022
Applicant/Owner:	Vector Devel	opment Company				State: WA	Sampling Point:	Wet	A DP7 W
Investigator(s):	C. Douglas, M	M. Curran	Sec	tion, Township,	Range:	S17 & 20 R4E T2	0N		
Landform (hillslope	e, terrace, etc.)	: Forested	Loca	l relief (concave	, conve	x, none): <u>concave</u>		Slope:	1-5
Subregion (LRR):	Northwest Fo	erests and Coast (LRR A)	Lat: 47.12'33			Long: <u>122.19'03</u>	I	Datum:	NAD83
Soil Map Unit Nam	e: Pilchu	ick fine sand				NWI Classification	PFO, PSS, POW		
Are climatic / hydro	ologic condition	ns on the site typical for this	s time of year?	Yes	х	No	_(If no, explain in Re	emarks)	
Are Vegetation	, Soil	, or Hydrology	significan	tly disturbed?	Are "	Normal Circumstan	ces" Present? Yes	х	No
Are Vegetation	, Soil	, or Hydrology	naturally	problematic?	(If ne	eded, explain any a	nswers in Remarks.)		

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	x x x	_No _No _No	Is the Sampled Area within a Wetland?	Yes _	x	_ No	
Remarks: Delineated northern and e	eastern bou	indary	/ of large wet	etland system to identify potential bu	ffer impacts fo	or utility li	ine construction	

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status?	Dominance Test worksheet: Number of Dominant Species
1. Populus balsamifera ssp. Trichocarpa	60	Yes	FAC	That Are OBL, FACW, or FAC:3 (A)
2				Total Number of Dominant       Species Across All Strata:       3
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
50%= <u>30</u> 20%= <u>12</u> Total Cover:	60			
Sapling/Shrub Stratum (Plot size:)				Prevalence Index Worksheet:
1. <u>Cornus sericea</u>	80	Yes	FACW	Total % Cover of: Multiply by:
2. Rubus armeniacus	20	No	FAC	OBL species 0 x1 = 0
3. <u>Rubus spectabilis</u>	30	Yes	FAC	FACW species 80 x2 = 160
4				FAC species $110  ext{ x3} = 330$
5 50%= 65 20%= 26 Total Cover:	420			FACU species         0         x4 =         0           UPL species         0         x5 =         0
	130			OPE species         0         x5 =         0           Column Totals:         190         (A)         490         (B)
,				Prevalence Index = $B/A = 2.6$
2				
2				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				<b>X</b> 3 - Prevalence Index is $\leq 3.0^1$
7.				4 - Morphological Adaptation <sup>1</sup> (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
50%= 0 20%= 0 Total Cover:	0			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size:)				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.				Hydrophytic
Total Cover:	0			Vegetation
% Bare Ground in Herb Stratum <u>100</u> % C	Cover of Bio	tic Crust		Present? Yes X No
Remarks: 100% FAC vegetation				1

