

**Agenda Item No.** e-5

**Date:** April 28, 2021

**Subject:** Final Plat approval of the Plat of Samish Estates



**FROM:** John Coleman, AICP, Planning Director

**RECOMMENDED ACTION:**

Make a motion to adopt Resolution No. 1068 -21, a resolution granting final plat approval for the Plat of Samish Estates, a 7-lot subdivision and authorizing the mayor and her designee(s) to sign all final plat approval documents.

**ISSUE:**

Should the Council grant final plat approval for the Plat of Samish Estates?

**BACKGROUND / SUMMARY INFORMATION:**

The property owner submitted a request for final plat approval for the Plat of Samish Estates, a seven lot subdivision at 528 F & S Grade Road. The city council approved Resolution 1038-19 on October 23, 2019, granting the seven lot subdivision preliminary plat approval. The preliminary plat application file number is LP-2019-092; the final plat application file number is 2021-157.

The required improvements associated with the Plat of Samish Estates have been completed and approved or agreements are in place that require the completion of the conditions.

**ATTACHMENTS:**

1. Resolution 1068 -21 granting final plat approval for the Plat of Samish Estates.

## **Attachment 1** to Council memo

Resolution No. 1068-21, a resolution granting final plat approval of the Plat of Samish Estates, a seven lot subdivision and authorizing the mayor and her designee(s) to sign all final plat approval documents.



RESOLUTION NO. 1068 -21

A RESOLUTION GRANTING FINAL PLAT APPROVAL FOR THE “PLAT OF SAMISH ESTATES,” A 7-LOT SUBDIVISION AND AUTHORIZING THE MAYOR AND HER DESIGNEE(S) TO SIGN ALL FINAL PLAT APPROVAL DOCUMENTS

WHEREAS, on August 27, 2019 the Hearing Examiner for the City of Sedro-Woolley held a public hearing with proper notice, and recommended to the City Council that the proposed preliminary Plat of Samish Estates, preliminary plat file #2019-092, be approved subject to conditions; and

WHEREAS, on October 23, 2019, the City of Sedro-Woolley City Council approved Resolution No. 1038-19 granting preliminary approval of said subdivision; and

WHEREAS, the owner of the property, Monte Petersen, has applied for final plat approval of the Plat of Samish Estates for a total of seven lots; and

WHEREAS, the final plat application, file # 2021-157, upon final review is deemed to be within the scope of the project’s environmental analysis and development conditions; and

WHEREAS, the conditions placed on the subdivision have been met or will be met to the satisfaction of the City of Sedro-Woolley;

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF SEDRO-WOOLLEY DOES HEREBY RESOLVE AS FOLLOWS:

**Section 1.** The Plat of Samish Estates, a subdivision consisting of seven (7) lots as represented in Attachment A, is hereby approved and the Mayor and her designee is authorized to sign all Final Plat approval documents.

**Section 2.** The City Council hereby adopts by reference the Hearing Examiner’s Findings, Conclusions and Recommendation dated September 11, 2019 (Attachment B) and the owner shall be in compliance with all conditions referenced in said Recommendation.

Passed and approved this \_\_\_\_\_ day of April, 2021.

\_\_\_\_\_  
JULIA JOHNSON, MAYOR

Attest:

Approved as to form:

\_\_\_\_\_  
Finance Director

\_\_\_\_\_  
City Attorney

**Attachment A**  
*Plat Map of*  
*“Plat of Samish Estates”*

# PLAT OF SAMISH ESTATES

BEING A PORTION OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4  
SECTION 23, TOWNSHIP 35 NORTH, RANGE 4 EAST OF W.M.  
CITY OF SEDRO-WOOLLEY, SKAGIT COUNTY, WASHINGTON  
FILE NO. SW-LP-2019-092

## LEGAL DESCRIPTION:

PER CHICAGO TITLE INSURANCE COMPANY SUBDIVISION GUARANTEE /  
CERTIFICATE NO. 620037814 [REVISION 1], WITH AN EFFECTIVE DATE OF MARCH 30, 2021.

ASSESSOR'S PARCEL NO.: P37166

COMMENCING AT A POINT 487 FEET WEST AND 423 FEET SOUTH OF THE NORTHEAST CORNER OF THE NORTHEAST QUARTER OF  
THE NORTHEAST QUARTER OF SECTION 23, TOWNSHIP 35 NORTH, RANGE 4 EAST OF THE WILLAMETTE MERIDIAN;

THENCE RUN SOUTH 484 FEET TO THE FAIRHAVEN AND SOUTHERN RAILWAY RIGHT-OF-WAY;  
THENCE RUN ON AN ANGLE SOUTHEAST PARALLEL WITH THE SAID RIGHT-OF-WAY A DISTANCE OF 200 FEET;  
THENCE RUN NORTH 610 FEET;  
THENCE WEST 160 FEET TO THE PLACE OF BEGINNING.

SITUATE IN THE COUNTY OF SKAGIT, STATE OF WASHINGTON.

## DECLARATION:

KNOWN BY ALL THESE PEOPLE PRESENT THAT I THE UNDERSIGNED HEREBY DECLARE THIS "PLAT OF SAMISH ESTATES" IS MADE WITH MY FREE CONSENT AND IN  
ACCORDANCE WITH MY WISHES.

MONTE R. PETERSEN

DATE

## ACKNOWLEDGEMENT

STATE OF WASHINGTON }  
COUNTY OF \_\_\_\_\_ } SS.

ON THIS DAY PERSONALLY APPEARED BEFORE ME MONTE R. PETERSEN, TO ME KNOWN TO BE THE INDIVIDUAL  
DESCRIBED IN AND WHO EXECUTED THE WITHIN AND FOREGOING INSTRUMENT, AND ACKNOWLEDGED THAT HE  
SIGNED THE SAME AS HIS FREE AND VOLUNTARY ACT AND DEED, FOR THE USES AND PURPOSES THEREIN MENTIONED.

GIVEN UNDER MY HAND AND OFFICIAL SEAL THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_.

NOTARY PUBLIC IN AND FOR THE STATE OF WASHINGTON

RESIDING AT \_\_\_\_\_

## PUD UTILITY EASEMENT

EASEMENTS ARE GRANTED TO PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, A MUNICIPAL CORPORATION, ITS SUCCESSORS OR ASSIGNS, THE PERPETUAL  
RIGHT, PRIVILEGE AND AUTHORITY ENABLING THE DISTRICT TO DO ALL THINGS NECESSARY OR PROPER IN THE CONSTRUCTION AND MAINTENANCE OF WATER FACILITIES. THIS  
INCLUDES THE RIGHT TO CONSTRUCT, OPERATE, MAINTAIN, INSPECT, IMPROVE, REMOVE, RESTORE, ALTER, REPLACE, CHANGE THE SIZE OF, RELOCATE, CONNECT TO AND  
LOCATE AT ANY TIME PIPE(S), LINE(S) OR RELATED FACILITIES, ALONG WITH NECESSARY APPURTENANCES FOR THE TRANSPORTATION AND CONTROL OF WATER FACILITIES OVER,  
ALONG, IN AND UNDER THE LANDS AS SHOWN ON THIS PLAT TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS FROM SAID LANDS OF THE GRANTOR(S). THE GRANTOR(S)  
ALSO GIVES THE DISTRICT TO CUT, TRIM AND/OR REMOVE ALL TIMBER, TREES, BRUSH, OR OTHER GROWTH STANDING OR GROWING UPON THE LANDS OF THE GRANTOR(S) IN  
THE DESCRIBED EASEMENT FOR THE PURPOSES OF THE THE ACTIVITIES LISTED ABOVE, AS WELL AS THE RIGHT TO CUT, TRIM, AND/OR REMOVE VEGETATION WHICH, IN THE  
OPINION OF THE DISTRICT, CONSTITUTES A MENACE OR DANGER TO SAID PIPE(S), LINE(S), OR RELATED FACILITIES, AND/OR TO PERSONS OR PROPERTY BY REASON OF  
PROXIMITY TO TO THE LINE(S). THE GRANTOR(S) AGREES THAT TITLE TO ALL TIMBER, BRUSH, OTHER VEGETATION OR DEBRIS TRIMMED, CUT, AND REMOVED FROM THE  
EASEMENT PURSUANT TO THIS AGREEMENT IS VESTED IN THE DISTRICT.

GRANTOR(S), ITS HEIRS, SUCCESSORS, OR ASSIGNS HEREBY CONVEYS AND AGREES NOT TO CONSTRUCT OR PERMIT TO BE CONSTRUCTED STRUCTURES OF ANY KIND ON THE  
EASEMENT AREA WITHOUT WRITTEN APPROVAL OF THE GENERAL MANAGER OF THE DISTRICT. GRANTOR(S) SHALL CONDUCT ITS ACTIVITIES AND ALL OTHER ACTIVITIES ON  
GRANTOR'S PROPERTY SO AS NOT TO INTERFERE WITH, OBSTRUCT, OR ENDANGER THE USEFULNESS OF ANY IMPROVEMENTS OR OTHER FACILITIES, NOW OR HEREAFTER  
MAINTAINED UPON THE EASEMENT OR IN ANY WAY INTERFERE WITH, OBSTRUCT OR ENDANGER THE DISTRICT'S USE OF THE EASEMENT.

## EASEMENT

AN EASEMENT IS HEREBY RESERVED AND GRANTED TO THE CITY OF SEDRO-WOOLLEY, PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, PUGET SOUND ENERGY, ATT  
BROADBAND, ZIPLY FIBER, CASCADE NATURAL GAS CORPORATION AND THEIR RESPECTIVE SUCCESSORS AND ASSIGNS UNDER AND UPON THE EXTERIOR 10 FEET OF ALL LOTS AND  
TRACTS ABUTTING PUBLIC ROADS AND RIGHT OF WAY SHOWN HEREON, AND OTHER UTILIZES SHOWN ON THE FACE OF THIS PLAT, WHICH TO INSTALL, LAY, CONSTRUCT, RENEW,  
OPERATE, MAINTAIN AND REMOVE UTILITY SYSTEMS, LINES, FIXTURES AND APPURTENANCES ATTACHED THEREOF, FOR THE PURPOSE OF PROVIDING UTILITY SERVICES TO THE  
SUBDIVISION AND OTHER PROPERTY. TOGETHER WITH THE RIGHT TO ENTER UPON THE LOTS AND TRACTS AT ALL TIMES FOR THE PURPOSES STATED, WITH THE UNDERSTANDING  
THAT ANY GRANTEE SHALL BE RESPONSIBLE FOR ALL UNNECESSARY DAMAGE IT CAUSED TO ANY REAL PROPERTY OWNER IN THE SUBDIVISION. PROPERTY OWNER IS PROHIBITED  
FROM BUILDING IMPROVEMENTS WITHIN THIS EASEMENT UNLESS APPROVAL HAS BEEN GRANTED BY THE CITY ENGINEER.

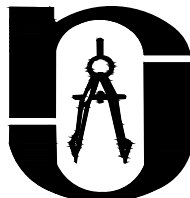
## PLAT NOTES:

- THE PLAT NUMBER AND DATE OF APPROVAL SHALL BE INCLUDED IN ALL DEEDS AND CONTRACTS.
- SEWAGE DISPOSAL: CITY OF SEDRO-WOOLLEY  
STORM DRAINAGE: PRIVATE  
WATER: SKAGIT COUNTY PUD NO. 1  
POWER: PUGET SOUND ENERGY  
TELEPHONE: ZIPLY FIBER  
GAS: CASCADE NATURAL GAS  
TELEVISION CABLE: COMCAST CORPORATION  
GARBAGE COLLECTION: CITY OF SEDRO-WOOLLEY
- EACH LOT WITHIN THIS SUBDIVISION MAY BE SUBJECT TO IMPACT FEES PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONSTRUCTION SHALL COMPLY WITH ALL LOCAL,  
STATE AND FEDERAL REGULATIONS, INCLUDING SEDRO-WOOLLEY MUNICIPAL CODE.
- THIS PROPERTY IS SUBJECT TO EASEMENTS, RESTRICTIONS OR OTHER EXCEPTIONS AS DISCLOSED IN THE TITLE REPORT AS SHOWN ON THIS SHEET UNDER "SCHEDULE B".
- ZONING AND BUILDING SETBACKS:  
FRONT: TWENTY FEET  
SIDE: ONE STORY DWELLINGS AND ACCESSORY STRUCTURES SHALL HAVE A MINIMUM OF FIVE FEET; A TWO STORY DWELLING SHALL HAVE A MINIMUM OF EIGHT;  
AND EACH ADDITIONAL STORY OVER TWO SHALL HAVE AN ADDITIONAL FOUR FEET, FOR EACH STORY.  
REAR: TEN FEET FOR RESIDENCES, FIVE FOR ACCESSORY; GARAGE SETBACKS. PRIVATE GARAGES ATTACHED TO OR WITHIN THE RESIDENCE SHALL ADHERE TO THE  
SETBACK REQUIREMENT OF THE RESIDENCE. IN ALL CASES, THERE SHALL BE A MINIMUM OFF-STREET PARKING APRON OF TWENTY-FIVE FEET IN LENGTH  
DIRECTLY IN FRONT OF ALL GARAGE DOOR ENTRANCES WHEN ACCESSING A STREET EITHER TO THE FRONT OR SIDE OF A RESIDENCE. WHERE GARAGE DOORS  
ACCESS AN ALLEY, THE OFF-STREET PARKING APRON SHALL BE AT LEAST TEN FEET.
- PERMANENT STORMWATER FACILITIES SHALL BE MAINTAINED BY THE HOME OWNERS ASSOCIATION IN ACCORDANCE WITH THE STORMWATER OPERATIONS AND  
MAINTENANCE MANUAL RECORDED UNDER AUDITOR'S FILE NO. \_\_\_\_\_.
- DECLARATION OF COVENANTS, CONDITIONS, RESTRICTIONS AND RESERVATIONS FOR THE "PLAT OF SAMISH ESTATES" WAS RECORDED UNDER SKAGIT COUNTY AUDITOR'S  
FILE NO. \_\_\_\_\_.

## SCHEDULE "B" ITEMS

PER CHICAGO TITLE INSURANCE COMPANY SUBDIVISION GUARANTEE / CERTIFICATE NO. 620037814 [REVISION 1], WITH AN  
EFFECTIVE DATE OF MARCH 30, 2021.

- CERTIFICATE FOR CITY OF SEDRO-WOOLLEY ORDINANCE NO. 1221-95, PROVIDING FOR A FACILITIES IMPROVEMENT CHARGE FOR  
NEW CONNECTIONS TO THE CITY SEWER SYSTEM, INCLUDING THE TERMS AND PROVISIONS THEREOF PER AF NO. 9502230028.  
EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT:  
IN FAVOR OF PUGET SOUND ENERGY, INC., FOR ONE OR MORE UTILITY SYSTEMS, RECORDED OCTOBER 20, 2020 UNDER  
RECORDING NO. 202010200113. [THIS EASEMENT IS NOT SPECIFIC IN LOCATION, AND THEREFORE NOT GRAPHICALLY SHOWN]
- CITY, COUNTY OR LOCAL IMPROVEMENT ASSESSMENTS, IF ANY.
- ASSESSMENTS, IF ANY, LEVIED BY THE CITY OF SEDRO-WOOLLEY.



## JEPSON & ASSOCIATES

REGISTERED PROFESSIONAL ENGINEERS AND LAND SURVEYORS  
222 GRAND AVE., SUITE C, BELLINGHAM, WA 98225  
PHONE: (360) 733-5760 | FAX: (360) 647-8939 | EMAIL: CMJEPSON@JEPSONENGINEERING.COM

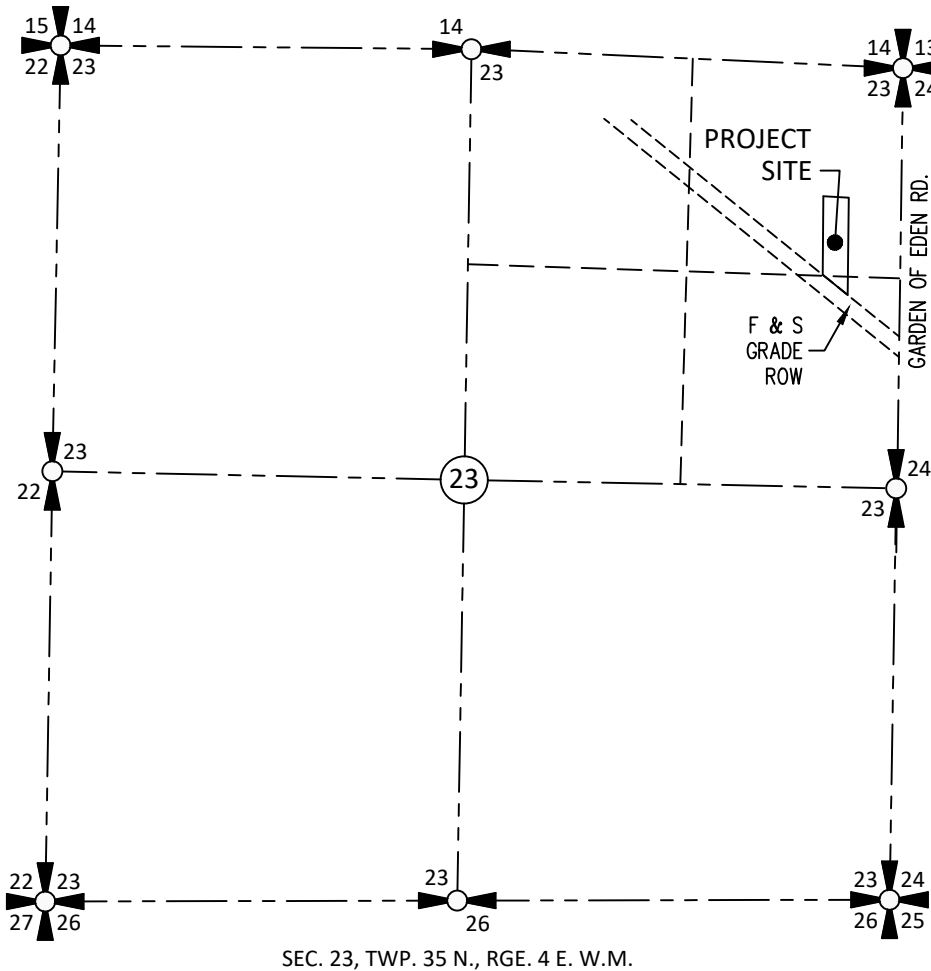
## AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_ AT \_\_\_\_\_ M.

UNDER AUDITOR'S FILE NO. \_\_\_\_\_  
AT THE REQUEST OF JEPSON & ASSOCIATES

SKAGIT COUNTY AUDITOR

DEPUTY AUDITOR



## STORMWATER TRACT A:

STORMWATER TRACT A SHALL BE BY THIS FINAL PLAT RECORDING BE DEDICATED  
TO THE OF SAMISH ESTATES HOME OWNERS ASSOCIATION.

## SKAGIT COUNTY TREASURER

THIS IS TO CERTIFY THAT ALL TAXES HERETOFORE LEVIED AND WHICH HAVE BECOME A LIEN UPON THE LANDS HEREIN DESCRIBED HAVE BEEN FULLY PAID AND DISCHARGED ACCORDING  
TO THE RECORDS OF MY OFFICE,

UP TO AND INCLUDING THE YEAR OF 20\_\_\_\_\_.

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_.

SKAGIT COUNTY TREASURER

DEPUTY

## CITY TREASURER'S CERTIFICATE

THIS IS TO CERTIFY THAT THERE ARE NO DELINQUENT SPECIAL ASSIGNMENTS AND ALL SPECIAL ASSIGNMENTS ON ANY OF THE PROPERTY HEREIN CONTAINED DEDICATED AS STREETS, ALLEYS OR  
FOR OTHER PUBLIC USE, ARE PAID IN FULL.

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_.

CITY TREASURER

## APPROVALS

THE WITHIN AND FOREGOING PLAT HAS BEEN EXAMINED FOR CONFORMANCE WITH THE PROVISIONS OF TITLE 15, 16 AND 17 OF THE SEDRO-WOOLLEY MUNICIPAL CODE AND IS HEREBY

APPROVED ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_.

PLANNING DIRECTOR

CITY ENGINEER

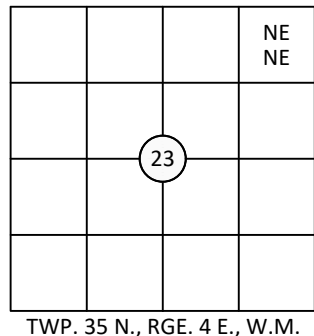
CITY MAYOR

## SURVEYOR'S CERTIFICATE

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH  
THE REQUIREMENTS OF THE SURVEY RECORDING ACT AT THE REQUEST MONTE PETERSEN IN MAY, 2018.

CHRISTOPHER MICHAEL JEPSON

DATE



## PLAT OF SAMISH ESTATES - FILE NO. SW-LP-2019-92

PTN. NE1/4 NE1/4, SECTION 23, TOWNSHIP 35 N., RANGE 4 E., W.M.  
CITY OF SEDRO-WOOLLEY, SKAGIT COUNTY, WASHINGTON

CLIENT:	MONTE R. PETERSEN	JOB NO:	18029	F.B. NO.	18-02B
DATE:	04/23/2021	DRAWN BY:	DRM	SHEET:	
DWG. NO.:	18029-Plat.dwg	CHECKED BY:	CMJ		

1 OF 2



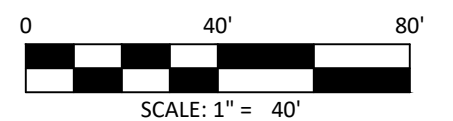
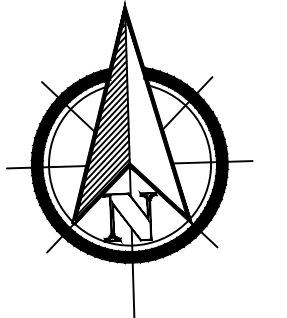
# PLAT OF SAMISH ESTATES

BEING A PORTION OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4  
SECTION 23, TOWNSHIP 35 NORTH, RANGE 4 EAST OF W.M.  
CITY OF SEDRO-WOOLLEY, SKAGIT COUNTY, WASHINGTON  
FILE NO. SW-LP-2019-092

FOUND Cased  
ALUMINUM DISK 0.17' W.  
OF CALCULATED POSITION

## PROPERTY CORNER & OCCUPATION TABLE

- (A) SET NAIL & WASHER WITH S'LY END OF FENCE S73° 52'W, 4.6' & WITH W'LY EDGE OF PAVED DRIVEWAY 2.7' W.
- (B) FOUND & ACCEPTED REBAR & ALUMINUM CAP WITH SW'LY FENCE COR. N32° 46'E, 0.2'
- (C) FENCE LINE & S'LY EDGE OF PAVED DRIVEWAY LYING 0.2' N. OF SET REBAR & CAP
- (D) FOUND & ACCEPTED REBAR & ALUMINUM CAP WITH E. END OF FENCE S50° 46'W, 0.2' & S'LY EDGE OF PAVED DRIVEWAY LYING 0.5' N.
- (E) FOUND & ACCEPTED REBAR & CAP
- (F) SET NAIL & WASHER ON FENCE LINE
- (G) SW'LY FENCE COR. S14° 20'E, 1.3' OF FOUND & ACCEPTED REBAR & CAP



## ADDRESS TABLE:

LOT 1: 512 DEBBIE DRIVE  
LOT 2: 506 DEBBIE DRIVE  
LOT 3: 509 DEBBIE DRIVE  
LOT 4: 513 DEBBIE DRIVE  
LOT 5: 515 DEBBIE DRIVE  
LOT 6: 511 DEBBIE DRIVE  
LOT 7: 528 F & S GRADE ROAD

## OWNER:

MONTE R. PETERSEN  
7451 F & S GRADE ROAD  
SEDRO WOOLLEY, WA 98284

## ZONING CLASSIFICATION:

RESIDENTIAL - R-7



## SEGMENT TABLE:

L1: N0° 52' 31"E - 20.01'  
L2: S87° 20' 58"E - 20.01'  
L3: S0° 52' 31"E - 24.69'  
L4: S0° 48' 58"W - 29.10'  
C1: L=19.52' Δ=22°22'04" R=50.00'  
C2: L=41.58' Δ=34°00'56" R=70.00'  
C3: L=9.57' Δ=7°49'51" R=70.00'  
C4: L=31.99' Δ=26°11'05" R=70.00'

## EASEMENT NOTES: (SEE "EASEMENT" NOTE ON SHEET 1)

- 20' ACCESS & UTILITY EASEMENT IN FAVOR OF LOT 1, CREATED HEREON.
- 20' UTILITY EASEMENT IN FAVOR OF PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, CREATED HEREON.
- ACCESS & UTILITY EASEMENT IN FAVOR OF LOTS 3 - 5, TRACT A & THE CITY OF SEDRO-WOOLLEY, CREATED HEREON.
- 20' UTILITY EASEMENT IN FAVOR OF LOTS 1 - 7, TRACT A & THE CITY OF SEDRO-WOOLLEY, CREATED HEREON.
- 20' STORM EASEMENT, IN FAVOR OF LOTS 1 - 7, TRACT A & THE CITY OF SEDRO WOOLLEY, CREATED HEREON.
- 5' UTILITY EASEMENT, IN FAVOR OF LOTS 1 - 2 & THE CITY OF SEDRO-WOOLLEY, CREATED HEREON.
- 17.5' UTILITY EASEMENT IN FAVOR OF LOTS 1 - 6 & THE CITY OF SEDRO-WOOLLEY, CREATED HEREON.
- 10' UTILITY EASEMENT, IN FAVOR OF LOTS 1 - 7 & THE CITY OF SEDRO-WOOLLEY, CREATED HEREON.
- VARIABLE WIDTH UTILITY EASEMENT, IN FAVOR OF LOTS 1 - 7, TRACT A & THE CITY OF SEDRO-WOOLLEY, CREATED HEREON.
- 10' EASEMENT IN FAVOR OF PUGET SOUND ENERGY, RECORDED UNDER AUDITOR'S FILE NO. 202010200113, CENTERED ON FACILITIES WITHIN THIS PLAT OF SAMISH ESTATES, WHICH IS NOT SPECIFIC IN LOCATION, AND THEREFORE NOT GRAPHICALLY SHOWN HEREON.

## SURVEYOR'S NOTES:

- STANDARD FIELD TRAVERSE PROCEDURES, A TOPCON GR-5 GPS BASE STATION AND ROVER UTILIZING GLOBAL POSITIONING, AND A LEICA 1203 ROBOTIC TOTAL STATION WERE USED TO ACCOMPLISH THIS SURVEY, ALL OF WHOSE ACCURACY MEETS OR EXCEEDS THOSE PRECISION STANDARDS STATED IN WAC 332-130-090.
  - THE FIELD WORK PERFORMED FOR THIS SURVEY WAS CONDUCTED IN **MAY OF 2018, MARCH OF 2021 & APRIL OF 2021**. ALL MONUMENTS SHOWN HEREON WERE VISITED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
  - BASIS OF BEARINGS:** NAD 83/11
- LINE HELD: **S00° 51' 13"W, 2627.53'** ALONG THE CENTERLINE OF GARDEN OF EDEN ROAD BETWEEN FOUND BRASS DISKS AT THE NORTHEAST AND EAST QUARTER CORNERS OF SECTION 23, AS SHOWN.

SEE ALSO THAT RECORD OF SURVEY FOR EDEN'S ACRES PLAT NO. LP-06-08, FILED UNDER AUDITOR'S FILE NO. 201101180064, RECORDS OF SKAGIT COUNTY, WASHINGTON.

## PLAT OF SAMISH ESTATES - FILE NO. SW-LP-2019-92

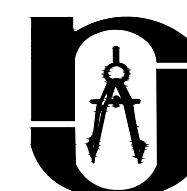
PTN. NE1/4 NE1/4, SECTION 23, TOWNSHIP 35 N., RANGE 4 E., W.M.  
CITY OF SEDRO-WOOLLEY, SKAGIT COUNTY, WASHINGTON

CLIENT:	MONTE R. PETERSEN	JOB NO:	18029	F.B. NO.	18-02B
DATE:	04/23/2021	DRAWN BY:	DRM	SHEET:	2 OF 2
DWG. NO.:	18029-Plat.dwg	CHECKED BY:	CMJ		

## LEGEND

- FOUND Cased 2" ALUMINUM DISK
- FOUND 5/8" REBAR & ALUMINUM CAP (PLS NO. 24223) IN CONCRETE
- FOUND 5/8" REBAR & CAP (PLS NO. 24223)
- FOUND 1/2" REBAR & CAP (PLS NO. 17651)
- SET 1/2" REBAR & CAP (PLS NO. 55832)
- SET NAIL & WASHER (PLS NO. 55832)
- FENCE LINE
- [R] DIMENSION DERIVED FROM ROS FOR EDEN'S ACRES PLAT NO. LP-06-08
- PROPOSED PROP. COR. (TO BE SET)
- (C) CALCULATED DIMENSION
- ACCESS & UTILITY ESMT. (SEE NOTE 3)

DETAIL  
(SCALE: 1" = 5')



**JEPSON & ASSOC.**  
REGISTERED PROFESSIONAL ENGINEERS AND LAND SURVEYORS  
222 GRAND AVE., SUITE C, BELLINGHAM, WA 98225  
PHONE: (360) 733-5760 | FAX: (360) 647-8939  
EMAIL: CMJEPSON@JEPSONENGINEERING.COM

**Attachment B**

*Findings, Conclusions and Recommendation* of the Hearing Examiner



**BEFORE THE HEARING EXAMINER  
FOR THE CITY OF SEDRO-WOOLLEY**

In the Matter of the Application of	)	No. LP-2019-092
	)	
<b>Monte and Nicole Petersen</b>	)	Samish Estates Preliminary Plat
	)	
	)	FINDINGS, CONCLUSIONS,
<u>For Approval of a Preliminary Plat</u>	)	AND RECOMMENDATION

**SUMMARY OF RECOMMENDATION**

The Hearing Examiner recommends that the request for a preliminary plat to subdivide two acres into seven, single-family residential lots, with associated improvements, at 528 F & S Grade Road, be **APPROVED**. Conditions are necessary to address specific impacts of the proposal.

**SUMMARY OF RECORD**

Hearing Date:

The Hearing Examiner held an open record hearing on the request on August 27, 2019.

