Exhibit L
To the Staff Report to
the Hearing Examiner

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720 SHELTER BAY DRIVE
LA CONNER, WASHINGTON 98257
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JULY 25, 2019

FISH & WILDLIFE HABITAT CONSERVATION AREA ASSESSMENT FOR:

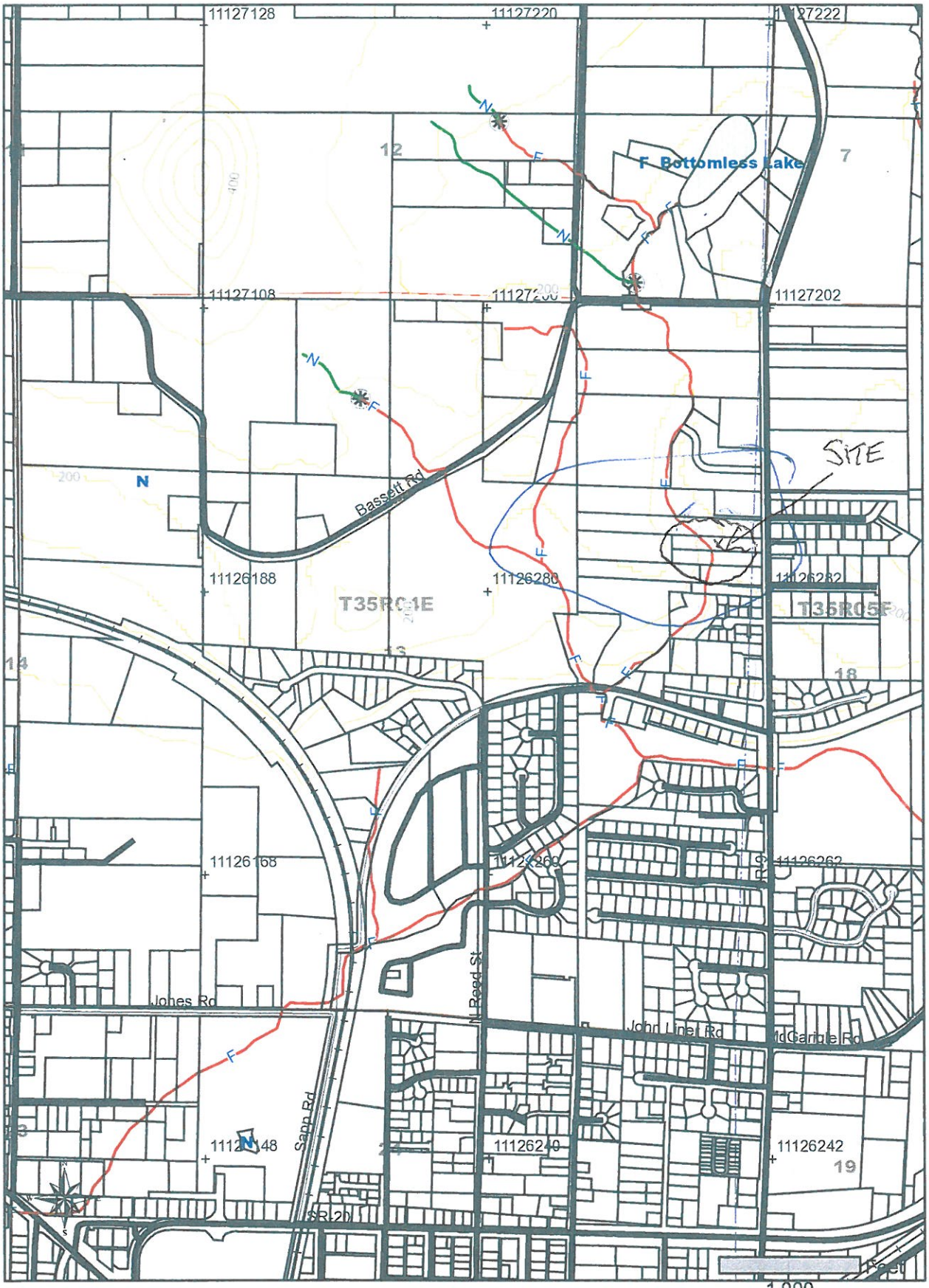
NEAL PRATHER
PARCEL NUMBER P~~4150~~ 36405
720 SHOESHEL DRIVE
SEDRO-WOOLLEY, WASHINGTON 98284