Wet A DP7 W

Color (molsi)       %       Color (molsi)       %       Type!       Loc <sup>2</sup> Texture       Remarks         0-5       10YR 3/1       100       10YR 5/4       15       D       M       Sit	Depth	cription: (Describe Matrix		•	dox Feat				
0.5       10YR 3/1       100	•		%				$loc^2$	Texture	Remarks
5-18       10YR 4/1       85       10YR 5/4       15       D       M       Sill         ************************************	<u> </u>				/0	Туре	LUC	-	Kemaks
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10) (LRR B)         Histosol (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Biock Histic (A3)       Loamy Muck (Minreal (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Yord Shallow Karface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Huck Mireral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (If present):       Type:       Depleted Batrix (F3)       Usersent?         Yee:       Yes				10YR 5/4	15	D	М	-	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       Red Parent Material (TF2)         Black Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic K(A3)       Loamy Gloyed Matrix (F2)       Other (Explain in Remarks)         X       Depleted Below Dark Surface (TF12)       Other (Explain in Remarks)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type:       Addata that (F3)       Unless disturbed or problematic.         Sandy Bydey Matrix (S4)       Redox Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type:       Hydric Soil Present?       Yes									
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       Red Parent Material (TF2)         Black Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic K(A3)       Loamy Gloyed Matrix (F2)       Other (Explain in Remarks)         X       Depleted Below Dark Surface (TF12)       Other (Explain in Remarks)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type:       Addata that (F3)       Unless disturbed or problematic.         Sandy Bydey Matrix (S4)       Redox Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type:       Hydric Soil Present?       Yes			 						
Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10) (LRR B)         Histic Epipadon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Muck(Mineral (F1) (except MLRA)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Muck(Mineral (F1) (except MLRA)       Very Shallow Dark Surface (TF12)         Other (Explain in Remarks)       Depleted Matrix (F2)       Other (Explain in Remarks)         Sandy gleyed Matrix (S4)       Redox Dark Surface (F7)       wetland hydrology must be present,         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Type:       Hydric Soil Present?       Yes_X_No_         Surface Water (A1)       X       Water-Stained Leaves (B9) (except MLRA)       X       Water-Stained Leaves (B9) (MLRA 1, 2, A and 48)         Saturation (A3)       Sati Crust (B11)       Drainage Patterns (B10)       Drainage Patterns (B10)       Drainage Patterns (B10)         Secondering Matrix (B6)       Crust (B11)       Drainage Patterns (B10)       Drainage Patterns (B10)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Seeson Water Table (C2)       Saturation Visible on Aerial Imagery (C9)       Ordized Rhicospheres along Living Roots (C3)       Geomorphi Cesiton (C2)	Type: C=C	Concentration, D=De	pletion, R	M=Reduced Matrix	, CS=Co	overed or C	Coated Sa	and Grains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Matrial (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Appleted Below Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and Sandy Muck Mineral (S1)         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type:	Hydric Soil	Indicators: (Appli	cable to a	all LRRs, unless o	therwis	e noted.)		Indicators for	Problematic Hydric Soils <sup>3</sup> :
Bick Histic (A3)       Loamy Mucky Minaral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sullide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Sedied Below Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and Sandy Muck Mineral (S1)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, wetland hydrology must be present, wetland hydrology must be present, sandy Muck Mineral (S4)         Restrictive Layer (if present):       Type:		( )			-				
Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         X       Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redx DArk Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and some of the surface (F7)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type:	Histic	Epipedon (A2)							Red Parent Material (TF2)
X       Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Indicators of hydrophytic vegetation and sandy Muck Mineral (S1)         Yethor Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type:	Black	Histic (A3)		Loamy	Mucky N	lineral (F1)	) (except	MLRA 1)	Very Shallow Dark Surface (TF12)
Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and set of hydrophytic vegetation and bydrology must be present, wetland hydrology must be present, unless disturbed or problematic.         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):	Hydrog	gen Sulfide (A4)		Loamy	Gleyed N	Matrix (F2)	)		Other (Explain in Remarks)
Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present,         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Type:	x Deplet	ed Below Dark Surfa	ace (A11)	Deplete	d Matrix	(F3)			
Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):	Thick	Dark Surface (A12)		Redox [	Dark Sur	face (F6)		<sup>3</sup> Indicator	s of hydrophytic vegetation and
Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Type:	Sandy	Muck Mineral (S1)		Deplete	d Dark S	Surface (F7	7)	wetland	d hydrology must be present,
Type:				Redox I	Depressi	ions (F8)	,		
Depth (inches):       Hydric Soil Present?       Yes _ X _ No         arks: 1 chroma with redox         Wetland Hydrology Indicators:         Primary Indicators (minimum one required; check all that apply)       Secondary Indicators (2 or more required).	Restrictive	Layer (if present):							
arks: 1 chroma with redox         Wetland Hydrology Indicators:         Primary Indicators (minimum one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       x         X       High Water Table (A2)       1, 2, 4A and 4B)         X       Saturation (A3)	Гуре:								
arks: 1 chroma with redox         Wetland Hydrology Indicators:         Primary Indicators (minimum one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       x         X       High Water Table (A2)       1, 2, 4A and 4B)         X       Saturation (A3)		es):					Hy	dric Soil Preser	nt? Yes X No
RROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum one required; check all that apply)       Secondary Indicators (2 or more required)	• •						-		
Surface Water (A1)       x       Water-Stained Leaves (B9) (except MLRA       x       Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B)         x       High Water Table (A2)       1, 2, 4A and 4B)       4A and 4B)         x       Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       x       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Plowed Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         x       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         x       Sparsely Vegetated Concave Surface (B8)       Depth (inches):       Materface         Saturation Present?       Yes       X       No       Depth (inches):       Materface         Saturation Present?       Yes       X       No       Depth (inches):       Materface </th <th>arks: 1 chro</th> <th>ma with redox</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	arks: 1 chro	ma with redox							
x       High Water Table (A2)       1, 2, 4A and 4B)       4A and 4B)         x       Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       x       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Plowed Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         x       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         x       Sparsely Vegetated Concave Surface (B8)       Depth (inches):       Mater table Present?       Yes       x       No         Saturation Present?       Yes       x       No       Depth (inches): at surface       Wetland Hydrology Present?       Yes       x       No         includes capillary fringe)       ribe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:       Yes       X	DROLOG Wetland Hy	Y ydrology Indicators							
x       Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       x       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Plowed Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         x       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         x       Sparsely Vegetated Concave Surface (B8)       Depth (inches): <u>at surface</u> Wetland Hydrology Present? Yes X No       No         Saturation Present?       Yes X No       Depth (inches): <u>at surface</u> Wetland Hydrology Present? Yes X No       No         Saturation Present?       Yes X No       Depth (inches): <u>at surface</u> Wetland Hydrology Present? Yes X No       No         Saturation Present?       Yes X No       Depth (inches): <u>at surface</u> Wetland Hydrology Present? Yes X No       No	OROLOG Wetland Hy	Y ydrology Indicators		d; check all that ap	ply)				Secondary Indicators (2 or more required)
Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       x       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Plowed Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         X       Sparsely Vegetated Concave Surface (B8)       Depth (inches):	PROLOG <sup>®</sup> Wetland Hy Primary Ind Surfac	Y ydrology Indicators icators (minimum or re Water (A1)		x Water-S	Stained L		) (excep	t MLRA <u>x</u>	Water-Stained Leaves (B9) (MLRA 1, 2,
Sediment Deposits (B2)       x       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Plowed Soils (C6)       FAC-Neutral Test (D5)         Sufface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         x       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         x       Sparsely Vegetated Concave Surface (B8)       Depth (inches):	PROLOG Wetland Hy Primary Ind Surfac X High V	Y /drology Indicators icators (minimum or ice Water (A1) Vater Table (A2)		<u>x</u> Water-S 1, 2,	Stained L 4A and	<b>4B</b> )	) (excep	t MLRA	Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B)
Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Plowed Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         X       Sparsely Vegetated Concave Surface (B8)       Depth (inches):       at surface         Sufface Water Present?       Yes       X       No       Depth (inches):         Saturation Present?       Yes       X       No       Depth (inches):       At surface         Vincludes capillary fringe)       ringe       Depth (inches):       at surface       Wetland Hydrology Present?       Yes       X       No	PROLOG Wetland Hy Primary Ind Surfac X High V X Satura	Y /drology Indicators icators (minimum or ice Water (A1) Vater Table (A2) ition (A3)		<u>x</u> Water-S 1, 2, Salt Cru	Stained L 4A and Ist (B11)	4B)		t MLRA <u>x</u>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B) Drainage Patterns (B10)
Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Plowed Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         X       Sparsely Vegetated Concave Surface (B8)       Depth (inches):       Wetland Hydrology Present?         Yes       X       No       Depth (inches):       Metland Hydrology Present?         Yes       X       No       Depth	Primary Ind Primary Ind Surfac X High V X Satura Water	<b>Y</b> ydrology Indicators icators (minimum or ie Water (A1) Vater Table (A2) ition (A3) Marks (B1)		<u>x</u> Water-S 1, 2, Salt Cru Aquatic	Stained L 4A and ust (B11) Invertet	<b>4B</b> ) prates (B13	3)	t MLRA	Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Iron Deposits (B5)       Recent Iron Reduction in Plowed Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         x       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         x       Sparsely Vegetated Concave Surface (B8)       Depth (inches):	DROLOG Wetland Hy Primary Ind Surfac X High V X Satura Water Sedim	Y ydrology Indicators icators (minimum or ie Water (A1) Vater Table (A2) ition (A3) Marks (B1) ent Deposits (B2)		x Water-S 1, 2, Salt Cru Aquatic x Hydroge	Stained L 4A and Ist (B11) Invertek en Sulfid	<b>4B</b> ) prates (B13 le Odor (C	3) 1)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)   x Inundation Visible on Aerial Imagery (B7)   x Sparsely Vegetated Concave Surface (B8)   Field Observations: Surface Water Present? Yes No Depth (inches): Water table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches):   Sturration Present? Yes No Depth (inches):   Mater table Present? Yes No Depth (inches):   Sturration Present? Yes No	PROLOG Wetland Hy Primary Ind Surfac X High V X Satura Water Sedim Drift D	Y ydrology Indicators icators (minimum or the Water (A1) Vater Table (A2) ttion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		x Water-S 1, 2, Salt Cru Aquatic x Hydroge Oxidized	Stained L 4A and Ist (B11) Invertet en Sulfid d Rhizos	4B) prates (B13 le Odor (C spheres alc	3) 1) ong Living		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)
x       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         x       Sparsely Vegetated Concave Surface (B8)       Frost-Heave Hummocks (D7)         Field Observations:       Surface Water Present?       Yes       No       x       Depth (inches):         Water table Present?       Yes       x       No       Depth (inches):       at surface         Saturation Present?       Yes       x       No       Depth (inches):       at surface         (includes capillary fringe)       ribe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:	PROLOG`         Wetland Hy         Primary Ind         Surfac         X         High V         X         Satura         Water         Sedim         Drift D         Algal N	Y ydrology Indicators icators (minimum or www.eweenergy wwww.eweenergy www.e		x Water-S 1, 2, Salt Cru Aquatic x Hydroge Oxidizee Presend	Stained L 4A and ust (B11) Invertek en Sulfid d Rhizos ce of Re	4B) prates (B13 le Odor (C spheres alc duced Iron	3) 1) ong Living (C4)	Roots (C3)	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)
x       Sparsely Vegetated Concave Surface (B8)         Field Observations:       Surface Water Present? Yes No Depth (inches):         Water table Present? Yes No Depth (inches):       Mo Depth (inches):         Saturation Present? Yes No Depth (inches):       Wetland Hydrology Present? Yes No         Saturation Present? Yes No Depth (inches):       Mo         Situration Present? Yes No       Depth (inches):         Saturation Present? Yes No       Depth (inches):         Includes capillary fringe)       ribe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:	PROLOG`         Wetland Hy         Primary Ind         Surfac         X         High V         X         Satura         Water         Sedim         Drift D         Algal N	Y ydrology Indicators icators (minimum or www.eweenergy wwww.eweenergy www.e		x Water-S 1, 2, Salt Cru Aquatic x Hydroge Oxidizee Presend	Stained L 4A and ust (B11) Invertek en Sulfid d Rhizos ce of Re	4B) prates (B13 le Odor (C spheres alc duced Iron	3) 1) ong Living (C4)	Roots (C3)	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)
Field Observations:         Surface Water Present?       Yes       No       x       Depth (inches):	Primary Ind Surfac X High V X Satura Water Sedim Drift D Algal N Iron D	Y ydrology Indicators icators (minimum or ie Water (A1) Vater Table (A2) ition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)		x Water-S 1, 2, Salt Cru Aquatic x Hydroge Oxidized Presend Recent	Stained L 4A and Ist (B11) Invertet en Sulfid d Rhizos ce of Ree Iron Rec	4B) prates (B13 le Odor (C spheres alc duced Iron duction in F	3) 1) ong Living (C4) Plowed So	I Roots (C3)	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)
Surface Water Present?       Yes       No       x       Depth (inches):	Primary Ind Surfac X High V X Satura Water Sedim Drift D Algal M Iron D Surfac	Y ydrology Indicators icators (minimum or ie Water (A1) Vater Table (A2) ition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ie Soil Cracks (B6)	ne required	x Water-S 1, 2, Salt Cru Aquatic x Hydroge Oxidizer Presend Recent Stunted	Stained L 4A and Ist (B11) Invertet en Sulfid d Rhizos ce of Red Iron Red or Stres	<b>4B</b> ) prates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants	3) 1) ong Living (C4) Plowed So s (D1) ( <b>LF</b>	I Roots (C3)	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)
Water table Present?       Yes       x       No       Depth (inches):       at surface         Saturation Present?       Yes       x       No       Depth (inches):       at surface         Vincludes capillary fringe)       Ves       x       No       Depth (inches):       at surface         ribe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:       Ves       X	Primary Ind Surfac X High V X Satura Vater Sedim Drift D Algal M Iron D Surfac X Inunda	Y ydrology Indicators icators (minimum or we Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) we Soil Cracks (B6) ation Visible on Aeria	<u>ne required</u> al Imagery	x Water-S 1, 2, Salt Cru Aquatic x Hydroge Oxidizer Presend Recent Stunted (B7) Other (E	Stained L 4A and Ist (B11) Invertet en Sulfid d Rhizos ce of Red Iron Red or Stres	<b>4B</b> ) prates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants	3) 1) ong Living (C4) Plowed So s (D1) ( <b>LF</b>	I Roots (C3)	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)
Saturation Present?       Yes       x       No       Depth (inches): at surface       Wetland Hydrology Present?       Yes       X       No         (includes capillary fringe)       ribe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:       Ves       X       No	DROLOG Wetland Hy Primary Ind X High V X Surfac X High V X Satura Water Sedim Drift D Algal N Iron D Surfac X Sparse Field Obse	Y ydrology Indicators icators (minimum or ie Water (A1) Vater Table (A2) ition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ie Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca rvations:	<u>ne required</u> al Imagery	x Water-S 1, 2, Salt Cru Aquatic x Hydroge Oxidized Presend Recent Stunted (B7) Other (B	Stained L 4A and Ist (B11) Invertek en Sulfid d Rhizos ce of Red Iron Red or Stres Explain in	4B) porates (B13 le Odor (C spheres alc duced Iron duction in F assed Plants n Remarks	3) 1) ong Living (C4) Plowed So s (D1) ( <b>LF</b>	I Roots (C3)	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)
(includes capillary fringe) ribe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:	DROLOG Wetland Hy Primary Ind Surfac X High V X Satura Water Sedim Drift D Algal N Iron D Surfac X Sparse Field Obse Surface Wa	Y ydrology Indicators icators (minimum or ie Water (A1) Vater Table (A2) ition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ie Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca rvations: itter Present? Ye	al Imagery ave Surfac	x Water-S 1, 2, Salt Cru Aquatic x Hydroge Oxidized Presend Recent Stunted (B7) Other (B No x Depth	Stained L 4A and 1st (B11) Invertek en Sulfid d Rhizos ce of Red Iron Red or Stres Explain in	4B) porates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants n Remarks	3) 1) (C4) Plowed So s (D1) (LF	I Roots (C3)	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)
ribe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:	DROLOG Wetland Hy Primary Ind Surfac X High V X Satura Water Sedim Drift D Algal N Iron D Surfac X Sparse Field Obse Surface Wa	Y ydrology Indicators icators (minimum or ie Water (A1) Vater Table (A2) ition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ie Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca rvations: itter Present? Ye	al Imagery ave Surfac	x Water-S 1, 2, Salt Cru Aquatic x Hydroge Oxidized Presend Recent Stunted (B7) Other (B No x Depth	Stained L 4A and 1st (B11) Invertek en Sulfid d Rhizos ce of Red Iron Red or Stres Explain in	4B) porates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants n Remarks	3) 1) (C4) Plowed So s (D1) (LF	I Roots (C3)	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)
	PROLOG`         Wetland Hy         Primary Ind         Surfac         X         High V         X         Satura         Water         Sedim         Drift D         Algal N         Iron D         Surfac         X         Inunda         X         Sparse         Field Obsee         Surface Wa         Water table         Saturation F	Y ydrology Indicators icators (minimum or ie Water (A1) Vater Table (A2) ition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ie Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca rvations: itter Present? Ye Present? Ye	al Imagery ave Surfac	x         Water-S           1, 2,         Salt Cru           Aquatic         Aquatic           x         Hydroge           Oxidizer         Presend           Recent         Stunted           (B7)         Other (B8)           No         x         Depth	Stained L 4A and Ist (B11) Invertet en Sulfid d Rhizos ce of Red Iron Red or Stres Explain in (inches) (inches)	4B) prates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants n Remarks ):	3) 1) ing Living (C4) Plowed So s (D1) (LF i) ace	pils (C6)	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)
	Primary Ind         Primary Ind         Surfac         X         High V         X         Satura         Water         Sedim         Drift D         Algal N         Iron D         Surfac         X         Inunda         X         Sparse         Field Obse         Surface Wa         Water table         Saturation F         Sturdace ca	Y ydrology Indicators icators (minimum or we Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) we Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca rvations: tter Present? Ye Present? Ye apillary fringe)	al Imagery ave Surfac s s	x         Water-S           1, 2,         Salt Cru	Stained L 4A and 1st (B11) Invertet en Sulfid d Rhizos ce of Red Iron Rec or Stres Explain in (inches) (inches)	4B) prates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants n Remarks n Remarks ):	3) 1) ong Living (C4) Plowed So s (D1) (LF ) ace ace	PRoots (C3)	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)
	DROLOG`         Wetland Hy         Primary Ind	Y ydrology Indicators icators (minimum or we Water (A1) Vater Table (A2) ttion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) we Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca rvations: tter Present? Ye Present? Ye Present? Ye apillary fringe) Hed Data (Unnamed	al Imagery ave Surfac s <u>x</u> s <u>x</u>	x Water-S     1, 2,     Salt Cru     Aquatic     x Hydroge     Oxidizee     Presend     Recent     Stunted     (B7) Other (B     No Depth     No Depth     No Depth     gauge, monitoring	Stained L 4A and 1st (B11) Invertet en Sulfid d Rhizos ce of Red Iron Rec or Stres Explain in (inches) (inches)	4B) prates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants n Remarks n Remarks ):	3) 1) ong Living (C4) Plowed So s (D1) (LF ) ace ace	PRoots (C3)	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)
	DROLOG`         Wetland Hy         Primary Ind	Y ydrology Indicators icators (minimum or we Water (A1) Vater Table (A2) ttion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) we Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca rvations: tter Present? Ye Present? Ye Present? Ye apillary fringe) Hed Data (Unnamed	al Imagery ave Surfac s <u>x</u> s <u>x</u>	x Water-S     1, 2,     Salt Cru     Aquatic     x Hydroge     Oxidizee     Presend     Recent     Stunted     (B7) Other (B     No Depth     No Depth     No Depth     gauge, monitoring	Stained L 4A and 1st (B11) Invertet en Sulfid d Rhizos ce of Red Iron Rec or Stres Explain in (inches) (inches)	4B) prates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants n Remarks n Remarks ):	3) 1) ong Living (C4) Plowed So s (D1) (LF ) ace ace	PRoots (C3)	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)
	Primary Ind Primary Ind Surfac X High V X Satura Water Sedim Drift D Algal N Iron D Surfac X Inunda X Sparse Field Obse Surface Wa Water table Saturation F (includes ca ribe Record	Y ydrology Indicators icators (minimum or we Water (A1) Vater Table (A2) ttion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) we Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca rvations: tter Present? Ye Present? Ye Present? Ye apillary fringe) Hed Data (Unnamed	al Imagery ave Surfac s <u>x</u> s <u>x</u>	x Water-S     1, 2,     Salt Cru     Aquatic     x Hydroge     Oxidizee     Presend     Recent     Stunted     (B7) Other (B     No Depth     No Depth     No Depth     gauge, monitoring	Stained L 4A and 1st (B11) Invertet en Sulfid d Rhizos ce of Red Iron Rec or Stres Explain in (inches) (inches)	4B) prates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants n Remarks n Remarks ):	3) 1) ong Living (C4) Plowed So s (D1) (LF ) ace ace	PRoots (C3)	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)

