

13 Appendix B: Wetland Delineation Report

WETLAND DELINEATION REPORT

For
Coyote Ridge Site
Blaine, WA



July 2004

Prepared For:

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Job # 93-167

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*** EAST MAPLE RIDGE PLAT**
2-11-05

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1.0 SITE DESCRIPTION

The 90+-acre Coyote Ridge Site is located west of I-5, north of H Street and west of Harvey Road in Blaine (Figure 1). This is an irregular- shaped parcel is approximately 2256 x 1552 feet. This proposed project is located in a partially developed residential area just south of the Canadian border. Elevation averages 240 to 300 feet with 2 to 8 % slopes. This site is located within SEC. 32, T 41 N, R 1 E, of the W.M., Whatcom County.

2.0 METHODS

Scott Morey and Katrina Jackson visited the site in June 2004. Wetland identification and delineation followed the "Routine Determination" (On-site Methodology) described in the Corps of Engineers 1987 Wetlands Delineation Manual. This methodology, except in certain situations defined in the manual, requires evidence that at least one positive wetland indicator for each of the three parameters, vegetation, soils, and hydrology, must be found in order to make a positive wetland determination. If no evidence can be found that the area at the observation point normally has wetland indicators for all three parameters the area is not a wetland. Methods for each of the parameters are as follows:

- **Vegetation:** *Determine whether hydrophytic vegetation is present.* A site is considered to be hydrophytic (wetland) if more than 50 percent of the dominant species in a community type have an indicator status of obligate wetland, facultative wetland, and/or facultative indicator status. Portions of the area failing this test are not wetlands.
- **Soils:** *Determine whether hydric soils are present.* Soil test pits are hand dug to approximately 16 inches and soils are examined for hydric soil indicators. These formal soil test pits are labeled with a data point number and located on site delineation map. Colors of the soil matrix, and mottling or gleying, if present, are measured immediately below the upper dark horizon using a Munsell color chart.
- **Hydrology:** *Site specific hydrology is assessed by an inspection of each site.* Depth to shallow groundwater and/ or saturation in each test pit is recorded, as are observations of other indicators of hydrology including water marks, drift lines, root zones, sediment deposits, and drainage patterns. Any portion of the area having a positive wetland hydrology indicator has wetland hydrology.

Discovery for potential wetland areas was conducted using topographical, aerial photo study, soils maps and field observation. Wetland boundaries were flagged and 8 sample plots selected based on changes in vegetation and/or soil type and hydrology. Data forms for this delineation are located in Appendix B of this report. Maps, aerial photographs, and reports were resourced from the US Geological Survey, National Wetland Inventory, National Resource Conservation Service, Washington State Department of Transportation, Washington Department of Ecology, Whatcom County Planning, as well as various taxonomy guides in determining status for this property. See References.

3.0 ECOLOGICAL ASSESSMENT

Existing Conditions

In this 90+ acre previously logged site, upland mixed conifer/ deciduous forest comprises the majority of the acreage. Soils are well drained with high chroma and exhibit high sand and gravel content. Wetland areas are located along drainages and in shallow forest depressions concentrated in the south central portion. Wetland areas appear to be HGM closed depressional systems. Buffers are moderately developed.

Vegetation

The majority of this site can be characterized as a palustrine forest community. Vegetation within areas which meet wetland criteria are marginal hydrophytes. Plot 3 is singular in dominance of a facultative wetland species as it is dominated by hardhack (*Spiraea douglasii*). Most scattered forest depressions support marginal facultative to facultative upland species. Transition zones on this site are narrow.

Upland forest species include red alder (*Alnus rubra*, FAC), big leaf maple (*Acer macrophyllum*, FACU), Douglas fir (*Pseudotsuga menziesii*, FACU), Western red cedar (*Thuja plicata*, FAC), Western hemlock (*Tsuga heterophylla*, FACU), Cascara (*Rhamnus purshiana*, FAC-), with a scrub-shrub and herbaceous under story dominated by Himalayan blackberry (*Rubus discolor*, FACU), snowberry (*Symphoricarpos albus*, FACU), and sword fern (*Polystichum munitum*, FACU), thimbleberry (*Rubus parviflorus*, FACU+), evergreen blackberry (*Rubus laciniatus*, FAC), trailing blackberry (*Rubus ursinus*, FACU), and false lily-of-the valley (*Maianthamum dilatatum*, FAC)

Hydrophytes include cottonwood (*Populus balsamifera*, FAC), red alder tree and sapling, salmonberry (*Rubus spectabilis*, FAC), hardhack FACW, lady fern (*Athyrium filix-femina*, FAC), deer fern (*Blechnum spicant*, FAC+). A large grassy area approximately 650 x 650 feet along H street appears to be a site of a former homestead (Plot 8). At one time it was most likely forested; however, currently it is dominated by Himalayan blackberry, bluegrass (*Poa pratensis*, FACU+), and tall fescue (*Festuca arundinacea*, FACU-).