FIGURE 1, SITE NON-HYDRIC SKIPPOPA SILT LOAM

Forest Practices Activity Map

TOWNSHIP 35 NORTH HALF 0, RANGE 04 EAST (W.M.) HALF 0, SECTION 13

Application #:



Please use the legend from the FPA Instruction or provide a list of symbols used.

Date: 4/26/2019 Time: 2:49:33 PM

NAD 83 Scale: 1:12,000

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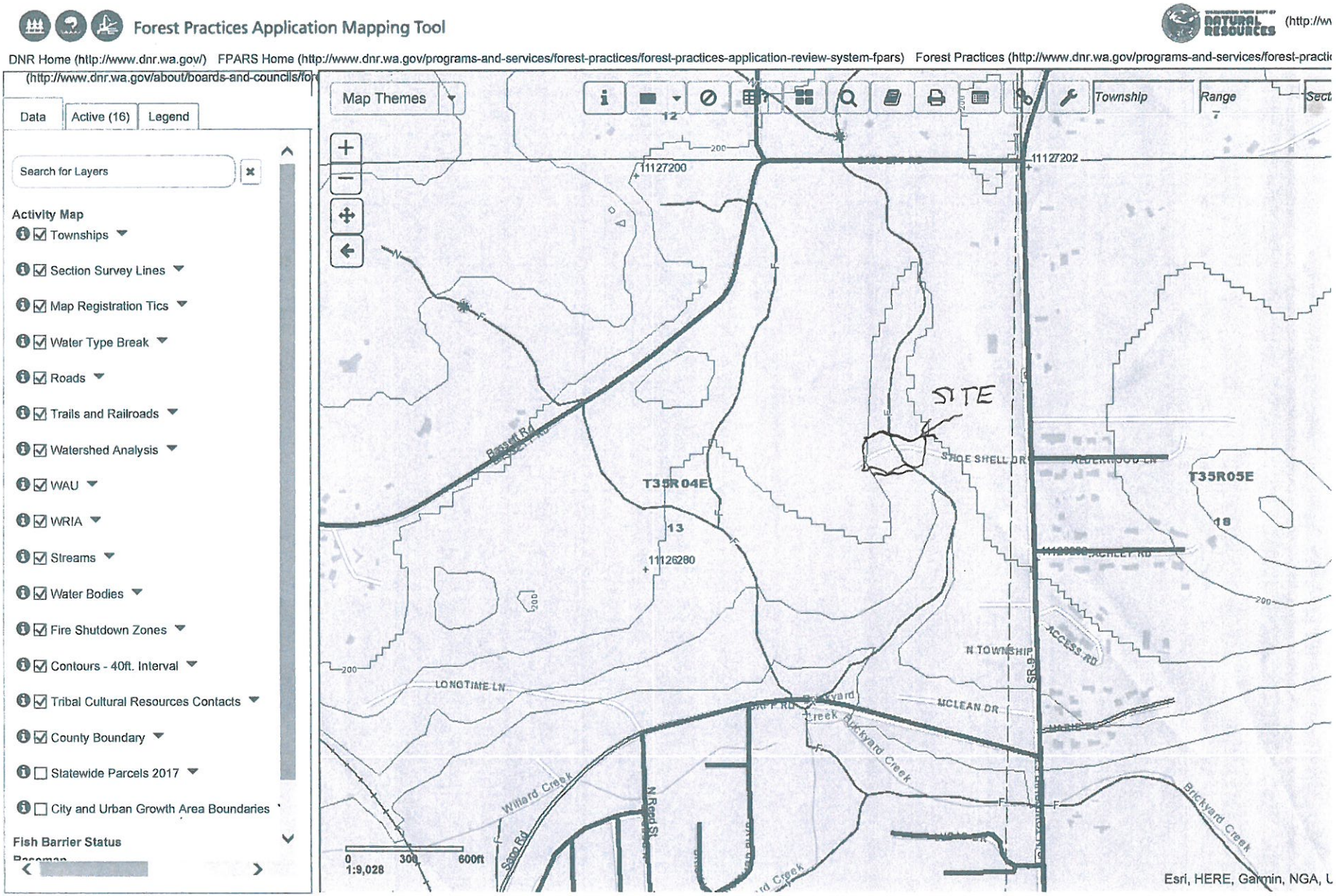
Forest Practices Application Mapping Tool
DNR Home (http://www.dnr.wa.gov/) FPARS Home (http://www.dnr.wa.gov/programs-and-services/forest-practices/forest-practices-application-review-system-fpars) Forest Practices (http://www.dnr.wa.gov/programs-and-services/forest-practi
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Data
Active (16)
Legend
Search for Layers
Activity Map
Townships
Section Survey Lines
Map Registration Tics
Water Type Break
Roads
Trails and Railroads
Watershed Analysis
WAU
WRIA
Streams
Water Bodies
Fire Shutdown Zones
Contours - 40ft. Interval
Tribal Cultural Resources Contacts
County Boundary
Statewide Parcels 2017
City and Urban Growth Area Boundaries
Fish Barrier Status
Map Themes
Township
Range
11127200
11127202
11126280
SITE
T35R04E
T35R05E
13
18
LONGTIME LN
MCLEAN DR
N TOWNSHIP
ACCESS RD
SR-9
Willard Creek
Brickyard Creek
N Reed St
0 300 600ft
1:9,028
Esri, HERE, Garmin, NGA, U