Project/Site:	Freeman Road Log	istics	City/Cou	inty: Puyallup/Pie	erce Cou	unty	Sampling Date:	3/1	1/2022
Applicant/Owner:	Vector Developmer	nt Company				State: WA	Sampling Point	Wet A	DP8 Up
Investigator(s):	C. Douglas, M. Cur	ran	Se	ection, Township,	Range:	S17 & 20 R4E T20	N		
Landform (hillslope	, terrace, etc.):	Forested	Loc	al relief (concave	, conve	x, none): <u>concave</u>		Slope:	1-5
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat: 47.12'33	8		Long: <u>122.19'03</u>		Datum:	NAD83
Soil Map Unit Nam	e: Pilchuck fine	e sand				NWI Classification:	PFO, PSS, POW		
Are climatic / hydro	logic conditions on t	he site typical for this	time of year?	Yes	х	No	(If no, explain in R	emarks)	
Are Vegetation	, Soil	, or Hydrology	significa	antly disturbed?	Are "I	Normal Circumstanc	es" Present? Yes	s <u>x</u>	No
Are Vegetation	, Soil	, or Hydrology	naturall	y problematic?	(If nee	eded, explain any an	swers in Remarks.	)	

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydric Soil Present? Yes No X	Is the Sampled	Yes			
	within a Wetla	ind?	No	Х	
Wetland Hydrology Present? Yes No X					

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status?	Dominance Test worksheet: Number of Dominant Species
1. <u>Alnus rubra</u>	60	Yes	FAC	That Are OBL, FACW, or FAC:(A)
<u>Populus balsamifera ssp. Trichocarpa</u> <u>.</u>	80	Yes	FAC	Total Number of Dominant       Species Across All Strata:       5
4 5 50%= 70 20%= 28 Total Cover:	140			Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index Worksheet:
1. Oemleria cerasiformis	50	Yes	FACU	Total % Cover of: Multiply by:
2. Rubus armeniacus	10	No	FAC	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
3. Rubus spectabilis	20	No	FAC	FACW species $0$ x2 = $0$
4. Symphoricarpos albus	70	Yes	FACU	FAC species <b>170</b> x3 = <b>510</b>
5.				FACU species 140 x4 = 560
50%= 75 20%= 30 Total Cover:	150			UPL species $0$ x5 = $0$
Herb Stratum (Plot size:)				Column Totals: <b>310</b> (A) <b>1070</b> (B)
1. Polystichum munitum	20	Yes	FACU	Prevalence Index = B/A = 3.5
2.				
3.				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
50%= <u>10</u> 20%= <u>4</u> Total Cover:	20			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size:) 1. Hedera helix	20		FACU	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	20			
Total Cover: % Bare Ground in Herb Stratum <b>80</b> % C		tic Crust		Hydrophytic Vegetation Present? Yes <u>No X</u>
Remarks: 40% FAC vegetation				

Depth Mat	rix	Re	dox Feat	tures					
(inches) Color (mois	st) %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-18 10YR 3/3	100					L			
						<u></u>			
				- <u> </u>		· · · · · · · · · · · · · · · · · · ·			
<sup>1</sup> Type: C=Concentration, I	D=Depletion, RM	M=Reduced Matrix	, CS=Co	overed or C	Coated S	and Grains. <sup>2</sup> l	ocation: PL=Pc	ore Lining, M=Ma	trix.
Hydric Soil Indicators: (A	Applicable to a	ll LRRs. unless o	otherwis	e noted.)		Indicators f	or Problematic	Hvdric Soils <sup>3</sup> :	
Histosol (A1)		-	Redox (S					A10) ( <b>LRR B</b> )	
Histic Epipedon (A2)			d Matrix					Material (TF2)	
Black Histic (A3)		Loamy	Mucky M	lineral (F1)	) (excep	t MLRA 1)	Very Shallov	v Dark Surface (T	F12)
Hydrogen Sulfide (A4	)	Loamy	Gleyed N	Matrix (F2)	)		Other (Expla	iin in Remarks)	
Depleted Below Dark	Surface (A11)	Deplete	ed Matrix	(F3)					
Thick Dark Surface (A	A12)	Redox	Dark Sur	rface (F6)		<sup>3</sup> Indicat	ors of hydrophyt	ic vegetation and	ł
Sandy Muck Mineral	(S1)	Deplete	ed Dark S	Surface (F7	7)	wetla	nd hydrology mu	ust be present,	
Sandy gleyed Matrix	(S4)	Redox	Depressi	ions (F8)		unl	ess disturbed or	problematic.	
Restrictive Layer (if pres	ent):								
Туре:									
Depth (inches):					Ну	ydric Soil Pres	ent?	Yes	No <u>X</u>
Depth (inches): arks: 3 chroma with no red	ox				ну	ydric Soil Pres	ent?	Yes	No <u>X</u>
Depth (inches): harks: 3 chroma with no red DROLOGY Wetland Hydrology Indic	ox ators:				Hy	ydric Soil Pres			
Depth (inches): harks: 3 chroma with no red DROLOGY Wetland Hydrology Indic Primary Indicators (minimu	ox ators:	; check all that ap					Secondary Inc	dicators (2 or mo	re required)
Depth (inches): arks: 3 chroma with no red DROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1)	ox ators: im one required	l; check all that ap Water-S	Stained L	_eaves (B9			Secondary Inc	dicators (2 or mo ed Leaves (B9) (I	re required)
Depth (inches): arks: 3 chroma with no red DROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2	ox ators: im one required	l; check all that ap Water-{ 1, 2,	Stained L , 4A and	4B)			Secondary Ind Water-Staine 4A and 4	dicators (2 or mo ed Leaves (B9) ( <b>I</b> B)	re required)
Depth (inches): arks: 3 chroma with no red DROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3)	ox ators: im one required	l; check all that ap Water-{ 1, 2, Salt Cru	Stained L , <b>4A and</b> ust (B11)	( <b>4B</b> )	) (excep		Secondary Inc Water-Staine <b>4A and 4</b> Drainage Pa	dicators (2 or mo ed Leaves (B9) ( <b>I</b> I <b>B</b> ) tterns (B10)	re required) MLRA 1, 2,
Depth (inches): arks: 3 chroma with no red DROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1)	ox ators: Im one required	l; check all that ap Water-3 1, 2, Salt Cru Aquatic	Stained L , <b>4A and</b> ust (B11) : Invertet	4 <b>B</b> ) ) prates (B13	) (excep		Secondary Ind Water-Staind <b>4A and 4</b> Drainage Pa Dry-Season	dicators (2 or mo ed Leaves (B9) (I B) tterns (B10) Water Table (C2	re required) MLRA 1, 2,
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Depth (inches): harks: 3 chroma with no red DROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B	ox ators: Im one required 2) 32)	l; check all that ap Water-S 1, 2, Salt Cru Aquatic Hydrog Oxidize Presen	Stained L , <b>4A and</b> ust (B11) : Invertek en Sulfid d Rhizos ce of Re	4B) prates (B13 le Odor (C spheres alc duced Iron	3) 1) (excep 3) 1) (C4)	ot MLRA	Secondary Ind Water-Staine <b>4A and 4</b> Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu	dicators (2 or mo ed Leaves (B9) (I B) tterns (B10) Water Table (C2 isible on Aerial In Position (D2) itard (D3)	re required) MLRA 1, 2,
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Depth (inches):	ox ators: Im one required 2) 32) 4) B6) Aerial Imagery Concave Surfact Yes Yes Yes	I: check all that ap Water-3 1, 2, Salt Cru Aquatic Hydrog Oxidize Presen Recent Stuntec (B7) Other (le (B8) No Depth No Depth	Stained L Stained L , <b>4A and</b> ust (B11) Invertet en Sulfid d Rhizos ce of Re- Iron Rec d or Stres Explain in (inches) (inches)	4B) porates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants n Remarks ): ):	<ul> <li>i) (except)</li> <li>3)</li> <li>1)</li> <li>nng Livin</li> <li>(C4)</li> <li>Plowed S</li> <li>s (D1) (L</li> <li>i)</li> </ul>	g Roots (C3) g Roots (C3) Soils (C6) RR A) Wetland Hyd	Secondary Ind Water-Staine <b>4A and 4</b> Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutral Raised Ant N Frost-Heave	dicators (2 or moled ed Leaves (B9) (I B) tterns (B10) Water Table (C2 isible on Aerial In Position (D2) itard (D3) Test (D5) Mounds (D6) (LR Hummocks (D7)	re required) MLRA 1, 2, ) nagery (C9 R A)
Depth (inches):	ox ators: Im one required 2) 32) 4) B6) Aerial Imagery Concave Surfact Yes Yes Yes	I: check all that ap Water-3 1, 2, Salt Cru Aquatic Hydrog Oxidize Presen Recent Stuntec (B7) Other (le (B8) No Depth No Depth	Stained L Stained L , <b>4A and</b> ust (B11) Invertet en Sulfid d Rhizos ce of Re- Iron Rec d or Stres Explain in (inches) (inches)	4B) porates (B13 le Odor (C spheres alc duced Iron duction in F ssed Plants n Remarks ): ):	<ul> <li>i) (except)</li> <li>3)</li> <li>1)</li> <li>nng Livin</li> <li>(C4)</li> <li>Plowed S</li> <li>s (D1) (L</li> <li>i)</li> </ul>	g Roots (C3) g Roots (C3) Soils (C6) RR A) Wetland Hyd	Secondary Ind Water-Staine <b>4A and 4</b> Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutral Raised Ant N Frost-Heave	dicators (2 or moled ed Leaves (B9) (I B) tterns (B10) Water Table (C2 isible on Aerial In Position (D2) itard (D3) Test (D5) Mounds (D6) (LR Hummocks (D7)	re required) MLRA 1, 2, ) nagery (C9) R A)

Project/Site:	Freeman Road Log	istics	C	City/County: P	uyallup/Pie	rce Cou	unty	Sampling Da	ate: 3/1	1/2022
Applicant/Owner:	Vector Developmen	nt Company					State: WA	Sampling Po	oint: Wet	A DP9 W
Investigator(s):	C. Douglas, M. Cur	ran		Section,	Township, F	Range:	S17 & 20 R4E	F20N		
Landform (hillslope	, terrace, etc.):	Forested		Local relie	f (concave,	conve	x, none): <u>concave</u>	9	Slope:	1-5
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat: 4	7.12'33			Long: <u>122.19'(</u>	)3	Datum:	NAD83
Soil Map Unit Nam	e: Pilchuck fine	e sand					NWI Classificatio	on: PFO, PSS, PO	W	
Are climatic / hydro	ologic conditions on t	he site typical for this	time of ye	ar?	Yes	х	No	(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly di	sturbed?	Are "	Normal Circumsta	ances" Present?	Yes <u>x</u>	No
Are Vegetation	, Soil	, or Hydrology	r	naturally probl	ematic?	(If ne	eded, explain any	answers in Remar	ks.)	