Testimony:

The following individuals provided testimony under oath at the open record hearing:

John Coleman, City Planning Director  
Monte Petersen, Applicant  
Dorothy de Fremery  
Dave Wiedenhoft

Exhibits:

The following exhibits were admitted into the record:

1. Transmittal & Report Memorandum (Staff Report)
2. Preliminary Plat Application, received March 28, 2019
3. Plat of Samish Estates (Sheets 1 and 2 of 2), dated August 13, 2019
4. Notice of Application and SEPA Comment Period, published May 27, 2019
5. Notice of Public Hearing, published August 12, 2019
6. Email from Patrick Tuttle to John Coleman, dated June 3, 2019, with email string
7. Email from David Wiedenhoft to John Coleman, dated June 18, 2019, with email string
8. Letter from Katelynn Piazza, Department of Ecology, to John Coleman, dated June 10, 2019
9. SEPA Environmental Checklist, dated March 3, 2019
10. SEPA Notice of Threshold Determination – Mitigated Determination of Nonsignificance (MDNS), issued August 2, 2019

*Findings, Conclusions, and Recommendation*  
*City of Sedro-Woolley Hearing Examiner*  
*Samish Estates Preliminary Plat*  
*No. LP-2019-092*

11. Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan, Aqua-Terr Systems, Inc., dated February 2019
12. Preliminary Stormwater Site Plan, Cascade Engineering Group, P.S., Inc., dated March 2019
13. Written Comments from Dorothy de Fremery, received August 27, 2019

The Hearing Examiner enters the following findings and conclusions based upon the admitted testimony and exhibits:

## **FINDINGS**

### Application and Notice

1. Monte and Nicole Petersen (Applicant), request approval of a preliminary plat to subdivide two acres into seven, single-family residential lots, with associated improvements. An existing residence would be retained on a large lot in the southern half of the property and would continue to be accessed from F & S Grade Road. The additional six lots would be developed on the northern half of the property and would be accessed from two private driveways off of Debbie Drive. The property is located at 528 F & S Grade Road.<sup>1</sup> *Exhibit 1, Staff Report, page 1; Exhibit 2; Exhibit 3.*
2. The City of Sedro-Woolley (City) determined that the application was complete on May 23, 2019. On May 27, 2019, the City mailed notice of the application to property owners within 500 feet of the subject property, posted notice at the project site, and published notice in the *Skagit Valley Herald*. On August 9, 2019, the City sent notice of the open record hearing associated with the application to all property owners within 500 feet of the subject property. On August 12, 2019, the City posted notice of the open record hearing on-site, and published notice in the *Skagit Valley Herald*. *Exhibit 1, Staff Report, pages 2 and 3; Exhibit 4; Exhibit 5.*
3. The City received two written comments from members of the public in response to its notice materials:
  - Patrick Tuttle wrote the City with concerns over potential drainage problems in the area in light of development.
  - David Wiedenhoft expressed concern over the loss of bird habitat from the proposed development and unpermitted work occurring on the project site in the past, including tree removal and placement of fill. Mr. Wiedenhoft also wrote that City employees previously indicated that no future development would be allowed on Debbie Road and reiterated concerns about potential drainage issues based on site design.

*Exhibit 6; Exhibit 7.*

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<sup>1</sup> The property is identified by Tax Assessor Parcel No. P37166. *Exhibit 2.* A legal description of the property is included with the preliminary plat map. *Exhibit 3.*

#### State Environmental Policy Act

4. The City acted as lead agency and analyzed the environmental impacts of the proposal under the State Environmental Policy Act (SEPA), Chapter 43.21C Revised Code of Washington RCW (RCW). The City used the optional Determination of Nonsignificance (DNS) process under Washington Administrative Code (WAC) 197-11-355, and the notice of the threshold determination was provided with the notice of application. The City reviewed the Applicant's environmental checklist and other information on file and determined that, with mitigation, the proposal would not have a probable significant adverse impact on the environment. The City received one comment specific to its SEPA determination: the Washington State Department of Ecology (DOE) commented that the Applicant would likely need to obtain a National Pollutant Discharge Elimination System (NPDES) permit in association with construction activities and that there are 17 contaminated sites within a one-mile radius of the project site although all 17 sites are "most likely hydraulically downgradient of this location and so potential dewatering during construction is unlikely to extract contaminated groundwater related to any of the listed sites." The City received no other comments specific to its threshold determination. *Exhibit 4; Exhibit 8; Exhibit 9.*
5. Following the SEPA comment period, the City issued a Mitigated Determination of Nonsignificance (MDNS) for the proposal on August 2, 2019. The MDNS included seven mitigation measures, requiring: mitigation for impacts to a wetland that would be impacted on-site; limitations on hours of construction; compliance with Northwest Clean Air Agency regulations; lighting to be directed away from neighboring residential properties; use of an approved temporary construction access; contribution to police impact fees; and compliance with the requirements of an NPDES permit. The MDNS was not appealed. *Exhibit 1, Staff Report, pages 4 and 5; Exhibit 4; Exhibit 9; Exhibit 10.*

#### Comprehensive Plan, Zoning, and Surrounding Property

6. The property is designated Residential 7 (R-7) under the City's Comprehensive Plan. The purpose of the designation is to allow "single lot developments to a maximum density of seven units per acre, with a minimum lot size of six thousand (6,000) square feet." *City Comprehensive Plan, pages 31 and 32. Exhibit 1, Staff Report, page 2.*
7. The property is located in the Residential 7 (R-7) zoning district. The R-7 zone "includes the portion of Sedro-Woolley platted over a hundred years ago" and is "characterized by a grid street system and small lots." *Sedro-Woolley Municipal Code (SWMC) 17.12.005.* The intent of the R-7 zone is to "encourage the continuation of this traditional pattern." *SWMC 17.12.005.* Single-family residential development is permitted outright in the R-7 zoning district. *SWMC 17.12.010.A.1. Exhibit 1, Staff Report, page 2.*



8. Chapter 17.12 SWMC provides specific requirements related to bulk restrictions, minimum lot size, maximum density, and maximum lot coverage in the R-7 zone. City Planning Director John Coleman testified that these specific requirements would be reviewed during the construction phase of development but that preliminary plans indicate that the proposal would meet these requirements. *Exhibit 1, Staff Report, page 2; Testimony of Mr. Coleman.*
9. The subject property is bounded on the south by F & S Grade Road. All other surrounding property is zoned R-7 and is generally developed with single-family residential development, including the Garden of Eden plat to the east. *Exhibit 1, Staff Report, page 2; Exhibit 2; Exhibit 3.*

#### Critical Areas

10. Aqua-Terr Systems, Inc., prepared a Wetland Critical Areas Assessment Report and Wetland & Buffer Bank Use Plan (“Wetland Report”) for the Applicant, dated February 2019. The Wetland Report identified a 3,011 square foot Category III wetland, Wetland A, on-site, requiring a 50-foot buffer, which is part of a 12,666 square foot wetland that extends off-site to the east. The Applicant proposes to fill all 3,011 square feet of the wetland on-site to allow the construction of a residence on one of the proposed lots (Lot 6). The Wetland Report includes an “alternatives analysis,” which states, “the location of the proposed project was selected as the property is owned by the client, Monte Petersen.” *Exhibit 11.* The Wetland Report determined that eliminating the proposed lot to be located on the proposed wetland fill would be “antithetical to Sedro-Woolley’s goal of infilling and would jeopardize the financial viability of the project.” *Exhibit 11.* The wetland report determined that no on-site mitigation would be available to compensate for filling the portion of Wetland A that encumbers the site. Instead, the Applicant would purchase credits in the Skagit Environmental Wetland Mitigation Bank (SEWMB). The proposed wetland fill is located within the SEWMB’s large “service area.” Under SWMC 17.65.240.L, the City’s Planning Director “may encourage, facilitate and approve innovative wetland mitigation projects.” The Planning Director has approved the use of wetland mitigation banking to address impacts to the wetland on-site. Moreover, approval from the DOE and the U.S. Army Corps of Engineers (Army Corps) is required prior to any on-site development that would involve infill of Wetland A on-site. There are no other critical areas on-site that would be impacted by development. *Exhibit 1, Staff Report, page 5; Exhibit 4; Exhibit 10; Exhibit 11.*

#### Trees and Landscaping

11. Under SWMC 17.50.110, significant existing trees and shrubs on a site proposed for development should be incorporated, where feasible, into proposed landscaping, and care should be taken in the grading and construction process so as not to disturb the roots and drip lines of retained trees, and to ensure proper irrigation. If significant trees cannot be incorporated into the site design, such trees shall be replaced with equivalent stumpage

for over ten percent reduction. Mr. Coleman testified that the City would review the Applicant's landscape plan and assess tree retention requirements during the construction phase of development. *Testimony of Mr. Coleman.*

#### Stormwater

12. The Applicant submitted a Preliminary Stormwater Site Plan ("Stormwater Plan") for the proposal, prepared by Cascade Engineering Group, P.S., Inc., in March 2019, which City staff reviewed. The Stormwater Plan notes that roof, lawn, road, and driveway runoff would be captured and conveyed to a combined water quality treatment and detention pond on-site before being discharged into the existing drainage system on the north side of F & S Grade Road, consistent with requirements of the 2012 Stormwater Management Manual for Western Washington (amended in 2014). The Stormwater Plan further notes that:

The proposed improvements will require elevating the site to enable the collection and routing of the stormwater runoff to the treatment and flow control facility. Raising the finished ground should have an insignificant effect on the north, west, and south side of the site. Runoff to the north and west may slightly be reduced since any runoff from the project site will be routed away from these property lines. The raised elevation on the east side of the site will prevent off-site runoff from entering site, which it does under the current conditions. The project will provide a new drainage system along the southern portion of the east property line . . . that will route and collect runoff along the east property line to the F & S Grade Road ditch system. The existing F & S Grade Road ditch system will be expanded southeast such that this offsite runoff can be captured and routed away from the site.

*Exhibit 13.*

13. Mr. Coleman testified that the City's engineer would further review proposed stormwater infrastructure prior to development to ensure that the proposal would not negatively impact surrounding development. *Testimony of Mr. Coleman.*

#### Utilities

14. Mr. Coleman testified that the City would provide water and sewer service to the property and that the Applicant would be required to create a homeowners' association (HOA) to ensure that all common utilities/facilities on-site are appropriately maintained. He also noted that the City's Fire Marshal was involved in the pre-application process for development of the proposed plat and expressed no concerns over fire-flow requirements or other requirements related to public health and safety. *Testimony of Mr. Coleman.*

#### Access, Parking, and Traffic

15. As noted above, access to the six new lots that are being created would be provided from two private driveways off of Debbie Drive, a 296-foot long public street that terminates as a hammerhead turn-around area on the west and connects to the Garden of Eden plat to the east. Debbie Drive currently serves as the primary access for seven residential lots and secondary access for one additional lot. Mr. Coleman testified that City staff reviewed the proposal and determined that it would not have adverse impacts on circulation or area traffic and would meet municipal code requirements related to parking, including requiring on-site parking for at least two vehicles on each lot. He noted that no further traffic analysis would be necessary for a project of this size. *Exhibit 1, Staff Report, page 2; Exhibit 2; Exhibit 3; Testimony of Mr. Coleman.*

#### Schools and Parks

16. Mr. Coleman testified that the Sedro-Woolley School District serves the project area and that an existing bus stop on Garden of Eden Road would likely serve the development. He noted that City staff would review the final proposal to ensure that safe-walking routes to area bus stops and schools are provided. Mr. Coleman further explained that the City plans to develop area sidewalks through its long-term planning process. *Testimony of Mr. Coleman.*
17. Mr. Coleman testified that the municipal code does not require that open space recreation be provided for a proposal of this size but that payment of park impact fees would be required to support the municipal and regional parks in the area. *Exhibit 1, Staff Report, pages 2 and 3; Exhibit 2; Testimony of Mr. Coleman.*

#### Testimony

18. Mr. Coleman testified generally about the proposal and how City staff reviewed it for compliance with the City's Comprehensive Plan, zoning ordinances, and critical areas ordinances, as discussed above. He noted that the existing residence on-site would be connected to the municipal sewer system as part of site development, providing an ecological benefit. Mr. Coleman explained that design review for single-family residential development, as proposed, would be unnecessary. *Testimony of Mr. Coleman.*
19. Applicant Monte Petersen testified that he is aware of the historic drainage issues in the vicinity and believes that the Stormwater Report addresses these concerns. He noted that he and his wife own the existing residence that would be retained on-site, and it is their goal to make the area better, and that they want to ensure that the development will have no adverse impacts on neighboring properties. Mr. Petersen stressed that permits must still be obtained from DOE and the Army Corps related to filling the portion of the wetland that encumbers the site and that, if such approval is not obtained, they will not move forward with development. *Testimony of Mr. Petersen.*

20. Dorothy de Fremery testified that she is concerned with the impacts from filling the wetland on-site, especially in relation to the impacts this would have on bird habitat in the area. She also expressed concern over drainage and noted that, in some instances, property owners have failed to maintain stormwater detention ponds, and it would be preferable if the City maintained the proposed detention pond on-site to ensure that no flooding occurs. Finally, Ms. de Fremery expressed concern over traffic safety in the area and stressed that traffic calming measures would be appropriate.<sup>2</sup> *Testimony of Ms. de Fremery.*
21. Dave Wiedenhoft testified as well, and he expressed many of the same concerns noted in the written comments he submitted in advance of the hearing. Specifically, Mr. Wiedenhoft stressed that traffic calming measures in the area would be appropriate, that fill was placed on the site without permits during previous development, that he was promised no additional traffic would be allowed on Debbie Road, and that flooding in the area would be exacerbated because of development. *Testimony of Mr. Wiedenhoft.*
22. Mr. Coleman responded to Mr. Wiedenhoft's and Ms. de Fremery's testimony. He noted that the Wetland Report addressed the concerns over in-fill of the wetland and that retention of the wetland on Lot 6 would make development of the other lots infeasible because of required wetland buffers. Mr. Coleman explained that the City requires that the HOA developed for new neighborhoods must maintain stormwater facilities and submit annual reports to the City. He noted that, if an HOA fails to maintain its stormwater facilities, the City has the ability to step in and maintain the facility at the HOA's expense. Mr. Coleman testified that the City has plans to extend Garden of Eden Road in the future and that this should alleviate traffic and safety concerns in the area. He noted, however, that the Public Works Department would review final plans to ensure road safety is addressed. Mr. Coleman also explained that stormwater on-site would not impact existing stormwater facilities in Debbie Drive because stormwater would be routed to an expanded stormwater system in F & S Grade Road, to the south. *Testimony of Mr. Coleman.*

#### Staff Recommendation

23. Mr. Coleman testified that City staff recommends approval of the proposal, with conditions. Mr. Petersen testified that the Applicant concurs with the City's assessment and would adhere to the recommended conditions of approval. *Testimony of Mr. Coleman; Testimony of Mr. Petersen; Exhibit 1, Staff Report, pages 5 and 6.*

### **CONCLUSIONS**

#### Jurisdiction

The Hearing Examiner is granted jurisdiction to hear and recommend applications for preliminary plats pursuant to SWMC 16.08.024. This review entails the Hearing Examiner

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<sup>2</sup> A copy of Ms. de Fremery's comments were admitted as Exhibit 13.

ensuring that the proposed plat, or revisions to it, would satisfy the criteria of Chapter 58.17 RCW. *SWMC 16.08.024. See also SWMC 2.34.080.C; SWMC 2.90.060.F.2.d.*

#### Criteria for Review

Under SWMC 16.08.028, the effect of preliminary plat approval is as follows:

- A. Approval of the preliminary plat shall constitute authorization for the subdivider to develop the subdivision facilities and improvements as required in the approved preliminary plat upon issuance of the final plat. Development shall be in strict accordance with the plans and specifications as prepared or approved by the city engineer and subject to any conditions imposed by the hearing body.
- B. No subdivision requirements which become effective after the approval of a preliminary plat for a subdivision shall apply to such subdivision unless the hearing body determines that a change in conditions created a serious threat to the public health or safety.
- C. Preliminary plat approval is valid for five years unless extended pursuant to SWMC 16.08.064.

The state subdivision criteria are as follows:

A proposed subdivision and dedication shall not be approved unless the city, town, or county legislature body makes written findings that: (a) appropriate provisions are made for the public health, safety, and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and schoolgrounds and all other relevant facts, including sidewalks and other planning features that [ensure] safe walking conditions for students who only walk to and from school; and (b) the public use and interest will be served by the platting of such subdivision and dedication.

*RCW 58.17.110(2).*

The criteria for review adopted by the City Council are designed to implement the requirement of Chapter 36.70B RCW to enact the Growth Management Act. In particular, RCW 36.70B.040 mandates that local jurisdictions review proposed development to ensure consistency with City development regulations, considering the type of land use, the level of development, infrastructure, and the characteristics of development. *RCW 36.70B.040.*

#### Conclusions Based on Findings

1. **With conditions, the preliminary plat would comply with RCW 58.17.110(2).** The Applicant submitted plans that ensure that, as proposed, the subdivision would meet all requirements for plat approval under the municipal code. City staff analyzed the proposal and determined that appropriate provisions would be made for: the public health, safety, and general welfare; and for such open spaces, drainage ways, streets or roads, alleys,

*Findings, Conclusions, and Recommendation  
City of Sedro-Woolley Hearing Examiner  
Samish Estates Preliminary Plat  
No. LP-2019-092*

other public ways; transit stops; potable water supplies; sanitary wastes; parks and recreation; and playgrounds, schools, and schoolgrounds, including sidewalks and other planning features that ensure safe walking conditions for students who walk to and from school. Staff also determined that the public use and interest would be served by the platting of such subdivision and dedication. The Hearing Examiner concurs with staff's assessment.

Conditions are necessary to ensure that the Applicant adheres to all requirements of the MDNS; constructs all improvements consistent with the preliminary plat map and submits all applicable construction plans to the City for review and approval, including, but not limited to, plans for stormwater, water, sewer, electrical, grading, erosion control, and streets; ensures all seven lots are connected to the City's sanitary sewer system; creates a homeowners' association to maintain common facilities on-site, including the stormwater system; and submits a final plat map to the City for review and approval after site improvements are completed, approved, and/or financially secured. *Findings 1, 3 – 23.*

2. **With conditions, the proposed subdivision would be consistent with City development regulations, considering land use type, development level, infrastructure, and development characteristics, such as development standards, as required by RCW 36.70B.040.** The City provided adequate notice and opportunity to comment on the proposed preliminary plat. The City acted as lead agency and analyzed the environmental impacts of the proposed plat, as required by SEPA, and issued a Mitigated Determination of Nonsignificance (MDNS). The MDNS was not appealed, and the relevant mitigation measures are incorporated herein. The preliminary plat would provide single-family residential development consistent with City development regulations, including the R-7 zoning district. The proposed use would be compatible with surrounding properties. As noted above in Conclusion 1, conditions are necessary to ensure the proposal meets all requirements for preliminary plat approval under municipal and state requirements. *Findings 1 – 23.*

### **RECOMMENDATION**

Based on the preceding findings and conclusions, the Hearing Examiner recommends that the request for a preliminary plat to subdivide two acres into seven, single-family residential lots, with associated improvements, at 528 F & S Grade Road, be **APPROVED**, with the following conditions:<sup>3</sup>

1. The Applicant shall comply with the mitigation measures included in the SEPA mitigated determination of nonsignificance (MDNS), issued August 2, 2019.

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<sup>3</sup> Conditions include legal requirements applicable to all developments, as well as those designed to mitigate the specific impacts of this development.

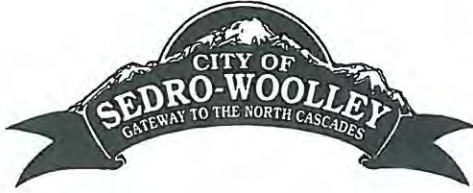
2. Construction of all required infrastructure improvements, including, but not limited to, streets, curbs, sidewalks, sewer, landscaping and street lighting shall be completed prior to final plat application or bonding in an amount approved by the City Engineer shall be filed with the City.
3. All seven lots and the residences on those lots (including the existing residence) shall be connected to the city sanitary sewer.
4. A homeowners association shall be created to own and maintain the stormwater infrastructure and private sewer infrastructure; the homeowner's association documents shall be approved by the Planning Department prior to recording.
5. The proponent or successor shall submit a final plat map to the City for review and approval after site improvements are completed, approved, and/or financially secured.
6. The Applicant shall comply with all requirements of additional permits obtained from other agencies, including DOE and the Army Corps, and shall not commence site development until all such permits have been obtained.

**RECOMMENDED** this 11<sup>th</sup> day of September 2019.

A handwritten signature in black ink, appearing to read "Andrew M. Reeves", is enclosed within a rectangular box with a thin grey border.

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ANDREW M. REEVES  
Hearing Examiner  
Sound Law Center



CITY OF SEDRO-WOOLLEY  
PLANNING DEPARTMENT  
325 Metcalf Street  
Sedro-Woolley, WA 98284  
Phone (360) 855-0771  
Fax (360) 855-0733


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## TRANSMITTAL & REPORT MEMORANDUM

**HEARING DATE:** August 27, 2019 at 3:00PM

**TO:** Sedro-Woolley Hearing Examiner

**RE:** LP-2019-092 – Preliminary Plat Approval for the Proposed Plat of  
**Samish Estates**

**FROM:**   
John Coleman, Planning Director

**APPLICATION DATE:** March 28, 2019

**APPLICATION COMPLETE:** May 23, 2019

**RECOMMENDATION:** Staff Recommends **Approval with Conditions**

**PROPERTY OWNER:** Monte Peterson  
528 F&S Grade Road  
Sedro-Woolley, WA 98284

**PROJECT PROPONENT:** Monte & Nicole Peterson  
528 F&S Grade Road  
Sedro-Woolley, WA 98284

### DESCRIPTION OF PROPOSAL

The proposal is to subdivide one existing parcel into seven (7) residential parcels. The site is approximately 2.0 acres in size and is zoned Residential - 7. The subdivision will require the construction of private driveways as well as stormwater infrastructure. File #LP-2019-092.



<b>Site Address:</b>	528 F&S Grade Road	<b>Parcel ID #(s):</b>	P37166
<b>Total Area:</b>	2.0 acres		

<b>Zoning District: Residential 7 (R-7)</b>			
Minimum lot size:	6,000 sqft	Lot width at building line:	40 feet
Front Setback:	20 feet	Lot width at road frontage:	20 feet
Rear Setback:	10 feet	Maximum building height:	35 feet
Side Setback:	5 feet for 1-story buildings, 8 feet for 2-story	Maximum building coverage:	50%

<b>Public Utility and Service Providers</b>			
Water:	Skagit County PUD #1	Sewer:	City of Sedro-Woolley
Telephone:	Verizon	Garbage:	City of Sedro-Woolley
Electricity:	Puget Sound Energy	Stormwater:	City of Sedro-Woolley
Gas:	Cascade Natural Gas	Police:	City of Sedro-Woolley
School:	Sedro-Woolley School District	Fire:	City of Sedro-Woolley

## ANALYSIS AND CONCLUSIONS

### 1. Application Process:

- a. On March 28, 2019, the property owners, Monte and Nicole Peterson, submitted a subdivision application for 528 F & S Grade Road, parcel P37166. The proposal is to subdivide the existing parcel, totaling 2.0 acres, into seven single family residential lots and one stormwater tract. The March 28 application was determined to be administratively incomplete on April 18, 2019. Additional application materials were submitted and the application was determined to be administratively complete on May 23, 2019. The application form is included as Exhibit B. A plat map of the Plat of Samish Estates is included as Exhibit C. The project has been assigned the file number LP-2019-092.
- b. Subdivisions of land into five or more properties are classified as “subdivisions” (also termed “long plats”). Per SWMC 2.90.010(C) preliminary approval for a subdivision is treated as a Type IV decision by the City Council following a Hearing Examiner open record hearing and recommendation.
- c. City regulations concerning subdivisions are found in the Sedro-Woolley Municipal Code (SWMC) **Chapter 16.04 – General Provisions** and **Chapter 16.08 – Subdivisions. Title 17 – Zoning, Chapter 2.88 – Environmental Policy** and **Chapter 15.44 – Design Review** also apply to long plats in Sedro-Woolley.

**CONCLUSION:** The application meets the procedural requirements for a Type IV application in Chapter 2.90 SWMC.

### 2. Public Notification:

- a. A *Notice of Application and SEPA Comment Period* was issued by the SEPA lead agency (City of Sedro-Woolley) on May 27, 2019 (Exhibit D). Notice was published in the local newspaper, posted at the project site, posted on city hall

bulletin boards and mailed to the property owners and residents within 500 feet of the subject parcel. The notice required a two week comment period ending June 10, 2019.

- b. The Hearing Examiner is scheduled to hold a public hearing on the preliminary Plat of Samish Estates at 3:00 PM, August 27, 2019. Based on the information presented to the Hearing Examiner and the testimony at that hearing, the Hearing Examiner will make a recommendation to the City Council whether to approve, approve with conditions or deny preliminary approval of the Plat of Samish Estates
- c. On August 12, 2019, in compliance with Chapters 16.04, 16.08 and 2.90 SWMC, *Notice of Public Hearing* (Exhibit E) for the Hearing Examiner hearing on the Preliminary Plat Samish Estates was posted on the project site. On August 9, 2019 the Notice was sent to all property owners and residents within 500 feet of the subject parcels and posted on city hall bulletin boards. On August 12, 2019 the *Notice of Public Hearing* was published in the Skagit Valley Herald.

**CONCLUSION:** The application meets the public notice requirements for a Type IV application in Chapter 2.90 SWMC.

3. Public Comment:

- a. Two written comments (Exhibits F & G) and one letter from the Department of Ecology (Exhibit H) were received as part of the Notice of Application and SEPA Comment Period Notice. The Department of Ecology letter includes additional information but no specific comments on the proposal or potential impacts of the proposal. The first public comment was received June 3, 2019 from Patrick Tuttle. The second public comment was received June 10, 2019 from David Wiedenhoft.

4. Comprehensive Plan and Zoning:

- a. The Comprehensive Plan and Zoning Code designation for this property is Residential 7 (R-7).
- b. The properties to the north, south, east and west are zoned R-7.
- c. The proposed lots are for single-family residences.

**CONCLUSION:** The proposed subdivision as conditioned is consistent with the Sedro-Woolley Comprehensive Plan and allowed uses in Chapter 17.12 SWMC.

5. Application Type and Specific Criteria:

- a. Chapter 16.04 and 16.12 SWMC establish the requirements and criteria for approving a preliminary subdivision.
- b. A preliminary plat shall be approved if it meets the approval criteria in Chapter 58.17 RCW and the requirements of Chapter 16.04 and 16.12 SWMC.
- c. Preliminary subdivisions are approved subject to the criteria of Chapter 58.17 of the Revised Code of Washington (RCW), which requires provisions for public health, safety, and general welfare; open spaces; drainage; streets; transit stops; potable water supplies; sanitary wastes; parks and recreation and playgrounds; schools, sidewalks, and whether the public interest will be served by the

subdivision and dedication. An analysis of each additional criterion will follow in subsequent sections.

- d. Preliminary plat approvals may contain conditions as deemed necessary to ensure the approval criteria are met.

**CONCLUSION:** The proposed subdivision as conditioned is consistent with the criteria described Chapters 16.04 and 16.12 SWMC and RCW 58.17.110 for preliminary subdivision approval.

**6. Dimensional Standards:**

- a. The dimensional standards of Chapter 17.12 SWMC apply to this proposed subdivision. The proposal is not using the optional subdivision process in Chapter 17.43 SWMC – Planned Residential Developments. Therefore only the standard lot dimensions in Chapter 17.12 SWMC apply.
- b. Standard minimum lot sizes in the R-7 zone are 6,000 square-feet for single-family housing lots and 9,000 square-feet for duplex lots.
- c. The required lot width at building line for standard lot sizes in the R-7 zone is forty (40) feet for single-family housing lots and eighty (80) feet for duplex lots. Duplex lots shall also have a minimum lot depth of one-hundred (100) feet.
- d. The required minimum lot frontage on a public street, approved private street, or approved easement for standard lots in the R-7 zone is twenty feet.
- e. The Public Works Department requires that stormwater be managed per the 2012/2014 Department of Ecology Stormwater Manual for Western Washington and the impacts of stormwater shall be addressed at the time that civil construction plans are reviewed (typically those plans are submitted after the preliminary plat has been approved).
- f. Access to the six new lots will be off the west end of Debbie Drive. Debbie Drive is a 296-foot long city street that terminates as a hammerhead turn-around area (as opposed to a cul-de-sac shape) on the west and connects to Garden of Eden Road at the east. No new public street or sidewalks are proposed. Two private driveways are proposed at the west end of Debbie Drive provide access to the six lots.
- g. Debbie Drive was dedicated as public street as part of the Plat of Eden's Acres – Auditor File Number 201101180064.
- h. Debbie Drive is a Local Access Street and serves as the primary access for seven residential lots and secondary access for one additional lot (which has primary access on Garden of Eden Road).
- i. Sanitary sewer is available to all seven proposed lots.

**CONCLUSION:** The proposed subdivision as conditioned is consistent with the dimensional standards in Chapter 17.12 SWMC.

**7. Environmental Review:**

- a. Long plats are subject to SEPA review (Chapter 2.88 SWMC) and require a SEPA checklist to be submitted along with the application. The SEPA checklist for this proposal is included as Exhibit I. The SEPA checklist is sent to all state and local agencies with an interest in development in the City.

- b. A *Notice of Application and SEPA Comment Period* was issued by the SEPA lead agency (City of Sedro-Woolley) on May 27, 2019 (Exhibit D). Public comments received are addressed above in Section 3 – Public Comments.
- c. On August 2, 2019, the SEPA lead agency issued a Mitigated Determination of Non-Significance (MDNS) for the proposed Plat of Woodrow Place (Exhibit J). The MDNS included a 14 day appeal period that ended on August 16, 2019. No appeals were received as of August 13, 2019.

**CONCLUSION:** The application is consistent with the State Environmental Policy Act (SEPA) identified in Chapter 2.88 SWMC.

**8. Critical Areas Review:**

- a. The subject parcel was reviewed for compliance under the Sedro-Woolley Critical Areas Ordinance as codified under Title 17.65 SWMC.
- b. A Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan (Wetland Report) was prepared by Aqua-Terr Systems, Inc, (Exhibit K) and submitted with the application materials. Aqua-Terr Systems, Inc found an approximately 3,011 square foot category III wetland on the site.
- c. The Wetland Report proposes to fill the wetland and provide mitigation through the purchase mitigation credits at the Skagit Environmental Wetland Mitigation Bank. The Wetland Report includes mitigation ratios for the lost wetland area and its buffer per the mitigation bank instrument. Any impacts to wetland and wetland must be mitigated; any such mitigation must be approved by the Army Corps of Engineers and the Department of Ecology.
- d. A condition of the MDNS issued August 2, 2019 is to: Provide mitigation for project related impacts to the wetland and buffer per the Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan submitted by ATSI and in accordance with Chapter 17.65 SWMC.

**CONCLUSION:** The project is consistent with Sedro-Woolley Critical Areas Ordinance as codified under Title 17.65 SWMC.

## **PLANNING DEPARTMENT RECOMENDATION**

Based on the above Findings of Fact and Exhibits B through K, the Planning Department recommends **APPROVAL** of the Preliminary Plat of Samish Estates, a request to subdivide one 2.0 acre parcel in the R-7 Zone into seven (7) residential lots **subject to the following conditions:**

1. Comply with the mitigation measures included in the SEPA mitigated determination of non-significance (MDNS) issued August 2, 2019;
2. Construction of all required infrastructure improvements, including, but not limited to, streets, curbs, sidewalks, sewer, landscaping and street lighting shall be completed prior

to final plat application or bonding in an amount approved by the City Engineer shall be filed with the City.

3. All seven lots and the homes on those lots (including the existing home) shall be connected to the city sanitary sewer.
4. A homeowners association shall be created to own and maintain the stormwater tract, stormwater system infrastructure and shared driveways; the homeowner's association documents shall be approved by the Planning Department prior to recording.
5. The proponent or successor shall submit a final plat map to the city for review and approval after site improvements are completed, approved, and/or financially secured.

### **EXHIBITS**

- A. Staff Report;
- B. Preliminary Plat Application;
- C. Preliminary Plat of Samish Estates (Sheets 1 & 2);
- D. Notice of Application and SEPA Comment Period published May 27, 2019;
- E. Notice of Public Hearing published August 12, 2019
- F. Public Comment from Patrick Tuttle received June 3, 2019;
- G. Public Comment from David Wiedenhoft received June 10, 2019;
- H. Letter from the Department of Ecology;
- I. SEPA Checklist;
- J. SEPA MDNS issued August 2, 2019; and
- K. Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan.