Soils

The NRCS Soil Survey indicates Everett 48 Typic haplorthod sandy to gravelly sandy loams (Figure 4). This soils unit is categorized as somewhat excessively drained. Permeability is moderated in the upper part of the Everett soil, rapid and very rapid in the substratum. Available water capacity is low. Seasonal high water table is at a depth of 3.5 to 5.0 feet from December through April. Included within this unit are small areas of Birch bay, Clipper, Labounty, Sehome, and Squalicum soils. On site field observation indicate soils consistent in hue, value, chroma, and texture compared to soil survey.

Upland plots exhibit color matrix of 10YR 3/2, 3/3, and 3/4 in the upper 6 inches with high chroma 3 and 4 B horizons (plots 2, 4, 5, 6, 7, 8). Hydric soils are indicated in the south central portion of the site. Soils exhibit low chroma 10YR 3/1 and 2/1 in the upper 10 to 12 inches in depressions along the dendritic drainage in this area (plot 1, 3). Soils do not indicate redox concentrations or streaking in sandy soils.

Hydrology

The site is located on 7-10% slope near the foot of a hill. A shallow perched water table is present in the upper 36" soil horizon across the site and is reliant upon the amount of precipitation it receives during the year. Percolation is good based on the sand and gravel content in the soils. Due to this high content of sand and gravels in the soils the saturation periods rely solely upon the precipitation period duration. The saturation periods across most of the site appear to be short less than 12% of the growing season. Those areas meeting wetland hydrology are topographic lows and swales that conduct water off the site. These areas were most likely formed during historic heavy surface runoff events following large storms.

Hydrology in this shallow perched table flows through a lens of sand laying on an impervious layer of clay or silt. Where this silty clay surfaces the saturation period is longer and results in a seasonal high water table generated by seasonal events which charge the ground water. It appears fluid in the A and B horizon due to the high percentage of sand and cobbles. This area does not have extended saturated periods based upon soil's porosity. Capillary action is low in sandy soils therefore inhibiting soils ability to percolate saturation. This is a depressional closed system based upon best available information no surface outflow is indicated on site. Primary indication of hydrology is saturated soils in the upper 12 inches.

Habitat and Wetland Functions

The habitat determination was based on the information provided by several agency sources. The site does not appear on any of the Washington Department of Fish and Wildlife (WDFW) or US Fish and Wildlife (USFW) maps for Endangered Species, and or Sensitive or Protected Habitat. No threatened or endangered state listed plant species that may be found in wetland were found on this site. No habitat or species of local importance is mapped within or near the boundaries of this property. It is not an area in which listed species have primary association (Whatcom County). Functionality for aquatic invertebrates is low due to lack of ponding, seasonal duration, and lack of snags and downed logs. Adult amphibian populations may utilize wooded areas; however hydrology appears to be insufficient during breeding season.

Production of organic material and export is low due to seasonal availability and limited export. Individually general habitat function of wetlands on this site is low due to lack of Cowardin class interspersions in wetland areas and small size.

Wetland Functions Values Form**Comments**

Flood Flow Alteration	likely	
Sediment Removal	Not likely	
Nutrient and Toxicant Removal	Not likely	Source unknown
Production of Organic Matter/Export	Not likely	
General Habitat Suitability	Not likely	Lacking Coward in class diversity
Habitat for Aquatic Invertebrates	Not likely	No pooling
Habitat for Amphibians	likely	Seasonal inundation, adult populations
Habitat for Wetland -Assoc. Mammals	Not likely	No evidence
Habitat for Wetland -Assoc. Birds	N/A	Does not meet open water criteria
General Fish Habitat	Not likely	
Native Plant Richness	likely	
Uniqueness and Heritage	Not likely	
Educational or Scientific Value	N/A	

4.0 DETERMINATION AND JURISDICTION

Site conditions indicate approximately 0.40 acres which meet wetland criteria. Current survey maps should be relied upon for more precise distances and square footage. The majority of this site is upland mixed conifer and deciduous forest. The primary functions of wetlands on this site are storm water storage / flood attenuation. We recommend wetlands to be rated Category III based upon City of Blaine criteria and based upon best available information which indicates wetland type. Wetland A and B are best characterized as a Cowardin PSS/PFO depressional closed wetlands. Wetlands in the state of Washington are under the jurisdiction of the Army Corps of Engineers (USACE), Washington Department of Ecology, and local agencies. Most likely these areas will not fall under USACE jurisdiction as waters of the US, however, prior to filling boundaries should be verified by the Corps. This site falls under local jurisdiction of the City of Blaine. Currently 25 foot buffers are required for Category III wetland greater than 10,000 square feet. Prior to any amount of fill USACE must be able to insure ESA compliance. The USACE requires landowners that fill 1/10 acre or less of regulated wetlands to submit post construction notice (PCN) to the District Engineer within 30 days of the completion of the work which may require a mitigation plan submitted at that time. A Nationwide Permit 39 is required for wetland fills up to 1/2 acre. Individual Permit 401 is required for fills over 1/2 acres.