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes X No	Is the Sampled Area within a Wetland?	Yes X No	
Remarks: Delineated northern and e	eastern boundary of large wet	land system to identify potential but	ffer impacts for utility line construction	

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status?	Dominance Test worksheet: Number of Dominant Species
1. <u>Alnus rubra</u>	70	Yes	FAC	That Are OBL, FACW, or FAC:3(A)
2. <u>Populus balsamifera ssp. Trichocarpa</u> 3	20	Yes	FAC	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
4 5 50%= 45 20%= 18 Total Cover:	90			Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index Worksheet:
1. Cornus sericea	70	Yes	FACW	Total % Cover of: Multiply by:
2. Rubus armeniacus	20	No	FAC	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
3. Rubus spectabilis	20	No	FAC	FACW species 70 x2 = 140
4. Ribes sanguineum	5	No	FACU	FAC species $130 \times 3 = 390$
5. Symphoricarpos albus	5	No	FACU	FACU species $10 \times 4 = 40$
50%= 60 20%= 24 Total Cover:	120			UPL species $0$ x5 = $0$
Herb Stratum (Plot size:)				Column Totals: 210 (A) 570 (B)
1.				Prevalence Index = $B/A = 2.7$
2.				
3.				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
50%= <u>0</u> 20%= <u>0</u> Total Cover:	0			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size:) 1.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2Total Cover:		tie Cruet		Hydrophytic Vegetation
% Bare Ground in Herb Stratum <u>100</u> % (	Jover of BIO			Present?         Yes X         No
Remarks: 100% FAC vegetation				

Depth	Matrix			Redox Feat				
(inches)	Color (moist)	%	Color (mois	st) %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 3/1	100					SiL	
4-18	10YR 4/1	80	10YR 5/4	20	D	M	SiL	
Гуре: С=С	Concentration, D=De	epletion, RI	M=Reduced N	latrix, CS=Cc	overed or C	Coated Sa	and Grains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
lydric Soil	Indicators: (Appl	icable to a			-		Indicators for	Problematic Hydric Soils <sup>3</sup> :
Histos	( )			ndy Redox (S	-			2 cm Muck (A10) (LRR B)
	Epipedon (A2)			ipped Matrix	. ,			Red Parent Material (TF2)
	Histic (A3)			amy Mucky N		· · ·	MLRA 1)	Very Shallow Dark Surface (TF12)
	gen Sulfide (A4)			amy Gleyed N		)		Other (Explain in Remarks)
	ed Below Dark Surf	ace (A11)		pleted Matrix			3	
	Dark Surface (A12)			dox Dark Sur				rs of hydrophytic vegetation and
Sandy	Muck Mineral (S1)		De	pleted Dark S	Surface (F7	7)	wetlan	d hydrology must be present,
Sandy	gleyed Matrix (S4)		Re	dox Depressi	ons (F8)		unle	ss disturbed or problematic.
Restrictive	Layer (if present):	:						
ype:								
onth (inch	,						dric Soil Prese	nt? Yes X No
	es):					Ну		
	·					Ну		
rks: 1 chro	ma with redox							
rks: 1 chro ROLOG Vetland Hy	ma with redox		t: chock all the					
rks: 1 chro ROLOG Vetland Hy Primary Indi	ma with redox / /drology Indicators icators (minimum o							Secondary Indicators (2 or more required
ROLOG Vetland Hy Primary Indi X_Surfac	ma with redox / /drology Indicators icators (minimum o e Water (A1)		<u>x</u> Wa	iter-Stained L	•			Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1, 2,
ROLOG Vetland Hy Primary Indi <u>x</u> Surfac <u>x</u> High W	ma with redox //drology Indicators icators (minimum o e Water (A1) Vater Table (A2)		<b>_x</b> _ Wa	iter-Stained L 1, 2, 4A and	<b>4B</b> )			Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1, 2 4A and 4B)
rks: 1 chro ROLOG Vetland Hy Primary Indi <u>x</u> Surfac <u>x</u> High W <u>x</u> Satura	ma with redox ma with redox f rdrology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3)		_ <b>x</b> _ Wa Sal	tter-Stained L 1, 2, 4A and t Crust (B11)	<b>4B</b> )	) (except		Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1, 2 4A and 4B) Drainage Patterns (B10)
rks: 1 chro ROLOG Vetland Hy Primary Indi x Surfac x High W x Satura Water	ma with redox ma with redox f rdrology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1)		_x Wa Sal Aqu	iter-Stained L 1, 2, 4A and t Crust (B11) uatic Inverted	<b>4B</b> ) prates (B13	) (except		Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2)
ROLOG Vetland Hy Primary Indi x Surfac x High W x Satura Water Sedimo	ma with redox ma with redox f rdrology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		_x Wa Sal Aqu Hyd	iter-Stained L 1, 2, 4A and t Crust (B11) uatic Inverteb drogen Sulfid	<b>4B</b> ) prates (B13 e Odor (C	) (except 3) 1)	: MLRA <u>x</u> 	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9
rks: 1 chro ROLOG Vetland Hy Primary Indi x Surfac x Surfac x High W x Satura Water Sedimo Drift Do	ma with redox f rdrology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		_x Wa Sal Aqu Hyu Oxi	iter-Stained L 1, 2, 4A and t Crust (B11) uatic Inverteb drogen Sulfid dized Rhizos	<b>4B</b> ) prates (B13 e Odor (C pheres alc	) (except 3) 1) 1)	: MLRA <u>x</u> 	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2)
ROLOG Vetland Hy Primary Indi x Surfac x High W x Satura Water Water Drift D Algal N	ma with redox ma with redox f rdrology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)		Sal Sal Aqu Hyo Oxi Pre	tter-Stained L 1, 2, 4A and t Crust (B11) uatic Invertet drogen Sulfid idized Rhizos esence of Rec	4B) prates (B13 e Odor (C pheres alc duced Iron	3) (C4)	• MLRA <u>x</u> 	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS Geomorphic Position (D2) Shallow Aquitard (D3)
ROLOG Vetland Hy Primary Indi x Surfac x High W x Satura Water Sedimu Algal M Iron De	ma with redox ma with redox f f f f f f f f f f f f f		x Wa Sal Aqu x Hyu Oxi Pre Res	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Invertee drogen Sulfid idized Rhizos esence of Re- cent Iron Rec	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron duction in F	<ul> <li>a) (except</li> <li>b) (except</li> <li>b) (except</li> <li>c) (c) (c) (c) (c) (c) (c) (c) (c) (c) (</li></ul>	t <b>MLRA</b> <u>x</u> 	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)
ROLOG Vetland Hy Primary Indi X Surfac X High W X Satura Water Sedimu Drift Du Algal M Iron De Surfac	ma with redox ma with redox ( /drology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6)	ne requirec	x Wa Sal Aqu X Hyo Oxi Pre Ree Stu	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Inverted drogen Sulfid idized Rhizos esence of Rea cent Iron Rec inted or Stress	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron duction in F ssed Plants	<ul> <li>except</li> <li>except</li></ul>	t <b>MLRA</b> <u>x</u> 	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)
ROLOG Vetland Hy Primary Indi x Surfac x High W x Satura Water Sedime Drift De Algal M Iron De Surfac x Inunda	ma with redox ma with redox f f f f f f f f f f f f f	<u>ne requirec</u> al Imagery	x         Wa	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Invertee drogen Sulfid idized Rhizos esence of Re- cent Iron Rec	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron duction in F ssed Plants	<ul> <li>except</li> <li>except</li></ul>	t <b>MLRA</b> <u>x</u> 	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)
ROLOG Vetland Hy Primary Indi x Surfac x High W x Satura Water Sedim Drift Du Algal M Iron De Surfac x Inunda x Sparse	ma with redox ma with redox rdrology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ely Vegetated Conc rvations:	ne required al Imagery ave Surfac	x         Wa	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Invertek drogen Sulfid idized Rhizos esence of Rea cent Iron Rec inted or Stress her (Explain in	4B) orates (B13 e Odor (C pheres ald duced Iron duction in F ased Plants n Remarks	) ( <b>except</b> 3) 1) )ng Living (C4) Plowed Sc s (D1) ( <b>LF</b> 5)	t <b>MLRA</b> <u>x</u> 	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)
<b>ROLOG ROLOG Wetland Hy</b> Primary Indi <b>X</b> Surfac <b>X</b> Sedimu         Drift Du         Algal N         Iron De         Surfac         X         Surfac         X         Surfac         X         Iron De         Surfac         X         Sparse         Field Obsel         Surface Wa	ma with redox ma with redox f rdrology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ely Vegetated Conc rvations: ter Present? Ye	al Imagery ave Surfac	x         Wa	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Invertek drogen Sulfid idized Rhizos esence of Rea cent Iron Rec inted or Stress her (Explain in epth (inches)	4B) prates (B13 e Odor (C pheres ald duced Iron duction in F ased Plants n Remarks	) (except 3) 1) ) ong Living (C4) Plowed Sc s (D1) (LF s)	t <b>MLRA</b> <u>x</u> 	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> , <b>4A and 4B</b> ) 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) ( <b>LRR A</b> )
ROLOG Vetland Hy Primary Indi X Surfac X High W X Satura Water Sedim Drift D Algal M Iron De Surfac X Sparse Field Obser Surface Wa Vater table	ma with redox ma with redox //drology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ely Vegetated Conc rvations: ter Present? Ye Present? Ye	al Imagery ave Surfac	x         Wa	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Invertex drogen Sulfid idized Rhizos esence of Rea cent Iron Rea inted or Stress her (Explain in epth (inches) epth (inches)	4B) prates (B12 e Odor (C pheres alc duced Iron duction in F ssed Plants n Remarks : <u>1 incl</u> : <u>at surfa</u>	) (except 3) 1) ng Living (C4) Plowed Sc s (D1) (LF 3) <u>h</u> ace	HIRA <u>x</u> I Roots (C3) Dils (C6) RR A)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) 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) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
ROLOG Vetland Hy Primary Indi x Surfac x High W x Satura Water Sedim Drift D Algal N Iron De Surfac x Sparse Field Obsel Surface Wa Vater table Saturation F	ma with redox ma with redox //drology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ely Vegetated Conc rvations: ter Present? Ye Present? Ye	al Imagery ave Surfac	x         Wa	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Invertek drogen Sulfid idized Rhizos esence of Rea cent Iron Rec inted or Stress her (Explain in epth (inches)	4B) prates (B12 e Odor (C pheres alc duced Iron duction in F ssed Plants n Remarks : <u>1 incl</u> : <u>at surfa</u>	) (except 3) 1) ng Living (C4) Plowed Sc s (D1) (LF 3) <u>h</u> ace	HIRA <u>x</u> I Roots (C3) Dils (C6) RR A)	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)
Arks: 1 chro PROLOGY Vetland Hy Primary Indi X Surfac X High W X Satura Water Sedime Drift De Algal N Iron De Surfac X Inunda X Sparse Field Obsee Surface Wa Nater table Saturation F includes ca	ma with redox ma with redox f f f f f f f f f f f f f	al Imagery ave Surfac es <u>x</u> es <u>x</u>	x         Wa	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Invertex drogen Sulfid idized Rhizos esence of Rea cent Iron Rea inted or Stress her (Explain in epth (inches) epth (inches)	4B) prates (B13 e Odor (C pheres alc duced Iron duction in F ssed Plants n Remarks n Remarks : <u>1 incl</u> : <u>at surfa</u>	e) (except a) (except a) (c4) Plowed Sc s (D1) (LF b) h acce acce	t MLRA <u>x</u> H Roots (C3) pils (C6) RR A) Wetland Hydro	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)
Primary Indi         X         Surfac         X         High W         X         Satura         Water         Sedimu         Drift Du         Algal N         Iron Da         Surfac         X         Inunda         X         Sparse         Surface Wa         Water table         Saturation F         (includes car         ribe Record	ma with redox ma with redox vdrology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ely Vegetated Conc rvations: ter Present? Ye Present? Ye pipillary fringe)	al Imagery ave Surfac es <u>x</u> es <u>x</u> Tributary g	x         Wa	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Invertex drogen Sulfid idized Rhizos esence of Rea cent Iron Rea inted or Stress her (Explain in epth (inches) epth (inches)	4B) prates (B13 e Odor (C pheres alc duced Iron duction in F ssed Plants n Remarks n Remarks : <u>1 incl</u> : <u>at surfa</u>	e) (except a) (except a) (c4) Plowed Sc s (D1) (LF b) h acce acce	t MLRA <u>x</u> H Roots (C3) pils (C6) RR A) Wetland Hydro	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)
arks: 1 chro         DROLOG N         Wetland Hy         Primary Indi         X         Surfac         X         High W         X         Satura         Water         Sedime         Drift De         Algal N         Iron De         Surfac         X         Sparse         Field Obsel         Saturation F         Gincludes ca         ribe Record	ma with redox ma with redox rdrology Indicators icators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ely Vegetated Conc rvations: ter Present? Ye Present? Ye present? Ye pillary fringe) ed Data (Unnamed	al Imagery ave Surfac es <u>x</u> es <u>x</u> Tributary g	x         Wa	tter-Stained L <b>1, 2, 4A and</b> t Crust (B11) uatic Invertex drogen Sulfid idized Rhizos esence of Rea cent Iron Rea inted or Stress her (Explain in epth (inches) epth (inches)	4B) prates (B13 e Odor (C pheres alc duced Iron duction in F ssed Plants n Remarks n Remarks : <u>1 incl</u> : <u>at surfa</u>	e) (except a) (except a) (c4) Plowed Sc s (D1) (LF b) h acce acce	t MLRA <u>x</u> H Roots (C3) pils (C6) RR A) Wetland Hydro	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)