1. INTRODUCTION AND PROJECT DISCRIPTION.

This is a Fish & Wildlife Habitat Conservation Area Assessment of a 4.42 acre property located in the SE 1/4, NE 1/4 of Section 13, Township 35 North, Range 4 East. It is Parcel numbers 36045 and 36407 with a street address of 720 Shoeshel Drive, off High Way 9 north of Sedro Woolley, 98284.

The project for this property is a future development of a single family home site with a two car garage. The location is to the far east portion of the property that will be outside the buffers of two streams. For the purpose of this assessment the two streams will be identified as stream A, the main stream flowing through the property, and stream B which has indirect hydrology connection to stream A.

II. CRITICAL AREA FINDINGS.

Midway through the property stream A is found in a deep ravine and is an unnamed Type F, fish bearing stream per WAC 16.22.030, known to support Coho salmon. In recent years the Department of Natural Resources (DNR) replaced an aging culvert in the bottom of the ravine with a larger culvert to allow fish passage to reach upstream spawning grounds. This stream has direct upstream connectivity to Bottomless Lake. Downstream the stream becomes a tributary of Wollard Creek. This stream is identified by the DNR as fish bearing as found on the DNR Forest Practices FPARS Map.

A second non-fish bearing, stream B is Type Np stream per WAC 16.22.030, has been identified and surveyed in the eastern portion of the property. It is a small stream formed in a shallow ravine that goes dry in the warmer months. When water flows in its 120' length the stream discharges through a culvert under Shoeshel Drive to the steep slope on the adjacent property to the south as scattered surface water to stream A, the Type F stream. The steepness of the slope and an undefined blank full width serves as a blockage of stream B, the Type Np stream to stream A.

Also, an unnamed Type F stream, which is a tributary to Wollard Creek has been identified to the west of the subject property. This stream has been surveyed to be more than 200 feet from the property. Its 200' buffer does not extend into the subject property. It is on the FPARS map as fish bearing.