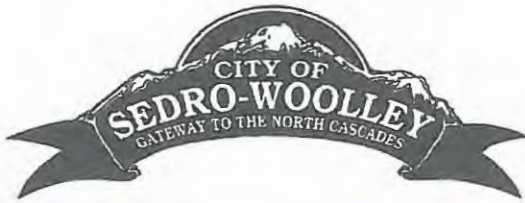


Exhibit B  
Plat of Samish Estates

Sedro-Woolley, WA 98284  
Phone (360)855-0771  
Fax (360) 855-0733

## PRELIMINARY PLAT APPLICATION

MAR 28 2019

APPLICATION NUMBER:

2019-92

Proposed name of Subdivision: Samish Estates

Location (cross street names and addresses, if they exist): 528 F and S Grade Rd

Assessor's Parcel number(s): P37166

Applicant Name: Monte and Nicole Petersen

Applicant Address: 528 F and S Grade Rd. Sedro-Woolley WA. 98284

Applicant Phone: 360-661-5649 email: themonteross@hotmail.com

Owner: Monte Petersen

Owner Address: 528 F and S Grade Rd. Sedro-Woolley WA 98284

Owner Phone: 360-661-5649 email: themonteross@hotmail.com

I am applying for the following variances or other permits at the same time: Access and Driveway permit

Public Works and Engineering Master Permit Application, Clearing and Grading Worksheet

Zoning Designation: R7 Flood zone: No

Total site size in acres: 2 Critical Areas by type and acres: Category III, 3011 sq. ft

Number of lots proposed: 7 Number of housing units proposed: 6 new

Describe existing conditions on and adjacent to site: On the existing site there is an existing home, barn, and various outbuilding, all on the southern acre of property. Northern acre is clear with sparse tree brush and 3011 cat III wetland.

Directly west is a undeveloped 5 acre field, to the north and east is residential, and F and S Grade Rd borders the south.

### Application Checklist:

- ☒ A. Pre-application file #: 2018039 Pre-application date: March 28, 2019
- ☒ B. State Environment Policy Act (SEPA). The applicant shall submit a SEPA Checklist or environmental impact statement (EIS), including a site plan and associated fees, with an application for a subdivision. The SEPA Checklist or EIS shall be reviewed by the SEPA official. Upon determination by the Planning Department that the SEPA Checklist is complete and accurate, thirteen (13) copies of the checklist will be required. No public hearing on a subdivision proposal shall be scheduled prior to the issuance of a determination of nonsignificance or mitigated determination of nonsignificance by the SEPA official.
- ☒ C. Fees. See current fee schedule. The applicant will also be billed for mailing and publication costs.
- ☒ D. Complete Application Required. The planning director notifies applicant when the application is complete.
- ☒ E. Project narrative including: a detailed description of the proposal; any other applications being submitted concurrently (such as planned residential development application or a variance); size of properties to be subdivided; number of lots proposed; critical areas, open space and recreation area calculations or any other information that will be pertinent to the review the application.
- ☒ F. Application Map. Ten copies of an accurately scaled and dimensioned map of the plat prepared by a land surveyor licensed by the state of Washington and showing the following:

**\*\*Every preliminary plat shall consist of one or more maps, on both mylar and in digital format approved by the City Engineer, together with written and digital data including the following:**

- ☒ The name of the proposed subdivision;
- ☒ North point and scale; the location of existing property lines: streets, building, if any; watercourses and all general features;
- ☒ The legal description of the land contained within the subdivision;
- ☒ The names and addresses of all persons, firms and corporations holding interest in the lands, including easement rights and interest;
- ☒ The proposed names, locations, widths and other dimensions of proposed streets, alleys, easements, parks, lots, building lines, if any, and all other information necessary to interpret the plat, including the location of existing utility and access easements which are to remain;
- ☒ The location of streets in adjoining plats and the approximate location of adjoining utilities and proposed extensions into the plat;
- ☒ The names of adjoining plats;
- ☒ The name, address and telephone number and seal of the registered land surveyor who made the survey or under whose supervision it was made;
- ☒ The date of the survey;
- ☒ All existing monuments and markers located by the survey;
- ☒ The zoning classification applicable to the land within the subdivision;
- ☒ The conditions of or the limitations on dedications, if any, including slope rights;
- ☒ Contour intervals as required, based upon city datum with intervals of five feet or less utilizing U.S.G.S, or better datum.
- ☒ Location of significant physical features such as buildings, bodies of water, power lines, slopes, trees, and section lines within or adjacent to the proposed plat;
- ☒ Location and description of existing and proposed drainage, sewer, and water facilities within or adjacent to the proposed plat;



- ☒ Location and outline of any sensitive areas, as defined under Section 17.65.040, using the delineation and classification methods and definitions provided for the specific sensitive area under the provisions of Chapter 17.65;
- ☒ If a replat, the layout for the original plat in dotted lines, with replat status reflected in the plat name;
- ☐ Vicinity map at a smaller scale, to include the location of any natural resource lands within three hundred feet of the edge of the proposed plat.

- ☒ G. Mailing labels: See separate form for instructions.
- ☒ H. Posting: See attached form for instructions.
- ☒ I. Copies of covenants, restrictions and collective maintenance agreements, if applicable.
- ☒ J. Environmental checklist or EIS.
- ☒ K. Survey information of all features within 100 feet of the boundary of the proposed subdivision.
- ☒ L. Evidence of water availability. PUD letter date: March 4, 2019.
- ☒ M. Evidence of sewer availability.
- ☒ N. Required materials identified in the pre-application meeting, such as additional information required for PRDs.
- ☐ O. Other information deemed necessary by the planning director, planning commission or city council.
- ☒ P. Landscaping Plan
- ☒ Q. Street Profiles

**Special Studies:**

- ☒ R. Traffic
- ☒ S. Stormwater
- ☒ T. Critical areas

**Criteria:** The proponent bears the burden of proving that the application should be granted. The project permit must be supported by convincing proof that it conforms to the applicable elements of the city's development regulations and comprehensive plan. The proponent must also prove that any significant adverse environmental impacts have been adequately mitigated.

Describe how the following provisions will be met with the proposed subdivision:

- ☒ Public health, safety and general welfare: Provided by the Sedro- Woolley Police Department
- ☒ Open spaces: Open spaces are in accordance with the Sedro Woolley building code.
- ☒ Drainage ways: Drainage ways are in accordance with the Sedro Woolley building code and engineering department requirements.
- ☒ Streets, alleys, other public ways: Will be maintained by a collective maintenance agreement, easements will be provided where necessary for all utilities.



☒ Water supplies: Water supplies will be provided by Skaqit Pud.

☒ Sanitary waste: Sanitary waste will be handled by Sedro Woolley Waste Management

☒ Fire protection facilities: Fire protection provided by the Sedro Woolley Fire Department

☒ Parks, playgrounds: No required per Sedro Woolley building code

**Purpose:** The purpose of the Subdivision (Long Plat) regulations:

To regulate the division of land and to promote the public health, safety and general welfare in accordance with standards established by the city and state to:

- A. Prevent the overcrowding of land;
- B. Lessen congestion in the streets and highways;
- C. Promote effective use of land;
- D. Promote safe and convenient travel by the public on streets and highways;
- E. Provide for adequate light and air;
- F. Provide for open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, fire protection, sanitary wastes, parks and recreation, playgrounds, schools and school grounds, sidewalks or other facilities to assure safe walking conditions for students who walk to and from school; and other public requirements;
- G. Provide for proper ingress and egress;
- H. Provide for expeditious review and approval of proposed divisions which conform to zoning standards and local plans and policies, including the purposes stated herein;
- I. Adequately provide for the housing and commercial needs of the citizens of the city; and
- J. Require uniform monumenting of land divisions and conveyance by accurate legal description.

**Process:** Preliminary plat applications shall be processed simultaneously with applications for rezones, variances, planned residential developments (PRDs), site plan approvals, and similar quasi-judicial or administrative actions to the extent that procedural requirements applicable to these actions permit simultaneous processing.

***No public hearing on a subdivision proposal shall be scheduled prior to the issuance of a declaration of non-significance or mitigated declaration of non-significance by the SEPA official.***

**Applicable local and state rules which will be used in the review of all subdivision applications:**

Applications shall be processed according to the procedures set forth in Chapter 2.90 SWMC, and the additional procedures established in Chapter 16.08 SWMC and state law (Chapter 43.21C RCW, and Chapter 36.70B RCW).

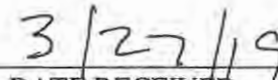
Chapter 16.04 SWMC – General Provisions, Chapter 16.08 SWMC – Subdivisions; Chapter 2.88 SWMC – State Environmental Policy Act; Chapter 15.40 SWMC – Public Works Construction Standards; Chapter 2.90 SWMC – Consolidated Planning Procedures; and Title 17 SWMC – Zoning.

Also applicable to subdivisions are the Public Works Department Standards manual and the Sedro-Woolley Design Standards and Guidelines manual. These documents are adopted by reference in the Sedro-Woolley Municipal Code.

**Signature:**

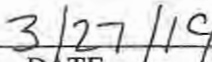
I request preliminary approval in accordance with the Sedro-Woolley subdivision ordinance and other applicable city codes. Application is hereby made for a **PRELIMINARY PLAT** and to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I hereby grant to the officials of the City of Sedro-Woolley the right to enter the above-described location to inspect the proposed or completed work.

  
SIGNATURE

  
DATE RECEIVED

Owner's certification: I certify that I am the legal owner of the property listed above and that the applicant listed above has my permission to represent me in this application for development.

  
OWNER'S SIGNATURE

  
DATE

## Samish Estates Project Narrative

I am pleased to propose the subdivision Samish Estates. Currently a 2 acre lot with 1 home and various outbuildings on the southern acre, I propose the division of the property into 7 lots. The division will create 6 new lots that range from 6,101 to 8,000 sq ft, the existing lot will be remain as a 30,535 sq ft lot, and a retention pond with a 16,273 sq ft footprint. There is currently a 3011 sq ft CAT III wetland located in the ~~would be developed~~ northern acre that will be mitigated off site to maximize the usefulness of the wetland. Access will be be from Debbie Lane which ends directly into the Northeastern most corner of the property. The resulting subdivision will result with 6 new lots ready for 6 family sized homes with yards big enough for a family to play in or have a bbq. Thank you for your consideration!

MAR 28 2019

2019-12-28

# PLAT OF SAMISH ESTATES

BEING A PORTION OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 23, TOWNSHIP 35 NORTH, RANGE 4 EAST OF W.M.  
CITY OF SEDRO-WOOLLEY , SKAGIT COUNTY, WASHINGTON  
FILE NO. SW-LP-2019-092

## LEGAL DESCRIPTION:

PER CHICAGO TITLE INSURANCE COMPANY SUBDIVISION GUARANTEE / CERTIFICATE NO. 620037814, DATED MARCH 21, 2019.

ASSESSOR'S PARCEL NO.: P37166

COMMENCING AT A POINT 487 FEET WEST AND 423 FEET SOUTH OF THE NORTHEAST CORNER OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 23, TOWNSHIP 35 NORTH, RANGE 4 EAST OF THE WILLAMETTE MERIDIAN;

THENCE RUN SOUTH 484 FEET TO THE FAIRHAVEN AND SOUTHERN RAILWAY RIGHT-OF-WAY;  
THENCE RUN ON AN ANGLE SOUTHEAST PARALLEL WITH THE SAID RIGHT-OF-WAY A DISTANCE OF 200 FEET;  
THENCE RUN NORTH 610 FEET;  
THENCE WEST 160 FEET TO THE PLACE OF BEGINNING.

SITUATE IN THE COUNTY OF SKAGIT, STATE OF WASHINGTON.

## DECLARATION:

KNOWN BY ALL THESE PEOPLE PRESENT THAT I THE UNDERSIGNED HEREBY DECLARE THIS "PLAT OF SAMISH ESTATES" IS MADE WITH MY FREE CONSENT AND IN ACCORDANCE WITH MY WISHES.

MONTE R. PETERSEN

DATE

## ACKNOWLEDGEMENT

STATE OF WASHINGTON }  
COUNTY OF WHATCOM } ss.

ON THIS DAY PERSONALLY APPEARED BEFORE ME MONTE R. PETERSEN, TO ME KNOWN TO BE THE INDIVIDUAL DESCRIBED IN AND WHO EXECUTED THE WITHIN AND FOREGOING INSTRUMENT, AND ACKNOWLEDGED THAT HE SIGNED THE SAME AS HIS FREE AND VOLUNTARY ACT AND DEED, FOR THE USES AND PURPOSES THEREIN MENTIONED.

GIVEN UNDER MY HAND AND OFFICIAL SEAL THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

NOTARY PUBLIC IN AND FOR THE STATE OF WASHINGTON

RESIDING AT \_\_\_\_\_

## SCHEDULE "B" ITEMS

PER CHICAGO TITLE INSURANCE COMPANY SUBDIVISION GUARANTEE / CERTIFICATE NO. 620037814, DATED MARCH 21, 2019.

- CERTIFICATE FOR CITY OF SEDRO-WOOLLEY ORDINANCE NO. 1221-95, PROVIDING FOR A FACILITIES IMPROVEMENT CHARGE FOR NEW CONNECTIONS TO THE CITY SEWER SYSTEM, INCLUDING THE TERMS AND PROVISIONS THEREOF PER AF NO. 9502230028.
- 
- CITY, COUNTY OR LOCAL IMPROVEMENT ASSESSMENTS, IF ANY.
- ASSESSMENTS, IF ANY, LEVIED BY THE CITY OF SEDRO-WOOLLEY.

## PLAT NOTES:

- THE PLAT NUMBER AND DATE OF APPROVAL SHALL BE INCLUDED IN ALL DEEDS AND CONTRACTS.
- SEWAGE DISPOSAL: CITY OF SEDRO-WOOLLEY  
STORM DRAINAGE: PRIVATE  
WATER: SKAGIT COUNTY PUD NO. 1  
POWER: PUGET SOUND ENERGY  
TELEPHONE: FRONTIER COMMUNICATION  
GAS: CASCADE NATURAL GAS  
TELEVISION CABLE: COMCAST CORPORATION  
GARBAGE COLLECTION: CITY OF SEDRO-WOOLLEY
- EACH LOT WITHIN THIS SUBDIVISION MAY BE SUBJECT TO IMPACT FEES PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONSTRUCTION SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS, INCLUDING SEDRO-WOOLLEY MUNICIPAL CODE.
- THIS PROPERTY IS SUBJECT TO EASEMENTS, RESTRICTIONS OR OTHER EXCEPTIONS AS DISCLOSED IN THE TITLE REPORT AS SHOWN ON THIS SHEET UNDER "SCHEDULE B".
- ZONING AND BUILDING SETBACKS:  
FRONT: TWENTY FEET  
SIDE: ONE STORY DWELLINGS AND ACCESSORY STRUCTURES SHALL HAVE A MINIMUM OF FIVE FEET; A TWO STORY DWELLING SHALL HAVE A MINIMUM OF EIGHT; AND EACH ADDITIONAL STORY OVER TWO SHALL HAVE AN ADDITIONAL FOUR FEET, FOR EACH STORY.  
REAR: TEN FEET FOR RESIDENCES, FIVE FOR ACCESSORY; GARAGE SETBACKS. PRIVATE GARAGES ATTACHED TO OR WITHIN THE RESIDENCE SHALL ADHERE TO THE SETBACK REQUIREMENT OF THE RESIDENCE. IN ALL CASES, THERE SHALL BE A MINIMUM OFF-STREET PARKING APRON OF TWENTY-FIVE FEET IN LENGTH DIRECTLY IN FRONT OF ALL GARAGE DOOR ENTRANCES WHEN ACCESSING A STREET EITHER TO THE FRONT OR SIDE OF A RESIDENCE. WHERE GARAGE DOORS ACCESS AN ALLEY, THE OFF-STREET PARKING APRON SHALL BE AT LEAST TEN FEET.
- THE HOMEOWNERS ASSOCIATION DECLARATION OF COVENANTS, CONDITIONS, RESTRICTIONS AND RESERVATIONS FOR THE "PLAT OF SAMISH ESTATES" CC&R'S AND STORMWATER MAINTENANCE MANUAL WAS RECORDED UNDER SKAGIT COUNTY AUDITOR'S FILE NO. \_\_\_\_\_.

## PUD UTILITY EASEMENT

EASEMENTS ARE GRANTED TO PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, A MUNICIPAL CORPORATION, ITS SUCCESSORS OR ASSIGNS, THE PERPETUAL RIGHT, PRIVILEGE AND AUTHORITY ENABLING THE DISTRICT TO DO ALL THINGS NECESSARY OR PROPER IN THE CONSTRUCTION AND MAINTENANCE OF A WATER, SEWER, ELECTRICAL, AND COMMUNICATION LINES AND/OR OTHER SIMILAR PUBLIC SERVICE RELATED FACILITIES. THIS INCLUDES THE RIGHT TO CONSTRUCT, OPERATE, MAINTAIN, INSPECT, IMPROVE, REMOVE, RESTORE, ALTER, REPLACE, CHANGE THE SIZE OF, RELOCATE, CONNECT TO AND LOCATE AT ANY TIME PIPE(S), LINE(S) OR RELATED FACILITIES, ALONG WITH NECESSARY APPURTENANCES FOR THE TRANSPORTATION AND CONTROL OF WATER, SEWER, ELECTRICAL OR ELECTRONIC INFORMATION ON FACILITIES OVER, ALONG, IN AND UNDER THE LANDS AS SHOWN ON THIS PLAT TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS FROM SAID LANDS OF THE GRANTOR(S). THE GRANTOR(S) ALSO GIVES THE DISTRICT TO CUT, TRIM AND/OR REMOVE ALL TIMBER, TREES, BRUSH, OR OTHER GROWTH STANDING OR GROWING UPON THE LANDS OF THE GRANTOR(S) IN THE DESCRIBED EASEMENT FOR THE PURPOSES OF THE THE ACTIVITIES LISTED ABOVE, AS WELL AS THE RIGHT TO CUT, TRIM, AND/OR REMOVE VEGETATION WHICH, IN THE OPINION OF THE DISTRICT, CONSTITUTES A MENACE OR DANGER TO SAID PIPE(S), LINE(S), OR RELATED FACILITIES, AND/OR TO PERSONS OR PROPERTY BY REASON OF PROXIMITY TO TO THE LINE(S). THE GRANTOR(S) AGREES THAT TITLE TO ALL TIMBER, BRUSH, OTHER VEGETATION OR DEBRIS TRIMMED, CUT, AND REMOVED FROM THE EASEMENT PURSUANT TO THIS AGREEMENT IS VESTED IN THE DISTRICT.

GRANTOR(S), ITS HEIRS, SUCCESSORS, OR ASSIGNS HEREBY CONVEYS AND AGREES NOT TO CONSTRUCT OR PERMIT TO BE CONSTRUCTED STRUCTURES OF ANY KIND ON THE EASEMENT AREA WITHOUT WRITTEN APPROVAL OF THE GENERAL MANAGER OF THE DISTRICT. GRANTOR(S) SHALL CONDUCT ITS ACTIVITIES AND ALL OTHER ACTIVITIES ON GRANTOR'S PROPERTY SO AS NOT TO INTERFERE WITH, OBSTRUCT, OR ENDANGER THE USEFULNESS OF ANY IMPROVEMENTS OR OTHER FACILITIES, NOW OR HEREAFTER MAINTAINED UPON THE EASEMENT OR IN ANY WAY INTERFERE WITH, OBSTRUCT OR ENDANGER THE DISTRICT'S USE OF THE EASEMENT.

## CITY EASEMENT

AN EASEMENT IS HEREBY RESERVED AND GRANTED TO THE CITY OF SEDRO-WOOLLEY, PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, PUGET SOUND ENERGY, ATT BROADBAND, VERIZON FRONTIER COMMUNICATIONS, CASCADE NATURAL GAS CORPORATION AND THEIR RESPECTIVE SUCCESSORS AND ASSIGNS UNDER AND UPON THE EXTERIOR 10 FEET OF ALL LOTS AND TRACTS ABUTTING PUBLIC ROADS AND RIGHT OF WAY SHOWN HEREON, AND OTHER UTILIZES SHOWN ON THE FACE OF THIS PLAT, WHICH TO INSTALL, LAY, CONSTRUCT, RENEW, OPERATE, MAINTAIN AND REMOVE UTILITY SYSTEMS, LINES, FIXTURES AND APPURTENANCES ATTACHED THEREOF, FOR THE PURPOSE OF PROVIDING UTILITY SERVICES TO THE SUBDIVISION AND OTHER PROPERTY. TOGETHER WITH THE RIGHT TO ENTER UPON THE LOTS AND TRACTS AT ALL TIMES FOR THE PURPOSES STATED, WITH THE UNDERSTANDING THAT ANY GRANTEE SHALL BE RESPONSIBLE FOR ALL UNNECESSARY DAMAGE IT CAUSED TO ANY REAL PROPERTY OWNER IN THE SUBDIVISION. PROPERTY OWNER IS PROHIBITED FROM BUILDING IMPROVEMENTS WITHIN THIS EASEMENT UNLESS APPROVAL HAS BEEN GRANTED BY THE CITY ENGINEER.

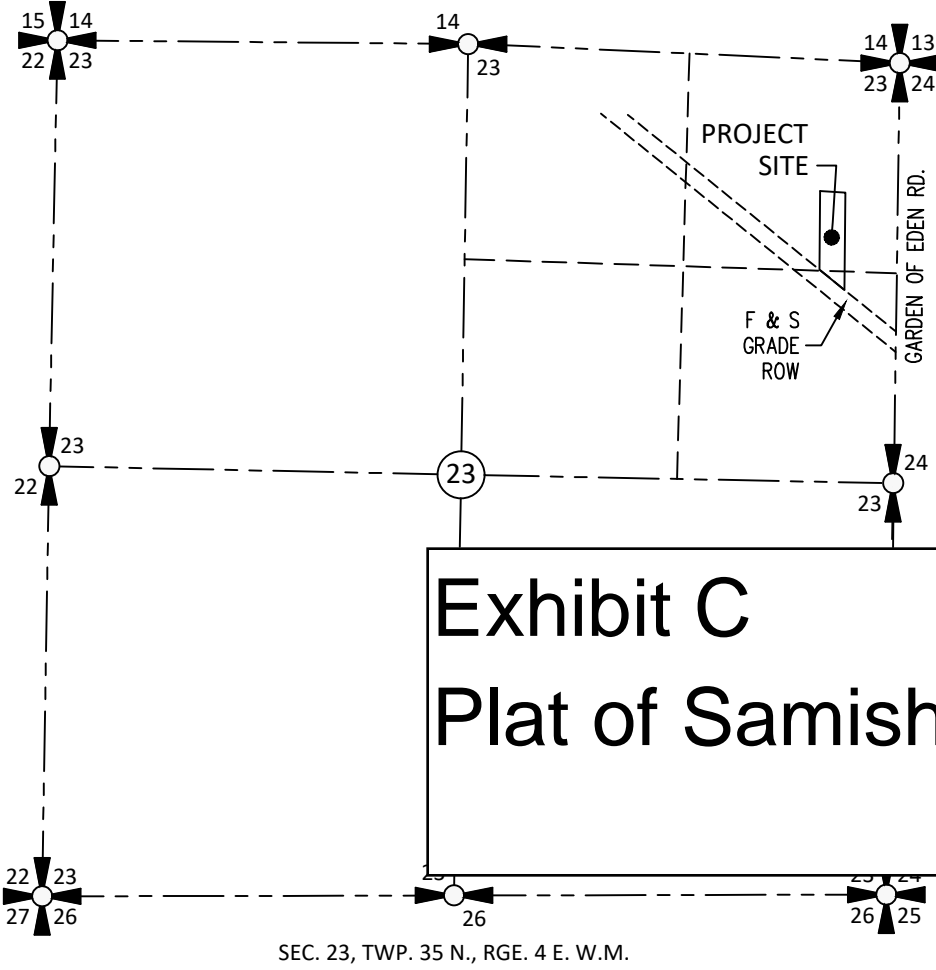
## AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_ AT \_\_\_\_\_ M.

UNDER AUDITOR'S FILE NO. \_\_\_\_\_  
AT THE REQUEST OF JEPSON & ASSOCIATES

SKAGIT COUNTY AUDITOR

DEPUTY AUDITOR



## SKAGIT COUNTY TREASURER

THIS IS TO CERTIFY THAT ALL TAXES HERETOFORE LEVIED AND WHICH HAVE BECOME A LIEN UPON THE LANDS HEREIN DESCRIBED HAVE BEEN FULLY PAID AND DISCHARGED ACCORDING TO THE RECORDS OF MY OFFICE, UP TO AND INCLUDING THE YEAR OF 20\_\_\_\_.

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

SKAGIT COUNTY TREASURER

DEPUTY

## CITY TREASURER'S CERTIFICATE

THIS IS TO CERTIFY THAT THERE ARE NO DELINQUENT SPECIAL ASSIGNMENTS AND ALL SPECIAL ASSIGNMENTS ON ANY OF THE PROPERTY HEREIN CONTAINED DEDICATED AS STREETS, ALLEYS OR FOR OTHER PUBLIC USE, ARE PAID IN FULL.

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

CITY TREASURER

## APPROVALS

THE WITHIN AND FOREGOING PLAT HAS BEEN EXAMINED FOR CONFORMANCE WITH THE PROVISIONS OF TITLE 15, 16 AND 17 OF THE SEDRO-WOOLLEY MUNICIPAL CODE AND IS HEREBY APPROVED ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

PLANNING DIRECTOR

CITY ENGINEER

CITY MAYOR

## SURVEYOR'S CERTIFICATE

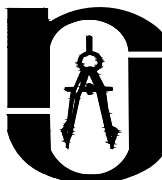
THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT AT THE REQUEST OF MONTE PETERSEN IN MAY 2018.

CHRISTOPHER MICHAEL JEPSON  
CERTIFICATE NO. 55832

DATE



PLAT OF SAMISH ESTATES - FILE NO. SW-LP-2019-092  
PTN. NORTHEAST 1/4, NORTHEAST 1/4, SECTION 23, TOWNSHIP 35 NORTH, RANGE 6 EAST, W.M.  
CITY OF SEDRO-WOOLLEY, SKAGIT COUNTY, WASHINGTON



**JEPSON & ASSOCIATES**

REGISTERED PROFESSIONAL ENGINEERS AND LAND SURVEYORS  
222 GRAND AVE., SUITE C, BELLINGHAM, WA 98225  
PHONE: (360) 733-5760 | FAX: (360) 647-8939 | EMAIL: CMJEPSON@JEPSONENGINEERING.COM

CLIENT: MONTE R. PETERSEN

ISSUE DATE: 08/13/2019

DWG. NO.: 18029-Plat.dwg

JOB NO.: 18029 F.B. NO. 18-02B

DRAWN BY: DRM

CHECKED BY: CMJ

SHEET:

1 of 2



# PLAT OF SAMISH ESTATES

BEING A PORTION OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 23,  
TOWNSHIP 35 NORTH, RANGE 4 EAST OF W.M.  
CITY OF SEDRO-WOOLLEY, SKAGIT COUNTY, WASHINGTON  
FILE NO. SW-LP-2019-092

FOUND CASED  
ALUMINUM DISK 0.17' W.  
OF CALCULATED POSITION

## PROPERTY CORNER & OCCUPATION TABLE

- (A) SET NAIL & WASHER WITH S'LY END OF FENCE LYING S73° 52'W, 4.6' & WITH W'LY EDGE OF PAVED DRIVEWAY LYING 2.7', W.  
(B) FENCE LINE LIES 2.2' W. OF PROPOSED PROP. COR.  
(C) FENCE LINE LIES 1.3' W. OF PROPOSED PROP. COR.  
(D) FENCE LINE LIES 0.5' W. OF PROPOSED PROP. COR.  
(E) FOUND & ACCEPTED REBAR & ALUMINUM CAP WITH N'LY END OF FENCE LYING S14° 36'E, 1.2' & SW'LY FENCE COR. LYING N32° 46'E, 0.2'  
(F) FENCE LINE & S'LY EDGE OF PAVED DRIVEWAY LYING 0.2' N. OF PROPOSED PROP. COR.  
(G) FOUND & ACCEPTED REBAR & ALUMINUM CAP WITH FENCE COR. LYING S50° 46'W, 0.2' & S'LY EDGE OF PAVED DRIVEWAY LYING 0.5' N.  
(H) PROPOSED PROP. COR. WITH FENCE ON PROP. LINE  
(I) FENCE LINE LYING 0.1' E. OF FOUND & ACCEPTED REBAR & CAP  
(J) FENCE LINE LYING 0.9' W. OF PROPOSED PROP. COR.  
(K) FENCE LINE LYING 0.5' W. OF PROPOSED PROP. COR.  
(L) FENCE COR. LYING S14° 20'E, 1.3' OF FOUND & ACCEPTED REBAR & CAP

## ADDRESS TABLE:

- LOT 1: 512 DEBBIE DRIVE  
LOT 2: 506 DEBBIE DRIVE  
LOT 3: 509 DEBBIE DRIVE  
LOT 4: 513 DEBBIE DRIVE  
LOT 5: 515 DEBBIE DRIVE  
LOT 6: 511 DEBBIE DRIVE  
LOT 7: 528 F & S GRADE ROAD

## OWNER:

MONTE R. PETERSEN  
7451 F & S GRADE ROAD  
SEDRO WOOLLEY, WA 98284

## ZONING CLASSIFICATION:

RESIDENTIAL - R-7

## SEGMENT TABLE:

- L1: N0° 52' 31"E - 20.01'  
L2: S87° 20' 58"E - 20.01'  
L3: S0° 48' 58"W - 20.06'  
L4: S0° 52' 31"E - 24.69'  
L5: S0° 48' 58"W - 29.10'  
C1: L=19.52' Δ=22°22'04" R=50.00'  
C2: L=41.56' Δ=34°00'56" R=70.00'  
C3: L=9.57' Δ=7°49'51" R=70.00'  
C3: L=31.99' Δ=26°11'05" R=70.00'

## EASEMENT NOTES:

- 20' ACCESS & UTILITY EASEMENT IN FAVOR OF LOT 1, CREATED HEREON.
- 20' UTILITY EASEMENT IN FAVOR OF PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, CREATED HEREON.
- ACCESS & UTILITY EASEMENT IN FAVOR OF LOTS 3, 4, 5 & 6, CREATED HEREON.
- 20' UTILITY EASEMENT IN FAVOR OF LOTS 1 - 7, CREATED HEREON.
- 20' UTILITY EASEMENT CREATED HEREON

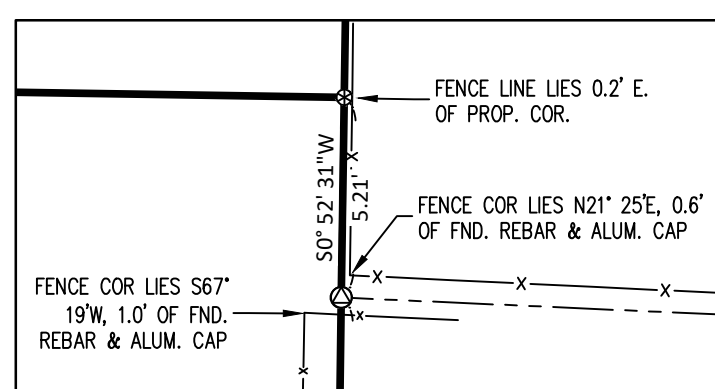
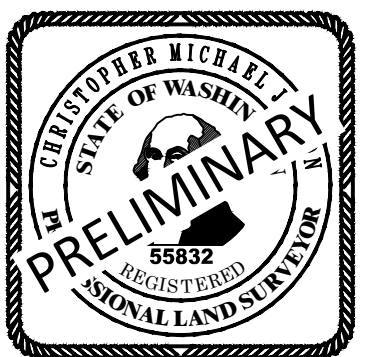
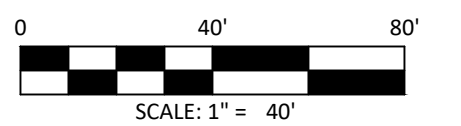
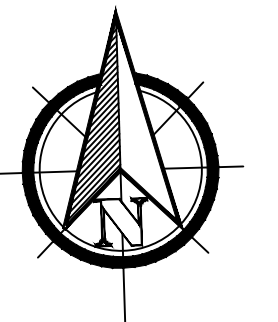
## SURVEYOR'S NOTES:

- STANDARD FIELD TRAVERSE PROCEDURES, A TOPCON GR-5 GPS BASE STATION AND ROVER UTILIZING GLOBAL POSITIONING, AND A LEICA 1203 ROBOTIC TOTAL STATION WERE USED TO ACCOMPLISH THIS SURVEY, ALL OF WHOSE ACCURACY MEETS OR EXCEEDS THOSE PRECISION STANDARDS STATED IN WAC 332-130-090.
- THE FIELD WORK PERFORMED FOR THIS SURVEY WAS CONDUCTED IN **MAY OF 2018**. ALL MONUMENTS SHOWN HEREON WERE VISITED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
- BASIS OF BEARINGS:** NAD 83/11  
LINE HELD: **S00° 51' 13"W, 2627.53'** ALONG THE CENTERLINE OF GARDEN OF EDEN ROAD BETWEEN FOUND BRASS DISKS AT THE NORTHEAST AND EAST QUARTER CORNERS OF SECTION 23, AS SHOWN.  
SEE ALSO THAT RECORD OF SURVEY FOR EDEN'S ACRES PLAT NO. LP-06-08, FILED UNDER AUDITOR'S FILE NO. 201101180064, RECORDS OF SKAGIT COUNTY, WASHINGTON.