LIMITATIONS

This report is based upon information collected in the field and obtained from manuals and publications produced by Federal, State, and Local agencies pertaining to the process of wetland delineation. Conclusions are the professional opinion of the authors subject to verification by the Army Corps of Engineers.

5.0 REFERENCES

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Washington Dept. of Natural Resources 2002. Forest Practices Review System. Mapping System. Olympia, Washington.

Whatcom County Planning and Development, 1997. County's Critical Area Ordinance, Title 16 and CAO Maps

Appendix A

Figures

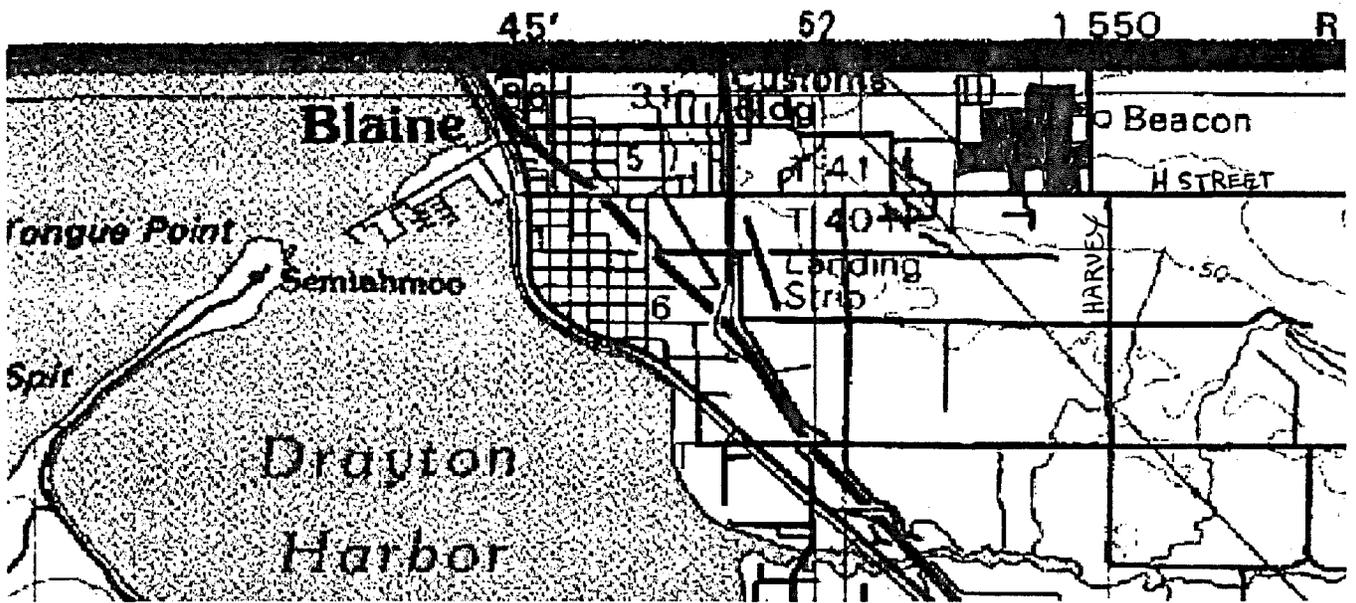


Figure 1. Vicinity Project Site

Directions: From I-5 Exit to Hwy 543 Truck Crossing. At the H Street intersection head east. Property is located northwest of the Harvey Road / H Street intersection.