III. REGULATORY ANALYSIS

Under Sedro-Woolley Code (SWC) 17.65.500 the unnamed streams meets the designation of a Fish & Wildlife Habitat Conservation Area (HCA). Under SWC 17.65.500A a Fish & Wildlife Habitat Conservation Area requires a Critical Area Site Assessment. The Site Assessment must be prepared by a Qualified Professional which is:

Bob Whitefield, MsF, is the Qualified Professional for this project. He is a former employee of the USDA Soil Conservation Service (Natural Resource Conservation Service). Bob has a master's degree in Forest Soil Science/Hydrology (stream ecology) from the University of Washington, College of Forest Resources. He is contributing author of the USDA Soil Survey of Snohomish County, and a technical contributor to the USDA Soil Surveys of Skagit, Whatcom and King Counties. He has over 40 years of experience in wetland and fish & wildlife assessments, wetland identification, delineations, mitigation planning and forest management plans.

Additional codes:

17.65.500.D. The following species and habitats have been designated on a site-specific basis according to the official species and habitats of local significance maps.

1. Great blue heron nest sites are not found on the property. However it is known that this heron is present in the several small ponds, streams and Bottomless Lake for feeding purposes.

FIGURE 4, AREA GREAT BLUE HERON.

2. Vaux swifts have no communal roosts on the property.

3. There are no Pileated wood pecker nests on the property.

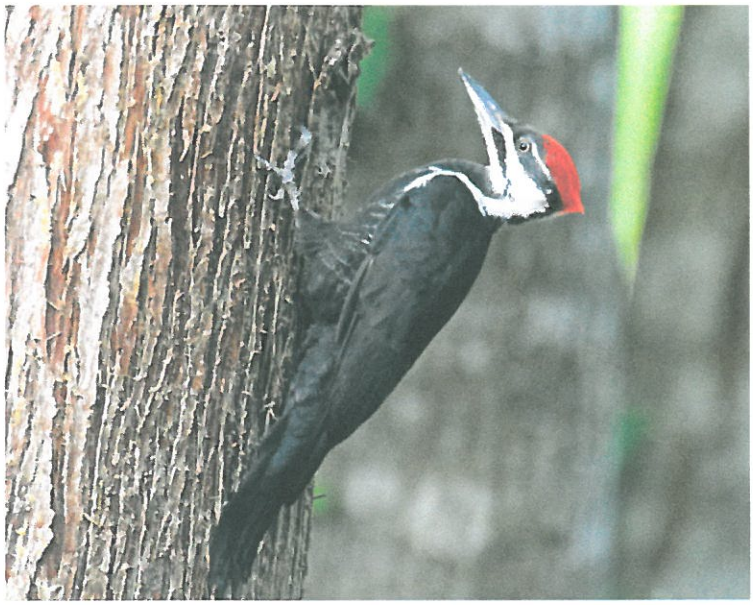


FIGURE 5, PILEATED WOODPECKER

4. There are no Osprey nest sites.
5. The Townsend big-eared bat has no communal sites on the property.

FIGURE 6, TOWNSEND BIG-EARED BAT.

6. There are no cavity nesting duck breeding areas.

7. There are no Trumpeter swan concentrations.

8. There are no Harlequin duck breeding areas.

9. The nearest waterfowl concentrations are at Bottomless Lake.

FIGURE 7, TRUMPETER SWAN CONCENTRATIONS.

IV. SWC 17.65.530 A, Riparian Standards.

1. Riparian standards include the level of the functions and values of Streams A and B.

The discussion on Stream B is quite simple. The bank full width of the stream in the times of high winter rain fall is less that 2 feet for nearly half of its length. For the remainder of its length the stream widens to over two feet for its journey to the culvert under the entry road. There is no defined bank full width of the culvert supplied water as it is dispersed as surface water with many paths to the unnamed Stream A. The riparian buffer on each side of Stream B north of the culvert was cleared of vegetation years ago by former owners. The buffers contain some scattered young Red alder (Alnus rubra) blackberries and Salmonberry. The total functions and values are very low.

2. FUNCTIONS AND VALUES FOR STREAM A.

a. The current riparian functions and values of Stream A are at a very high level. The current ground cover of the stream buffer is a very dense, dominating mix of FACU plants.