PLAT OF SAMISH ESTATES - FILE NO. SW-LP-2019-092  
PTN. NORTHEAST 1/4, NORTHEAST 1/4, SECTION 23, TOWNSHIP 35 NORTH, RANGE 6 EAST, W.M.  
CITY OF SEDRO-WOOLLEY, SKAGIT COUNTY, WASHINGTON

**JEPSON & ASSOCIATES**  
REGISTERED PROFESSIONAL ENGINEERS AND LAND SURVEYORS  
222 GRAND AVE., SUITE C, BELLINGHAM, WA 98225  
PHONE: (360) 733-5760 | FAX: (360) 647-8939 | EMAIL: CMJEPSON@JEPSONENGINEERING.COM

CLIENT:	MONTE R. PETERSEN		
ISSUE DATE:	08/13/2019		
DWG. NO.:	18029-Plat.dwg		
JOB NO.:	18029	F.B. NO.	18-02B
DRAWN BY:	DRM	SHEET:	2 of 2
CHECKED BY:	CMJ		



DETAIL  
(SCALE: 1" = 5')

## NOTICE OF APPLICATION AND SEPA COMMENT PERIOD CITY OF SEDRO-WOOLLEY PLANNING DEPARTMENT

**Description of proposal/application:** The city has received an application for a proposed 7-lot subdivision of a 2.0 acre property on F&S Grade Road. The back of the property is also adjacent to Debbie Drive. The six proposed new lots will be accessed from Debbie Drive; the existing home will maintain its access from F&S Grade Road. The property is zoned Residential 7 and allows for single family residential lots of 6,000 square feet or larger. The project includes construction of private shared driveways and stormwater infrastructure. There is an approximately 3,011 sf Category III wetland on the property that is proposed to be filled. Compensation for the impacts to the wetland and buffer include a Skagit Environmental Wetland Mitigation Bank credit purchase. File #LP-2019-092.

**Proponent:** Monte & Nicole Peterson  
528 F&S Grade Road  
Sedro-Woolley, WA 98284

### Exhibit D Plat of Samish Estates

**Location of project, including street address if any:** 528 F&S Grade Road, Sedro-Woolley, WA 98284

**Environmental Review:** The optional DNS process in WAC 197-11-355 is being used. Agencies, tribes, and the public are encouraged to review and comment on the proposed project and its probable environmental impacts. The City of Sedro-Woolley has reviewed the proposed project for probable adverse environmental impacts and expects to issue a mitigated determination of non-significance (MDNS) for this project. The MDNS will likely include the following conditions and any other conditions that may be necessary to address concerns raised during this comment period:

1. Hours of construction shall be limited to 7:00 a.m. to 9:00 p.m. weekdays and 8:00 a.m. to 9:00 p.m. weekends as required in SWMC 9.46.020;
2. Comply with Northwest Clean Air Agency Regulations during construction activities;
3. Comply with the Sedro-Woolley Critical Areas Ordinance (Chapter 17.65 SWMC) and U.S. Army Corps of Engineers requirements for wetland fill and necessary off-site mitigation;
4. Any water discharged to the City stormwater system as a result of this project must be approved by and comply with conditions of the Public Works Department;
5. Provide a temporary erosion and sedimentation control plan for approval by the city engineer;
6. Lighting from the site shall be directed and/or shielded so as to not shine at the neighboring residential properties;
7. All construction traffic shall use temporary construction access as approved by the Public Works Department;
8. Obtain and comply with conditions of a NPDES stormwater general permit from the Department of Ecology;
9. Contribute police mitigation fees of \$505.76 per unit as per the residential unit fee calculation in the Capital Facilities Element of the City of Sedro-Woolley Comprehensive Plan; and
10. Construction shall comply with all local, state and federal regulations, including Sedro-Woolley Municipal Code Title 13.36 Stormwater Management Standards; Title 13.40 Stormwater Facilities Maintenance; Title 15.40 Public Works Construction Standards; Title 17 Zoning; Sedro-Woolley Public Works Design Standards and the Sedro-Woolley Comprehensive Plan.

**Documents are available for review at:** The City of Sedro-Woolley Planning Department, 325 Metcalf Street, Sedro-Woolley, WA 98284, Monday through Friday, 8:00 AM to 5:00 PM. Environmental documents available include a SEPA checklist, stormwater report and critical areas report & wetland & buffer bank use plan. For more information, contact John Coleman at the Sedro-Woolley Planning Department at (360) 855-0771 or by email: [jcoleman@ci.sedro-woolley.wa.us](mailto:jcoleman@ci.sedro-woolley.wa.us).

**Public Comment Period:** The lead agency for this proposal has NOT yet made a threshold determination of whether or not the proposed project has a probable significant adverse impact on the environment. Interested persons may comment on the application and/or the anticipated SEPA determination, receive notice, participate in any hearings and request a copy of the decision. **Public comments must be received by 4:30 p.m. June 10, 2019** and should be submitted to the City of Sedro-Woolley Planning Department, 325 Metcalf Street, Sedro-Woolley, WA 98284. Comments may be mailed or personally delivered and should be as specific as possible. **This may be your only opportunity to comment on the environmental impacts of the proposed project.**

John Coleman, Planning Director  
City of Sedro-Woolley Planning Department

Published in Skagit Valley Herald on May 27, 2019



**REVISIONS**

DATE

**DATE:** 01/18/2019  
**DESIGN:**  
**DRAWN:** LCT  
**CHECKED:**

**SCALE:** AS SHOWN

**PROJECT NUMBER:**

**CEGX0006**

# NOTICE OF PUBLIC HEARING

**Tuesday, August 27, 2019 at 3:00PM**

Sedro-Woolley Municipal Courtroom  
325 Metcalf Street, Sedro-Woolley, WA 98284

Exhibit E Plat of Samish Estates
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**Application:** LP-2019-092, Plat of Samish Estates

**Applicant Contact:** Monte & Nicole Petersen, 528 F&S Grade Road, Sedro-Woolley, WA 98284

**Project Address:** 528 F&S Grade Road, Sedro-Woolley

**Project:** Proposed subdivision (long plat) of a 2.0 acre property on F&S Grade Road into seven residential lots. The back of the property is adjacent to Debbie Drive. Six proposed new lots will be accessed from Debbie Drive; the existing home will maintain its access from F&S Grade Road. The project includes construction of private shared driveways and stormwater infrastructure. There is an approximately 3,011 sf Category III wetland on the property that is proposed to be filled. Compensation for the impacts to the wetland and buffer include a Skagit Environmental Wetland Mitigation Bank credit purchase. File #LP-2019-092.

**Public Comment:** Interested persons may comment on the application, receive notice and participate in any hearings and request a copy of the decision. Written testimony may be submitted to: City of Sedro-Woolley Planning Department, ATTN: Planning Director, 325 Metcalf Street, Sedro-Woolley, Washington, 98284, or by email to [jcoleman@ci.sedro-woolley.wa.us](mailto:jcoleman@ci.sedro-woolley.wa.us) **until 2:30 PM of the date of the public hearing.**

**Documents are available for review at:** The City of Sedro-Woolley Planning Department, Monday through Friday, 8:00 AM to 4:30 PM. Project documents are available for review at no cost; copies will be provided at the requestor's cost. For more information, contact the Planning Department at (360) 855-0771. A staff report will be available seven days prior to the hearing.

**Hearing Examiner:** The Hearing Examiner will hold an open record public hearing on the proposed Preliminary Plat of Samish Estates at 3:00PM, **Tuesday, August 27, 2019** at the Sedro-Woolley Municipal Courtroom, 325 Metcalf Street. Based on the information presented to the Hearing Examiner and testimony at that hearing, the Hearing Examiner will make a recommendation to the City Council whether to approve, approve with conditions or deny preliminary approval of the proposed Preliminary Plat proposal.

**Notice Published:** Monday, August 12, 2019



**John Coleman**

---

**From:** Patrick Tuttle <a-ptuttle@expediagroup.com>  
**Sent:** Monday, June 3, 2019 3:39 PM  
**To:** John Coleman  
**Cc:** Patrick Tuttle  
**Subject:** RE: Regarding 528 F&S Grade Road Project

Exhibit F Plat of Samish Estates
-------------------------------------

To: City of Sedro Woolley Planning Department,

In regards to the 528 F&S Grade Road Project, we have the following concerns:

- Previous developments, notably the Klingerville development created a myriad of water draining issues affecting properties (specifically 603 F&S Grade Road and Adjacent Properties) resulting in yearly Winter flooding. After many consultations with the City of Sedro Woolley and various projects to clean the ditches, clear/replace drainage pipes, etc. the situation has become more bearable.
- Our concern is that any work on 528 F&S grade Road will have adverse effects on the wetlands/drainage situation and result in the mess that took us several years to get out of. We don't want to see another Klingerville drainage mess dumping into ours or nearby properties.
- We have privately spoken to acquaintance city engineers regarding this for advice and wish to make sure that the City of Sedro Woolley can fulfill a proper development plan and maintain or improve the drainage/flooding situation in the area of the development.

We appreciate your consideration in making Sedro Woolley a model example of development and consider the various home/land owners.

Regards,  
Patrick Tuttle  
P.O. Box 40205  
Bellevue, WA 98015-4205  
[a-ptuttle@expediagroup.com](mailto:a-ptuttle@expediagroup.com)

**From:** John Coleman <jcoleman@ci.sedro-woolley.wa.us>  
**Sent:** Thursday, May 30, 2019 11:28 AM  
**To:** Patrick Tuttle <a-ptuttle@expediagroup.com>  
**Subject:** RE: Regarding 528 F&S Grade Road Project

An email to this address is fine. Please include your name, address and email address in you letter.

*John Coleman, AICP  
Planning Director  
City of Sedro-Woolley  
360-855-0771*

---

**From:** Patrick Tuttle [<mailto:a-ptuttle@expediagroup.com>]  
**Sent:** Thursday, May 30, 2019 10:36 AM  
**To:** John Coleman  
**Subject:** Regarding 528 F&S Grade Road Project

Mr. Coleman,

We read over the proposal for the 528 F&S Grade Road project.

May we post our comments via email or do you require U.S. Postal Mail? If email is an option, what email address may we send them to.

Thank you so much,  
Patrick Tuttle

FW: Re. Plat at 528 F&S Grade Road

From: andynkito8@gmail.com

To: allcopiersystems1@yahoo.com

Date: Monday, June 10, 2019, 10:40 AM PDT



Sent from Outlook Mail for Windows 10 phone

Exhibit G  
Plat of Samish Estates

**From:** goododace@hotmail.com

**Sent:** Saturday, June 8, 2019 12:22 PM

**To:** andynkito8@gmail.com; warrenonlythebestwilldo@yahoo.com

**Subject:** Re. Plat at 528 F&S Grade Road

To John Coleman, Planning Director et al. Certain statements made in your notice may appear to be lacking total and adequate statement of facts. (1) has the State of Washington Department of Ecology been presented with a complete statement of the loss of bird habitat that the grade and fill by previous developer and in fact this proposed developer has already performed, possibly without proper procedure and permit. Also many trees have been removed also perhaps without permit. These issues have verbally been reported to you. (2) My understanding during that previous construction that the city would not ever allow further properties to utilize Debbie Road. This was the information that the engineer (not with the city any longer) and by the planning department verbally told me in conversation before I would 'sign off' on Eden Gardens. (3) unclear to me is how high will the city allow the developer to raise the surface height of the sites above and beyond the natural historic level. Included in this question has the developer already filled possibly without a permit or with Department of Ecology acknowledgement? (4) Does the Notice of Application meet state mandated timeframe of such? (paragraph 5) if these and other issues are not properly addressed there is a strong possibility that litigation in Thurston County may be necessary.

David Wiedenhoft, 312 Garden of Eden Rd, 98284

Sent from my Windows 10 phone

## NOTICE OF APPLICATION AND SEPA COMMENT PERIOD CITY OF SEDRO-WOOLLEY PLANNING DEPARTMENT

**Description of proposal/application:** The city has received an application for a proposed 7-lot subdivision of a 2.0 acre property on F&S Grade Road. The back of the property is also adjacent to Debbie Drive. The six proposed new lots will be accessed from Debbie Drive; the existing home will maintain its access from F&S Grade Road. The property is zoned Residential 7 and allows for single family residential lots of 6,000 square feet or larger. The project includes construction of private shared driveways and stormwater infrastructure. There is an approximately 3,011 sf Category III wetland on the property that is proposed to be filled. Compensation for the impacts to the wetland and buffer include a Skagit Environmental Wetland Mitigation Bank credit purchase. File #LP-2019-092.

**Proponent:** Monte & Nicole Peterson  
528 F&S Grade Road  
Sedro-Woolley, WA 98284

**Location of project, including street address if any:** 528 F&S Grade Road, Sedro-Woolley, WA 98284

**Environmental Review:** The optional DNS process in WAC 197-11-355 is being used. Agencies, tribes, and the public are encouraged to review and comment on the proposed project and its probable environmental impacts. The City of Sedro-Woolley has reviewed the proposed project for probable adverse environmental impacts and expects to issue a mitigated determination of non-significance (MDNS) for this project. The MDNS will likely include the following conditions and any other conditions that may be necessary to address concerns raised during this comment period:

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2. Comply with Northwest Clean Air Agency Regulations during construction activities;
3. Comply with the Sedro-Woolley Critical Areas Ordinance (Chapter 17.65 SWMC) and U.S. Army Corps of Engineers requirements for wetland fill and necessary off-site mitigation;
4. Any water discharged to the City stormwater system as a result of this project must be approved by and comply with conditions of the Public Works Department;
5. Provide a temporary erosion and sedimentation control plan for approval by the city engineer;
6. Lighting from the site shall be directed and/or shielded so as to not shine at the neighboring residential properties;
7. All construction traffic shall use temporary construction access as approved by the Public Works Department;
8. Obtain and comply with conditions of a NPDES stormwater general permit from the Department of Ecology;
9. Contribute police mitigation fees of \$505.76 per unit as per the residential unit fee calculation in the Capital Facilities Element of the City of Sedro-Woolley Comprehensive Plan; and
10. Construction shall comply with all local, state and federal regulations, including Sedro-Woolley Municipal Code Title 13.36 Stormwater Management Standards; Title 13.40 Stormwater Facilities Maintenance; Title 15.40 Public Works Construction Standards; Title 17 Zoning; Sedro-Woolley Public Works Design Standards and the Sedro-Woolley Comprehensive Plan.

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**Public Comment Period:** The lead agency for this proposal has NOT yet made a threshold determination of whether or not the proposed project has a probable significant adverse impact on the environment. Interested persons may comment on the application and/or the anticipated SEPA determination, receive notice, participate in any hearings and request a copy of the decision. **Public comments must be received by 4:30 p.m. June 10, 2019** and should be submitted to the City of Sedro-Woolley Planning Department, 325 Metcalf Street, Sedro-Woolley, WA 98284. Comments may be mailed or personally delivered and should be as specific as possible. **This may be your only opportunity to comment on the environmental impacts of the proposed project.**

John Coleman, Planning Director  
City of Sedro-Woolley Planning Department



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

*Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000  
711 for Washington Relay Service • Persons with a speech disability can call (877) 833-6341*

Exhibit H  
Plat of Samish Estates

June 10, 2019

John Coleman, Planning Director  
City of Sedro-Woolley  
325 Metcalf Street  
Sedro-Woolley, WA 98284

**Re: Samish Estates (Petersen-F & S Grade Road)**  
**File #LP-2019-092, Ecology SEPA #201902949**

Dear John Coleman:

Thank you for the opportunity to provide comments on the **Samish Estates (Petersen-F & S Grade Road)**. Based on review of the State Environmental Policy Act (SEPA) checklist associated with this Project, we offer the following comments:

**WATER QUALITY**

Stephanie Barney, (360) 255-4390, [Stephanie.Barney@ecy.wa.gov](mailto:Stephanie.Barney@ecy.wa.gov)

Stormwater runoff can have a significant impact on water quality, introducing sediment and other pollutants into waters of the state. Such pollutants can impair or eliminate aquatic habitat and prevent such waters from having multiple beneficial uses (e.g., fishing, swimming and drinking).

From the SEPA register, it appears this project **may** be subject to Ecology's National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit (CSGP).

**NPDES Construction Stormwater General Permit (CSGP)**

Permit coverage is necessary if construction activity meets the following criteria:

- Clearing, grading, and/or excavation results in a disturbance of one or more acres and discharges stormwater to surface waters of the State.
- Clearing, grading, and/or excavation on sites smaller than one acre that are a part of a larger common plan of development or sale also require coverage if the common plan of



development will ultimately disturb one acre or more and discharge stormwater to surface waters of the State.

- Forest practices, (including but not limited to class IV conversions) that are a part of a construction activity that will result in a disturbance of one or more acres, and discharge to surface waters of the State.

Information regarding the NPDES Construction Stormwater General Permit can be found at:  
<http://www.ecy.wa.gov/programs/wq/stormwater/construction/>

### **TOXICS CLEANUP PROGRAM**

Heather Vick, (425) 649-7064, [Heather.Vick@ecy.wa.gov](mailto:Heather.Vick@ecy.wa.gov)

There are 17 contaminated sites listed on Ecology's database within a 1-mile radius of this project location with all 17 sites at least 0.5 mile from the location. Five of the sites have received No Further Action determinations. All of the 17 sites are south of Brickyard Creek and are most likely hydraulically downgradient of this location and so potential dewatering during construction is unlikely to extract contaminated groundwater related to any of the listed sites.

Thank you for considering these comments from the Department of Ecology. If you have questions or would like to respond to these comments, please contact one of the commenters listed above.

Sincerely,



Katelynn Piazza  
SEPA Coordinator

Sent by email: John Coleman, [jcoleman@ci.sedro-woolley.wa.us](mailto:jcoleman@ci.sedro-woolley.wa.us)

ecc: Monte Petersen, Applicant  
Stephanie Barney, Ecology  
Heather Vick, Ecology

**SEPA ENVIRONMENTAL CHECKLIST**

Exhibit I Plat of Samish Estates
--

***Purpose of checklist:***

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

***Instructions for applicants:***

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

***Instructions for Lead Agencies:***

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

***Use of checklist for nonproject proposals:***

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements -that do not contribute meaningfully to the analysis of the proposal.

MAY - 3 2019

6 2019-002

**A. Background** [\[HELP\]](#)

1. Name of proposed project, if applicable:

*Samish Estates (Petersen-F & S Grade Road)*

2. Name of applicant:

*Monte Petersen*

3. Address and phone number of applicant and contact person:

*Monte Petersen  
528 F & S Grade Road  
Sedro-Woolley, WA 98248  
[themonteross@hotmail.com](mailto:themonteross@hotmail.com)  
(360) 661-5649*

4. Date checklist prepared:

*28 March 2019, revised April 23, 2019*

5. Agency requesting checklist:

*City of Sedro-Woolley*

6. Proposed timing or schedule (including phasing, if applicable):

*Construction will begin after acquisition of necessary permits as appropriate, potentially as early as summer 2019.*

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

*No*

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

*Aqua-Terr Systems, Inc. March 2019. Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan.*

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

*None known*



10. List any government approvals or permits that will be needed for your proposal, if known.

*Known permits that will be needed for the proposal include the following:*

- *Critical Area Permit (will be prepared and submitted by the client),*
- *Ecology Permit (JARPA will be prepared and submitted by ATSI),*
- *Corps Permit (JARPA will be prepared and submitted by ATSI),*
- *Stormwater Permit (will be prepared and submitted by the client),*
- *Building Permit (will be prepared and submitted by the client).*
- *Long Plat Subdivision Application to the City of Sedro Woolley (will be prepared and submitted by client).*

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

*The 2.00 acre site is located at 528 F & S Grade Road parcel number P37166 in Sedro-Woolley, Washington within a portion of Section 23, Township 35 north, Range 04 east, WM (see Attachment #1).*

*The proposed project is to sub divide an existing 2.00 acre lot into seven lots plus a stormwater tract. The project will add six detached starter homes with paved driveway access, utilities, and stormwater features (see Attachment #2).*

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

## **B. Environmental Elements** [\[HELP\]](#)

### **1. Earth** [\[help\]](#)

a. General description of the site:

*The site is generally flat (approximately 1% slope to north across the entire site) with a slight 3,011 square foot depression in the northeast portion of the site, which extends offsite to the east. (See Attachment #1).*

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other \_\_\_\_\_

b. What is the steepest slope on the site (approximate percent slope)?

*Approximately 10%*

- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

*Per the USDA NRCS Web Soils map, the site includes one soil type: 92 Minkler silt loam, 0 to 3 percent slopes, not listed as hydric. The soil description is listed below.*

*Map Unit: 92 Minkler silt loam, 0 to 3 percent slopes*

*Component: Minkler (100%)*

*The Minkler component makes up 100 percent of the map unit. Slopes are 0 to 3 percent. This component is on river valleys, terraces. The parent material consists of alluvium and glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 8 percent. Nonirrigated land capability classification is 5w. This soil does not meet hydric criteria.*

*The soils observed were similar to the mapped NRCS soil units.*

*Soils were sampled in two plots within the site. The soils present within Data Plot 1 satisfied hydric soil indicators and are therefore hydric. The soils present within Data Plot 2 did not satisfy hydric soil indicators and are therefore upland soils.*

#### *Wetland*

*The soils sampled had two layers. From 0 to 8 inches the matrix color of the first layer was colored 10YR 2/1 with a mucky silt texture. From 8 to 20 inches, 90 percent of the matrix was colored 10YR 4/2 with 10 percent prominent soft mass concentrations within the matrix colored 10YR 3/6. This second soil layer had a silt texture. These soils satisfy hydric soil indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3) and are therefore hydric soils.*

#### *Upland*

*The soils sampled had two layers. From 0 to 14 inches the matrix color of the first layer was colored 10YR 2/2 with a loam texture. From 14 to 20 inches, 99 percent of the matrix was colored 10YR 4/2 with 1 percent prominent soft mass concentrations within the matrix colored 10YR 5/8. This second soil layer had a silt loam texture. These soils did not satisfy hydric soil indicators and are therefore upland soils.*

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.  
None known

- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

*Site clearing and grading will occur over a 1.4 acre area that will be redeveloped for the new lots - see Attachment #2. The site will be filled to enable surface water and the stormwater conveyance system*

pipe to gravity drain to a stormwater pond to be constructed in the southeast corner of the site. Approximately 3,800 cubic yards (CY) of material will be used to fill the site. As part of the overall site fill, approximately 223 cubic yards of material will be used to fill 3,011 square feet (0.07 acre) of wetland to a depth of 2 feet (see Attachment #4, Figure 6). Approximately 800 CY of soil will be excavated to construct the 4,800 sf pond. This excavated material will be used as fill if suitable.

The fill material will be suitable and will be supplied by an approved local source. Fill will be conducted with heavy equipment including, but not limited to, dump truck, back hoe, dozer, and/or roller. Additional, standard grading will be conducted for the remainder of the site.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

The potential for erosion as a result of clearing, construction, or use is low as the site is generally flat. In addition, temporary surface water quality impacts associated with stormwater runoff that may result from the proposed project will be minimized by constructing in the dry period and utilizing control measures.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 30%.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Temporary surface water quality impacts associated with stormwater runoff that may result from the proposed project will be minimized by constructing in the dry period and utilizing control measures such as, but not limited to, silt fencing, brush barriers, straw bale dams, sediment ponds/traps, etc. as directed by the engineer and outlined in the Stormwater Pollution Prevention Plan.

## 2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Potential air emissions include:

- Dust as a result of clearing and grading during construction.
- Asphalt preparation for access roads.
- Painting of streets and starter homes.
- Vehicle exhaust.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.  
None known

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

BMPs, as appropriate, will be adhered to minimize/control impacts to air quality.



**3. Water** [\[help\]](#)**a. Surface Water:** [\[help\]](#)

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

*A 12,666 square foot Category III Wetland A is located on and adjacent to the northeast portion of the site, 3,011 square feet onsite. The onsite portion of the wetland was delineated by ATSI and surveyed by Ronald T. Jepson and Associates. The offsite portion of the wetland was estimated by ATSI. The Cowardin class of the entire wetland is PEME and the HGM class is depressional closed (see Attachment #4, Figure 6).*

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

*Yes. The proposed project includes 3,011 square feet of wetland fill (see Attachments #4 and #5, Figures 5 and 6). As a biological critical area, i.e. wetland, and its buffer are located within and adjacent to the site, mitigation sequencing steps were taken to avoid and minimize project related impacts to the maximum extent practical. Impacts to the wetland located within the site are unavoidable results of the proposed project. The resultant impacts are necessary to accommodate an efficient and economically viable residential site design aimed at meeting a local and regional need for detached starter homes and infill.*

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

*Approximately 223 cubic yards of material will be used to fill 3,011 square feet (0.07 acre) of wetland to a depth of 2 feet (see Attachment #5, Figure 6). The fill material will be suitable and will be supplied by an approved local source. Fill will be conducted with heavy equipment including, but not limited to, dump truck, back hoe, dozer, and/or roller. Additional, standard grading will be conducted for the remainder of the site.*

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

*No surface water withdrawals or diversions are proposed.*

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

*The area is not mapped, and the site appears to be right on the border of the historical FEMA which shows the area as Zone X.*

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

*No waste materials will be discharged into surface waters.*

b. Ground Water: [\[help\]](#)

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

*No ground water will be withdrawn and no water will be discharged to ground water as part of this proposal. One exception to this could be temporary dewatering for infrastructure installation should conditions require it.*

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

*No ground discharge is proposed.*

## c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

*The source of water runoff will be stormwater from rooftops and driveways. Stormwater runoff will be captured in a stormwater system consisting of catch basins and conveyance pipe and routed to a combined stormwater treatment and detention pond. This facility will be designed in accordance with the City and Department of Ecology stormwater requirements. Treated and detained water discharged from the pond will be released into the F&S Grade roadside ditch in accordance with the site's existing overall drainage pattern. The F&S Grade ditch flows northwest through existing ditches and culverts to the Samish River Basin.*

*The existing drainage system west of the site should be minimally impacted by the proposed improvements and will continue to drain as in the current conditions. Off-site runoff east of the site will still drain towards the small depression near the midpoint of the site's east property line. However, to provide a release for any ponded water east of the project site, the project will install a stormwater conveyance system along the property line that will route any surface water to the F&S Grade Road ditch. The F&S Grade Road ditch will be extended to the southeast corner of the project site to capture and convey this runoff northwest per the current conditions -see Attachment #2.*

- 2) Could waste materials enter ground or surface waters? If so, generally describe.  
No

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

*The proposed grading will fill the portion of an existing depression on the project site to which on-site and off-site runoff currently drains. As discussed in the response to Item 3.c.(1) above, the proposed improvements will maintain the current drainage pattern west of the site. A new drainage system will capture and runoff east of the site that flows to the site. This captured runoff will be routed to the existing roadside ditch on F&S Grade Road.*

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

*See response to Items 3.c.(1) and (3) above.*

**4. Plants** [\[help\]](#)

a. Check the types of vegetation found on the site:

- ☒ deciduous tree: alder, maple, aspen, other
- ☒ evergreen tree: fir, cedar, pine, other
- ☒ shrubs
- ☒ grass
- ☐ pasture
- ☐ crop or grain
- ☐ Orchards, vineyards or other permanent crops.
- ☒ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- ☐ water plants: water lily, eelgrass, milfoil, other
- ☒ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

*Vegetation that is currently within the site that will be removed or altered is primarily mowed grass with a row of ornamental trees along the eastern boundary, deciduous trees on the northern portion, and emergent wetland on the northeast portion (see Attachment #4, Figure 6. All of the beforementioned vegetation will be removed.*

c. List threatened and endangered species known to be on or near the site.

*ATSI did not observe species of local importance, priority species, or Endangered Species Act listed, proposed, candidate, delisted, or species of concern that have a primary association with habitat on or near the site.*

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

*Native landscaping will be used in the proposed yards as feasible.*

e. List all noxious weeds and invasive species known to be on or near the site.

*Invasive reed canarygrass (Phalaris arundinacea) and Himalayan blackberry (Rubus armeniacus) are on and near the site.*

## 5. **Animals** [help]

- a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other:

mammals: deer, bear, elk, beaver, other:

fish: bass, salmon, trout, herring, shellfish, other \_\_\_\_\_

*Observed on and/or near the site and/or likely animals that could utilize the site include aquatic and terrestrial invertebrates and insects, reptiles, amphibians, passerine birds, song birds, deer, coyote, squirrel, rabbit, racoon, opossum, mice, voles, moles, etc.*

- b. List any threatened and endangered species known to be on or near the site.

*ATSI did not observe species of local importance, priority species, or Endangered Species Act listed, proposed, candidate, delisted, or species of concern that have a primary association with habitat on or near the site.*

- c. Is the site part of a migration route? If so, explain.

*Yes, all of Western Washington is part of the Pacific Flyway.*

- d. Proposed measures to preserve or enhance wildlife, if any:

*Potential native landscape plantings for wildlife food, shelter, etc.*

- e. List any invasive animal species known to be on or near the site.

*None known*

## 6. **Energy and Natural Resources** [help]

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

*During the construction process, gas/oil powered construction equipment will be operated. The proposed detached starter homes will utilize natural gas.*

- b. Would your project affect the potential use of solar energy by adjacent properties?  
If so, generally describe.

*No*

- c. What kinds of energy conservation features are included in the plans of this proposal?  
List other proposed measures to reduce or control energy impacts, if any:



*None proposed at this time beyond those required by building code. The project design does not preclude the implementation of other energy conservation features.*

## **7. Environmental Health** [\[help\]](#)

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal?  
If so, describe.  
*None known*

- 1) Describe any known or possible contamination at the site from present or past uses.  
*None known*

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.  
*None known*

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

*All potential toxic or hazardous chemicals will be properly stored during the construction process. There will be no lingering toxic or hazardous chemicals located onsite post construction.*

- 4) Describe special emergency services that might be required.

*No special emergency services will be required. Typical impacts on regular fire, police and other emergency services will be generated by the new residences.*

- 5) Proposed measures to reduce or control environmental health hazards, if any:

*Gas/oil powered construction equipment will be used only when necessary and oil/gas will be conserved to the maximum extent practical. Temporary surface water quality impacts associated with stormwater runoff that may result from the proposed project will be minimized by constructing in the dry period and utilizing control measures such as, but not limited to, silt fencing, brush barriers, straw bale dams, sediment ponds/traps, etc. as directed by the engineer and outlined in the Stormwater Pollution Prevention Plan.*

### **b. Noise**

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

*Vehicle noise from adjacent streets*



- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

*During construction heavy equipment and construction activities will generate noise during daylight working hours. During occupancy noise will be typical for residential uses.*

- 3) Proposed measures to reduce or control noise impacts, if any:

*Local noise ordinances will be adhered to during and post construction.*

## **8. Land and Shoreline Use** [\[help\]](#)

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

*The zoning designation for the site has been planned under guidelines and regulations for the local zoning, Residential 7, which allows for seven residences per acre. The proposed land use will adhere to the local zoning guidance.*

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

*The property may have been used as farmland or forest land in the past. Site is currently being used by one residence, majority of the land is undeveloped.*

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

*Not applicable*

- c. Describe any structures on the site.