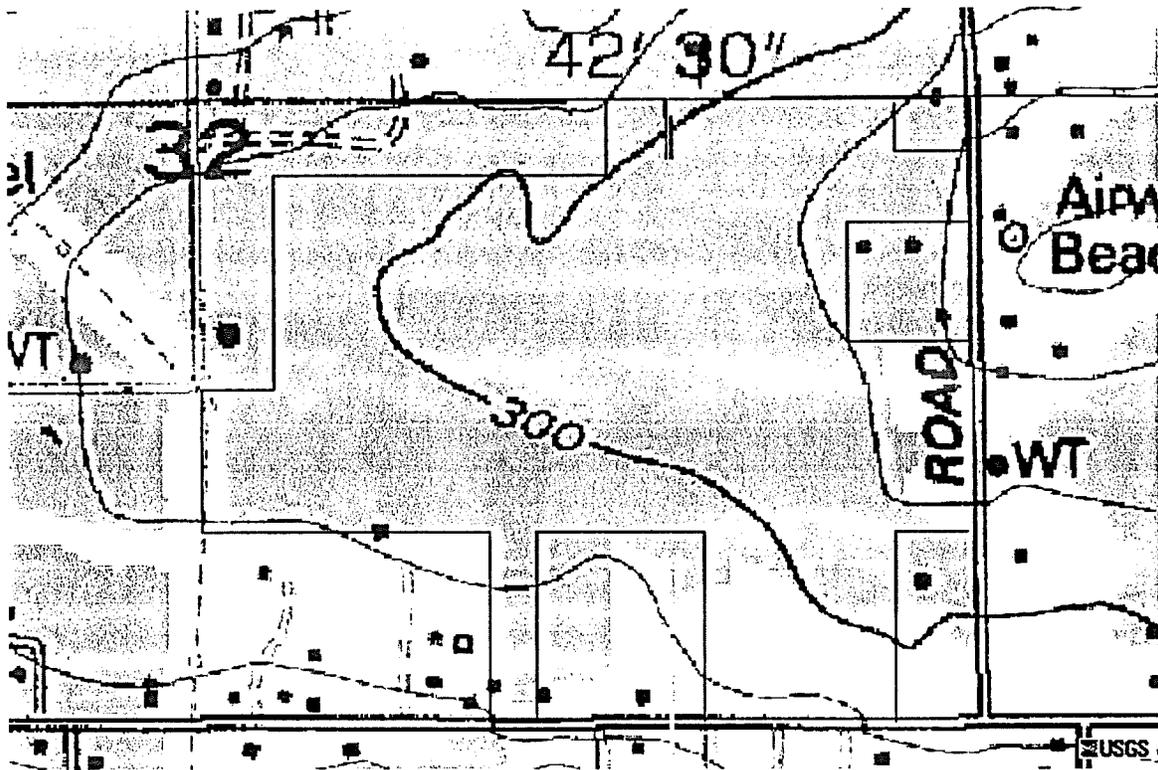


Figure 2. Topo Coyote Ridge Site(Boundaries approximate)

Scale 1"= 600'



Figure 3 Aerial Coyote Ridge Site 1998(Boundaries approximate)

Scale 1"= 600'