Project/Site:	Freeman Road Log	jistics	City/Co	ounty: Puyallup/Pie	erce Cou	unty	Sampling Date:	3/1	1/2022
Applicant/Owner:	Vector Development	nt Company				State: WA	Sampling Point:	Wet B	DP10 Up
Investigator(s):	C. Douglas, M. Cur	ran	:	Section, Township,	Range:	S17 R4E T20N			
Landform (hillslope	, terrace, etc.):	Forested	Lo	ocal relief (concave	e, conve	x, none): <u>concave</u>		Slope:	1-5
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat: 47.12	33		Long: <u>122.19'03</u>		Datum:	NAD83
Soil Map Unit Name	e: Sultan silt lo	bam				NWI Classification:	None		
Are climatic / hydro	logic conditions on	the site typical for this	time of year?	Yes	х	No	(If no, explain in R	emarks)	
Are Vegetation	, Soil	, or Hydrology	signifi	cantly disturbed?	Are "	Normal Circumstanc	es" Present? Yes	x	No
Are Vegetation	, Soil	, or Hydrology	natura	ally problematic?	(If ne	eded, explain any an	swers in Remarks.)		

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No KNo	X X	Is the Sampled Area within a Wetland?	Yes	No	
Remarks: Confirming upland conditi	ons in suspec	t area iden	ntified as S	SP 13 in Confluence Report			

ee Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status?	Dominance Test worksheet: Number of Dominant Species	
Populus balsamifera ssp. Trichocarpa	70	Yes	FAC	That Are OBL, FACW, or FAC:1	(A)
				Total Number of Dominant Species Across All Strata: <u>3</u>	_(B)
				Percent of Dominant Species That Are OBL, FACW, or FAC: 33%	_(A/B)
50%= <u>35</u> 20%= <u>14</u> Total Cove	: <u>70</u>				
pling/Shrub Stratum (Plot size:)			<b>E</b> 4 0 1 1	Prevalence Index Worksheet:	
Oemleria cerasiformis	20		FACU	Total % Cover of: Multiply by:	
Symphoricarpos albus	80	Yes	FACU	OBL species 0 x1 = 0	
				FACW species x2 =0	
				FAC species <b>70</b> x3 = <b>210</b>	_
				FACU species <b>100</b> x4 = <b>400</b>	_
50%= <u>50</u> 20%= <u>20</u> Total Cove	: <b>100</b>			UPL species 0 x5 = 0	_
rb Stratum (Plot size:)				Column Totals: <u>170</u> (A) <u>610</u>	(B)
	. <u> </u>		·	Prevalence Index = B/A = <b>3.6</b>	_
				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%	
				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
				4 - Morphological Adaptation <sup>1</sup> (Provide supp data in Remarks or on a separate sheet)     5 - Wetland Non-Vascular Plants <sup>1</sup>	
50%= <u>0</u> 20%= <u>0</u> Total Cove	: 0			Problematic Hydrophytic Vegetation <sup>1</sup> (Expla	in)
body Vine Stratum (Plot size:)				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Total Cove % Bare Ground in Herb Stratum <b>100</b> %		tic Crust		Hydrophytic Vegetation Present? Yes No	x

(inches)	Color (moist) 10YR 3/3			edox Feat	ures			
0-18	10YR 3/3	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
		100		. <u> </u>			SL	gravel below 8 inches
				. <u> </u>				
				<u> </u>				
				. <u> </u>				
<sup>1</sup> Type: C=Cor	ncentration, D=De	epletion, RI	M=Reduced Matr	ix, CS=Co	vered or C	Coated S	and Grains. <sup>2</sup> l	Location: PL=Pore Lining, M=Matrix.
Hydric Soil In	ndicators: (Appli	icable to a	II LRRs, unless	otherwise	e noted.)		Indicators f	or Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy	Redox (S	5)			2 cm Muck (A10) ( <b>LRR B</b> )
Histic Ep	oipedon (A2)			ed Matrix (				Red Parent Material (TF2)
Black His	( )			-		•	t MLRA 1)	Very Shallow Dark Surface (TF12)
	n Sulfide (A4)	(		-	latrix (F2)			Other (Explain in Remarks)
	Below Dark Surf	ace (A11)	·	ed Matrix	. ,		<sup>3</sup> Indiaat	ors of hydrophytic vegetation and
	ark Surface (A12)			Dark Sur	. ,	7)		
	luck Mineral (S1)		·		Surface (F7	)		and hydrology must be present,
Sandy gi	leyed Matrix (S4)		Redox	Depressi	ons (F8)		uni	ess disturbed or problematic.
Restrictive La	ayer (if present):							
Туре:								
Depth (inches)	s):					Ну	dric Soil Pres	ent? Yes No <u>X</u>
DROLOGY	rology Indicators							
-	ators (minimum or		l: check all that a	(vlaa				Secondary Indicators (2 or more required)
,	Water (A1)			/	eaves (B9	) (excep	t MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,
	iter Table (A2)			2, 4A and	•	, (		4A and 4B)
x Saturatio	. ,			rust (B11)				Drainage Patterns (B10)
Water M	arks (B1)		Aquati	c Inverteb	rates (B13	3)		Dry-Season Water Table (C2)
Sedimen	t Deposits (B2)				e Odor (C			Saturation Visible on Aerial Imagery (C9)
Drift Den	oosits (B3)		Oxidiz	- ed Rhizos	pheres alc	ng Living	g Roots (C3)	Geomorphic Position (D2)
Dimebop	t or Crust (B4)		Prese	nce of Red	luced Iron	(C4)		Shallow Aquitard (D3)
	osits (B5)		Recen	t Iron Red	uction in F	Plowed S	oils (C6)	FAC-Neutral Test (D5)
Algal Ma	Soil Cracks (B6)		Stunte	d or Stres	sed Plants	s (D1) ( <b>L</b>	RR A)	Raised Ant Mounds (D6) (LRR A)
Algal Ma				(Explain ir	Pomarka	)		
Algal Ma Iron Depo Surface S	on Visible on Aeria	al imagery	(B7) Other		i ivemaiks	)		Frost-Heave Hummocks (D7)
Algal Ma Iron Depo Surface S Inundatio			· · · ·		ritemarks	)	_	Frost-Heave Hummocks (D7)
Algal Ma Iron Depo Surface S Inundatio	on Visible on Aeria Vegetated Conca		· · · ·			)		Frost-Heave Hummocks (D7)
Algal Ma Iron Dep Surface S Inundatic Sparsely	on Visible on Aeria Vegetated Conca		e (B8)		: <u>6 inche</u>			Frost-Heave Hummocks (D7)
Algal Ma Iron Dep Surface S Inundatic Sparsely Field Observa	on Visible on Aeria Vegetated Conca ations: r Present? Ye	ave Surfac	e (B8) No Dept	h (inches)		es		Frost-Heave Hummocks (D7)
Algal Mai Iron Depo Surface S Inundatic Sparsely Field Observa Surface Water	on Visible on Aeria Vegetated Conca ations: r Present? Ye resent? Ye	ave Surfac	e (B8) No Dept No Dept	h (inches) h (inches)	: 6 inche	es	Wetland Hyd	Frost-Heave Hummocks (D7)
Algal Mai Iron Depo Surface S Inundatic Sparsely Field Observa Surface Water Water table Pr	ations: r Present? Ye esent? Ye	ave Surfac	e (B8) No Dept No Dept	h (inches) h (inches)	: <u>6 inch</u>	es	Wetland Hyd	
Algal Mai Iron Depo Surface S Inundatic Sparsely Field Observa Surface Water Water table Pr Saturation Pre (includes capil	ations: r Present? Ye esent? Ye	ave Surfac	e (B8) No Dept No Dept No Dept	h (inches) h (inches) h (inches)	: <u>6 inche</u> : <u>at surfa</u> : <u>at surfa</u>	es ice ice		Irology Present? Yes <u>X</u> No
Algal Mai Iron Depo Surface S Inundatic Sparsely Field Observa Surface Water Water table Pr Saturation Pre (includes capil cribe Recorded	ations: r Vegetated Conce ations: r Present? Ye resent? Ye essent? Ye llary fringe)	ave Surfac	e (B8) No Dept No Dept No Dept gauge, monitoring	h (inches) h (inches) h (inches) g well, aeri	: <u>6 inch</u> : <u>at surfa</u> : <u>at surfa</u> al photos,	es ice ice		Irology Present? Yes <u>X</u> No

Project/Site:	Freeman Road Logistics	City/County: Puyallup/Pierce Cou	inty	Sampling Date:	3/11/2022
Applicant/Owner:	Vector Development Company		State: WA	Sampling Point:	Wet B DP11 W
Investigator(s):	C. Douglas, M. Curran	Section, Township, Range:	S17 R4E T20N		
Landform (hillslope	, terrace, etc.): Forested	Local relief (concave, convex	, none): <u>concave</u>		Slope: <u>1-5</u>
Subregion (LRR):	Northwest Forests and Coast (LRR A)	Lat: <u>47.12'33</u>	Long: <u>122.19'03</u>		Datum: NAD83
Soil Map Unit Nam	e: Pilchuck fine sand		NWI Classification:	PFO, PSS, POW	
Are climatic / hydro	logic conditions on the site typical for this	time of year? Yes x	No	(If no, explain in Re	marks)
Are Vegetation	, Soil, or Hydrology	significantly disturbed? Are "	Normal Circumstanc	es" Present? Yes	x No
Are Vegetation	, Soil, or Hydrology	naturally problematic? (If nee	eded, explain any an	swers in Remarks.)	