*Structures within the site include an existing home, shop, and other outbuildings to be retained as part of the proposed development.*

- d. Will any structures be demolished? If so, what?

*No*

- e. What is the current zoning classification of the site?

*Residential 7*

f. What is the current comprehensive plan designation of the site?

*Residential 7 per City of Sedro Woolley Comprehensive Plan*

g. If applicable, what is the current shoreline master program designation of the site?

*Not applicable*

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

*A 12,666 square foot Category III Wetland A is located on and adjacent to the northeast portion of the site, 3,011 square feet onsite. The onsite portion of the wetland was delineated by ATSI and surveyed by Ronald T. Jepson and Associates. The offsite portion of the wetland was estimated by ATSI. The Cowardin class of the entire wetland is PEME and the HGM class is depressional closed. The wetland has a 50 foot Sedro-Woolley regulated buffer (see Attachment #4, Figure 6).*

i. Approximately how many people would reside or work in the completed project?

*Approximately 15*

j. Approximately how many people would the completed project displace?

*None*

k. Proposed measures to avoid or reduce displacement impacts, if any:

*None needed or proposed*

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

*The zoning designation for the site has been planned under guidelines and regulations for the local zoning, Residential 7, which allows for 7 residences per acre. The proposed land use will adhere to the local zoning guidance.*

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

*None needed or proposed*

## **9. Housing** [\[help\]](#)

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

*Six additional detached starter homes will be constructed as part of the project and will be considered low income housing.*

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

*None*

- c. Proposed measures to reduce or control housing impacts, if any:

*None needed or proposed.*

**10. Aesthetics** [\[help\]](#)

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

*Height not to exceed what is allowed by City of Sedro Woolley zoning.*

- b. What views in the immediate vicinity would be altered or obstructed? *None known*

- b. Proposed measures to reduce or control aesthetic impacts, if any:

*The proposed starter homes will be similar to the surrounding area and will not adversely affect the aesthetics of the area.*

**11. Light and Glare** [\[help\]](#)

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

*The proposal will result in six additional residential units. These homes will have indoor lighting and access to and from the homes will require vehicle lights. This additional lighting will not have an adverse effect on the surrounding area as the site is within an existing urban environment.*

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

*No, it is unlikely that light or glare could interfere with views or present a safety hazard.*

- c. What existing off-site sources of light or glare may affect your proposal?

*None*

- d. Proposed measures to reduce or control light and glare impacts, if any:

*Appropriate screening mechanisms for lights, landscaping and other design considerations will be taken to reduce the impact of light or glare.*

**12. Recreation** [\[help\]](#)

- a. What designated and informal recreational opportunities are in the immediate vicinity?

*The nearest park is Bingham City Park, which is approximately 0.4 mile to the south.*

- b. Would the proposed project displace any existing recreational uses? If so, describe.

*No*

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

*Not applicable*

### **13. Historic and cultural preservation** [\[help\]](#)

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

*None known.*

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

*None known.*

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

*The Washington State Department of Archeology & Historic Preservation's webpage*

*"Washington Information System for Architectural and Archaeological Records Data*

*(WISAARD)" website was reviewed. The site, like most of the Sedro-Wooley city limits, is labeled "Survey Highly Advised: High Risk".*

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

*Proposed measures to compensate for loss and disturbance to resources include off site mitigation through the Department of Ecology, Army Corp of Engineers, and a local wetlands mitigation bank to ensure that what is compensated for at a 1:1 ratio at a different location.*

### **14. Transportation** [\[help\]](#)

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

*The existing home, shop, and other outbuildings are accessed from F & S Grade Road at the southern end of the site. The proposed six detached starter homes will be accessed via Debbie Drive in the northeast corner of the site.*

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

*The site is not served by public transit; however, a Sedro-Woolley Park and Ride is 0.5 miles to the south of the site.*

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

*The project would have at a minimum the number of parking spaces required by zoning. No parking spaces would be eliminated by the project.*

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

*Debbie Drive will be altered to facilitate access to the homes (see Attachment #2).*

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

*No*

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

*According to the ITE manual, approximately 67 vehicular trips per day will be generated by the completed project. Approximately 8.4 pm peak hour trips will be generated.*

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

*No*

- h. Proposed measures to reduce or control transportation impacts, if any:

*Client will pay transportation impact fees at the time of building permits.*

## **15. Public Services** [\[help\]](#)



- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Yes, project would require these services commensurate with 6 additional single family residential units.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

Payment of real-estate taxes by owners to contribute towards general city tax revenues.

#### 16. Utilities [help]

- a. Circle utilities currently available at the site: Underlined below

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other \_\_\_\_\_

- c. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

City of Sedro-Woolley sewer, city trash/recycling, Puget Sound Energy electricity, Cascade Natural Gas, Skagit PUD/water, and local communications, Frontier and or Comcast.

#### C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: \_\_\_\_\_

Name of signer \_\_\_\_\_

Position and Agency/Organization \_\_\_\_\_

Date Submitted: \_\_\_\_\_

#### D. Supplemental sheet for nonproject actions [HELP]

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:



2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

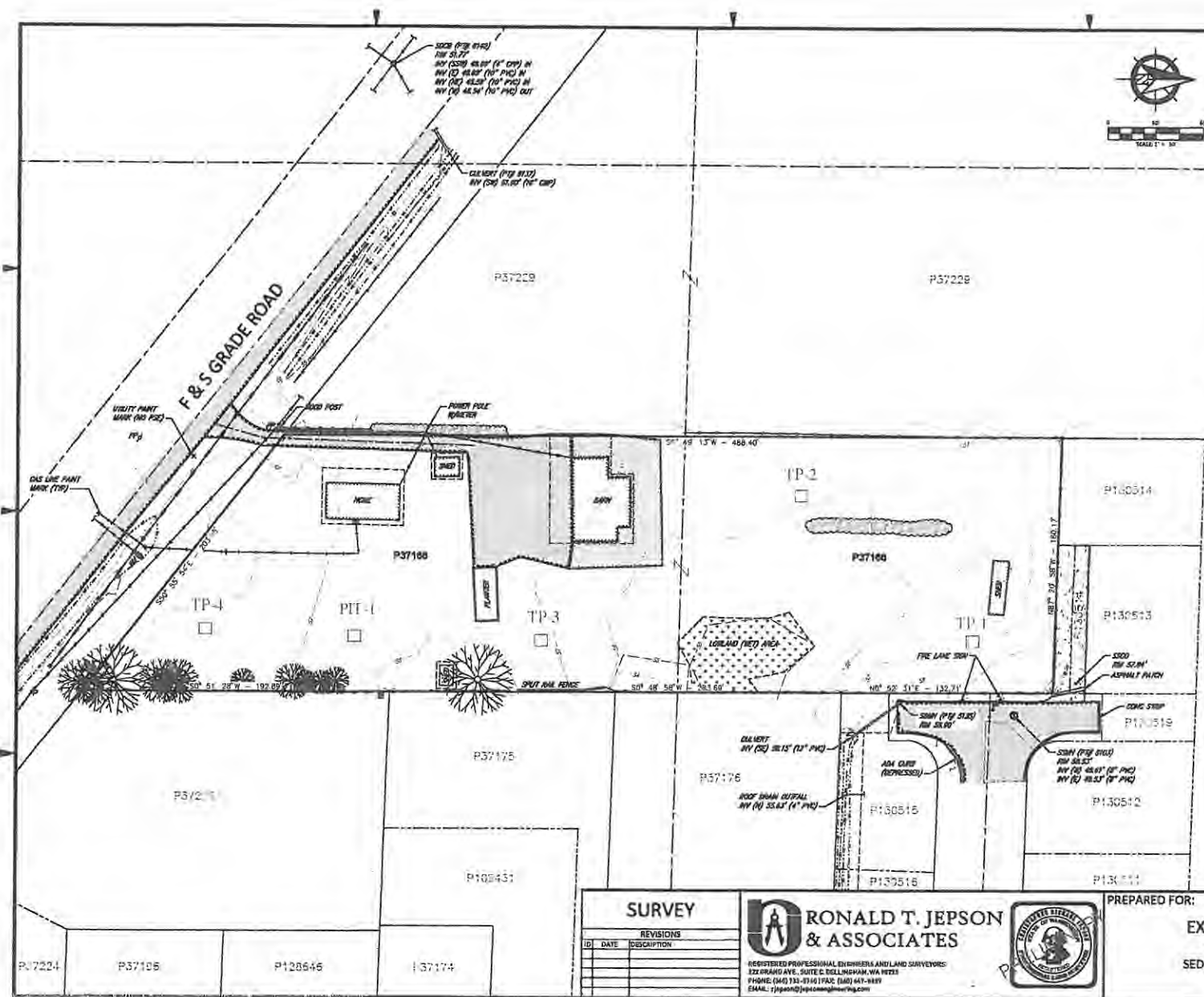
6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

**ATTACHMENTS:**

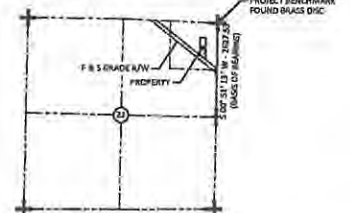
1. Figure 1, *Existing Conditions, Preliminary Stormwater Site Plan, Samish Estates Long Plat, 528 F & S Grade Road, Sedro-Woolley, Washington*, Cascade Engineering Group, March 2019.
2. Figure 2, *Developed Conditions, Preliminary Stormwater Site Plan, Samish Estates Long Plat, 528 F & S Grade Road, Sedro-Woolley, Washington*, Cascade Engineering Group, March 2019.
3. Figure 5, *Aerial Photograph & Proposed Conditions, Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan*, Aqua-Terr Systems, Inc. March 2019
4. Figure 6, *Aerial Photograph & Proposed Impacts, Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan*, Aqua-Terr Systems, Inc. March 2019



**HORIZONTAL DATUM**  
NAD83  
NE CORNER SECTION 23, TOWNSHIP 35 NORTH, RANGE 4 EAST, W.M. AS PROJECT BENCHMARK.

**VERTICAL DATUM**  
NAD83  
PROJECT BENCH MARK (PER AD0463) - ELEVATION 39.37'

**BASIS OF BEARING**  
WELD BEARING OF 8 MP 11° 13' W. 2,802.22' BETWEEN FOUND BRASS DISC AT NE CORNER OF SECTION 23 (INTERSECTION OF GARDEN OF EDEN ROAD & EAST KENNE ROAD) AND THE FOUND BRASS DISC AT THE EAST MID-SECTION POINT OF SECTION 23 (INTERSECTION OF GARDEN OF EDEN ROAD AND COOK ROAD).



**LEGAL DESCRIPTION**  
COMMENCEMENT AT A POINT 487 FEET WEST AND 425 FEET SOUTH OF THE NORTHEAST CORNER OF THE NORTHEAST 1/4 OF THE NORTH EAST 1/4 OF SECTION 23, TOWNSHIP 35 NORTH, RANGE 4 EAST, W.M.;

THENCE RUN SOUTH 454 FEET TO THE FAIRHAVEN AND SOUTHERN RAILWAY RIGHT-OF-WAY; THENCE RUN ON AN ANGLE SOUTHEAST PARALLEL WITH THE SAID RIGHT-OF-WAY A DISTANCE OF 200 FEET; THENCE RUN NORTH 830 FEET; THENCE WEST 350 FEET TO THE PLACE OF BEGINNING.

ALL UTILITIES IN SKAGIT COUNTY, WASHINGTON.

- FEATURE LEGEND**
- CONTOUR (MAJOR W/ ELEV)
  - CONTOUR (MINOR)
  - TOP OF SLOPE
  - TOP OF SLOPE
  - FENCE LINE (WIRE MESH)
  - FENCE LINE (SPLIT RAIL)
  - FENCE LINE (BARBED WIRE)
  - STORM DRAIN LINE
  - COMMUNICATIONS LINE (UNDERGROUND)
  - POWER LINE (OVERHEAD)
  - GAS LINE
  - WATER LINE
  - POWER POLE
  - POWER VAULT
  - FUEL TANK
  - CATCH BASIN (STORM)
  - MANHOLE (SEWER)
  - UNDERGROUND UTILITY (SURFACE MARKED)
  - SIGN
  - ASPHALT PAVEMENT
  - CONCRETE PAVEMENT
  - GRAVEL PAVEMENT
  - LOWLAND AREA (WET)
  - VEGETATED AREA (SHRUBS, BUSHES, TREES)

**BURIED UTILITIES NOTE:**  
ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE IN APPROXIMATE LOCATIONS ONLY AND THERE IS NO GUARANTEE THAT ALL UTILITIES ON THIS SITE ARE SHOWN. THE CONTRACTOR MUST FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT THE WASHINGTON STATE UTILITY LOCATE CENTER AT 1-800-455-4545 AT LEAST 48 HOURS BEFORE CONSTRUCTION.



<p><b>SURVEY</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	DATE	DESCRIPTION																<p><b>RONALD T. JEPSON &amp; ASSOCIATES</b></p> <p>REGISTERED PROFESSIONAL ENGINEERS AND LAND SURVEYORS 322 GRAND AVE., SUITE C, BELLINGHAM, WA 98225 PHONE: (360) 735-0146 FAX: (360) 641-1877 EMAIL: rj@ronaldtjepson.com</p>	<p>PREPARED FOR: MONTE PETERSON</p> <p><b>EXISTING CONDITIONS</b> 528 F &amp; S GRADE ROAD SEDRO WOOLLEY, WASHINGTON</p> <p><b>FIGURE 1</b></p>	<p>PROJ. NO.: 13078</p> <p>ISSUED: 05/27/2014</p> <p>FIELD NO.: 13-028</p> <p>DRAWN BY: M. SPARKLING</p> <p>CHECKED BY: C. JEPSON</p> <p>SHEET NO.: 1 of 1</p>
NO.	DATE	DESCRIPTION																			

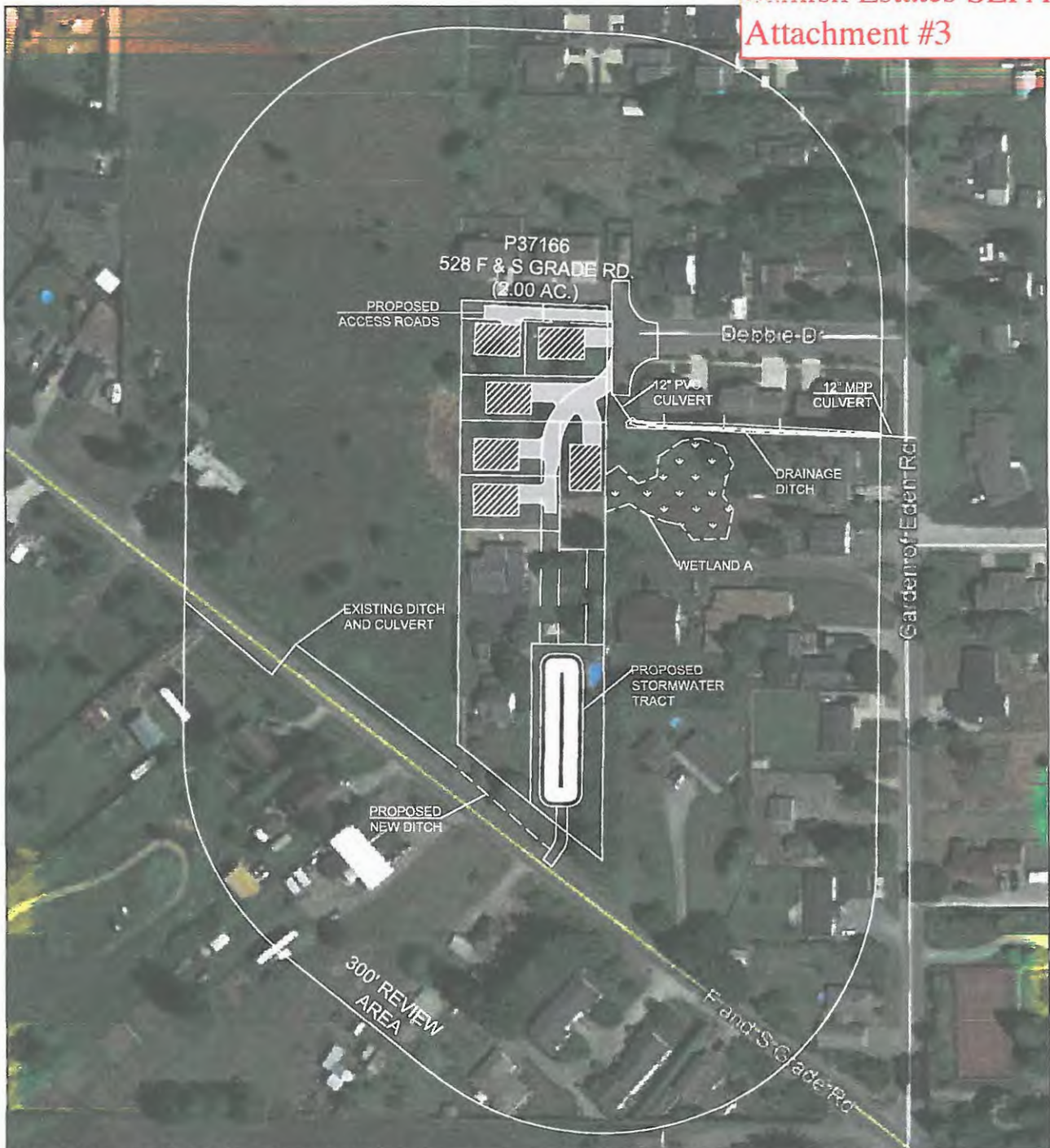
REVISIONS	DATE

DATE: 03/20/2019  
 DESIGN:  
 DRAWN: LCP  
 CHECKED:  
 SCALE: AS SHOWN  
 PROJECT NUMBER: CEGX0006


SHEET NO.

# FIG. 2





**Figure 5. Aerial Photograph & Proposed Conditions**  
Petersen-F & S Grade Rd.  
Parcel Number: P37166  
528 F & S Grade Road, Sedro-Woolley, Washington  
Section 23, Township 35 N, Range 04 E, WM  
March 2019

 Proposed Detached Starter Homes (6 Units)

1" = 160'  
0' 160'



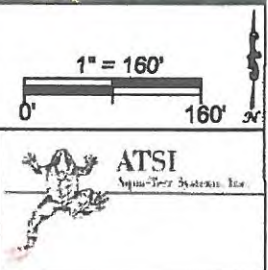
**Note.** Basemap obtained from Google Earth (Imagery Date: 24 July 2017). The onsite wetland boundaries were delineated by ATSI. The onsite wetland boundaries, property boundaries were surveyed by Ronald T. Jepson and Associates. The proposed conditions were provided by Cascade Engineering Group. The offsite portion of the wetland is approximate and does not constitute a legal land survey.





**Figure 6. Aerial Photograph & Proposed Impacts**  
Petersen-F & S Grade Rd.  
Parcel Number: P37186  
528 F & S Grade Road, Sedro-Woolley, Washington  
Section 23, Township 35 N, Range 04 E, WM  
March 2019

	Location of Surveyed (Bold Line) and Approximated (Dashed Line) Cat. III PEME Depressional Closed Wetland (Wetland A) that will not be impacted (0.18 ac.)
	Wetland A Indirect Paper Fill Impacts (0.04 ac.)
	Wetland A Direct Fill Impacts (0.07 ac.)
	Wetland Buffer Direct Impacts (0.14 ac.)



**Note.** Basemap obtained from Google Earth (Imagery Date: 24 July 2017). The onsite wetland boundaries were delineated by ATSI. The onsite wetland boundaries, property boundaries were surveyed by Ronald T. Jepson and Associates. The offsite portion of the wetland is approximate and does not constitute a legal land survey.

**CITY OF SEDRO-WOOLLEY**  
**SEPA Notice of Threshold Determination**  
**Mitigated Determination of Non-significance (MDNS)**

Exhibit J  
Plat of Samish Estates

**Description of proposal/application:** A proposed 7-lot subdivision of a 2.0 acre property on F&S Grade Road. The back of the property is adjacent to Debbie Drive. The six proposed new lots will be accessed from Debbie Drive; the existing home will maintain its access from F&S Grade Road. The property is zoned Residential 7 and allows for single family residential lots of 6,000 square feet or larger. The project includes construction of private shared driveways and stormwater infrastructure. There is an approximately 3,011 sf Category III wetland on the property that is proposed to be filled. Compensation for the impacts to the wetland and buffer include a Skagit Environmental Wetland Mitigation Bank credit purchase. File #LP-2019-092

**Proponent:** Monte & Nicole Peterson  
528 F&S Grade Road  
Sedro-Woolley, WA 98284

**Location of project:** 528 F&S Grade Road, Sedro-Woolley, WA 98284

**Environmental Review:** The City of Sedro-Woolley, lead agency for this proposal, has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist, a Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan and other information on file with the lead agency. This information is available to the public on request. This determination is based upon the following mitigation being provided by the applicant:

1. Provide mitigation for project related impacts to the wetland and buffer per the Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan submitted by ATSI and in accordance with Chapter 17.65SWMC;
2. Hours of construction shall be limited to 7:00 a.m. to 9:00 p.m. weekdays and 8:00 a.m. to 9:00 p.m. weekends as required in SWMC 9.46.020;
3. Comply with Northwest Clean Air Agency Regulations during construction activities;
4. Lighting from the site shall be directed and/or shielded so as to not shine at the neighboring residential properties;
5. All construction traffic shall use temporary construction access as approved by the Public Works Department;
6. Contribute police impact fees of \$505.76 per unit as per the residential unit fee calculation in the Capital Facilities Element of the City of Sedro-Woolley Comprehensive Plan; and
7. Obtain and comply with conditions of a NPDES stormwater general permit from the Department of Ecology.

The lead agency previously issued a comment period for this proposal under the optional DNS process in WAC 197-11-355. There is no further comment period on this threshold determination. Per SWMC 2.88.170, you may appeal this threshold determination in writing to the City of Sedro-Woolley Planning Department within 14 days from date of publication. Written appeals and appeal fees must be submitted by 4:30 p.m. **Friday, August 16, 2019.** Contact the Planning Director at the City of Sedro-Woolley, 325 Metcalf Street, Sedro-Woolley,



Washington, 98284 or electronically at [jcoleman@ci.sedro-woolley.wa.us](mailto:jcoleman@ci.sedro-woolley.wa.us) to read or ask about the procedures for SEPA appeals.

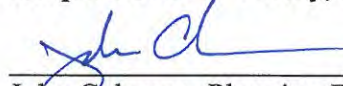
**Responsible SEPA Official:** Planning Director – City of Sedro-Woolley

**Contact Person:** John Coleman, Planning Director

**Address:** 325 Metcalf Street, Sedro-Woolley, WA 98284

**Date of Issue and publication:** Friday, August 2, 2019

**Signature:**

  
\_\_\_\_\_  
John Coleman, Planning Director

Per SWMC 2.88.170, you may appeal this threshold determination in writing to the City of Sedro-Woolley Planning Department no later than **August 16, 2019**. Written appeals must be submitted, along with the required fee, to the Planning Department, City of Sedro-Woolley, 325 Metcalf Street, Sedro-Woolley, WA, 98284. You should be prepared to make specific factual objections. Contact the Planning Department to read or ask about the procedures for SEPA appeals.

**Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan:**  
Petersen – F & S Grade Road  
Sedro-Woolley, Washington

Exhibit K  
Plat of Samish Estates

February 2019

**Prepared for:**  
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**ATSI**  
Aqua-Terr Systems, Inc.

**Wetland Critical Areas Assessment Report & Wetland & Buffer Bank Use Plan:**  
Petersen – F & S Grade Road  
Sedro-Woolley, Washington

February 2019

**Prepared for:**

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## RESPONSIBLE PARTIES

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### Client/Permit Applicant

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### Appendix A. Data Forms

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### LIST OF ABBREVIATIONS & ACRONYMS

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Aqua-Terr Systems, Inc. (ATSI)  
Bachelor of Science (BS)  
Certified Ecological Restoration Practitioner (CERP)  
Clean Water Act (CWA)  
Critical Areas Ordinance (CAO)  
Hydrogeomorphic (HGM)  
Information for Planning and Consultation (IPaC)  
Master of Science (MS)  
Natural Heritage Program (NHP)  
National Wetlands Inventory (NWI)  
National Wetland Plant List (NWPL)  
Natural Resources Conservation Service (NRCS)  
Ordinary High Water Mark (OHWM)  
Palustrine Emergent Persistent Seasonally Flooded (PEM1C)  
Palustrine Emergent Seasonally Flooded/Saturated (PEME)  
Priority Habitat and Species (PHS)  
Professional Certification Program (PCP)  
Professional Wetland Scientist (PWS)  
Proposed Similarity of Appearance (Threatened) (PSAT)  
Riverine Intermittent Streambed Seasonally Flooded (R4SBC)  
Society of Wetland Scientists (SWS)  
United States Army Corps of Engineers (Corps)  
United States Environmental Protection Agency (USEPA)  
United States Fish and Wildlife Service (USFWS)  
Washington State Department of Ecology (Ecology)  
Washington State Department of Natural Resources (WDNR)  
Water Quality Certification (WQC)  
Water Resource Inventory Area (WRIA)  
Web Soil Survey (WSS)  
Western Washington University (WWU)  
Wetland Professional in Training (WPIT)  
Wetlands of High Conservation Value (WHCV)  
Willamette Meridian (WM)

## 1.0 EXECUTIVE SUMMARY

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Our client, Mr. Monte Petersen, is proposing to construct six detached starter homes with paved driveway access, utilities, and stormwater features on his property. The 2.00 acre property is located at 528 F & S Grade Road parcel number P37166 in Sedro-Woolley, Washington within a portion of Section 23, Township 35 north, Range 04 east, WM. ATSI has prepared this wetland critical areas assessment report and wetland and buffer bank use plan for impacts that will result from the proposed project. The plan component has been prepared to satisfy the City of Sedro-Woolley, Skagit Environmental Wetland Mitigation Bank, Corps, and Ecology with regards to impacts by utilizing the bank for mitigation.

The property is surrounded by single family homes on less than an acre to the north and east, F & S Grade Road to the south, and a single family home on more than an acre to the west. Vegetation within the property is primarily mowed grass with a row of ornamental trees along the eastern property boundary. A PEME depressional closed wetland is on the northeast portion of the property and continues offsite to the east. Wetland A is dominated by reed canarygrass with sparse black cottonwood and Douglas's spiraea dispersed throughout the wetland unit. Structures within the property include an existing home, shop, and other outbuildings to be retained as part of the proposed development. Topography within the property is generally flat with a slight topographic depression within the northeast portion of the property, i.e. Wetland A.

Wetland A is a Category III with a City of Sedro-Woolley regulated 50 foot buffer. The wetland is approximately 12,666 square feet in size with 3,011 square feet of the wetland located within the property. The onsite portion of the wetland was delineated by ATSI and surveyed by Ronald T. Jepson and Associates. The offsite portion of the wetland was estimated by ATSI. The Cowardin class of the entire wetland is PEME and the HGM class is depressional closed.

As a biological critical area, i.e. wetland, and its buffer are located within and adjacent to the property, mitigation sequencing steps were taken to avoid and minimize project related impacts to the maximum extent practical. Impacts to the wetland located within the property are unavoidable results of the proposed project. The resultant impacts are necessary to accommodate an efficient residential site design aimed at meeting a local and regional need for detached starter homes and infill.

An analysis of alternatives was conducted, and several site plans were evaluated to accommodate the wetland and its associated buffer, including a no action alternative, but no design met the needs of the client and/or Sedro-Woolley development requirements for the proposed six additional lots, such as access, property setbacks, regional need, and infill. The current proposed project was determined to be the least environmentally damaging practicable alternative capable of achieving the project's desired intent.

Compensation for project related impacts to the wetland (water quality, hydrologic, and habitat functions) and buffer includes a Skagit Environmental Wetland Mitigation Bank credit purchase. The mitigation ratio used to calculate the total number of bank credits

needed to compensate for direct wetland impacts was obtained from Sedro-Woolley's CAO. As Wetland A is a Category III, a 2:1 ratio is proposed for impacts and therefore, to mitigate for 0.07 acre of direct wetland fill impacts, 0.14 wetland credits will be purchased. Per Ecology's guidance, a 0.5:1 ratio is recommended for wetland impacts as "paper fill". Therefore, to mitigate for 0.04 acre of indirect wetland "paper fill" impacts, 0.02 wetland credits will be purchased. Per Sedro-Woolley's guidance, wetland buffer impacts will be compensated for at a 1:1 ratio. Therefore, to mitigate for 0.14 acre of wetland buffer impacts, 0.14 wetland buffer credits will be purchased. Per the guidelines described above, 0.16 wetland credits and 0.14 wetland buffer credits will be purchased to offset impacts from the proposed project.

## 2.0 INTRODUCTION

This Wetland Critical Areas Assessment Report and Wetland and Buffer Bank Use Plan describes the existing conditions of the property in the context of biological critical areas, the proposed project, and proposed mitigation (Figures 1 through 7).

## 3.0 METHODS

### 3.1 GENERAL

The biological critical areas in this document were evaluated utilizing the methods set forth in the Sedro-Woolley CAO, Chapter 17.65: 17.65 Regulations for Critical Areas (City of Sedro-Woolley 26 September 2018). Review, reconnaissance, data collection, and critical area identification were conducted on the property and within the 300 foot review area (Figure 2). This Wetland Critical Areas Assessment Report and Wetland and Buffer Bank Use Plan has been prepared to document the existing conditions of the property in the context of biological critical areas, the proposed project, and proposed mitigation. It was prepared using regulatory guidance which included the documents published by Ecology, Corps, Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Ecology, Corps, and USEPA March 2006), Wetland Mitigation in Washington State, Part 2: Developing Mitigation Plans (Ecology, Corps, and USEPA March 2006), and Using Credits from Wetland Mitigation Banks: Guidance to Applicants on Submittal Contents for Bank Use Plans (Ecology, Corps, USEPA 18 August 2010).

#### 3.1.0 Preliminary Review

Preliminary data review of public resource documents was performed to provide initial information on the potential vegetation, soil, hydrology, and critical areas located on and adjacent to the property. These resources included, but were not limited to:

- Google Earth aerial photographs (Google Earth 2018)
- NRCS WSS maps (NRCS WSS)
- USFWS NWI maps (USFWS 22 November 2016)

#### 3.1.1 Reconnaissance

ATSI performed a site visit on 26 April 2018 by Karla Gallina and former ATSI employee Sigrid Williams to assess the property for biological critical areas, including wetlands. A wetland was delineated by ATSI and surveyed by Ronald T. Jepson and Associates (Figure 2). Aerial photographs were used for orientation and to assist in locating potential

biological critical areas. Data on topography, vegetation, soils, hydrology, wildlife, and habitat were observed and recorded and have been synthesized into this report.

### 3.1.2 Data Collection

Data were collected utilizing the methods set forth in the Corps, Wetland Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (Corps May 2010) as accepted by Ecology. Data on vegetation, soil, and hydrology were recorded on data forms (Appendix A).

#### 3.1.2.0 Vegetation

In general, hydrophytic vegetation is present when the plant community is dominated by species that can tolerate prolonged inundation or soil saturation during the growing season. In most cases, hydrophytic vegetation decisions are based on the wetland indicator status which include Facultative (FAC), Facultative Wetland (FACW), Obligate (OBL), Facultative Upland (FACU), Upland (UPL), No Indicator (NI), No Occurrence (NO), and Not Listed (NL) as defined in the NWPL (Corps 2016).