1. Creeping buttercup, *Ranunculus repens, FACW.*
2. Water parsley, *Oenanthe sarmentosa, OBL*
3. Kneeling angelica, *Angelica genuflexa, FAC.*
4. Slough sedge, *Carex obnupta, FACW.*
5. Salmonberry, *Rubus spectabilis, FAC*
6. Oceanspray, *Holodiscus discolor, FACU*
7. Common snowberry, *Symphoricarpos albus, FACU*
8. Red elderberry, *Sambucus racemosa, FACU*
9. Western trumpet honeysuckle, *Lonicera ciliosa, FACU*
10. Twinflower, *Linnaea borealis, FACU*
11. Kinnikiknick, *Artostaphy uva-ursi, FACU*
12. Douglas fir, *Pseudotsuga menziesii, FACU*
13. Vine maple, *Acer circinatum. FAC.*
14. Bigleaf maple, *Acer macrophyllum, FACU*
15. Western red cedar, *Thuja plicata, FAC*
16. Salal, *Gaultheria shallon, FACU*
17. Oregon grape, *Mahonia nervosa, FACU*
18. Sword fern, *Polystichum munitum, FACU*

b. The intent of riparian buffers is to protect 5 basic functions that influence waterway and near waterway habitat quality. These are:

a. Recruitment of large woody debris (LWD), for creating habitat structure.
b. Shade, for maintaining cool water temperatures that influences available oxygen.
c. Bank integrity, for creating habitat quality and water quality by reducing bank erosion and creating habitat structure for hiding.
d. Runoff filtration, for filtering nutrients and sediments in runoff.
e. Wildlife habitat, for functional habitat for riparian-dependent species for protection, nesting and feeding.

Of these five, all of them are functioning maximally. We can address the function and values that are present.

Riparian Wildlife Functions of the Unnamed Stream.

(i) Vegetative banks of Stream A are providing food, habitat, and corridors for wildlife. This is primarily for song birds and insect nesting and feeding purposes.

(ii) The streamside vegetation is providing a periodic source of organic litter and debris which are needed by stream inhabitants. This is primarily for aquatic organisms and benthic communities.

(iii) Over hanging bank vegetation shades and helps to maintain cool water temperatures, making it more livable for aquatic organisms and migrating fish..

Riparian Flood Control of Stream A

(i) The plant foliage, stems and litter intercepts storm waters, slows down water movement, and reduces the peak height and duration of floods downstream.

(ii) Natural water levels rise and drop daily with rainfall, seasonally with snowmelt and summer heat.

Riparian Sediment Trapping of the Stream A.

(i) Plants and litter reduce the load of suspended sediments in storm waters and runoff by slowing down the water and allowing the particles to settle out.

(ii) Streamside plant communities are improving water quality by trapping suspended sediments among the plants and litter.

Riparian Erosion Control of Stream A.

(i) Plant roots, that consists of well established native vegetation hold the soil of the stream bank stable while preventing erosion,

(ii) Plant roots form a fine, dense network throughout the soil, binding it together and resisting the erosive power of flowing water.

Riparian Groundwater Filtering

(i) The soil-root-microbe environment of the riparian zone functions very high. It filters out nutrients, metals, and other contaminants from water as it moves through the subsurface soil.

(ii) Phosphorus, and metals are absorbed or retained in subsurface organic matter.

(iii) Microbes transform, through dentrification, nitrates into gas.

Riparian Values of Stream A.

(i) Riparian values generally are human interpretations that are pleasing to the individual. Descriptions that are pleasing to the eye, soothing, comforting, beautiful are common values of human interpretation of stream vegetation. Stream A flows through the property without obstructions. Migrating Coho are seen in the stream and resting under the vegetation overhang.

c. SCC 17.65.530 (B) Standard Riparian Buffers for Water Type.

The Water Type for fish bearing Stream A is Type F. Buffer width for a Type F is 200' as measured in a landward direction from the Ordinary High Water Mark (OHMW).

Water Type for non-fish bearing Stream B is Type Np. Buffer width for a Non-fish bearing Type Np is 50' as measured in a landward direction from the Ordinary High Water Mark (OHWM).