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes _ Yes _ Yes _	X X X	No No No	Is the Sampled Area within a Wetland?	Yes _	x	No	
Remarks: Suspect area identified as surrounds standing water.	3 SP 12 in	Conflu	uence Report	t. Depression area within grass pastu	ıre, ground i	is cleared	d of vegetation, grass vegetation	

Tree Stratum (Plot size:) 1.	Absolute % Cover	Dominant Species?	Indicator Status?	Dominance Test worksheet:         Number of Dominant Species         That Are OBL, FACW, or FAC:         0       (A)
2				Total Number of Dominant       Species Across All Strata:       0
4 5 50%= 0 20%= 0 Total Cov				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index Worksheet:
<u> </u>				Total % Cover of: Multiply by:
2.				OBL species 0 x1 = 0
3.				FACW species 0 x2 = 0
4.				FAC species x3 =
5.				FACU species 0 x4 = 0
50%= 0 20%= 0 Total Cov	ver: 0			UPL species 0 x5 = 0
Herb Stratum (Plot size:)				Column Totals:         0         (A)         0         (B)
				Prevalence Index = B/A = 0.0
1				
3				Hydrophytic Vegetation Indicators:         1 - Rapid Test for Hydrophytic Vegetation         2 - Dominance Test is >50%         3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptation <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)         5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				Hydrophytic Vegetation Present? Yes X No

Sampling Point:	Wet B DP11 W
oumpning i onit.	

inches) 0-8 8-18				dox Feat	ures			
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
8-18	10YR 5/2	90	10YR 5/4	10	D	М	SiL	
	10YR 5/1	70	7.5YR 4/4	30	D	М	SiL	
						. <u> </u>		
Гуре: С=Сс	oncentration, D=De	pletion, RI	M=Reduced Matrix	, CS=Co	overed or C	Coated Sa	and Grains. <sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
ydric Soil I	Indicators: (Appli	cable to a	all LRRs, unless o	therwise	e noted.)		Indicators for	Problematic Hydric Soils <sup>3</sup> :
Histoso	ol (A1)		Sandy F	Redox (S	5)			2 cm Muck (A10) ( <b>LRR B</b> )
Histic E	pipedon (A2)		Stripped	d Matrix	(S6)			Red Parent Material (TF2)
Black H	listic (A3)		Loamy	Mucky M	lineral (F1)	) (except	MLRA 1)	Very Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)		Loamy	Gleyed N	Aatrix (F2)	)		Other (Explain in Remarks)
Deplete	ed Below Dark Surfa	ace (A11)	X Deplete	d Matrix	(F3)			
Thick D	ark Surface (A12)		Redox I	Dark Sur	face (F6)		<sup>3</sup> Indicators	of hydrophytic vegetation and
Sandy M	Muck Mineral (S1)		Deplete	d Dark S	Surface (F7	7)		hydrology must be present,
	gleyed Matrix (S4)			Depressi		,	unless	s disturbed or problematic.
	Layer (if present):							
ype:	````					l		
epth (inche	es):						dric Soil Present	t? Yes X No
	2 chroma with redox	(						
rks: 1 and 2		(						
rks: 1 and 2								
rks: 1 and 2 ROLOGY Vetland Hyd	, drology Indicators		1 <sup>,</sup> check all that an					
rks: 1 and 2 ROLOGY Vetland Hyd	, drology Indicators cators (minimum or				eaves (BQ			Secondary Indicators (2 or more required
rks: 1 and 2 ROLOGY /etland Hyd rimary Indic <u>k</u> Surface	, drology Indicators cators (minimum or ∋ Water (A1)		Water-S	Stained L	eaves (B9			Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b>
rks: 1 and 2 ROLOGY /etland Hyd rimary Indic <u>x</u> Surface High W:	drology Indicators cators (minimum or Water (A1) ater Table (A2)		Water-S 1, 2,	Stained L 4A and	<b>4B</b> )			Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> )
rks: 1 and 2 ROLOGY Vetland Hyo rimary Indic <u>v</u> Surface High Wa <u>v</u> Saturati	drology Indicators cators (minimum or e Water (A1) later Table (A2) ion (A3)		Water-S 1, 2, Salt Cru	Stained L 4A and Ist (B11)	<b>4B</b> )	) (except		Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10)
ROLOGY Vetland Hyd rimary Indic K Surface High Wa K Saturati Water N	drology Indicators cators (minimum or Water (A1) ater Table (A2) ion (A3) Marks (B1)		Water-S <b>1, 2,</b> Salt Cru Aquatic	Stained L 4A and Ist (B11) Inverteb	<b>4B</b> ) prates (B13	e) (except		Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2)
ROLOGY /etland Hyd rimary Indic K Surface High Wa Saturati Water M Sedime	drology Indicators cators (minimum or Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		Water-S 1, 2, Salt Cru Aquatic Hydroge	Stained L 4A and ust (B11) Inverteb	<b>4B</b> ) prates (B13 e Odor (C	e) (except 3) 1)		Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS
ROLOGY Vetland Hyd Irimary Indic X Surface High Wi X Saturati Water N Sedime Drift De	drology Indicators cators (minimum or Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		Water-S  , 2,  Salt Cru Aquatic Hydroge Oxidizee	Stained L 4A and Ist (B11) Inverteb en Sulfid d Rhizos	<b>4B</b> ) prates (B13 e Odor (C pheres alc	a) (except 3) 1) ong Living		Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS Geomorphic Position (D2)
rks: 1 and 2 ROLOGY Vetland Hyd Vetland Hyd Trimary Indic X Surface High Wa X Saturati Water N Water N Drift De Algal M:	drology Indicators cators (minimum or Water (A1) 'ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4)		Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidizee Presend	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron	a) (except a) b) (except b) a) b) (cxcept b) b) (except b)	MLRA	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS Geomorphic Position (D2) Shallow Aquitard (D3)
rks: 1 and 2 ROLOGY Vetland Hyc Primary Indic X Surface High W: X Saturati Water N Sedime Drift De Algal M: Iron De	drology Indicators cators (minimum or e Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5)		Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Recent	Stained L 4A and Ist (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron luction in F	a) ( <b>except</b> a) ( <b>except</b> b) ( <b>except</b> c)	MLRA Roots (C3) bils (C6)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
rks: 1 and 2 ROLOGY Vetland Hyc 'rimary Indic x Surface High W: x Saturati Water N Sedime Drift De Algal M: Iron De  Surface	drology Indicators cators (minimum or e Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6)	:: ne required	Water-S  1, 2, Salt Cru Aquatic Hydroge Oxidizee Recent Stunted	Stained L <b>4A and</b> Ist (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Rec or Stres	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron luction in F ssed Plants	e) (except )) (except )) )) )) )) )) )) )) )) )) )	MLRA Roots (C3) bils (C6)	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 (CS Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
rks: 1 and 2 ROLOGY Vetland Hyc Yrimary Indic X Surface High Wa X Saturati Water N Sedime Drift De Algal Ma Iron De  Surface Iron De  Surface Inundati	drology Indicators cators (minimum or e Water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) tion Visible on Aeria	i: ne required	Water-S  1, 2, Salt Cru Aquatic Hydroge Oxidizee Recent Stunted (B7) Other (B	Stained L <b>4A and</b> Ist (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Rec or Stres	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron luction in F	e) (except )) (except )) )) )) )) )) )) )) )) )) )	MLRA Roots (C3) bils (C6)	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)
ROLOGY Vetland Hyc rimary Indic Vetland Hyc Surface High Wa Saturati Water N Sedime Drift De Algal Ma Iron De Surface Iron De Lift Ce	drology Indicators cators (minimum or e Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6)	i: ne required	Water-S  1, 2, Salt Cru Aquatic Hydroge Oxidizee Recent Stunted (B7) Other (B	Stained L <b>4A and</b> Ist (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Rec or Stres	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron luction in F ssed Plants	e) (except )) (except )) )) )) )) )) )) )) )) )) )	MLRA Roots (C3) bils (C6)	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 (CS Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
rks: 1 and 2 ROLOGY Vetland Hyc Primary Indic x Surface High Wa x Saturati Water N Sedime Drift De Algal Ma Iron De Surface Inundati Sparsel	drology Indicators cators (minimum or Water (A1) 'ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) tion Visible on Aeria ly Vegetated Conca	i: ne required	Water-S  1, 2, Salt Cru Aquatic Hydroge Oxidizee Recent Stunted (B7) Other (B	Stained L <b>4A and</b> Ist (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Rec or Stres	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron luction in F ssed Plants	e) (except )) (except )) )) )) )) )) )) )) )) )) )	MLRA Roots (C3) bils (C6)	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 (CS Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
ROLOGY Vetland Hyc Primary Indic X Surface High Wi X Saturati Water N Sedime Drift De Algal Mi Iron Dej Surface Inundati Sparsel	drology Indicators cators (minimum or Water (A1) 'ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) tion Visible on Aeria ly Vegetated Conca	i: ne required	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted (B7) Other (B	Stained L 4A and ist (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red or Stres Explain ir	<b>4B</b> ) prates (B13 e Odor (C pheres alc duced Iron luction in F ssed Plants	e) (except a) b) (except b) c) c) c) c) c) c) c) c) c) c	MLRA Roots (C3) bils (C6)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> , <b>4A and 4B</b> ) 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) ( <b>LRR A</b> )
ROLOGY Vetland Hyc Primary Indic X Surface High Wa X Saturati Water N Sedime Drift De Algal Ma Iron Dej Surface Inundati Sparsel	drology Indicators cators (minimum or e Water (A1) fater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeria ly Vegetated Conca vations: er Present? Ye	e required	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted (B7) Other (B	Stained L 4A and Ist (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Rec or Stres Explain ir (inches)	4B) orates (B13 e Odor (C pheres alc duced Iron luction in F ased Plants n Remarks	e) (except a) b) (except b) c) c) c) c) c) c) c) c) c) c	MLRA Roots (C3) bils (C6)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> , <b>4A and 4B</b> ) 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) ( <b>LRR A</b> )
rks: 1 and 2 ROLOGY Vetland Hyc Primary Indic x Surface High W: x Saturati Water N Sedime Drift De Algal M: Iron De  Surface Inundati Sparsel Gurface Water Vater table F Saturation Pr	drology Indicators cators (minimum or e Water (A1) fater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) tion Visible on Aeria ly Vegetated Conca vations: er Present? Ye present? Ye	al Imagery ave Surfac	Water-S  1, 2, Salt Cru Aquatic Hydroge Oxidizer Presend Recent Stunted (B7) Other (B8)  No <u>x</u> Depth	Stained L 4A and Ist (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red or Stres Explain ir (inches) (inches)	4B) orates (B13 e Odor (C pheres alc duced Iron luction in F ased Plants n Remarks	es	MLRA Roots (C3) bils (C6)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
ROLOGY Vetland Hyc Primary Indic Yetland Hyc Primary Indic X Surface High Wi X Saturati Water N Sedime Drift De Algal Mi Iron De Inundati Sparsel Field Observ Gurface Wate Vater table F Saturation Pr includes cap	drology Indicators cators (minimum or e Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) tion Visible on Aeria ly Vegetated Conca vations: er Present? Ye	al Imagery ave Surfac s <u>x</u> s <u>x</u>	Water-S           1, 2,           Salt Cru           Aquatic           Hydroge           Oxidizer           Presend           Recent           Stunted           (B7)           Other (B8)           No           No           X           Depth           No           X           Depth	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Rec or Stres Explain ir (inches) (inches)	4B) prates (B13 e Odor (C' pheres alc duced Iron luction in F ssed Plants n Remarks : <u>3 inche : at surfa</u>	es	Image: MLRA	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 (CS Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
ROLOGY Vetland Hyc Primary Indic X Surface High Wa X Saturati Water N Sedime Drift De Algal Ma Iron De Surface Inundati Sparsel Field Observ Surface Wate Vater table F Saturation Pr includes cap ibe Recorde	drology Indicators cators (minimum or e Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) tion Visible on Aeria ly Vegetated Conca vations: er Present? Ye Present? Ye poillary fringe)	al Imagery ave Surfac ss ss	Water-S  1, 2, Salt Cru Aquatic Hydroge Oxidizee Presend Recent Stunted (B7) Other (B No Depth No Depth No Depth gauge, monitoring	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Rec or Stres Explain ir (inches) (inches) (inches) well, aeri	4B) prates (B13 e Odor (C pheres alc duced Iron luction in F issed Plants n Remarks : <u>3 inche</u> : <u>at surfa</u> ial photos,	es previous	MLRA	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)