The percent cover of the dominant plant species is estimated, and the indicator status of each species is determined for each stratum (e.g. tree, woody vine, sapling/shrub, and herb strata) within a 30 foot radius plot for the tree and woody vine strata and a 5 foot radius plot for the sapling/shrub and herb strata. Plot size and shape are modified to reflect site conditions. Vegetation characteristics are recorded on data forms (Appendix A).

The hydrophytic vegetation indicators include the Rapid Test, Dominance Test, Prevalence Test, Morphological Adaptations, Wetland Non-Vascular Plants, and Problematic Hydrophytic Vegetation.

#### 3.1.2.1 Soil

Hydric soils are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper portion (upper 12 inches). Onsite soils are described from a 20 inch (+/-), hand-dug soil pit. Soil characteristics, including hydric soil characteristics and indicators such as redoxymorphic features, if present, and color determined using Munsell Soil Color Charts (Munsell 2009), are examined within the soil profile. Soil characteristics are recorded on data forms (Appendix A).

The hydric soil indicators pertinent to our area include Histosol (A1), Histic Epipedon (A2), Black Histic (A3), Hydrogen Sulfide (A4), Depleted Below Dark Surface (A11), Thick Dark Surface (A12), Sandy Mucky Mineral (S1), Sandy Gleyed Matrix (S4), Sandy Redox (S5), Stripped Matrix (S6), Loamy Mucky Mineral (F1), Loamy Gleyed Matrix (F2), Depleted Matrix (F3), Redox Dark Surface (F6), Depleted Dark Surface (F7), Redox Depressions (F8), Muck (A10), Red Parent Material (TF2), and Very Shallow Dark Surface (TF12).



Multiple additional test holes/pits were dug for quick reference of soil conditions of which data were not recorded.

#### 3.1.2.2 Hydrology

Wetland hydrology is present when direct or indirect indicators of seasonal or permanent soil saturation or inundation are observed. Hydrology characteristics are recorded on data forms (Appendix A).

Primary indicators of wetland hydrology include Surface Water (A1), High Water Table (A2), Saturation (A3), Water Marks (B1), Sediment Deposits (B2), Drift Deposits (B3), Algal Mat or Crust (B4), Iron Deposits (B5), Surface Soil Cracks (B6), Inundation Visible on Aerial Imagery (B7), Sparsely Vegetated Concave Surface (B8), Water Stained Leaves (B9), Salt Crust (B11), Aquatic Invertebrates (B13), Hydrogen Sulfide Odor (C1), Oxidized Rhizospheres along Living Roots (C3), Presence of Reduced Iron (C4), Recent Iron Reduction in Tilled Soils (C6), Stunted or Stressed Plants (D1). Secondary Indicators of wetland hydrology include Water Stained Leaves (B9), 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), and Frost-Heave Hummocks.

Multiple additional test holes/pits were dug for quick reference of hydrology conditions of which data were not recorded.

#### 3.1.2.3 Wetland Delineation

Wetlands were delineated utilizing the guidance provided in the delineation manual and supplement (Environmental Laboratory 1987 and Corps May 2010). Pink wetland delineation flags were tied around existing vegetation and pin flags were placed in the ground with said points mapped by Ronald T. Jepson and Associates (Figure 2). Offsite portions of wetlands were approximated by ATSI.

#### 3.1.2.4 Wetland Classification

Wetlands are classified using the methodology provided in Cowardin's, Classification of Wetlands and Deepwater Habitats of the United States and Brinson's, A Hydrogeomorphic Classification for Wetlands (Cowardin 1979 and Brinson 1993).

#### 3.1.2.5 Wetland Categorization

Wetlands in this report were categorized using the 2014 update for the Washington State Wetland Rating System for Western Washington (Hruby 2014). This system considers the HGM class of the wetland (Brinson 1993), sensitivity to disturbance, significance of the wetland, it's degree of rarity, replacement potential, and functions the wetland provides. When wetlands extend off, or are located adjacent to the property, NWI maps and best professional judgment are used. Categorizing information is recorded on wetland rating forms (Appendix B).

### 3.1.2.6 Wetland Functions & Attributes

Wetland functions were evaluated using the 2014 update for the Washington State Wetland Rating System for Western Washington (Hruby 2014).

### 3.1.3 Qualifications

ATSI staff includes Jim Wiggins, Karla Gallina, Nathan Goldschmidt, Kelly Werdick, and Nicholas Denk whose qualifications are as follows (resumes available upon request). Both Mr. Wiggins and Mrs. Gallina are PWSs certified by the SWS PCP and have completed training from the Ecology on the 2004 Wetland Rating System for Western Washington (Hruby 2004). Mrs. Gallina is a CERP certified through Society of Ecological Restorations CERP Program. Mr. Goldschmidt is a WPIT certified by the SWS PCP. Mrs. Gallina is qualified to rate wetlands per the Washington State Wetland Rating System for Western Washington: 2014 Update and to write Biological Assessments per Washington State Department of Transportation requirements (Senior Author) (Hruby 2014). Mr. Wiggins, Ms. Gallina, and Mr. Goldschmidt have completed Ecology training for Determining the OHWM (Ecology October 2016). We complete relevant workshops and courses to maintain their PWS/WPIT statuses and to have a current understanding of the best available science.

Jim Wiggins, MS, PWS Emeritus is a senior biologist for ATSI. Mr. Wiggins has a MS degree in ecology from WWU and has been a biologist with ATSI since 1988. Karla Gallina, BS, PWS, CERP president/senior biologist of ATSI is an ACAD specialist, technical writer and editor, and project manager. Mrs. Gallina has a BS degree in natural resources/environmental science from Paul Smith's College in New York State and has been a biologist with ATSI since 2008. Nathan Goldschmidt, BS, WPIT, associate biologist with ATSI is a field and ACAD technician and technical writer. Mr. Goldschmidt has a BS in biology from WWU and has been an associate biologist with ATSI since November 2016. Ms. Werdick has a BS in environmental science from WWU and has been an associate biologist with ATSI since May 2018. Mr. Denk has a BS in environmental science from WWU and has been an associate biologist with ATSI since June 2018.

## 4.0 RESULTS

### 4.1 GENERAL

The 2.00 acre property is surrounded by single family homes on less than an acre to the north and east, F & S Grade Road to the south, and a single family home on more than an acre to the west (Figures 1 and 2). Vegetation within the property is primarily mowed grass with a row of ornamental trees along the eastern property boundary (Figure 2). A PEME depressional closed wetland is on the northeast portion of the property and continues offsite to the east (Figure 2). Wetland A is dominated by reed canarygrass with sparse black cottonwood and Douglas's spiraea dispersed throughout the wetland unit (Figure 2). Structures within the property include an existing home, shop, and other outbuildings to be retained as part of the proposed development (Figure 2). Topography within the property is generally flat with a slight topographic depression within the northeast portion of the property, i.e. Wetland A (Figure 1).

Wetland A is approximately 12,666 square feet in size with 3,011 square feet of the wetland located within the property (Figure 2). The onsite portion of the wetland was delineated by ATSI and surveyed by Ronald T. Jepson and Associates. The offsite portion of the wetland was estimated by ATSI. The Cowardin class of the entire wetland is PEME and the HGM class is depressional closed (Figure 2).

#### 4.1.0 Vegetation

##### 4.1.0.0 Observations

Vegetation within the property is primarily mowed grass with a row of ornamental trees along the eastern property boundary (Figure 2). A PEME depressional closed wetland is on the northeast portion of the property and continues offsite to the east (Figure 2). Wetland A is dominated by reed canarygrass with sparse black cottonwood and Douglas's spiraea dispersed throughout the wetland unit (Figure 2). Representative vegetation was sampled and is described below and on data forms (Appendix A).

##### *Wetland Vegetation*

Representative wetland vegetation was sampled within the property (Data Plot 1; Figure 2). Data Plot 1 serves as a wetland paired plot to upland Data Plot 2.

Black cottonwood (*Populus balsamifera*; FAC) was present in the tree stratum.

There were no species present in the sapling/shrub stratum.

Reed canarygrass (*Phalaris arundinacea*; FACW) was present in the herb stratum.

There were no species present in the woody vine stratum.

##### *Upland Vegetation*

Representative upland vegetation was sampled within the property (Data Plot 2; Figure 2). Data Plot 2 serves as an upland paired plot to wetland Data Plot 1.

The species present in the tree stratum include Douglas fir (*Pseudotsuga menziesii*; FACU), Pacific crab apple (*Malus fusca*; FACW), and western red cedar (*Thuja plicata*; FAC).

There were no species present in the sapling/shrub stratum.

Common dandelion (*Taraxacum officinale*; FACU) was present in the herb stratum.

There were no species present in the woody vine stratum.

#### 4.1.1 Soil

##### 4.1.1.0 Observations

The soils observed were similar to the mapped NRCS soil units.

Soils were sampled in two plots within the property. The soils present within Data Plot 1 satisfied hydric soil indicators and are therefore hydric. The soils present within Data Plot 2 did not satisfy hydric soil indicators and are therefore upland soils (Appendix A: Data Plots 1 and 2; Figure 2).

#### *Wetland*

The soils sampled had two layers. From 0 to 8 inches the matrix color of the first layer was colored 10YR 2/1 with a mucky silt texture. From 8 to 20 inches, 90 percent of the matrix was colored 10YR 4/2 with 10 percent prominent soft mass concentrations within the matrix colored 10YR 3/6. This second soil layer had a silt texture. These soils satisfy hydric soil indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3) and are therefore hydric soils (Appendix A: Data Plot 1; Figure 2).

#### *Upland*

The soils sampled had two layers. From 0 to 14 inches the matrix color of the first layer was colored 10YR 2/2 with a loam texture. From 14 to 20 inches, 99 percent of the matrix was colored 10YR 4/2 with 1 percent prominent soft mass concentrations within the matrix colored 10YR 5/8. This second soil layer had a silt loam texture. These soils did not satisfy hydric soil indicators and are therefore upland soils (Appendix A: Data Plot 2; Figure 2).

#### 4.1.1.1 NRCS WSS Map

The property includes one soil type: 92 Minkler silt loam, 0 to 3 percent slopes, not listed as hydric (NRCS WSS) (Figure 3). The soil description is listed below.

Map Unit: 92 Minkler silt loam, 0 to 3 percent slopes

Component: Minkler (100%)

The Minkler component makes up 100 percent of the map unit. Slopes are 0 to 3 percent. This component is on river valleys, terraces. The parent material consists of alluvium and glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 8 percent. Nonirrigated land capability classification is 5w. This soil does not meet hydric criteria.

#### 4.1.2 Hydrology

##### 4.1.2.0 Water Regime

Wetland A is located within the Lower Skagit/Samish watershed within WRIA 3 (Ecology 21 December 2016): Hydrology within the property is diverted east via ditches towards Garden of Eden Road. Hydrology is then diverted south along Garden of Eden Road where it feeds into Brickyard Creek which flows southwest into the Skagit River. The Skagit River flows west and outlets into Skagit Bay.

#### 4.1.2.1 Observations

Hydrology is supplied by direct precipitation and overland flow (Figure 2). While there is a drainage ditch to the north, Wetland A does not outflow/inflow to said ditch (Figure 2).

##### *Wetland*

Wetland Data Plot 1 satisfied wetland hydrology indicators High Water Table (A2) and Algal Mat or Crust (B4) (Appendix A: Data Plot 1; Figure 2).

##### *Upland*

Upland Data Plot 2 did not satisfy wetland hydrology indicators (Appendix A: Data Plot 2; Figure 2).

#### 4.1.3 Habitat and Species

##### 4.1.3.0 Observations

The property and review area are comprised of highly developed residential/agriculture land use (Figure 2). There is potential for the property and review area to provide habitat to a variety of wildlife species including amphibians, birds, reptiles, aquatic and terrestrial insects, and small mammals due to the presence of uplands and a PEME depressional closed wetland (Figure 2). ATSI did not observe species of local importance, priority species, or Endangered Species Act listed, proposed, candidate, delisted, or species of concern that have a primary association with habitat on the property or within the review area.

##### 4.1.3.1 USFWS

###### *IPAC*

With regards to IPAC listed species within the property and review area; IPaC lists marbled murrelet (*Brachyramphus marmoratus*), streaked horned lark (*Eremophila alpestris strigata*), yellow-billed cuckoo (*Coccyzus americanus*), Oregon spotted frog (*Rana pretiosa*), and bull trout (*Salvelinus confluentus*) as threatened species. Dolly varden (*Salvelinus malma*) is listed as PSAT and is considered threatened based on its similarity of appearance to other threatened species. The North American wolverine (*Gulo gulo luscus*) is listed as proposed threatened for this region. Though these species have formal listings with IPaC, no designated critical habitat was observed on the property or within the review area (IPAC 2018).

##### 4.1.3.2 WDNR

###### *WHCV Map*

Per the WDNR NHP WHCV Map, no WHCV are located within the Section/Township/Range of the property and review area (WDNR December 2015).

##### 4.1.3.3 WDFW

###### *SalmonScape*

Per WDFW's SalmonScape map, no fish bearing streams are located on the property or within the review area (WDFW 2015 SalmonScape).

## PHS

Per the WDFW PHS program, PHS mapped on the property and within the review area include a freshwater emergent wetland in the approximate location where ATSI delineated and estimated the location of Wetland A. ATSI agrees with the description and approximate location of the wetland displayed on the PHS map. However, ATSI has mapped the location of this wetland in a slightly different location (WDFW 2015 PHS; Figure 2).

### 4.1.3.4 Sedro-Woolley

Per Sedro-Woolley's CAO, a PEME depressional closed wetland is on the northeast portion of the property and continues offsite to the east, i.e. Wetland A. ATSI agrees with the description and approximate location of the wetland displayed by Sedro-Woolley. However, ATSI has mapped the location of this wetland in a slightly different location (City of Sedro-Woolley 26 September 2018; Figure 2).

### 4.2.0 Wetland

A wetland, Wetland A, was identified on and adjacent to the northeast portion of the property (Figure 2).

#### 4.2.0.0 Field Observations, Classification, & Categorization

ATSI delineated a portion of, and approximated the remainder, of an approximate 0.29 acre Category III PEME depressional closed wetland within the northeast portion of the property and within 300 feet of the property boundary (Figure 2). Hydrology is supplied to the wetland by direct precipitation.

#### 4.2.0.1 Functions & Attributes

Wetland functions were evaluated using the 2014 update for the Washington State Wetland Rating System for Western Washington and summarized below (Hruby 2014; Appendix B; Table 1).

Overall, the wetlands had a moderate rating for function (Table 1).

Table 1. Wetland Functions 2014			
FUNCTION	Water Quality	Hydrologic	Habitat
Site Potential	Moderate	Moderate	Low
Landscape Potential	Moderate	High	Low
Value	High	High	Low

The wetland rated moderate for **water quality**:

- Moderate site potential due to being within a depression with no outlet with moderate seasonal ponding and plant coverage.
- Moderate landscape potential due to adjacent pollutant sources but the absence of septic within 250 feet of the wetland unit.
- High value due to the poor condition of the watershed.



The wetland rated high for **hydrologic**:

- Moderate site potential due to being within a depression with no outlet, the relatively moderate basin size, and minimal depth of storage.
- High landscape potential due to proximity of development and adjacent excess runoff sources.
- High value due to flood issues immediately downstream of the wetland unit.

The wetland rated low for **habitat**:

- Low site potential due to the lack of plant community species and hydroperiods (seasonally flooded/saturated, no interspersions, and no special habitat features).
- Low landscape potential due to the lack of adjacent, accessible habitat.
- Low value due to the lack of habitat valued species.

#### 4.2.0.2 USFWS NWI Map

Per the USFWS NWI map, a PEM1C wetland is mapped within the northeast portion of the property. The PEM1C mapped within the northeast portion of the property is in the approximate location where ATSI delineated and estimated the location of Wetland A. ATSI agrees with the description and approximate location of the wetland displayed on the USFWS NWI map. However, ATSI has mapped the location of this wetland in a slightly different location (USFWS 22 November 2016; Figures 2 and 4).

In addition, a PEM1C wetland is mapped in the northwest portion of the review area (USFWS 22 November 2016; Figure 4). ATSI did not witness indicators of wetlands where said wetland was mapped.

Lastly, a R4SBC wetland is mapped parallel to the southern side of F & S Grade Road. ATSI disagrees with this assessment as no wetland indicators were observed near the location of where said R4SBC is mapped (USFWS 22 November 2016; Figure 4).

### 4.3 REGULATIONS

#### 4.3.0 City of Sedro-Woolley

ATSI delineated a portion and estimated the remainder of an approximate 0.29 acre Category III PEME depressional closed wetland on and adjacent to the northeast portion of the property and within 300 feet of the property boundary. Said wetland has a City of Sedro-Woolley regulated 50 foot buffer (City of Sedro-Woolley 26 September 2018; Figure 2).

#### 4.3.1 Ecology

Ecology reviews all permits received by the Corps for WQC. Ecology has authority over discharge into all wetlands and streams and can impose buffers and compensatory mitigation for impacts. WQC is required for all Individual Permit applications.

#### 4.3.2 Corps

Corps requires notification for all disturbances to wetlands, streams, and potentially other drainages. Corps regulates Waters of the United States, which includes wetlands, streams, and other surface waters.

### 5.0 PROJECT

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#### 5.1 PROPOSED

Our client, Mr. Monte Petersen, is proposing to construct six detached starter homes with paved driveway access, utilities, and stormwater features on his property (Figure 5). For project related critical area impacts, mitigation is proposed (Figure 6 and 7).

##### 5.1.0 Location

The property is located at 528 F & S Grade Road parcel number P37166 in Sedro-Woolley, Washington within a portion of Section 23, Township 35 north, Range 04 east, WM (Figures 1 and 2).

##### 5.1.1 Type

The land use type is “household, single family residence, inside city” (Skagit County 2019). Structures within the property include an existing home, shop, and other outbuildings that will be retained as part of the proposed development (Figure 2). The land use type of the property will remain the same; however, six additional starter homes will be built on the property (Figure 5).

##### 5.1.2 Size

The property is 2.00 acres in size (Figure 2).

##### 5.1.3 Schedule

The proposed project is scheduled to be constructed as soon as applicable permits are obtained, at a time sufficient to minimize temporary surface water quality impacts associated with erosion.

##### 5.1.4 Equipment

The equipment to be used includes excavators, dump trucks, bulldozers, and rollers.

##### 5.1.5 Staging

The proposed project construction equipment staging, and storage areas will be on the existing disturbed areas within the property.

##### 5.1.6 Access

The existing home, shop, and other outbuildings are accessed from F & S Grade Road at the southern end of the property (Figures 2 and 5). The proposed six detached starter homes will be accessed via Debbie Drive in the northeast corner of the property (Figure 5).

## 5.2 SITE

### 5.2.0 Ownership

The property is owned by Monte Petersen.

### 5.2.1 Land Uses & Zoning Designations

#### 5.2.1.0 Historic

The historic zoning designation and land use for the property is not known.

#### 5.2.1.1 Current

The zoning designation for the property has been planned under guidelines and regulations for the local zoning - Residential 7, which allows for 7 residences per acre (City of Sedro-Woolley 4 June 2016).

### 5.2.2 Wetlands

A PEME depressional closed wetland is on the northeast portion of the property and continues offsite to the east. Wetland A is a Category III with a City of Sedro-Woolley regulated 50 foot buffer (City of Sedro-Woolley 26 September 2018). The wetland is approximately 12,666 square feet in size with 3,011 square feet of the wetland located within the property. The onsite portion of the wetland was delineated by ATSI and surveyed by Ronald T. Jepson and Associates. The offsite portion of the wetland was estimated by ATSI. The Cowardin class of the entire wetland is PEME and the HGM class is depressional closed (Figure 2).

## 6.0 IMPACTS

Impacts will occur as a result of the proposed project (Figures 5 and 6). The impact areas, landscape positions, functions and attributes, and water quality are discussed in this section.

### 6.1 IMPACT AREAS

The proposed project will result in 3,011 square feet (0.07 acre) of Category III direct wetland fill. As the proposed direct wetland fill will occur to the property boundary, thus eliminating a suitable 50 foot wetland buffer, 1,869 square feet (0.04 acre) of Category III indirect wetland "paper fill" is proposed. Lastly, 5,982 square feet (0.14 acre) of wetland buffer impact is proposed (Figure 6; Table 2).

Table 2. Summary of Proposed Impacts.								
Wetland Identifier	Total Wetland Area (acres)	Direct Wetland Fill (acres)	Indirect Wetland Paper Fill (acres)	Wetland Buffer Impacts (acres)	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
A	0.29	0.07	0.04	0.14	PEME	III	III	Depressional Closed

### 6.2 LANDSCAPE POSITIONS

Wetland A is located within a shallow depression not greater than two feet in depth (Figure 2).

### 6.3 CATEGORIZATION

Wetland A is rated as a Category III (Appendix B).

### 6.4 FUNCTIONS & ATTRIBUTES

The overall value of the functions and attributes of Wetland A was moderate, and independently, water quality was moderate, hydrologic was high, and habitat functions were low (Appendix B).

### 6.5 WATER QUALITY

No water quality issues associated with Wetland A are recorded.

### 7.0 MITIGATION

Wetland A is regulated by the Corps, Ecology, and City of Sedro-Woolley. The following mitigation for impacts was designed to meet the requirements by said entities.

### 7.1 SEQUENCING

Mitigation sequencing steps were taken to avoid and minimize project related impacts to the maximum extent practicable. The portion impacts that could not be avoided will be compensated for with offsite bank mitigation at the Skagit Environmental Wetland Mitigation Bank (Figure 7).

#### 7.1.0 Avoidance & Minimization

As a biological critical area, i.e. wetland, and its buffer are located within and adjacent to the property, mitigation sequencing steps were taken to avoid and minimize project related impacts to the maximum extent practical (Figure 2). The proposed impacts are unavoidable results of the proposed project (Figure 6). The resultant impacts are necessary to accommodate an efficient residential site design aimed at meeting a local and regional need for detached starter homes and infill. Several site plans were evaluated that would accommodate the wetland and its associated buffer, including a no action alternative, but none resulted in a site plan that met the needs of the client and/or Sedro-Woolley's development requirements, such as access and property setbacks, to the proposed six additional lots.

#### 7.1.1 Alternatives Analysis

The goal of the project is to construct detached starter homes utilizing an efficient residential site design aimed at meeting a local and regional need for detached starter homes and infill. The location of the proposed project was selected as the property is owned by the client, Monte Petersen. The acquisition of a new property by the client to achieve the project goal would be cost prohibitive and would jeopardize the project. In addition, the parcel is zoned as Residential 7 which accommodates our client's goal of constructing six detached starter homes on his property (City of Sedro-Woolley 4 June 2016; Figure 5).

An alternative would be to eliminate one or more starter homes from the proposed project to avoid the wetland impacts. However, our client can currently only accommodate seven of the possible 14 residences per Sedro-Woolley zoning due to the physical constraints

of the existing home, the configuration of the lot, and the need for a stormwater detention pond (City of Sedro-Woolley 4 June 2016; Figures 2 and 5). Eliminating another unit would be antithetical to Sedro-Woolley's goal of infilling and would jeopardize the financial viability of the project. This project will only be viable if offsite mitigation is possible. Due to the small site area, and the size and moderate quality of this wetland, off site mitigation for filling the entire wetland area is proposed.

A final alternative would be a no action alternative. This alternative however would not permit the client to achieve the project, and the City of Sedro-Woolley would lose an opportunity to further their goal of infilling and providing detached starter homes.

## 7.2 BANK

Compensation for impacts to the wetland (water quality, hydrologic, and habitat function) and buffer includes a Skagit Environmental Wetland Mitigation Bank credit purchase (Figures 6 and 7).

### 7.2.0 Rationale

Wetland A is a moderately functioning Category III wetland with a City of Sedro-Woolley regulated 50 foot buffer (City of Sedro-Woolley 26 September 2018; Figure 2). Wetland A rated moderately for hydrologic function as it is within a closed depression and is vegetated with persistent plants but receives minimal potential pollutants. Wetland A rated high for water quality functions because it is in a basin where there are existing water quality issues with shallow ponding. The wetlands rated low for habitat function. There is no interspersions of habitats within the wetland unit, minimal plant diversity and the unit is located within a highly developed landscape. The 50 foot wetland buffer on the property currently consists of a row of trees including Douglas fir, Pacific crab apple, and western red cedar, moss, mowed lawn and existing structural footprints (Figure 2).

It is proposed that credits from the bank be used for mitigating the wetland and wetland buffer impacts resulting from the proposed project. The project is located within the banks service area and credits are available for sale (Figure 7). Utilizing the bank is the only feasible offsite option as it is located within the same watershed as Wetland A, onsite mitigation is not possible because there is limited available upland area within the property and our client does not own adjacent properties.

The wetland/wetland buffer mitigation needs of the proposed project, including replacement of the impacted water quality, hydrologic, and habitat functions, correspond with the purpose of the bank which generates credits to compensate for unavoidable adverse impacts to the aquatic environment that occur as a result of permitted projects within the service area of the bank.

### 7.2.1 Bank Wetland Functions

The credits purchased from the Skagit Environmental Wetland Mitigation Bank will be used to help restore and preserve 396 acres of critical floodplain habitat. This bank will enhance wetland processes in a way that contributes to achieving a net functional gain, while successfully supporting economic and social development for our generation and

for generations to come. The Skagit Environmental Bank will improve ecological conditions in the lower Skagit watershed (Skagit Environmental Bank 2013). Wetland A currently provides a moderate level of wetland functions. Wetland A's buffer is currently developed and impacted. The bank will replace the moderate level functions of Wetland A to the higher level of function of the bank and will replace the developed, impacted 50 foot buffer with high functioning forested buffer.

### 7.2.2 Proposed Credits

The mitigation ratio used to calculate the total number of bank credits needed to compensate for direct wetland impacts was obtained from Sedro-Woolley's CAO (City of Sedro-Woolley 26 September 2018; Table 3).

<b>Table 3. Credits Recommended for Wetland Impacts</b>	
<b>Category of Impacted Wetland</b>	<b>Credit Recommended per Impact Acre</b>
I	6:1
II	3:1
III	2:1
IV	1.5:1

As Wetland A is a Category III, a 2:1 ratio is proposed for impacts and therefore, to mitigate for 0.07 acre of direct wetland fill impacts, 0.14 wetland credits will be purchased. Per Ecology's guidance, a 0.5:1 ratio is recommended for wetland impacts as "paper fill" (Ecology April 2005). Therefore, to mitigate for 0.04 acre of indirect wetland "paper fill" impacts, 0.02 wetland credits will be purchased. Per Sedro-Woolley's guidance, wetland buffer impacts will be compensated for at a 1:1 ratio of impact to enhancement. Therefore, to mitigate for 0.14 acre of wetland buffer impacts, 0.14 wetland buffer credits will be purchased. Per the guidelines described above, 0.16 wetland credits and 0.14 wetland buffer credits will be purchased to offset impacts from the proposed project (City of Sedro-Woolley 26 September 2018; Table 4).

<b>Table 4. Summary of Proposed Wetland Mitigation for Wetland A (Cat. III) Impacts</b>		
<b>Area of Proposed Impact in Acres (Impact Type)</b>	<b>Ratio (mitigation: impact)</b>	<b>Bank Mitigation Credits (Type)</b>
0.07 (Direct wetland fill)	2:1	0.14 (Wetland)
0.04 (Indirect wetland paper fill)	0.5:1	0.02 (Wetland)
0.14 (Wetland buffer)	1:1	0.14 (Wetland buffer)
<b>Totals:</b>		<b>0.16 (Wetland) 0.14 (Wetland buffer)</b>

### 7.2.3 Credit Purchase Timing

The purchase of credits is currently being expedited. The final sale will not occur until the relevant permits for wetland impacts have been issued. Prior to impacting the project wetlands, proof of purchase (e.g. bill of sale) will be submitted to the project managers for Ecology, Corps, and the City of Sedro-Woolley.



## 8.0 SUMMARY

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Our client, Mr. Monte Petersen, is proposing to construct six detached starter homes with paved driveway access, utilities, and stormwater features on his property (Figure 5). Wetland A is a Category III with a City of Sedro-Woolley regulated 50 foot buffer (Figure 2). The wetland is approximately 12,666 square feet in size with 3,011 square feet of the wetland located within the property (Figure 2).

As a biological critical area, i.e. wetland, and its buffer are located within and adjacent to the property, mitigation sequencing steps were taken to avoid and minimize project related impacts to the maximum extent practical. Impacts to the wetland located within the property are unavoidable results of the proposed project (Figures 2, 5 and 6). The resultant impacts are necessary to accommodate an efficient residential site design aimed at meeting a local and regional need for detached starter homes and infill.

An analysis of alternatives was conducted, and several site plans were evaluated to accommodate the wetland and its associated buffer, including a no action alternative, but no design met the needs of the client and/or Sedro-Woolley development requirements for the proposed six additional lots, such as access, property setbacks, regional need, and infill. The current proposed project was determined to be the least environmentally damaging practicable alternative capable of achieving the project's desired intent.

Compensation for project related impacts to the wetland (water quality, hydrologic, and habitat function) and buffer includes a Skagit Environmental Wetland Mitigation Bank credit purchase (Figures 6 and 7). The mitigation ratio used to calculate the total number of bank credits needed to compensate for direct wetland impacts was obtained from Sedro-Woolley's CAO (City of Sedro-Woolley 26 September 2018; Table 3). As Wetland A is a Category III, a 2:1 ratio is proposed for impacts and therefore, to mitigate for 0.07 acre of direct wetland fill impacts, 0.14 wetland credits will be purchased. Per Ecology's guidance, a 0.5:1 ratio is recommended for wetland impacts as "paper fill" (Ecology April 2005). Therefore, to mitigate for 0.04 acre of indirect wetland "paper fill" impacts, 0.02 wetland credits will be purchased. Per Sedro-Woolley's guidance, wetland buffer impacts will be compensated for at a 1:1 ratio. Therefore, to mitigate for 0.14 acre of wetland buffer impacts, 0.14 wetland buffer credits will be purchased. Per the guidelines described above, 0.16 wetland credits and 0.14 wetland buffer credits will be purchased to offset impacts from the proposed project (City of Sedro-Woolley 26 September 2018; Table 4).

## 9.0 LIMITATIONS

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We have used the most current, established methods to make determinations as to the location, size, and types of biological critical areas located on the property and within the review area. The above statements are based on our best professional judgment. Although we follow the local, state, and federal criteria, we cannot guarantee their determination will correspond with ours. Please note that regulations pertaining to critical areas are subject to change over time.