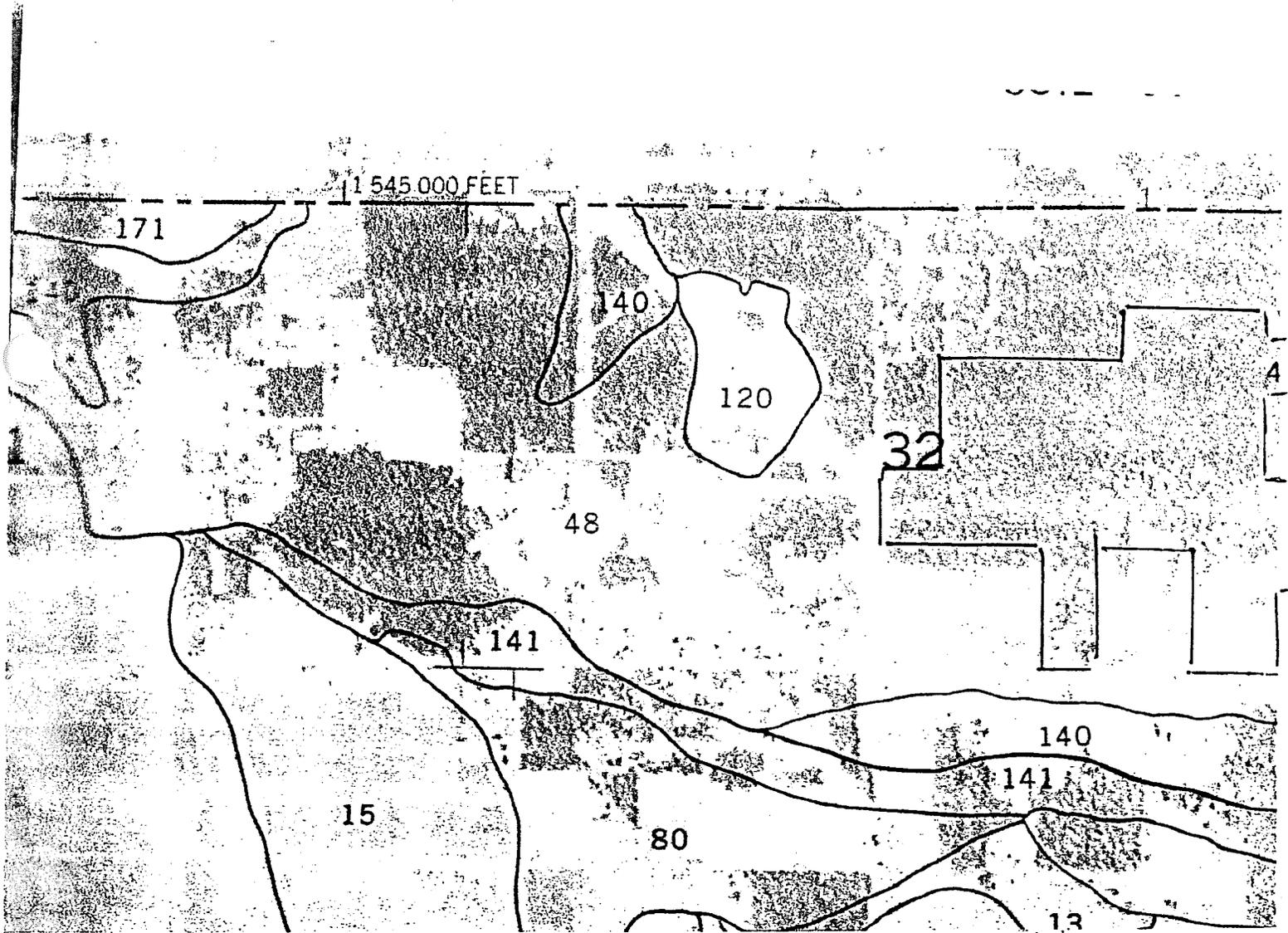
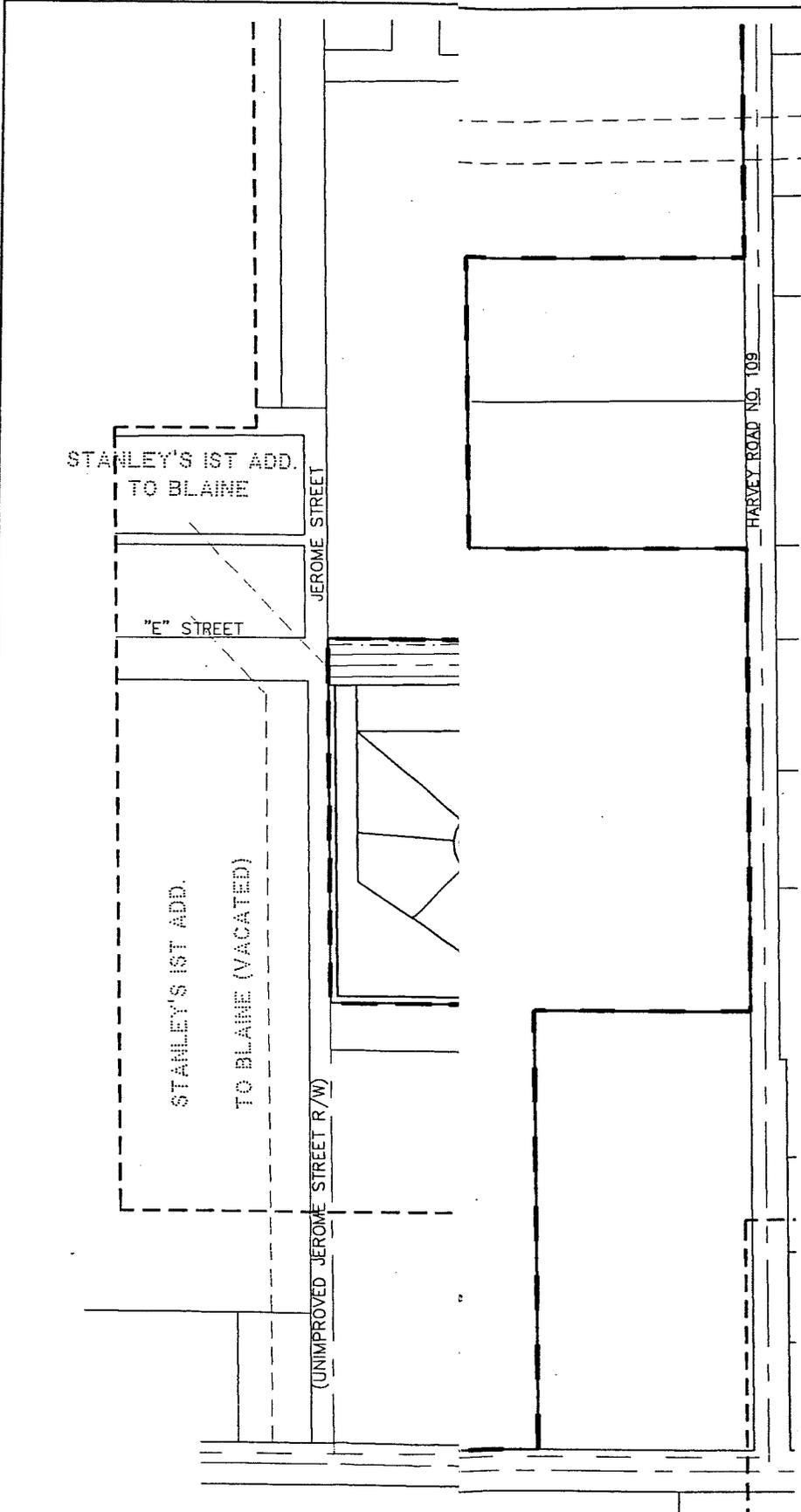