Western Mountains, Valleys and Coast - Version 2.0

Project/Site:	Freeman Road Logistics City/County: Puyallup/Pierce Cou				unty	Sampling Date:	3/1	1/2022	
Applicant/Owner:	Vector Development	nt Company				State: WA	Sampling Point:	Wet B	DP12 Up
Investigator(s):	C. Douglas, M. Cur	rran	Sec	tion, Township,	Range:	S17 R4E T20N			
Landform (hillslope	, terrace, etc.):	Forested	Loca	I relief (concave,	, conve	x, none): <u>concave</u>		Slope:	1-5
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat: 47.12'33			Long: <u>122.19'03</u>		Datum:	NAD83
Soil Map Unit Nam	e: Pilchuck fin	e sand				NWI Classification:	PFO, PSS, POW		
Are climatic / hydro	logic conditions on	the site typical for this	time of year?	Yes	х	No	(If no, explain in R	emarks)	
Are Vegetation	, Soil	, or Hydrology	significan	tly disturbed?	Are "	Normal Circumstanc	es" Present? Yes	<u>x</u>	No
Are Vegetation	, Soil	, or Hydrology	naturally	problematic?	(If ne	eded, explain any an	swers in Remarks.)	1	

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	X No No X No	<u>x</u>	Is the Sampled Area within a Wetland?	Yes	No	<u>x</u>
Remarks: Suspect area identified as surrounds standing water	SP 12 in C	onfluence	Report. De	pression area within grass past	ure, ground is cle	ared of vegetat	tion, grass vegetation

1 2		<u> </u>	Status?	Number of Dominant Species         That Are OBL, FACW, or FAC:         2         (A)
3				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
4 5 50%= 0 20%= 0 Total Cover:				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
Some 20%= 0 20%= 0 Total Cover.				Prevalence Index Worksheet:
				Total % Cover of: Multiply by:
1 2				$\begin{array}{c c c c c c c c c c c c c c c c c c c $
3.				FACW species 0 x2 = 0
4				FAC species 100 x3 = 300
4 5.				FACU species 0 x4 = 0
50%= 0 20%= 0 Total Cover:	0			UPL species $0$ x5 = $0$
Herb Stratum (Plot size:)				Column Totals: <b>100</b> (A) <b>300</b> (B)
1. Agrostis capillaris	30	Yes	FAC	Prevalence Index = $B/A = 3.0$
2. Festuca rubra	70	Yes	FAC	
3	0			Hydrophytic Vegetation Indicators:         1 - Rapid Test for Hydrophytic Vegetation         X       2 - Dominance Test is >50%         X       3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptation <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)         5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.         Hydrophytic         Vegetation         Present?       Yes

SOIL

			Redox Fea	tures						
(inches) Color (m	oist) %	Color (moi	st) %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Rem	narks	
0-18 10YR	4/3 99	10YR 5/4	4 1	D	М	SiL				
<sup>1</sup> Type: C=Concentratior	, D=Depletion, F	RM=Reduced I	Matrix, CS=C	overed or 0	Coated S	and Grains. <sup>2</sup> l	Location: P	L=Pore Lining,	M=Matrix.	
Hydric Soil Indicators:	(Applicable to	all LRRs, unl	ess otherwis	e noted.)		Indicators f	or Problem	atic Hydric Sc	oils <sup>3</sup> :	
Histosol (A1)		Sa	andy Redox (	S5)			2 cm Mu	uck (A10) ( <b>LRF</b>	<b>R B</b> )	
Histic Epipedon (A	2)		ripped Matrix					ent Material (T	,	
Black Histic (A3)			amy Mucky N			t MLRA 1)		allow Dark Sur		
Hydrogen Sulfide (			amy Gleyed		)	_	Other (E	Explain in Rema	arks)	
Depleted Below Da			epleted Matrix			<sup>3</sup> ladiaat	are of hudro	nhutio vo nototi		
Thick Dark Surface			edox Dark Su		7)			phytic vegetati		
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# **RATING SUMMARY – Western Washington**

 Name of wetland (or ID #):
 Wetland A
 Date of site visit:
 3/11/22

 Rated by C. Douglas
 Trained by Ecology?
 Yes No Date of training 2007

 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** <u>III</u> (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

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

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
Circle the appropriate ratin								tings		
Site Potential	Н	M	L	Н	Μ	L	Н	M	L	
Landscape Potential	Н	M	L	H	Μ	L	Н	Μ	L	
Value	Н	Μ	L	Н	M	L	Н	Μ	L	TOTAL
Score Based on Ratings		6			7			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	Ι				
Mature Forest	I				
Old Growth Forest		I			
Coastal Lagoon	Ι	II			
Interdunal	I II	III IV			
None of the above		Х			

# 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 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 5.2	
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 <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	

# **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?

•N0 – 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)** 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	<b>YES</b> – The wetland class is <b>Flats</b>
If your wetland can be classified as a Flats wetland,	use the form for <b>Depressional</b> 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).
- •N0 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. <u>Does the entire wetland unit **meet all** of the following criteria?</u>

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 <u>A</u>

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

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	0
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2	3
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	
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 > $\frac{1}{2}$ of area points = 3	3
Wetland has persistent, ungrazed plants $> 1/10$ of area points = 1	
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area points = 0	
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 $> \frac{1}{2}$ total area of wetland points = 4	2
Area seasonally ponded is > ¼ total area of wetland points = 2	
Area seasonally ponded is < ¼ total area of wetland points = 0	_
Total for D 1Add the points in the boxes above	8

#### **Rating of Site Potential** If score is: $\square$ **12-16 = H** $\boxtimes$ **6-11 = M** $\square$ **0-5 = L** Record the ratio

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	1
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? SourceYes = 1 (No = 0)	0
Total for D 2Add the points in the boxes above	2

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

D 3.0. Is the water quality improvement provided by the site valuable	e to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, rive 303(d) list?	er, lake, or marine water that is on the Yes = 1 (No = 0)	0
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 <i>if there is a TMDL for the basin in which the unit is found</i> )?	for maintaining water quality ( <i>answer YES</i> Yes = 2 (No = 0)	0
Total for D 3	Add the points in the boxes above	1
Rating of Value If score is: 2-4 = H X 1 = M 0 = L	Record the rating on the first page	

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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 of flat depression with no surface water leaving it (no outlet)       points = 0         D 4.2. Characteristics of surface water outflows from the wetland:       wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 1         Wetland has an unconstricted, or sightly constricted area outflow this 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 of permanent water or if dir, the deepest part.       Marks of ponding between 21 to < 31 from surface or bottom of outlet points = 5         Marks of ponding the wetland is a "headwater" wetland       points = 3       points = 3         Metland is far but has small depressions on the surface that trap water points = 1       points = 5         O 4.3. Contribution of the wetland to to trage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to this area of the unit points = 5       0         O 4.3. Contribution of the vetland to storage in the watershed: Estimate the ratio of the area of upstream basin to boxes above       11         Rating of Site Potential I facore is::::::::::::::::::::::::::::::::::::	DEPRESSIONAL AND FLATS WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradati	ion
Wetland is a depression or flat depression with no surface water leaving it (no outlet)       coints=0       4         Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 1       4         Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing itich points = 0       4         0       2. Decth of Storage during wet periods; istimate the height of ponding above the bottom of the outlet. For wetlands with no outlet measure from the surface or bottom of outlet points = 5       7         Marks of ponding between 21 to < 31 from surface or bottom of outlet points = 3		
with no outlet, measure from the surface of permanent water or if dry, the deepest part.       points = 7         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 5         Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	Wetland is a depression or flat depression with no surface water leaving it (no outlet)points = 4Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditchpoints = 1	4
contributing surface water to the wetland to the area of the wetland unit itself.       points = 5       0         The area of the basin is lots 100 times the area of the unit       points = 3       0         The area of the basin is 10 to 100 times the area of the unit       points = 3       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         Total for D 4       Add the points in the boxes above       11         Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L       Record the rating on the first page         D 5.0. Does the vetland 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       3       3         Rating of Landscape Potential If score is: [] 3 = H	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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	7
Rating of Site Potential If score is: 12-16 = H (1-1 = M (1-5 = L))       Record the rating on the first page         D 5.0. Does the landscape have the potential to support hydrologic functions of the site?       0       1         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 > 1 residence/ac, urban, commercial, agriculture, etc.)?       Yes = 1 No = 0       1         Total for D 5       Add the points in the boxes above       3         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         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 description that best matches conditions area. The wetland captures surface water that would otherwise flow down-gradient of unit.       1         Flooding problems are in a sub-basin farther down-gradient of unit.       points = 1       1         Flooding from groundwater is an issue in the sub-basin.       points = 1       1         Flooding from groundwater is an issue in the sub-basin.       poin	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0	0
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?       1         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         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         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       3       3         Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L       Record the rating on the first page       0         D 6.0. Are the hydrologic functions provided by the site valuable to society?       1       1       1         D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around 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):       1	· · · · · · · · · · · · · · · · · · ·	11
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       3         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?       0       0       1         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 description that best matches conditions around 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):       1         •       Flooding problems are in a sub-basin farther down-gradient of unit. points = 2       1         •       Surface flooding problems are in a sub-basin.       points = 1         The wetsting 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	Rating of Site PotentialIf score is: $\square$ 12-16 = H $\boxtimes$ 6-11 = M $\square$ 0-5 = LRecord the rating on the	first page
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       3         Rating of Landscape Potential If score is: [X] 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?       0         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):       1         • Flooding problems are in a sub-basin that is immediately down-gradient of unit.       points = 2       1         • Surface flooding problems are in a sub-basin.       points = 1       1         • Flooding from groundwater is an issue in the sub-basin.       points = 1       1         • Flooding from groundwater is an issue in the sub-basin.       points = 0       1         • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland	D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
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       3         Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 e L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         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):       1         • Flooding problems are in a sub-basin farther down-gradient of unit.       points = 2       1         • Surface flooding problems are in a sub-basin farther down-gradient of unit.       points = 1       1         Flooding from groundwater is an issue in the sub-basin.       points = 1       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       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         There of D 6       Add the points in t	D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
>1 residence/ac, urban, commercial, agriculture, etc.)?       Yes = 1 No = 0       1         Total for D 5       Add the points in the boxes above       3         Rating of Landscape Potential If score is: 🔍 3 = H1 or 2 = MO = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       D         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): <ul> <li>Flooding problems are in a sub-basin father down-gradient of unit.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> <li>There are no problems with flooding downstream of the wetland.</li> <li>points = 2</li> <li>No = 0</li> </ul> 0         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       1         Total for D 6       Add the points in the boxes above       1 </td <td>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff? (Yes = 1) No = 0</td> <td>1</td>	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
Rating of Landscape Potential If score is: X 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         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       1         Flooding from groundwater is an issue in the sub-basin.       points = 1       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       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		1
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> </ul> 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)           Total for D 6         Add the points in the boxes above         1           Add the points in the boxes above         1		3
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> <li>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)</li> <li>Total for D 6</li> <li>Add the points in the boxes above</li> <li>Add the points in the boxes above</li> </ul>	<b>Rating of Landscape Potential</b> If score is: $\boxed{X}$ 3 = H $\boxed{1}$ or 2 = M $\boxed{0}$ = L Record the rating on the	first page
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):Image: Description of the sub-basin redds is the sub-basin redds is the sub-basin farther down-gradient of unit. Points = 1 	D 6.0. Are the hydrologic functions provided by the site valuable to society?	
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 Total for D 6 Add the points in the boxes above 1	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 = 1Flooding from groundwater is an issue in the sub-basin.points = 1The 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 whypoints = 0	1
Yes = 2     No = 0       Total for D 6     Add the points in the boxes above     1		
	Yes = 2 (No = 0)	
		-

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      A structures or more: points = 4        X Emergent      3 structures: points = 2)        X Scrub-shrub (areas where shrubs have > 30% cover)      2 structures: points = 1        X Forested (areas where trees have > 30% cover)      1 structure: points = 0        If the unit has a Forested class, check if:	2
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).	2
H 1.3. Richness of plant species         Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> .         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	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. <i>If you</i> <i>have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points All three diagrams in this row are HIGH = 3points	2

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.	
X Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
X Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> 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)	
X 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)	4
X At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i>	
Invasive plants cover less than 25% of the wetland area in every stratum of plants ( <i>see H 1.1 for list of strata</i> )	
Total for H 1Add the points in the boxes above	11
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = LRecord 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).	