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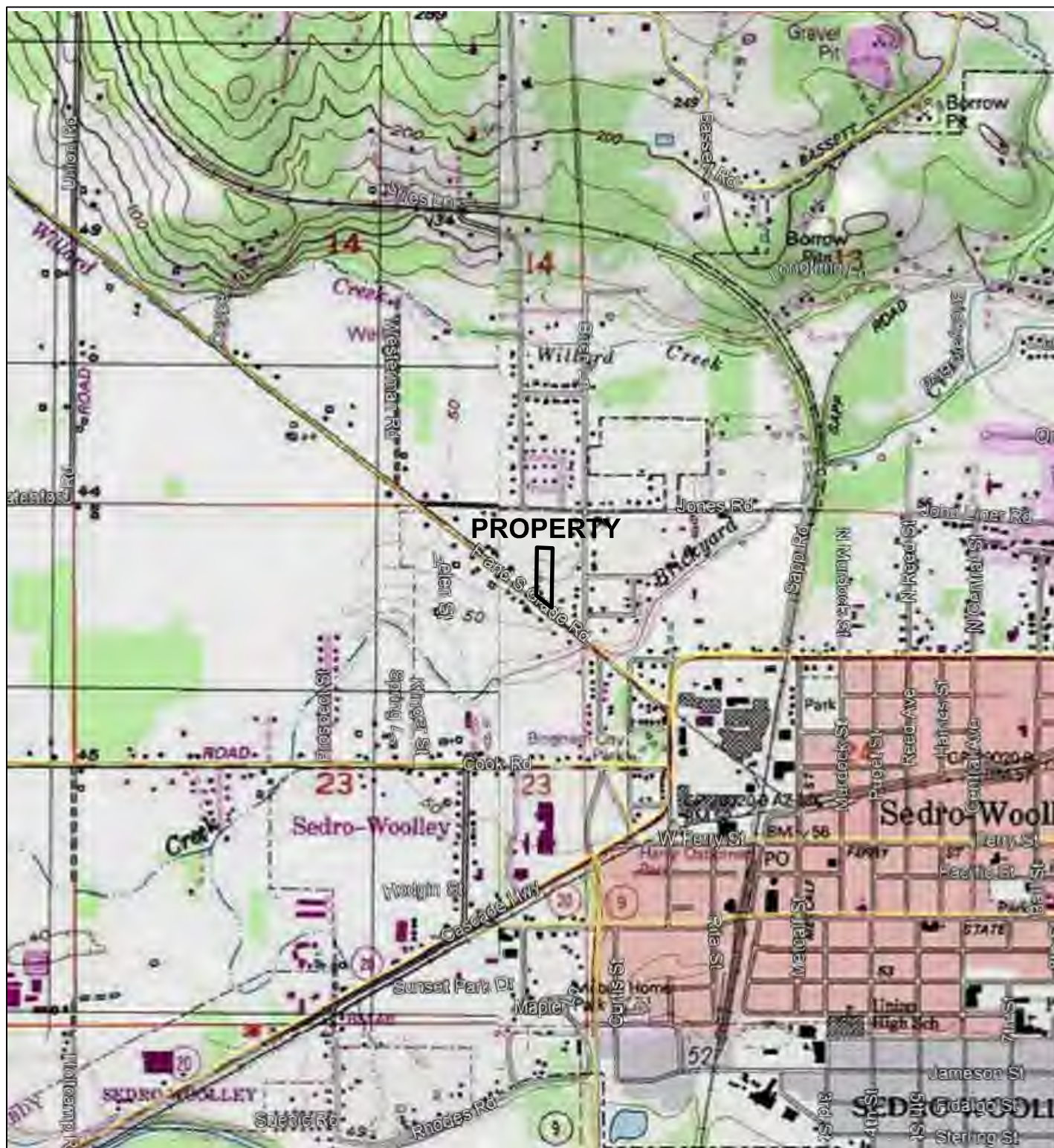
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## 11.0 FIGURES

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**Figure 1. Vicinity Map**

Petersen-F & S Grade Rd.

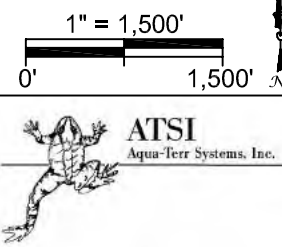
Parcel Number: P37166

528 F & S Grade Road, Sedro-Woolley, Washington

Section 23, Township 35 N, Range 04 E, WM

February 2019

**Directions:** From I-5 S take exit 232 for Cook Rd toward Sedro-Woolley (0.2 mi.). Turn left onto Cook Rd (4.3 mi.). At the traffic circle, take the 3rd exit onto Edward R. Murrow St (200 ft.). Turn left onto F & S Grade Rd (0.2 mi). Property is on your right: 528 F & S Grade Rd.



**Note.** Basemap obtained from Google Earth TOPO. The property boundaries were surveyed by Ronald T. Jepson and Associates with alterations by ATSI.





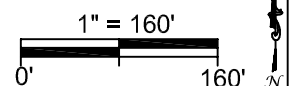
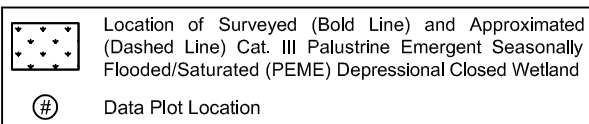
**Figure 2. Aerial Photograph, Existing Conditions & Data Plots 1, 2**

Petersen-F & S Grade Rd.

Parcel Number: P37166

528 F & S Grade Road, Sedro-Woolley, Washington  
Section 23, Township 35 N, Range 04 E, WM

February 2019



**ATSI**  
Aqua-Terr Systems, Inc.

**Note.** Basemap obtained from Google Earth (Imagery Date: 24 July 2017). The onsite wetland boundaries were delineated by ATSI. The onsite wetland boundaries, property boundaries, ditch and culverts were surveyed by Ronald T. Jepson and Associates. The offsite portion of the wetland is approximate and does not constitute a legal land survey.





**Figure 3. WSS NRCS Soils Map**

Petersen-F & S Grade Rd.

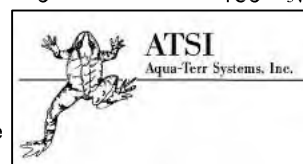
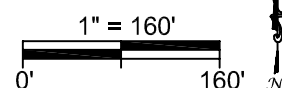
Parcel Number: P371166

528 F & S Grade Road, Sedro-Woolley, Washington

Section 23, Township 35 N, Range 04 E, WM

February 2019

**Mapped NRCS Soil Unit**  
**92 - Minkler silt loam (not listed as hydric)**



**Note.** Basemap obtained from NRCS WSS with alterations made by ATSI. The property boundaries were surveyed by Ronald T. Jepson and Associates with alterations by ATSI.



**Figure 4. USFWS NWI Wetlands Map**

Petersen-F & S Grade Rd.

Parcel Number: P371166

528 F & S Grade Road, Sedro-Woolley, Washington

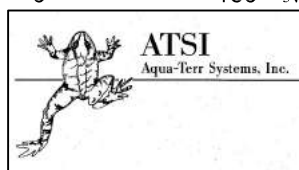
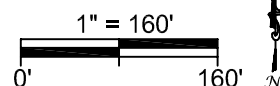
Section 23, Township 35 N, Range 04 E, WM

February 2019

**Mapped NWI Units**

**PEM1C** - Palustrine Emergent Persistent  
Seasonally Flooded

**R4SBC** - Riverine Intermittent Streambed  
Seasonally Flooded



**Note.** Basemap obtained from USFWS NWI Mapper with alterations made by ATSI. The property boundaries were surveyed by Ronald T. Jepson and Associates with alterations by ATSI.





**Figure 5. Aerial Photograph & Proposed Conditions**


Petersen-F & S Grade Rd.

Parcel Number: P37166

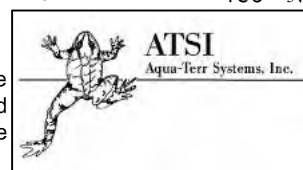
528 F & S Grade Road, Sedro-Woolley, Washington

Section 23, Township 35 N, Range 04 E, WM

February 2019

 Proposed Detached Starter Homes (6 Units)

1" = 160'  
0' 160' N



**Note.** Basemap obtained from Google Earth (Imagery Date: 24 July 2017). The onsite wetland boundaries were delineated by ATSI. The onsite wetland boundaries, property boundaries were surveyed by Ronald T. Jepson and Associates. The proposed conditions were provided by Cascade Engineering Group. The offsite portion of the wetland is approximate and does not constitute a legal land survey.









**Figure 6. Aerial Photograph & Proposed Impacts**

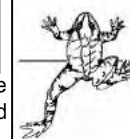
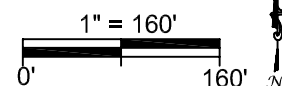
Petersen-F & S Grade Rd.

Parcel Number: P37116

528 F & S Grade Road, Sedro-Woolley, Washington  
Section 23, Township 35 N, Range 04 E, WM

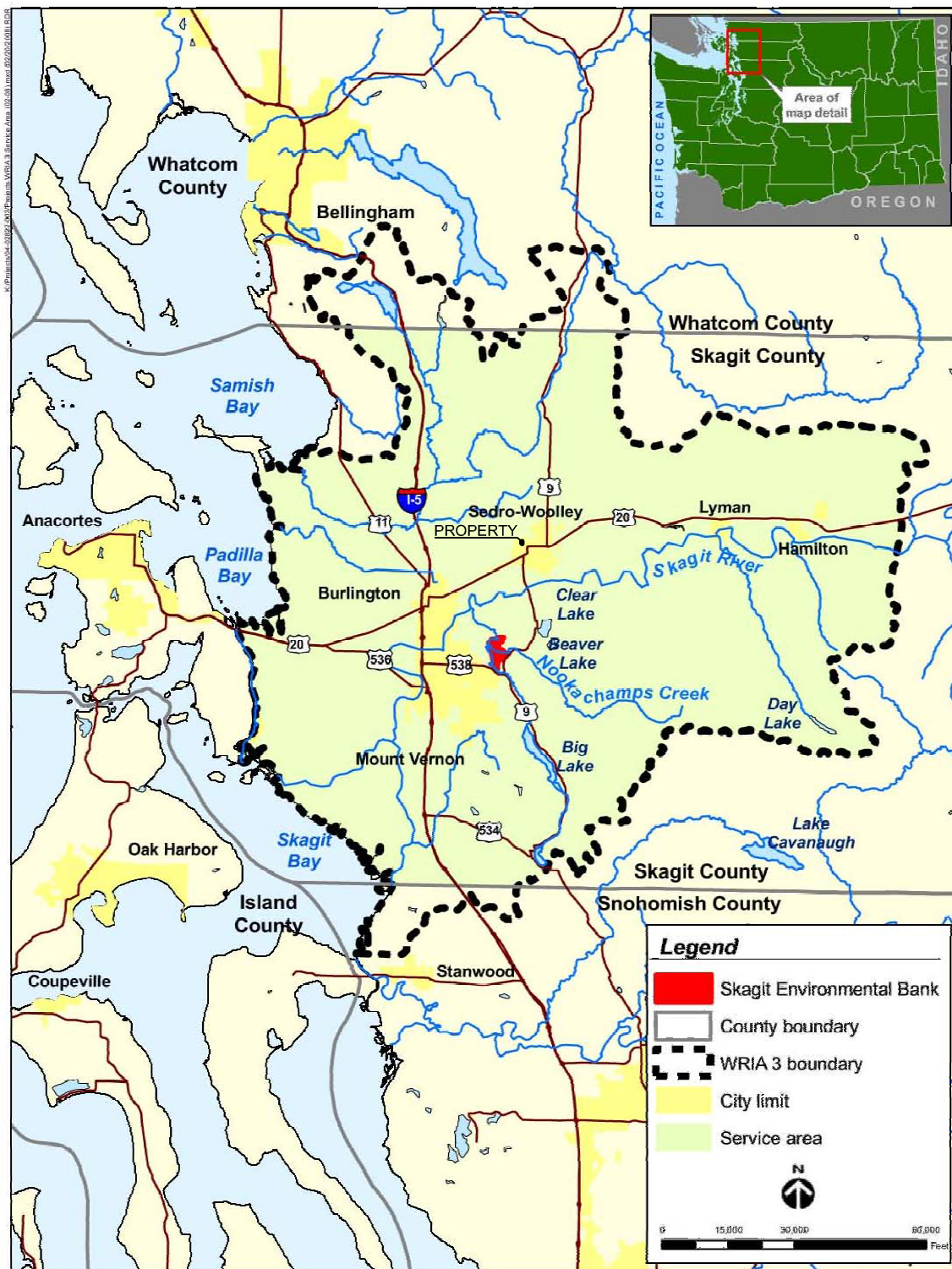
February 2019

	Location of Surveyed (Bold Line) and Approximated (Dashed Line) Cat. III PEME Depressional Closed Wetland (Wetland A) that will not be Impacted (0.18 ac.)
	Wetland A Indirect Paper Fill Impacts (0.04 ac.)
	Wetland A Direct Fill Impacts (0.07 ac.)
	Wetland Buffer Direct Impacts (0.14 ac.)



**ATSI**  
Aqua-Terr Systems, Inc.

**Note.** Basemap obtained from Google Earth (Imagery Date: 24 July 2017). The onsite wetland boundaries were delineated by ATSI. The onsite wetland boundaries, property boundaries were surveyed by Ronald T. Jepson and Associates. The offsite portion of the wetland is approximate and does not constitute a legal land survey.



**Figure E-1. Service area.**

**Figure 7. Skagit Environmental Wetland Mitigation Bank Service Area Map**

Petersen-F & S Grade Rd.

Parcel Number: P37166

528 F & S Grade Road, Sedro-Woolley, Washington

Section 23, Township 35 N, Range 04 E, WM

February 2019

**Note.** Map obtained from Skagit County GIS/Mapping Services, Washington State Department of Ecology with alterations made by ATSI. The property boundaries were surveyed by Ronald T. Jepson and Associates with alterations by ATSI.



## 12.0 APPENDICIES

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## 12.0 APPENDICIES

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### 12.1 APPENDIX A. DATA FORMS

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project Site: <u>Petersen – F &amp; S Grade</u>		Sampling Date: <u>26 April 2018</u>	
Applicant/Owner: <u>Monte Petersen</u>		Sampling Point: <u>1</u>	
Investigator: <u>Sigrid Williams, Karla Gallina, and Nathan Goldschmidt</u>		City/County: <u>Sedro-Woolley</u>	
Section, Township, Range: <u>Section 23, Township 35 N, Range 04 E, WM</u>		State: <u>WA</u>	
Landform (hillslope, terrace, etc): <u>Depression</u>		Slope (%): <u>~0%</u>	
Subregion (LRR): <u>A</u>		Lat: <u>48.304618° north</u>	
		Long: <u>122.145733° west</u>	
		Datum: <u>WGS84</u>	
Soil Map Unit Name: <u>92 – Minkler silt loam, 0-3% slopes (not hydric)</u>		NW1 classification: <u>PEM1C</u>	
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)	
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?: No			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?: No		(If needed, explain any answers in Remarks.)	

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

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point within a Wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Remarks: Indicators of hydrophytic vegetation, hydric soil, and wetland hydrology were present; therefore, since all three parameters were met, data plot number 1 was located within a wetland. Data plot number 1 was taken in an emergent depressional closed wetland within the northeast portion of the property. Wetland data plot 1 was paired with upland data plot 2.			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size <u>30 foot radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. <i>Populus balsamifera</i>	10	Yes	FAC	Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)	
2.				Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3.				Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)	
4.					
50 percent threshold equals: <u>5</u>	<u>10</u>	= Total Cover			
20 percent threshold equals: <u>2</u>					
Sapling/Shrub Stratum (Plot size <u>5 foot radius</u> )				Prevalence Index Worksheet	
1.				Total % Cover of	
2.				Multiply by	
3.				OBL species	x 1 =
4.				FACW species	x 2 =
5.				FAC species	x 3 =
50 percent threshold equals:	<u>0</u>	= Total Cover		FACU species	x 4 =
20 percent threshold equals:				UPL species	x 5 =
Herb Stratum (Plot size <u>5 foot radius</u> )				Column totals	(A) (B)
1. <i>Phalaris arundinacea</i>	80	Yes	FACW	Prevalence Index = B/A = <u>N/A</u>	
2.					
3.					
4.				Hydrophytic Vegetation Indicators	
5.				No	1. Rapid Test- Hydrophytic Vegetation OBL/FACW
6.				Yes	2. Dominance test is > 50%
7.				N/A	3. Prevalence test is ≤ 3.0 <sup>1</sup>
8.				N/A	4. Morphological Adaptations <sup>1</sup> (provide supp. info.)
9.				N/A	5. Wetland Non-Vascular Plants <sup>1</sup>
10.				N/A	6. Problematic Hydrophytic Vegetation <sup>1</sup> (explain)
11.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
50 percent threshold equals: <u>40</u>	<u>80</u>	= Total Cover			
20 percent threshold equals: <u>16</u>					
Woody Vine Stratum (Plot size <u>30 foot radius</u> )				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.					
2.					
50 percent threshold equals:	<u>0</u>	= Total Cover			
20 percent threshold equals:					
% Bare Ground in Herb Stratum	<u>20</u>				
Remarks: The Corps 2016 NWPL was used to determine indicator statuses. Indicators of hydrophytic vegetation were present. The vegetation present did not satisfy the Rapid Test for Hydrophytic Vegetation because not all the dominant species across all strata were rated OBL or FACW or a combination of these two categories. The vegetation present satisfied the Dominance Test because greater than 50 percent of the dominant species present (100%) were FAC, FACW, or OBL.					

## SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/1	100					Mucky silt	
8-20	10YR 4/2	90	10YR 3/6	10	C	M	Silt	Concentrations are prominent soft masses

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Loc: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>**

<input type="checkbox"/> 2cm Muck (A10)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Other (explain in remarks)

<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):  
Type: N/A

Depth (inches): N/A

**Hydric soil present?** Yes ☒ No ☐

Remarks: Indicators of hydric soil were present. The soil present satisfied the hydric soil indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3).

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply):

<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (explain in remarks)

Secondary Indicators (2 or more required):

<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Frost-Heave Hummocks

**Field Observations**

Surface Water Present?	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Depth (in):	N/A
Water Table Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Depth (in):	0
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Depth (in):	N/A

**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Indicators of wetland hydrology were present. Direct or indirect indicators of seasonal or permanent soil saturation or inundation were observed. The hydrology present satisfied wetland hydrology indicators High Water Table (A2) and Algal Mat or Crust (B4).

## WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project Site: <u>Petersen – F &amp; S Grade</u>		Sampling Date: <u>26 April 2018</u>	
Applicant/Owner: <u>Monte Petersen</u>		Sampling Point: <u>2</u>	
Investigator: <u>Sigrid Williams, Karla Gallina, and Nathan Goldschmidt</u>		City/County: <u>Sedro-Woolley</u>	
Section, Township, Range: <u>Section 23, Township 35 N, Range 04 E, WM</u>		State: <u>WA</u>	
Landform (hillslope, terrace, etc): <u>Flat</u>		Slope (%): <u>~0%</u>	
Local relief (concave, convex, none): <u>None</u>			
Subregion (LRR): <u>A</u>	Lat: <u>48.304618° north</u>	Long: <u>122.145733° west</u>	Datum: <u>WGS84</u>
Soil Map Unit Name: <u>92 – Minkler silt loam, 0-3% slopes (not hydric)</u>		NW1 classification: <u>PEM1C</u>	
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)	
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?: No			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?: No			
(If needed, explain any answers in Remarks.)			

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

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>Remarks:</b> Indicators of hydrophytic vegetation, hydric soil, and wetland hydrology were absent; therefore, since all three parameters were not met, data plot number 2 was not located within a wetland. Data plot number 2 was taken in a mowed upland lawn in the northeast portion of the property. Upland data plot 2 was paired with wetland data plot 1.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size <u>30 foot radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet														
1. <i>Pseudotsuga menziesii</i>	20	Yes	FACU	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>33%</u> (A/B)														
2. <i>Malus fusca</i>	10	Yes	FACW															
3. <i>Thuja plicata</i>	5	No	FAC															
4.																		
50 percent threshold equals: <u>17.5</u>	<u>35</u>	= Total Cover		<b>Prevalence Index Worksheet</b> <table style="width:100%; border-collapse: collapse;"> <tr> <th style="width:50%;">Total % Cover of</th> <th style="width:50%;">Multiply by</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column totals</td> <td>(A) <u>45</u> (B) <u>155</u></td> </tr> </table> Prevalence Index = B/A = <u>3.44</u>	Total % Cover of	Multiply by	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column totals	(A) <u>45</u> (B) <u>155</u>
Total % Cover of	Multiply by																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species <u>30</u>	x 4 = <u>120</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column totals	(A) <u>45</u> (B) <u>155</u>																	
20 percent threshold equals: <u>7.0</u>																		
<b>Sapling/Shrub Stratum (Plot size <u>5 foot radius</u>)</b>																		
1.																		
2.																		
3.																		
4.																		
5.																		
50 percent threshold equals: <u>0</u>	<u>0</u>	= Total Cover																
20 percent threshold equals: <u>0</u>																		
<b>Herb Stratum (Plot size <u>5 foot radius</u>)</b>																		
1. Moss spp.*	90	N/A	N/A															
2. <i>Taraxacum officinale</i>	10	Yes	FACU															
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
11.																		
50 percent threshold equals: <u>5</u>	<u>10</u>	= Total Cover																
20 percent threshold equals: <u>2</u>																		
<b>Woody Vine Stratum (Plot size <u>30 foot radius</u>)</b>																		
1.																		
2.																		
50 percent threshold equals: <u>0</u>	<u>0</u>	= Total Cover																
20 percent threshold equals: <u>0</u>																		
% Bare Ground in Herb Stratum <u>0</u>																		
<b>Hydrophytic Vegetation Indicators</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">No</td> <td style="width:85%;">1. Rapid Test- Hydrophytic Vegetation OBL/FACW</td> </tr> <tr> <td>No</td> <td>2. Dominance test is &gt; 50%</td> </tr> <tr> <td>No</td> <td>3. Prevalence test is ≤ 3.0<sup>1</sup></td> </tr> <tr> <td>N/A</td> <td>4. Morphological Adaptations<sup>1</sup> (provide supp. info.)</td> </tr> <tr> <td>N/A</td> <td>5. Wetland Non-Vascular Plants <sup>1</sup></td> </tr> <tr> <td>N/A</td> <td>6. Problematic Hydrophytic Vegetation<sup>1</sup> (explain)</td> </tr> </table>				No	1. Rapid Test- Hydrophytic Vegetation OBL/FACW	No	2. Dominance test is > 50%	No	3. Prevalence test is ≤ 3.0 <sup>1</sup>	N/A	4. Morphological Adaptations <sup>1</sup> (provide supp. info.)	N/A	5. Wetland Non-Vascular Plants <sup>1</sup>	N/A	6. Problematic Hydrophytic Vegetation <sup>1</sup> (explain)			
No	1. Rapid Test- Hydrophytic Vegetation OBL/FACW																	
No	2. Dominance test is > 50%																	
No	3. Prevalence test is ≤ 3.0 <sup>1</sup>																	
N/A	4. Morphological Adaptations <sup>1</sup> (provide supp. info.)																	
N/A	5. Wetland Non-Vascular Plants <sup>1</sup>																	
N/A	6. Problematic Hydrophytic Vegetation <sup>1</sup> (explain)																	
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic																		
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																		
<b>Remarks:</b> The Corps 2016 NWPL was used to determine indicator statuses. Indicators of hydrophytic vegetation were present. The vegetation present did not satisfy the Rapid Test for Hydrophytic Vegetation because not all the dominant species across all strata were rated OBL or FACW or a combination of these two categories. The vegetation present did not satisfy the Dominance Test because less than 50 percent of the dominant species present (33%) were FAC, FACW, or OBL. The vegetation present did not satisfy the Prevalence Test as the index was greater than 3.0 (3.44). *Bryophytes not included in total percent cover.																		

## SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-14	10YR 2/2	100					Loam	
14-20	10YR 4/2	99	10YR 5/8	1	C	M	Silt loam	Concentrations are prominent soft masses

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Loc: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>**

<input type="checkbox"/> 2cm Muck (A10)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Other (explain in remarks)

<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):  
Type: N/A

Depth (inches): N/A

**Hydric soil present?**    Yes ☐    No ☒

*Remarks:*    Indicators of hydric soil were absent. The redoxymorphic features present were too deep in the soil column. The soil present did not satisfy the hydric soil indicators.

## HYDROLOGY

**Wetland Hydrology Indicators:**

*Primary Indicators (minimum of one required: check all that apply):*

<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves <b>(except MLRA 1, 2, 4A &amp; 4B)</b> (B9)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (explain in remarks)

*Secondary Indicators (2 or more required):*

<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A &amp; 4B)</b>
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Frost-Heave Hummocks

**Field Observations**

Surface Water Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Depth (in):	N/A
Water Table Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Depth (in):	N/A
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Depth (in):	N/A

**Wetland Hydrology Present?**    Yes ☐    No ☒

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

*Remarks:*    Indicators of wetland hydrology were absent. Direct or indirect indicators of seasonal or permanent soil saturation or inundation were not observed. The hydrology present did not satisfy wetland hydrology indicators.

## 12.2 APPENDIX B. WETLAND RATING FORMS



Wetland name or number Petersen - F&S Grade

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Petersen - F&S Grade Date of site visit: 4/26/18  
 Rated by Sigrid Williams & Karla Gallina Trained by Ecology? ☒ Yes ☐ No Date of training 10/15/15 & 6/14/16  
 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 Google Earth

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

### 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

☒ Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	H (M) L	(H) M L	H M (L)	
Value	(H) M L	(H) M L	H M (L)	TOTAL
Score Based on Ratings	7	8	3	18

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

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

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

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

Wetland name or number Petersen - F&S Grade

## 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	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	4
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	5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	2
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	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 dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetlands in Western Washington

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

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

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

☒ **NO** - go to 2

**YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

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

**YES** - **Freshwater Tidal Fringe**

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

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

☒ **NO** - go to 3

**YES** - The wetland class is **Flats**

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

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ **NO** - go to 4

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),  
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,  
☐ The water leaves the wetland **without being impounded**.

☒ **NO** - go to 5

**YES** - The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
☐ The overbank flooding occurs at least once every 2 years.

Wetland name or number Petersen - F&S Grade

**NO** go to 6

**YES** – The wetland class is **Riverine**

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

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

**NO** – go to 7

**YES** The wetland class is **Depressional**

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

**NO** – go to 8

**YES** – The wetland class is **Depressional**

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

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

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

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



Wetland name or number Petersen - F&S Grade

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing. points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area. points = 5 Wetland has persistent, ungrazed, plants > 1/2 of area. points = 3 Wetland has persistent, ungrazed plants > 1/10 of area. points = 1 Wetland has persistent, ungrazed plants < 1/10 of area. points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: This is the area that is ponded for at least 2 months. See description in manual. Area seasonally ponded is > 1/2 total area of wetland. points = 4 Area seasonally ponded is > 1/4 total area of wetland. points = 2 Area seasonally ponded is < 1/4 total area of wetland. points = 0	2
Total for D 1	8

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	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? Source _____ Yes = 1 No = 0	0
Total for D 2	2

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

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	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 for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	2
Total for D 3	3

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



Wetland name or number Petersen - F&S Grade

### DEPRESSIONAL AND FLATS WETLANDS

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

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

D 4.1. Characteristics of surface water outflows from the wetland:

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

4

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- The wetland is a "headwater" wetland points = 3
- Wetland is flat but has small depressions on the surface that trap water points = 1
- Marks of ponding less than 0.5 ft (6 in) points = 0

0

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- The area of the basin is less than 10 times the area of the unit points = 5
- The area of the basin is 10 to 100 times the area of the unit points = 3
- The area of the basin is more than 100 times the area of the unit points = 0
- Entire wetland is in the Flats class points = 5

3

Total for D 4

Add the points in the boxes above

7

Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L

Record the rating on the first page

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

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

1

D 5.2. Is >10% of the area within 350 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?

D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

- The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):
- Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2
  - Surface flooding problems are in a sub-basin farther down-gradient. points = 1
  - Flooding from groundwater is an issue in the sub-basin. points = 1
- The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why \_\_\_\_\_ points = 0
- There are no problems with flooding downstream of the wetland. points = 0

2

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

2

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page



Wetland name or number Petersen - F & S Grade

**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.

- |  |                                  |
|--|----------------------------------|
| <input type="checkbox"/> Aquatic bed                                       | 4 structures or more: points = 4 |
| <input checked="" type="checkbox"/> Emergent                               | 3 structures: points = 2         |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1         |
| <input type="checkbox"/> 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

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).