Figure 4 NRCS Soil Survey

REVISION	DATE	DRAWN
1		
2		
3		
4		



JOB NO.: 93-167	CLIENT:	THE CONNELLY COMPANY	
ACAD FILE: 93-167 Wetland Map	PROJECT:	COYOTE RIDGE PLAT	
SHEET: 1	TITLE:	WETLAND MAP	
OF: 1	ASSOCIATED PROJECT CONSULTANTS, INC., P.S. CIVIL ENGINEERS, PROJECT AND LAND USE MANAGEMENT, BUILDING, STRUCTURAL, AND ENVIRONMENTAL SERVICES 1401 ASTOR STREET, BELLINGHAM, WA 98225 PHONE (360) 671-1146 FAX (360) 671-1169		
HORIZONTAL SCALE: GRAPHIC SCALE VERTICAL SCALE: NONE		DRAWN BY: NGR APPROVED BY: DATE: 08/02/04 NORTH DATUM: & BASE POINT:	
SCALE:			

Appendix B
Data Sheets and Site Photos

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Coyote Ridge 93-167</u> Applicant/Owner: <u>Connolly</u> Investigator: <u>K. JACKSON SMOREY</u>	Date: <u>6-7-04</u> County: <u>WHATCOM</u> State: <u>WA</u>						
Do Normal Circumstances exist on the site? is the site significantly disturbed (Atypical Situation)? is the area a potential Problem Area? (If needed, explain on reverse.)	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">(Yes)</td> <td style="text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Yes</td> <td style="text-align: center;">(No)</td> </tr> <tr> <td style="text-align: center;">(No)</td> <td style="text-align: center;">No</td> </tr> </table>	(Yes)	No	Yes	(No)	(No)	No
(Yes)	No						
Yes	(No)						
(No)	No						
Community ID: <u>FERN</u> Transect ID: _____ Plot ID: <u>1</u>							

VEGETATION

Dominant Plant Species	Species	Indicator	Depth of Plant Species	Stem	Indicator
1. <u>Blechnum spicant</u>	<u>H</u>	<u>EAC</u>			
2. <u>Rubus spectabilis</u>	<u>3/5</u>	<u>EAC</u>			
3. <u>Athyrium filix-femina</u>	<u>H</u>	<u>FAC</u>			
4. <u>ALNUS RUBRA</u>	<u>T</u>	<u>FAC</u>			
5. _____					
6. _____					
7. _____					
8. _____					
Percent of Dominant Species that are OEL, FACW or FAC (excluding FAC-)			<u>100</u>		
Remarks:					

HYDROLOGY

Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Ditch Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Natural Test <input type="checkbox"/> Other (Specify in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (ft) Depth to Free Water in Pit: <u>8</u> (ft) Depth to Saturated Soil: <u>1</u> (ft)	
Remarks:	

SOILS

Map Unit Name
(Series and Phase):

Everett

Taxonomy (Subgroup):

Typic haploarthid inclusion

Drainage Class:
Field Observations
Confirm Mapped Type?

excessively well

Yes No

Profile Description: Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, concretions, Structure, etc.
0-12	A	10YR 3/1			
12	B	N/A			

Hydric Soil Indicators:

- Histic
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Striking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?
Wetland Hydrology Present?
Hydric Soils Present?