H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		
<i>Calculate:</i> % undisturbed habitat $5 + [(\%  moderate and low intensity land u$	uses)/2] 0 = 5 %	
If total accessible habitat is:	// <u></u>	
> 1/3 (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: % undisturbed habitat <u>10</u> + [(% moderate and low intensity land u	uses)/2] <u>10</u> = <u>20</u> %	
Undisturbed habitat > 50% of Polygon	points = 3	1
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	I
Undisturbed habitat 10-50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity	points = 0	
Total for H 2 Add the p	oints in the boxes above	-1
Rating of Landscape Potential If score is: 4-6 = H 1-3 = M X < 1 = L	Record the rating on th	e 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? <i>Choose only</i>	ly the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)		
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		0
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources		
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensive plan, in a</li> </ul>		
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	
Rating of Value If score is: 2 = H 1 = M 0 = L	Record the rating on	the first page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

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# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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 Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number A

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
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	
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 ONO - Go to SC 1.2	
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.	Cat. II
— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I ONO = Category II	0
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? OYes – Go to SC 2.2 No – Go to SC 2.3	OCat. I
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
OYes = 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? OYes = Category I     ONo = Not a WHCV	
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? $\bigcirc$ Yes – Go to SC 3.3 $\bigcirc$ 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? OYes – Go to <b>SC 3.3</b> ONo = <b>Is not a bog</b> 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? $Yes = Is a Category I bog ONo - Go to SC 3.4$	
<b>NOTE:</b> 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.	Cat. I
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	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
<ul> <li>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.</li> </ul>	
<ul> <li>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).</li> </ul>	
Yes = Category I No = Not a forested wetland for this section	OCat. 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) $\bigcirc$ Yes – Go to SC 5.1 $\bigcirc$ No = Not a wetland in a coastal lagoon	OCat. 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 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 is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )	
Yes = Category I No = Category I	
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:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
<ul> <li>— Grayland-Westport: Lands west of SR 105</li> </ul>	OCat I
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
Yes – Go to <b>SC 6.1</b> 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	OCat. II
for the three aspects of function)?	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? OYes = Category II ONO – Go to SC 6.3	OCat. 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 ONO = Category IV	OCat. IV
Category of wetland based on Special Characteristics	NA
If you answered No for all types, enter "Not Applicable" on Summary Form	

### **RATING SUMMARY – Western Washington**

 Name of wetland (or ID #):
 Wetland B
 Date of site visit:
 3/11/22

 Rated by C. Douglas
 Trained by Ecology?
 Yes No Date of training 2007

 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 IV** (based on functions **X** 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

**X** \_Category IV – Total score = 9 - 15

FUNCTION		nprov iter Q	-	Hy	ydrolo	ogic		Habita	at	
		Circle the appropriate ratings								
Site Potential	Н	M	L	Н	Μ	L	Н	Μ	L	
Landscape Potential	Н	M	L	Н	M	L	Н	Μ	L	
Value	Н	M	L	Н	Μ	L	Н	Μ	L	ΤΟΤΑ
Score Based on Ratings		7			4			3		14

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

AL

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

# 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 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 5.2	
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	

### **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)** 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	<b>YES</b> – The wetland class is <b>Flats</b>
If your wetland can be classified as a Flats wetland,	use the form for <b>Depressional</b> 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).
- •N0 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. <u>Does the entire wetland unit **meet all** of the following criteria?</u>

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

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve wa	ter 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).	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 g outlet.	3
	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	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cow	vardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	0
Wetland has persistent, ungrazed plants $> 1/10$ of area	points = 1	
Wetland has persistent, ungrazed plants <1/10 of area	points = 0	
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 > $\frac{1}{2}$ total area of wetland	points = 4	4
Area seasonally ponded is > $\frac{1}{4}$ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the b	oxes above	7

#### **Rating of Site Potential** If score is: $\Box$ **12-16 = H** $\boxed{\times}$ **6-11 = M** $\Box$ **0-5 = L** Record the rational second the second s

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 Source	D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2 Add the points in t	he boxes above	1
Detine of Londonne Detential if again in $\square 2$ on $A = U$ $\square 4$ on $2 = M$ $\square 0 = U$		- 4

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

D 3.0. Is the water quality improvement provided by the site valuable t	to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river 303(d) list?	, lake, or marine water that is on the Yes = 1 (No = 0)	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on t	he 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 ( <i>answer YES if there is a TMDL for the basin in which the unit is found</i> )? Yes = 2 No = 0		0
Total for D 3	Add the points in the boxes above	1
Rating of Value If score is: 2-4 = H X 1 = M 0 = L	Record the rating on the first page	

E

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. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) <b>points = 4</b> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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 = 1 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)	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	0			
Total for D 4Add the points in the boxes above	4			
Rating of Site PotentialIf score is: $\square$ 12-16 = H $\square$ 6-11 = M $\boxtimes$ 0-5 = LRecord the rating on the f	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	0			
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 5Add the points in the boxes above	1			
<b>Rating of Landscape Potential</b> If score is: $3 = H$ $3 = H$ $1$ or $2 = M$ $0 = L$ Record the rating on the f	first page			
D 6.0. Are the hydrologic functions provided by the site valuable to society?				
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. <i>Choose the description that best matches conditions around the wetland unit being rated</i>. <i>Do not add points</i>. <i>Choose the highest score if more than one condition is met</i>. 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):</li> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin. points = 1</li> <li>The existing or potential outflow from the wetland is so constrained by human or natural conditions that the</li> </ul>	0			
water stored by the wetland cannot reach areas that flood. <i>Explain why</i> points = 0				
There are no problems with flooding downstream of the wetland.     points = 0				
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	0			
<b>Rating of Value</b> If score is: $\Box 2 - 4 = H \Box 1 = M \boxtimes 0 = L$ Record the rating on the f	first page			

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        Aquatic bed       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	0
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).	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . 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 5 - 19 species <pre></pre>	0
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. <i>If you</i> <i>have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points Low = 1 point All three diagrams in this row are HIGH = 3points Decide from the diagrams Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the classes of three classes and open water, the rating is always high. Decide from the c	0

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>	
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) <b>and/or</b> 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	0
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)	
Total for H 1Add the points in the boxes above	1
<b>Rating of Site Potential</b> If score is: $15-18 = H$ $7-14 = M$ $\times 0-6 = L$ 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: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 0	=%	
If total accessible habitat is:		
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: % undisturbed habitat <u>10</u> + [(% moderate and low intensity land uses)/2] <u>10</u>	=%	
Undisturbed habitat > 50% of Polygon	points = 3	1
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	1
Undisturbed habitat 10-50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity	points = 0	
Total for H 2 Add the points in the	boxes above	-1
<b>Rating of Landscape Potential</b> If score is: $\Box$ 4-6 = H $\Box$ 1-3 = M $\boxtimes$ < 1 = L Record the rating on the		he 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? <i>Choose only the highest score that applies to the wetland being rated.</i> 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	0
Rating of ValueIf score is: $\Box 2 = H$ $\Box 1 = M$ $\boxtimes 0 = L$ Record the rating on	the first page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

### **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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 Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number \_\_\_\_\_

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
<ul> <li>— The dominant water regime is tidal,</li> <li>— Vegetated, and</li> </ul>	
— With a salinity greater than 0.5 ppt — With a salinity greater than 0.5 pp	
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 ONO - Go to SC 1.2	OCat. 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	Cat. I
than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , 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-	0
mowed grassland.	
— The wetland has at least two of the following features: tidal channels, depressions with open water, or	OCat. II
contiguous freshwater wetlands. OYes = Category I ONo = Category 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?	Cat. I
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	0
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? OYes = Category I ONO = Not a WHCV	
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? OYes – Go to SC 3.3 ONo – 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? $(Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of an inpermeable final upan such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of a lake of the such as clay of volcanic asit, of that are floating of top of a lake of (Vector Bedrock, of a lake of the such as the$	
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? Ves = Is a Category I bog ONO – Go to SC 3.4	
<b>NOTE:</b> 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.	OCat. I
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?	
Species (or combination of species) instea in Table 4 provide more than 50% of the cover under the canopy? $\bigcirc$ Yes = Is a Category I bog $\bigcirc$ No = Is not a bog	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i>	
<ul> <li>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.</li> <li>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).</li> </ul>	
Yes = Category I • No = Not a forested wetland for this section	OCat. I
SC 5.0. Wetlands in Coastal Lagoons	
<ul> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</li> <li>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</li> <li>The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)</li> <li>Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</li> <li>SC 5.1. Does the wetland meet all of the following three conditions?</li> </ul>	OCat. I
<ul> <li>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).</li> <li>At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> </ul>	OCat. II
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> ) (Yes = <b>Category I</b> ) No = <b>Category I</b>	
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:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> <li>Grayland-Westport: Lands west of SR 105</li> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> <li>Yes – Go to SC 6.1          No = not an interdunal wetland for rating     </li> </ul>	OCat 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 ONO – Go to SC 6.2	OCat. 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? OYes = Category II ONO - Go to SC 6.3	OCat. 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 = <b>Category III</b> No = <b>Category IV</b>	OCat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

## Appendix D Owner Letter

March 30, 2022

Re: Sessler Parcel 0420174075 NE Corner Ponding

Tyler,

Thank you for calling to discuss the water ponding you found on the property we sold to you in November. I'm happy to provide you with a history of this parcel as it relates to storm water and farming activities.

My wife and I have owned this property for over 20 years at the time of selling it in November 2021. During that time, there were two old barns on the property as it was used as an animal farm. At no point in our ownership period was there standing water on the property.

We had torn down the shed structures since a rise in homeless and transient activity started to plague the Freeman Road area. In addition to this work, we had begun to relocate soil from the northeast corner of the property (adjacent to the WSDOT shared property line) to the location of the sheds, with the intent of raising the elevation in the footprint of the sheds. While excavating soil from the northeast, we noticed groundwater seeping up, which led us to stop using material from that location.

We left the source for the soil relocation bare and flat, which resulted in slightly lower elevation than surrounding areas. At no point during our 20+ year ownership was there ponding on-site or even puddles forming during heavy rain events. We knew we had to keep the property relatively dry due to recurring farming activities throughout our ownership.

Sindere Jon Sessler