V. SUMMARY.

This property has a Type F stream (Stream A)running through the center portion of the property. It is fed from an outlet of Bottomless Lake 5/8th of a mile to the north. The stream requires a 200' buffer. The stream has very high functions and values.

A tributary of Stream A is a short stream of 120' with very low functions and values. It flows to the entry drive where a culvert under the entry road discharges as a water fan of steep slope surface water to Stream A. This serves as a fish blockage to Stream B. The buffer for this stream is 50 feet.

Respectfully submitted,

Bob Whitefield, MsF

Bob Whitefield, MsF

REFERENCES

Brinson, M. M. (1993). "A hydrogeomorphic classification for wetlands," Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS., NTIS No. AD A270 053

City of Sedro-Woolley, Department of Planning and Development Services; Critical Area Ordinance, Chapter 17.65.500, Fish & Wildlife Habitat Conservation Area.

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U. S. Department of The Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center [Online]. Available: http://www.npwrc.usgs.gov/resource/1998/classwet/classwet.htm (Version 04DEC98).

Hitchcock, C.L. & A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press. Seattle, WA

Pojar, J. and A. MacKinnon. 1994. Plants of the Pacific Northwest Coast; Washington, Oregon, British Columbia, and Alaska. Lone Pine Publishing, Redmond, WA. 528 pp.

Smith, D. R., Ammann, A., Bartoldus, C., and Brinson, M. M. (1995). "An approach for assessing wetland functions using hydrogeomorphic classification, reference wetlands, and functional indices," Technical Report WRP-DE-9, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS., NTIS No. AD A307 121.

USDA-NRCS. 1995. Federal Register. 7/13/94, Vol. 59, No. 133, pp 35680-83

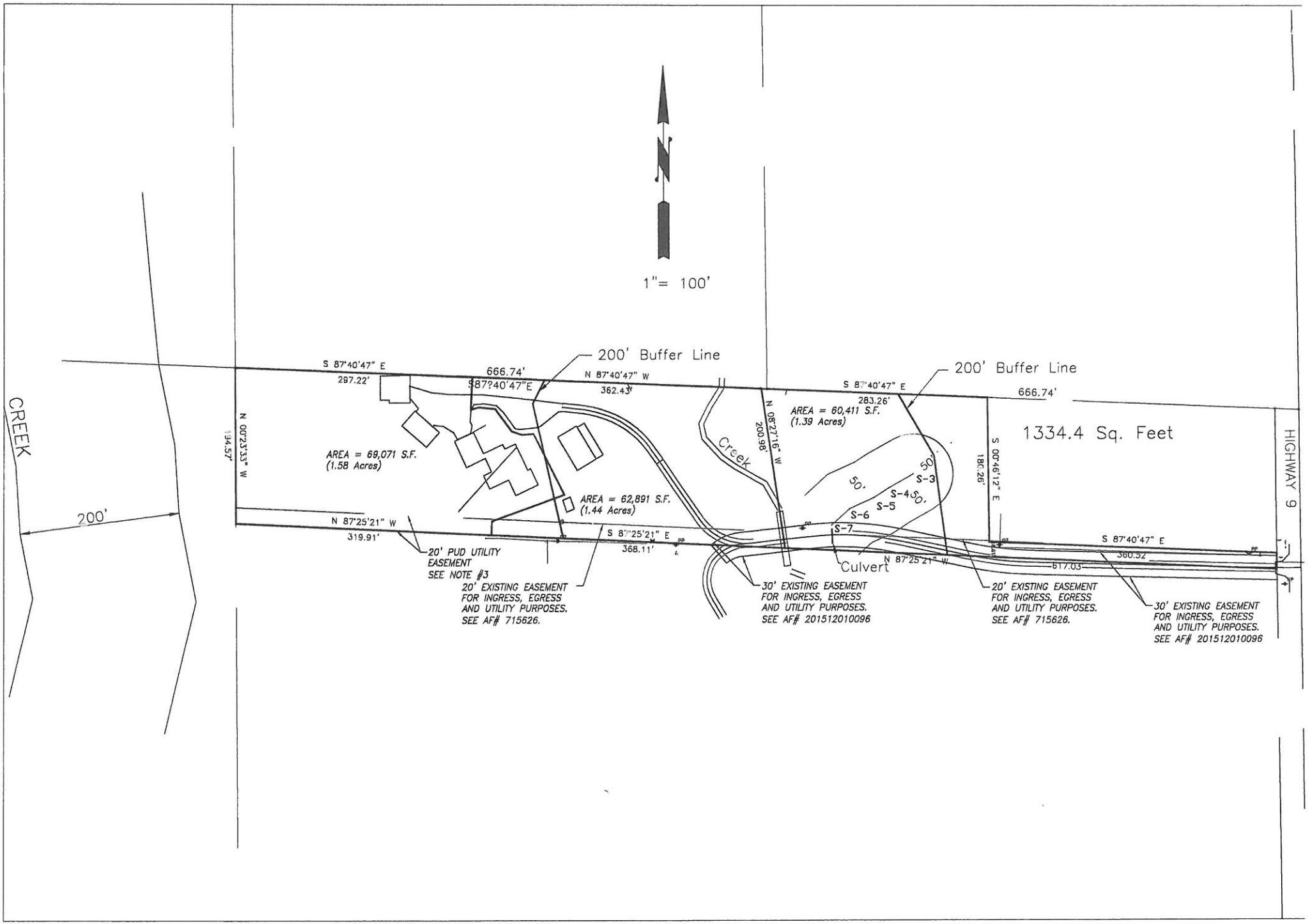
USDA Soil Conservation Service (NRC-National Resource Conservation Service). 1978. Soil Survey of Skagit County [Online]. Available: http://www.or.nrcs.usda.gov/pnw_soil/wa_reports.html