Yes No (Circle)
 Yes No
 Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 392

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Coyote Ridge 93-167</u> Applicant/Owner: <u>Connelly</u> Investigator: <u>KONKSON SMOREY</u>	Date: <u>6-7-04</u> County: <u>WHATCOM</u> State: <u>WA</u>
Do Normal Circumstances exist on the site? is the site significantly disturbed (Atypical Situation)? is the area a potential Problem Area? (If needed, explain on reverse.)	<input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No
Community ID: <u>Berry</u> Transect ID: _____ Plot ID: <u>2</u>	

VEGETATION

Species or Plant Section	Stratum	Indicator	Dominant Plant Section	Stratum	Indicator
1. <u>Parasthramum dilatatum</u>	<u>H</u>	<u>FAC</u>			
2. <u>Rubus laciniatus</u>	<u>S/S</u>	<u>FAC</u>			
3. <u>Rubus discolor</u>	<u>S/S</u>	<u>FACU</u>			
4. <u>Alnus rubra</u>	<u>T</u>	<u>FAC</u>			
5. <u>Rubus ursinus</u>	<u>H</u>	<u>FACU</u>			
6. <u>Sphagnum peruvianum</u>	<u>T</u>	<u>FAC-</u>			
7. _____					
8. _____					

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50

Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drill Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetland Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (in) Depth to Free Water in Pit: <u>> 14</u> (in) Depth to Saturated Soil: <u>> 14</u> (in)	Remarks: _____

SOILS

Map Unit Name
(Series and Phase):

Everett 40

Drainage Class:
Field Observations

excessively well

Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Typic haplochrod

Profile Description: Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors - (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 3/3			Sandy <u>clm</u>
6+	B	10YR 3/4			Sandy <u>clm</u>

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chrome Colors

- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?
Wetland Hydrology Present?
Hydric Soils Present?

Yes No (Circle)
Yes No
Yes No

(Circle)

Is this Sampling Point Within a Wetland?

Yes No

Remarks:

Approved by HQUSACE 3/52

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Coyote Ridge</u> Applicant/Owner: _____ Investigator: _____	Date: <u>June 7, 2004</u> County: <u>WHATCOM</u> State: <u>WA</u>						
Do Normal Circumstances exist on the site? is the site significantly disturbed (Atypical Situation)? is the area a potential Problem Area? (if needed, explain on reverse.)	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input checked="" type="radio"/></td> <td style="text-align: center;">No <input type="radio"/></td> </tr> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input checked="" type="radio"/></td> </tr> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input type="radio"/></td> </tr> </table>	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Yes <input type="radio"/>	No <input type="radio"/>
Yes <input checked="" type="radio"/>	No <input type="radio"/>						
Yes <input type="radio"/>	No <input checked="" type="radio"/>						
Yes <input type="radio"/>	No <input type="radio"/>						
Community ID: <u>Spiraea</u> Transect ID: _____ Plot ID: <u>3</u>							

VEGETATION

Dominant Plant Species	Structure	Indicator	Dominant Plant Species	Structure	Indicator
1. Phragmites australis					
2. <u>Rubus spectabilis</u>	<u>S/S</u>	<u>FAC</u>			
3. <u>Alnus rubra</u>	<u>T</u>	<u>FAC</u>			
4. _____					
5. <u>Spiraea douglasii</u>	<u>S/S</u>	<u>FACW</u>			
6. _____					
7. _____					
8. _____					

Percent of Dominant Species that are OEL, FACW or FAC (excluding FAC): 100

Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drill Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Natural Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (ft.) Depth to Free Water in Pit: <u>8</u> (ft.) Depth to Saturated Soil: <u>0</u> (ft.)	Remarks: _____

SOILS

Map Unit Name (Series and Phase): Everett
 Taxonomy (Subgroup): Labrintypinclusion?

Drainage Class: excess drained
 Field Observations Confirm Mapped Type? Yes No

Profile Description Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10y2 2/1			silt loam

Hydric Soil Indicators

- Histosol
- High Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chrome Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:

Approved by HQUSACE 382

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Connetta Ridge</u> Applicant/Owner: <u>Connelly</u> Investigator: <u>K. McKesson Smokey</u>	Date: <u>6-2-04</u> County: <u>WHATCOM</u> State: <u>WA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (if needed, explain on reverse.)	Community ID: <u>alder</u> Transect ID: _____ Plot ID: <u>4</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Alnus rubra</u>	<u>T</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Populus balsamifera</u>	<u>T</u>	<u>FAC</u>	10. _____	_____	_____
3. <u>Rubus spectabilis</u>	<u>S/S</u>	<u>FAC</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FACO): 100

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Dirt Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>> 14</u> (in.) Depth to Saturated Soil: <u>> 14</u> (in.)	Remarks: _____

SOILS

Map Unit Name
(Series and Phase):

Everett

Drainage Class: excess-drained
Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	A	10YR 3/2			loam
3-7	B	7.5YR 3/3			loam
7+1	B	10YR 5/3			Sandy loam

Hydric Soil Indicators:

- Histosol
- Salic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chrome Colors

- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?
Wetland Hydrology Present?
Hydric Soils Present?