USFWS (US Fish and Wildlife Service). 2005. National Wetlands Inventory Map. [Online]. Available: http://wetlandsfws.er.usgs.gov/wtlnds/launch.html

USFWS (US Fish and Wildlife Service). 1996. National Wetlands Inventory. National List of Vascular Plant Species that Occur in Wetlands: 1996. 206 p. [Online]. Available: http:www.library.fws.gov/Pubs9/wetlands_plantlist96.pdf

WA ST DNR (Dept. of Natural Resources). 2005. [Online]. And DNR Water Type Map of Skagit County.

Whitefield, R.O., Contributing Author, USDA Soil Survey of Snohomish County, Washington, 1978; Technical Contributor, USDA Soil Surveys of Skagit (1981), Whatcom (1982) King (1983) Counties, Washington.


1"= 100'
200' Buffer Line
200' Buffer Line
S 87°40'47" E
297.22'
666.74'
S87°40'47"E
N 87°40'47" W
362.43'
S 87°40'47" E
283.26'
666.74'
AREA = 60,411 S.F.
(1.39 Acres)
1334.4 Sq. Feet
HIGHWAY 9
CREEK
200'
N 00°23'33" W
194.57'
AREA = 69,071 S.F.
(1.58 Acres)
AREA = 62,891 S.F.
(1.44 Acres)
Creek
N 08°27'16" W
200.98'
S 00°46'12" E
186.26'
50'
S-3
S-4
S-5
S-6
S-7
N 87°25'21" W
319.91'
S 87°25'21" E
368.11'
N 87°25'21" W
617.03'
S 87°40'47" E
360.32'
Culvert
20' PUD UTILITY EASEMENT SEE NOTE #3
20' EXISTING EASEMENT FOR INGRESS, EGRESS AND UTILITY PURPOSES. SEE AF# 715626.
30' EXISTING EASEMENT FOR INGRESS, EGRESS AND UTILITY PURPOSES. SEE AF# 201512010096
20' EXISTING EASEMENT FOR INGRESS, EGRESS AND UTILITY PURPOSES. SEE AF# 715626.
30' EXISTING EASEMENT FOR INGRESS, EGRESS AND UTILITY PURPOSES. SEE AF# 201512010096