Yes No (Circle)
 Yes No

In this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 352

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Coyote Ridge</u> Applicant/Owner: <u>Connellly</u> Investigator: <u>S. W. Long K. JACKSON</u>	Date: <u>6-7-04</u> County: <u>WHATCOM</u> State: <u>WA</u>						
Do Normal Circumstances exist on the site? is the site significantly disturbed (Atypical Situation)? is the area a potential Problem Area? (if needed, explain on reverse.)	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input checked="" type="radio"/></td> <td style="text-align: center;">No <input type="radio"/></td> </tr> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input checked="" type="radio"/></td> </tr> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input checked="" type="radio"/></td> </tr> </table>	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Yes <input type="radio"/>	No <input checked="" type="radio"/>
Yes <input checked="" type="radio"/>	No <input type="radio"/>						
Yes <input type="radio"/>	No <input checked="" type="radio"/>						
Yes <input type="radio"/>	No <input checked="" type="radio"/>						
Community ID: <u>BERRY</u> Transect ID: _____ Plot ID: <u>5</u>							

VEGETATION

Dominant Plant Species Species Name Structure Indicator	Dominant Plant Species Structure Indicator
1. <u>Rubus parviflorus</u> S/S FACU	9. _____
2. <u>Rubus visnolus</u> H FACU	10. _____
3. <u>Rubus discolor</u> S/S FACU	11. _____
4. <u>Rhynchospora alba</u> T FAC	12. _____
5. <u>Thuja plicata</u> T FAC	13. _____
6. _____	14. _____
7. _____	15. _____
8. _____	16. _____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FACU): 20

Remarks: _____

HYDROLOGY

Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drain Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>>14</u> (in.) Depth to Saturated Soil: <u>>14</u> (in.)	Remarks: _____

SOILS

Map Unit Name: Everett Drainage Class: excess drained
 (Series and Phase): _____ Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description Depth (Feet)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors - (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10YR 5/2			loam
4-13	B	10YR 4/3			sandy loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)	Is this Sampling Point Within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)	
Hydric Soils Present?	Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)	
Remarks:		

Approved by HOUACE 392

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Coyote Ridge</u> Applicant/Owner: <u>Connell</u> Investigator: <u>S. MOREY KJNKSON</u>	Date: <u>6-7-04</u> County: <u>WHATCOM</u> State: <u>WA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>PFO</u> Transect ID: _____ Plot ID: <u>6</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Acer macrophyllum</u>	<u>T</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Tsuga heterophylla</u>	<u>T</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Rubus ursinus</u>	<u>N</u>	<u>FACU</u>	11. _____	_____	_____
4. <u>Rubus parviflorus</u>	<u>S/S</u>	<u>FACU</u>	12. _____	_____	_____
5. <u>Polystichum munitum</u>	<u>S/S</u>	<u>FACU</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drill Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>>16</u> (in.) Depth to Saturated Soil: <u>>16</u> (in.)	Remarks: _____

SOILS

Map Unit Name (Series and Phase): Everett 4B

Drainage Class: excessively drained
 Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description Depth (feet)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-17	A	10YR 7/4			sandy loam
17-26	B	7.5Y 4/4			sandy loam

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks: _____

Approved by HQUSACE 3/52

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Coyote Ridge</u> Applicant/Owner: <u>Connell</u> Investigator: <u>S. MORLEY K. JACKSON</u>	Date: <u>6-7-04</u> County: <u>WHATCOM</u> State: <u>WA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>PFD</u> Transect ID: _____ Plot ID: <u>7</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
✓ 1. <u>Thuja plicata</u>	<u>T</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Acet macrophyllum</u>	<u>T</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Rubus discolor</u>	<u>S/S</u>	<u>FACU</u>	11. _____	_____	_____
4. <u>Rubus ursinus</u>	<u>H</u>	<u>FACU</u>	12. _____	_____	_____
✓ 5. <u>Syboldia purpurea</u>	<u>S/S</u>	<u>FACU</u>	13. _____	_____	_____
6. <u>Rubus strigosus</u>	<u>S/S</u>	<u>FACU</u>	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): 20

Remarks: _____

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other ___ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 inches ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>>14</u> (in.) Depth to Saturated Soil: <u>>14</u> (in.)	Remarks: _____

SOILS

Map Unit Name (Series and Phase): Everett 4B Drainage Class: excessively drained
 Taxonomy (Subgroup): Typic haploorthod Field Observations Confirm Mapped Type? Yes No

Profile Description: Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 3/4			sandy loam
6-12	B	7.5YR 4/4			gravelly sandy loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Circle)	Is this Sampling Point Within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Circle)
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Circle)	
Hydric Soils Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Circle)	
Remarks:		

Approved by HQUSACE 3/92



Plot 3 Hardhack, Alder, Salmonberry



Plot 6 Upland species include Western Hemlock, Thimbleberry, Big Leaf Maple, Trailing Blackberry