- |   |                                     |
|---|-------------------------------------|
| <input type="checkbox"/> Permanently flooded or inundated           | 4 or more types present: points = 3 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2         |
| <input type="checkbox"/> Occasionally flooded or inundated          | 2 types present: points = 1         |
| <input checked="" type="checkbox"/> Saturated only                  | 1 type present: points = 0          |
- ☐ Permanently flowing stream or river in, or adjacent to, the wetland
- ☐ Seasonally flowing stream in, or adjacent to, the wetland
- ☐ Lake Fringe wetland 2 points
- ☐ Freshwater tidal wetland 2 points

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

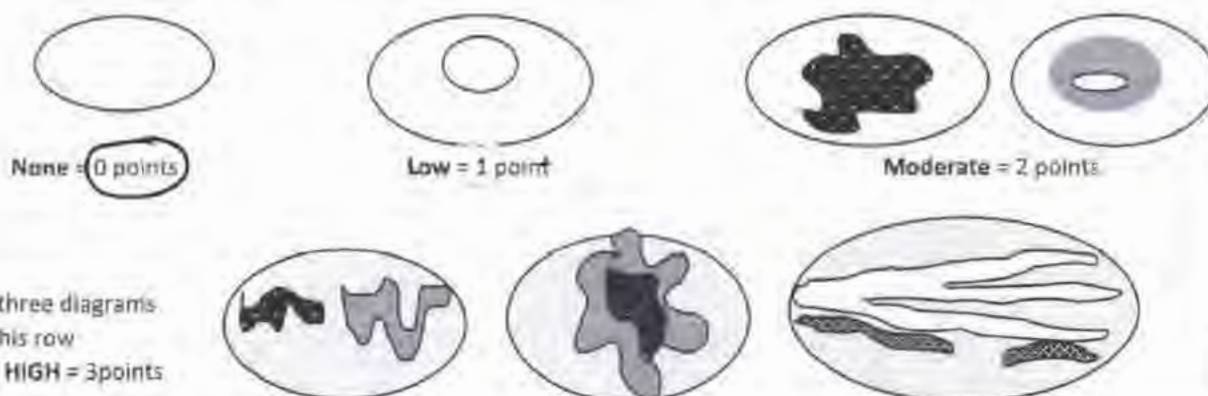
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle**

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

0

H 1.4. Interspersion of habitats

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



0

Wetland name or number Petersen - F&S Grade

**H 1.5. Special habitat features:**

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

- ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).
- ☐ Standing snags (dbh > 4 in) within the wetland
- ☐ Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- ☐ At least 1/4 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)

0

Total for H 1

Add the points in the boxes above

1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M ✓ 0-6 = L

Record the rating on the first page

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

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

Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 2.5 = 2.5 %

If total accessible habitat is:

> 1/3 (33.3%) of 1 km Polygon

points = 3

20-33% of 1 km Polygon

points = 2

10-19% of 1 km Polygon

points = 1

< 10% of 1 km Polygon

points = 0

0

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

Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 2.5 = 2.5 %

Undisturbed habitat > 50% of Polygon

points = 3

Undisturbed habitat 10-50% and in 1-3 patches

points = 2

Undisturbed habitat 10-50% and > 3 patches

points = 1

Undisturbed habitat < 10% of 1 km Polygon

points = 0

0

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

> 50% of 1 km Polygon is high intensity land use

points = (-2)

≤ 50% of 1 km Polygon is high intensity

points = 0

-2

Total for H 2

Add the points in the boxes above

-2

**Rating of Landscape Potential** If score is: 4-6 = H 1-3 = M ✓ < 1 = L

Record the rating on the first page

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

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

Site meets ANY of the following criteria:

points = 2

— It has 3 or more priority habitats within 100 m (see next page)

— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)

— It is mapped as a location for an individual WDFW priority species

— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources

— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a

Shoreline Master Plan, or in a watershed plan

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

points = 1

Site does not meet any of the criteria above ✓

points = 0

0

**Rating of Value** If score is: 2 = H 1 = M ✓ 0 = L

Record the rating on the first page



Wetland name or number Petersen - F&S Grade

## WDFW Priority Habitats

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

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

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Wetland name or number Petersen - F&S Grade

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

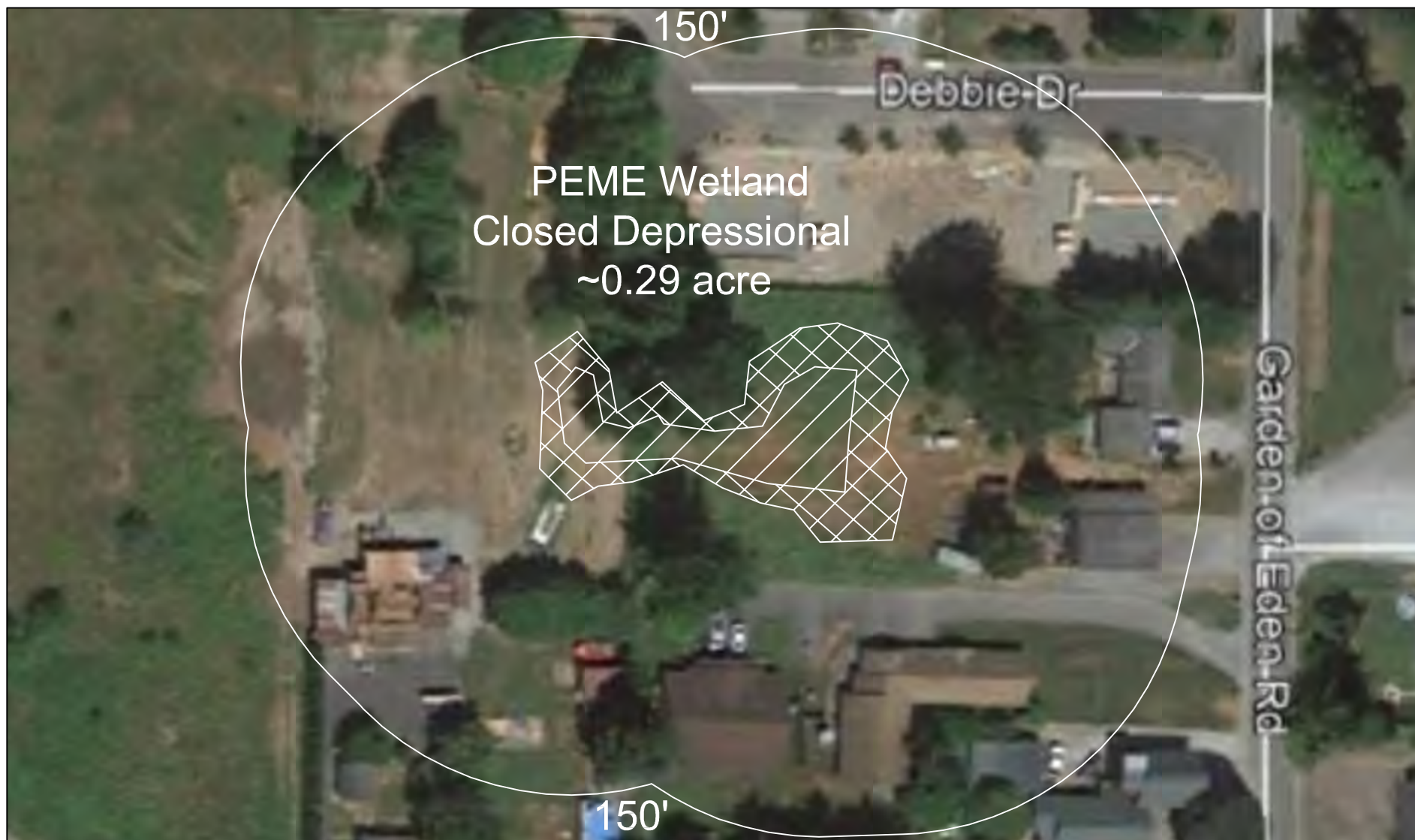
Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt	Yes – Go to SC 1.1 <b>(No) – Not an estuarine wetland</b>
<b>SC 1.1.</b> 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 = <b>Category I</b> No – Go to SC 1.2 <b>Cat. I</b>
<b>SC 1.2.</b> 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 <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 unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Yes = <b>Category I</b> No = <b>Category II</b> <b>Cat. I</b> <b>Cat. II</b>
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>	
<b>SC 2.1.</b> Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?	Yes – Go to SC 2.2    No – Go to SC 2.3 <b>Cat. I</b>
<b>SC 2.2.</b> Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	Yes = <b>Category I</b> <b>(No) – Not a WHCV</b>
<b>SC 2.3.</b> Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www2.dnr.wa.gov/nhp/reldesk/datasetsearch/wnhpwetlands.pdf">http://www2.dnr.wa.gov/nhp/reldesk/datasetsearch/wnhpwetlands.pdf</a>	Yes – Contact WNHP/WDNR and go to SC 2.4    No = Not a WHCV
<b>SC 2.4.</b> Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?	Yes = <b>Category I</b> No = Not a WHCV
<b>SC 3.0. Bogs</b>	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. <b>If you answer YES you will still need to rate the wetland based on its functions.</b>	
<b>SC 3.1.</b> Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?	Yes – Go to SC 3.3 <b>(No) – Go to SC 3.2</b>
<b>SC 3.2.</b> Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?	Yes – Go to SC 3.3 <b>(No) – Is not a bog</b>
<b>SC 3.3.</b> 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 = <b>Is a Category I bog</b> No – 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.	
<b>SC 3.4.</b> 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 = <b>Is a Category I bog</b> No = <b>Is not a bog</b> <b>Cat. I</b>



<b>SC 4.0. Forested Wetlands</b> 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> — <b>Old-growth forests</b> (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. — <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = Category I <b>No</b> = Not a forested wetland for this section	Cat. I
<b>SC 5.0. Wetlands in Coastal Lagoons</b> 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 ( <i>needs to be measured near the bottom</i> ) Yes – Go to SC 5.1 <b>No</b> = Not a wetland in a coastal lagoon <b>SC 5.1. Does the wetland meet all of the following three conditions?</b> — 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 1/3 of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than 1/12 ac (4350 ft <sup>2</sup> ) Yes = Category I    No = Category II	Cat. I  Cat. II
<b>SC 6.0. Interdunal Wetlands</b> Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUD)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to SC 6.1 <b>No</b> = not an interdunal wetland for rating <b>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)?</b> Yes = Category I    No – Go to SC 6.2 <b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b> Yes = Category II    No – Go to SC 6.3 <b>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?</b> Yes = Category III    No = Category IV	Cat. I  Cat. II  Cat. III  Cat. IV
<b>Category of wetland based on Special Characteristics</b> If you answered No for all types, enter "Not Applicable" on Summary Form	N/A

Wetland name or number Petersen - F&S Grade

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**Figure 1. Wetland Map**

Monte Petersen

Parcel Number: P37166

528 F & S Grade Road, Sedro-Woolley, Washington

Section 23, Township 35 N, Range 04 E, WM

June 2018



Saturated Wetland



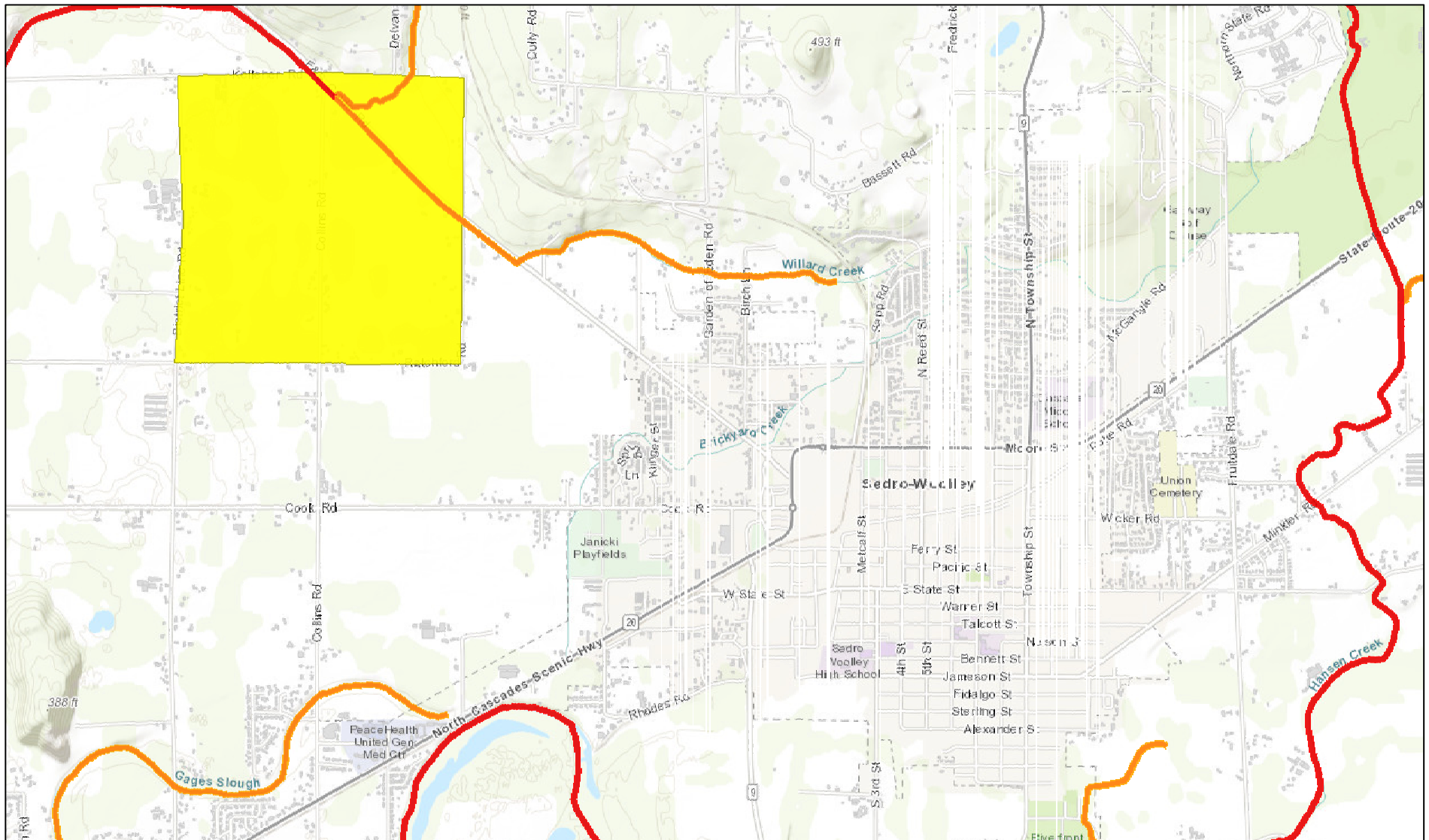
Seasonally Flooded Wetland



**ATSI**  
Aqua-Terr Systems, Inc.

**Note** Basemap obtained from Google Earth (Imagery Date: 24 July 2017). The onsite wetland boundaries were delineated by ATSI and surveyed by Ronald T. Jepson and Associates, the offsite portion is approximate and does not constitute a legal land survey.





**Figure 2. 303d List Map**

Monte Petersen

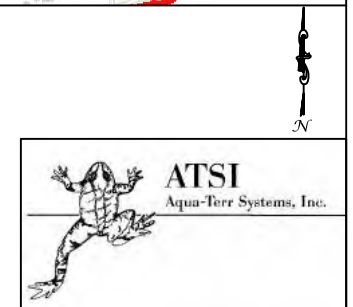
Parcel Number: P37166

528 F & S Grade Road, Sedro-Woolley, Washington

Section 23, Township 35 N, Range 04 E, WM

June 2018

**Note** Basemap obtained from the Department of Ecology.

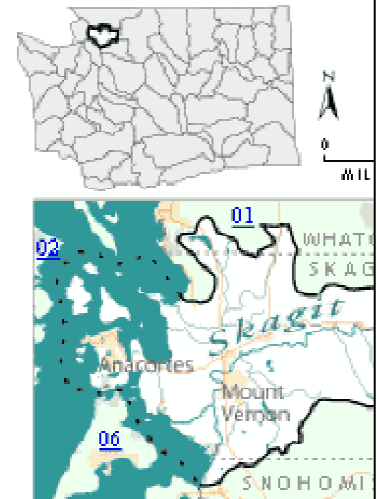


# Water Quality Improvement Projects (TMDLs)

[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > WRIA 3: Lower Skagit-Samish

## WRIA 3: Lower Skagit-Samish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area ([WRIA](#)). Please use links (where available) for more information on a project.



### Counties

- [Skagit](#)
- [Snohomish](#)
- [Whatcom](#)

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
<a href="#">Campbell Lake</a>	Total Phosphorus	EPA approved	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Erie Lake</a>	Total Phosphorus	EPA approved	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Lake Ketchum</a>	Total Phosphorus	Under development as a straight to implementation project	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Padilla Bay</a>	Fecal Coliform	Under development	<a href="#">Danielle DeVoe</a> 425-649-7036
<a href="#">Samish Watershed</a>	Fecal Coliform	EPA approved Has an implementation plan	<a href="#">Danielle DeVoe</a> 425-649-7036
<a href="#">Skagit Basin</a>	Fecal Coliform	EPA approved Has an implementation plan	<a href="#">Danielle DeVoe</a> 425-649-7036
	Temperature	EPA approved	

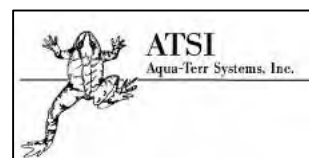
**\*\* Status** will be listed as one of the following: Approved by EPA, Under Development or Implementation

### For more information about WRIA 3:

- [Waterbodies in WRIA 3](#) - using the Water Quality Assessment Query Tool
- [Watershed Information for WRIA 3](#)

### Figure 3. TMDL List

Monte Petersen  
Parcel Number: P37166  
528 F & S Grade Road, Sedro-Woolley, Washington  
Section 23, Township 35 N, Range 04 E, WM  
June 2018



**Note** List obtained from the Department of Ecology.





**Figure 4. Basin Map**

Monte Petersen

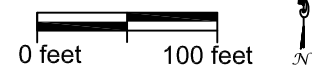
Parcel Number: P37166

528 F & S Grade Road, Sedro-Woolley, Washington

Section 23, Township 35 N, Range 04 E, WM

June 2018

Wetland: ~0.29 acre vs. Basin: ~5.10 acres



**Note** Basemap obtained from Google Earth (Imagery Date: 24 July 2017). The onsite wetland was delineated by ATSI and the boundaries were surveyed by Ronald T. Jepson and Associates, the offsite portion is approximate and does not constitute a legal land survey.



**Figure 5. 1 Km Map**

Monte Petersen

Parcel Number: P37166

528 F & S Grade Road, Sedro-Woolley, Washington

Section 23, Township 35 N, Range 04 E, WM

June 2018

U = Relatively Undisturbed

M = Moderately Disturbed

H = Highly Disturbed

0 feet 1,400 feet N



**ATSI**  
Aqua-Terr Systems, Inc.

**Note** Basemap obtained from Google Earth (Imagery Date: 24 July 2017). The onsite wetland boundaries were delineated by ATSI and surveyed by Ronald T. Jepson and Associates, the offsite portion is approximate and does not constitute a legal land survey.



EXHIBIT L (12)  
Plat of Samish Estates

**SAMISH ESTATES LONG PLAT  
528 F & S GRADE ROAD  
SEDRO-WOOLLEY, WASHINGTON**

**PRELIMINARY  
STORMWATER SITE PLAN**

Prepared for:  
**Monte Petersen**  
528 F & S Grade Road  
Sedro-Woolley, WA 98248  
360-661-5649

Prepared by:  
**CASCADE ENGINEERING GROUP, P.S., INC.**  
119 Grand Avenue, Suite D  
Bellingham, Washington 98225  
(360) 306-8161

March 2019



**SAMISH ESTATES LONG PLAT  
528 F & S GRADE ROAD  
SEDRO-WOOLLEY, WASHINGTON**

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STORMWATER  
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CEGX0006

March 2019

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Figure 1: Existing Conditions

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Appendix A: Soils Information

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## 1.0 PROJECT OVERVIEW

### 1.1 General Description

This Preliminary Stormwater Site Plan is for the development of a 2.00-acre site located at 528 F & S Grade Road in the City of Sedro-Woolley. The project site lies within Section 23, Township 35 North, Range 4 East, W.M. in Skagit County, with Tax Parcel Number P37229.

The site is currently a single-family residence consisting of an existing home, a shop, and some outbuildings – see Figure 1, *Existing Conditions*. These buildings, and their associated driveways and hardscape, are surrounded by lawn with some ornamental trees. The site topography shows the site is relatively flat with the northern two thirds draining to a small depression located along the center of the east property line. This depression, a Category III wetland, continues into the adjacent property to the east. The southern third of the property drains towards F & S Grade Road.

The proposed development includes the construction of six additional single-family residence lots and a stormwater tract for the development's stormwater water quality treatment and detention facility – see Figure 2, *Developed Conditions*. The proposed stormwater facilities are for the proposed improvements only; the existing home (Lot 7) is not part of the proposed improvements. Access to the new lots will be through private driveways and a private road from Debbie Lane. The project requires site grading, access improvements, construction of on-site stormwater management facilities, and utility infrastructure improvements. Roof, lawn, road, and driveway runoff will be captured and conveyed to a combined water quality treatment and detention pond. The treated and detained runoff will be discharged into the F& S Grade Road ditch system located on the north side of the road.



## **2.0 DESIGN REQUIREMENTS AND CRITERIA**

### **Governing Requirements**

This report has been prepared in accordance with the requirements of City of Sedro-Woolley Municipal Code (SWMC) 15.40 *Public Works Construction Standards*, SWMC 13.36 *Stormwater Management*, and SWMC 13.40 *Stormwater Maintenance*. These regulations require the implementation of the latest Washington State Department of Ecology stormwater management manual for the stormwater Best Management Practices (BMPs). The 2012 *Stormwater Management Manual for the Western Washington, 2014 amendment* (DOE Manual) will be used to design the water quality treatment and flow control facilities for this project.

In accordance with the DOE Manual, the site's hydrologic analysis was performed using the 2012 Western Washington Hydrologic Model (WWHM), version 4.2.16, a continuous simulation hydrologic model developed by the DOE. As stated in the manual, runoff treatment Best Management Practices (BMPs) shall be sized to capture and treat the water quality design storm volume, defined as the six-month, 24 hour return storm event or a flow rate at or below 91% of the runoff volume, as estimated by an approved continuous runoff model. A 15-minute time step was used in all WWHM analyses, unless noted otherwise.

The project site is located in the R-7 Zone, Single-Family Residence with a minimum density of 6,000 sf per lot.

### **Design Assumptions**

- Lots are assumed to have 1,700 sf of impervious area, which includes the roof and hardscape area. Driveway areas are included as part of the road system.

## **3.0 EXISTING CONDITIONS SUMMARY**

### **3.1 Pre-Development Condition**

Site topography used for this analysis is based on field survey work performed by Ronald T. Jepson & Associates, Inc. in May 2018 – see Figure 1.

The site is currently a single-family residence consisting of an existing home, a shop, and some outbuildings. These buildings, and their associated driveways and hardscape, are surrounded by lawn with some ornamental trees located along the east property line. The site topography shows the site is relatively flat with the northern two thirds draining to a small depression located along the center of the east property line. This depression, a Category III wetland, continues into the adjacent property to the east. The southern third of the property drains towards F & S Grade Road.

### **3.2 Soil Information**

General soil information at the project site was obtained from the *Soil Survey of Skagit County Area, Washington* published by the Natural Resources Conservation Service (NRCS). Soils underlying the tributary area are comprised of the Minkler silt loam (#92) soil series. The soils are classified as a Hydrologic Group “B/D” soils. As stated in the NRCS Hydrologic Group Description:

*If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.*

The site currently does not have a drainage system. Appendix A of this plan contains copies of the soil boundary map, soil descriptions, and a table with the hydrologic group classification.

A geotechnical investigation was performed by GeoTest in May 2018 to examine the site's soils and determine its classification and estimated infiltration rate. GeoTest issued a supplemental report in August 2018 that included the results of a Small-Scale Pilot Infiltration Test and mounding analysis. Copies of both reports are in Appendix A.

The GeoTest report confirmed the soils encountered were characterized as Alluvial Deposits consisting of silty sands and silts with varying amounts of sand. As stated in the May 2018 report, "The density within each exploration was considered loose to medium dense (coarse grain soils) or soft to stiff (fine grain soils)."

Groundwater: As stated in the May 2018 report, due to the unusually high volume of rainfall during April 2018 GeoTest "anticipates that the groundwater elevations observed on-site to be generally indicative of a seasonal high groundwater table". This observed groundwater level is considered a perched groundwater level. The two northern explorations sites encountered seepage at 3.5 ft (TP-1) and 3.3 ft (TP-2) below the ground surface. The two southern explorations sites encountered seepage at 7.0 ft (TP-3) and 4.8 ft (TP-4) below the ground surface. The proposed stormwater pond is located near TP-4 where groundwater was encountered at 4.8 ft below the ground surface.

A follow-up Small-Scale Pilot Infiltration Test was performed at the site of the proposed pond on accordance with the criteria outlined in the DOE Manual, Volume III, Section 3.3.6.2. The results of this investigation provided a design (long term) infiltration rate of 0.78 inches per hour. A mounding analysis was also performed and the estimated rise of the groundwater level (the groundwater mound) above the surrounding groundwater level at 0.84 feet.

As stated in the DOE Manual, Volume III, Section 3.3.7 *Site Suitability Criteria (SSC)*, sub-section SSC-5 *Depth to Bedrock, Water Table, or Impermeable Layer*:

*The base of all infiltration basins or trench systems shall be  $\geq 5$  feet above the seasonal high-water mark, bedrock (or hardpan) or other low permeability layer. A separation down to 3 feet may be considered if the ground water mounding analysis, ... meet the site suitability criteria specified in this section.*

Based on these results, the bottom of an infiltration facility shall be a minimum of  $3 \text{ ft} + 0.84 \text{ ft} = 3.84 \text{ ft}$  above the groundwater level. With the observed groundwater level at TP-4 (the approximate location of a stormwater facility) at 4.8 ft. below the ground surface, the bottom of an infiltration facility can only be approximately one foot below existing ground surface.

Ground Surface: El. 57.0 ft

Perched Groundwater Surface: El.  $57.0 \text{ ft} - 4.8 \text{ ft} = \text{El } 52.2 \text{ ft}$ .

Minimum Elevation of Infiltration Facility: El. 52.2 + 3.84 ft = El. 56.04 ft.

### 3.3 WWHM Land Use Information

As shown in Figure 2, the proposed improvement area is 1.41 acres. This area is used for both the pre- and post-development basins. As noted in the DOE Manual, Volume III, Appendix III-B, page B-4 (see copy in Appendix A):

*Outwash soils over high ground water or an impervious soil layer have low infiltration rates and act like till soils. Where ground water or an impervious soil layer is within 5 feet from the surface, outwash soils may be modeled as till soils in the WWHM.*

Since the majority of the developed is located in areas where the perched groundwater layer is located within five feet of the ground surface, the site is modeled as a till soil. The pre-development condition is therefore modeled as 1.41 acre Forest, Hydrologic Group C, with a Flat slope.

### 4.0 OFF-SITE ANALYSIS

Figure 3, *Stormwater Off-Site Analysis*, shows the stormwater drainage system in the vicinity of the project site based on LIDAR information. (Figure 1 provides more accurate information regarding the on-site topography based the actual Jepson survey information.) Except for the areas around Debbie Lane and F&S Grade Road, the area is all undeveloped lawn and pasture. As shown in Figure 3, the site and the surrounding area are relatively flat with no pronounced overall drainage system. The area north of the project site drains to the north at slopes ranging from approximately 0.6% to 1.5%. The northern half of the area west of the project site is relatively flat with a series of shallow depressions. The southern half drains to the southwest at an approximately 2% slope.

The area east of the project site is also very flat. Debbie Lane, and the associated homes have their own stormwater system that infiltrates runoff in an underground facility. Any overflow from this system is routed to a ditch located along the south property line of the Debbie Lane development. While the original intention for this ditch was to drain east towards the Garden of Eden Road drainage system, the east end of the ditch appears to be overgrown, which prevents drainage to the east. Any runoff from this ditch and from the area east of the center of the project site collects in a depression area, both on and off the project site.

The proposed improvements will require elevating the site to enable the collection and routing of the stormwater runoff to the treatment and flow control facility. Raising the finished ground elevation should have an insignificant effect on the north, west, and south side of the site. Runoff to the north and west may slightly be reduced since any runoff from the project site will be routed away from these property lines. The raised elevation on the east side of the site will prevent off-site runoff from entering the site, which it does under the current conditions. The project will provide a new drainage system along the southern portion of the east property line (see Figure 2) that will route and collected runoff along the east property line to the F&S Grade Road ditch system. The existing F&S Grade Road ditch system will be expanded southeast such that this offsite runoff can be captured and routed away from the site.

## 5.0 PERMANENT STORMWATER CONTROL PLAN

### 5.1 Post-Development Condition

The proposed development is shown in Figure 2. The project requires filling the site to enable the stormwater runoff to gravity flow to the stormwater combined treatment and detention facility. Roof, lawn, road, and driveway runoff will be captured and conveyed to this facility. As discussed in Section 2.0, the combined roof and hardscape area for the lots is assumed at 1,700 sf per lot. The driveway and road area is based on the site layout shown in Figure 2. Since BMP T5.13 *Post-Construction Soil Quality and Depth*, will be implemented, lawn areas will be modeled as Pasture. Land use assumed for the WWHM analysis is shown in Table 1.

Table 1: Summary of Ground Cover Breakdown

	Basin 1 (acres)
<b>Pre-Developed Area</b>	
Forest, Hydrologic Group C, Flat	<b>1.41</b>
<b>Post-Developed Area</b>	
Forest	0
Lawn: Pasture, Hydrologic Group C, Flat	0.92
Road and Driveways: Flat	0.21
Roof and Hardscape (6 @ 1,700 sf): Flat	0.23
Pond	0.05
<b>TOTAL</b>	<b>1.41</b>

This proposed stormwater management system described above, with additional information provided in Section 6.0 *Summary of Minimum Development Requirements*, and as shown in Figure 2, make up the Permanent Stormwater Control Plan.

## 6.0 SUMMARY OF MINIMUM DEVELOPMENT REQUIREMENTS

As shown in Table 1, the proposed development will add over 5,000 sf (0.11 acres) of new impervious area. As stated in the DOE Manual, Volume I, Section 2.4, *Applicability of the Minimum Requirements*, Minimum Requirements #1 - #9 apply to this project.

### 6.1 Minimum Requirement #1: Preparation of Stormwater Site Plans

This report is the Preliminary Stormwater Site Plan, prepared in accordance with Chapter 3 of Volume I of the DOE Manual. A final report will be provided with the construction documents.

### 6.2 Minimum Requirement #2: Construction Stormwater Pollution Prevention

A Stormwater Pollution Prevention Plan (SWPPP) will be included in the construction drawings. This Plan will provide erosion and sediment control information, locations where Best Management Practices (BMPs) shall be implemented, and requirements that the contractor must follow throughout construction.



### 6.3 Minimum Requirement #3: Source Control of Pollution

Other than the presence of the road and driveways, no improvements are proposed which will require additional source control BMPs. The buildings will incorporate asphalt shingle or enamel coated roofing and therefore will not require source control BMPs. During the construction phase of the project, source controls measures will be implemented.

### 6.4 Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls

As discussed in Section 4.0, *Off-Site Analysis*, of this report, due to the relative flatness of the project site and the surrounding areas there is no pronounced overall drainage system. Small localized depressions both on and off-site capture runoff with a generally flow path to the south towards F&S Grade Road.

The post-development system will regrade the site and eliminate the onsite depressions. Stormwater from the project site will be captured, treated, detained, and discharged to the F&S Grade Road ditch similar to the current conditions. The existing drainage system west of the site should be minimally impacted by the proposed improvements and will continue to drain as in the current conditions. Off-site runoff east of the site will still drain towards the small depression near the midpoint of the site's east property line. However, to provide a release for any ponded water east of the project site, the project will install a stormwater conveyance system along the property line that will route any surface water to the F&S Grade Road ditch. The F&S Grade Road ditch will be extended to the southeast corner of the project site to capture and convey this runoff northwest per the current conditions.

### 6.5 Minimum Requirement #5: On-Site Stormwater Management

Table 2.5.1, *Flow Chart for Determining LID MR # 5* of the DOE Manual (Volume 1, Section 2.5.5) is provided below:

Table 2.5.1 On-site Stormwater Management Requirements for Projects Triggering Minimum Requirements #1 - #5	
Project Type and Location	Requirement
New development on any parcel inside the UGA, or new development outside the UGA on a parcel less than 5 acres	Low Impact Development Performance Standard and BMP T5.13, or List #2 (applicant option).
New development outside the UGA on a parcel of 5 acres or larger	Low Impact Development Performance Standard and BMP T5.13.
Redevelopment on any parcel inside the UGA, or redevelopment outside the UGA on a parcel less than 5 acres	Low Impact Development Performance Standard and BMP T5.13, or List #2 (applicant option).
Redevelopment outside the UGA on a parcel of 5 acres or larger	Low Impact Development Performance Standard and BMP T5.13.

This project triggers Minimum Requirements 1-9 thereby Low Impact Development Performance Standards and BMP T5.13, *Post-Construction Soil Quality and Depth*, or List #2 Requirements will need to be addressed.

Meeting the flow control requirements for Low Impact Development Performance Standards Stormwater (additionally matching developed discharge durations to pre-developed forest durations below the 50% of the 2-year peak threshold down to 8% of the 2-year peak flow) will have an insignificant benefit due to the small overall project area. Additionally, meeting this extra detention requirement will make the flow control facility prohibitively huge, negating the ability to develop the property as proposed. Therefore the List #2 Requirement option will be addressed.

#### List #2 Requirements:

##### *Lawn and landscape areas:*

- *Post-Construction Soil Quality and Depth in accordance with BMP T5.13 in Chapter 5 of Volume V.*

BMP T5.13 will be followed.

##### *Roofs:*

1. *Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V, or Downspout Full Infiltration Systems in accordance with BMP T5.10A in Section 3.1.1 in Chapter 3 of Volume III*

BMP T5.30, Full Dispersion, cannot be implemented since 65% of the site cannot be left in a forest condition. Based on the site's existing silty sand/sandy silt (sandy loam) soils BMP T5.10A, *Downspout Full Infiltration Systems*, requires 125 LF of trench per 1,000 sf of roof area. Assuming a 1,500 sf roof area, the required trench length would be 188 ft. Based on the lot and house sizes, and structure setbacks from the property line, there is insufficient space available to install these infiltration trenches on the lots.

##### *Other Hard Surfaces:*

1. *Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V*

BMP T5.30: Full dispersion of non-roof hard surfaces is not possible since 65% of the site area cannot be left as a forest or native condition.

2. *Permeable pavement in accordance with BMP T5.15 in Chapter 5 of Volume V*

Permeable pavement is not practical due to the proximity of the perched groundwater to the ground surface. TP-1 (northeast corner of the site) and TP-2 (northwest side of site) had groundwater levels approximately 3.3 ft to 3.5 ft. below the surface. In the northeast corner of the site, where the proposed fill is minimal, there is potential for the seasonal high groundwater to create saturated conditions within one foot of the bottom of the pavement's lowest gravel base course. The type of soil used to fill the site is assumed to be till, which typically has a low permeability rate. This soil will enable a minimal amount to infiltration thereby also creating the potential for saturated conditions for the pavement's gravel base course.

3. *Bioretention BMP's (See Chapter 7, Volume V of the SMMWW) that have a minimum horizontally projected surface area below the overflow which is at least 5% of the total surface area draining to it.*

Bioretention cells typically have a top of cell to bottom of media depth of approximately five feet. Due to the site's high groundwater level, and the minimal fall across the site and in the

proposed conveyance pipes, there is not enough elevation difference to install bioretention cells and have them drain to the detention facility. Additionally, the high perched groundwater level would require lining the bioretention cells, thereby negating most of the LID benefits of this BMP.

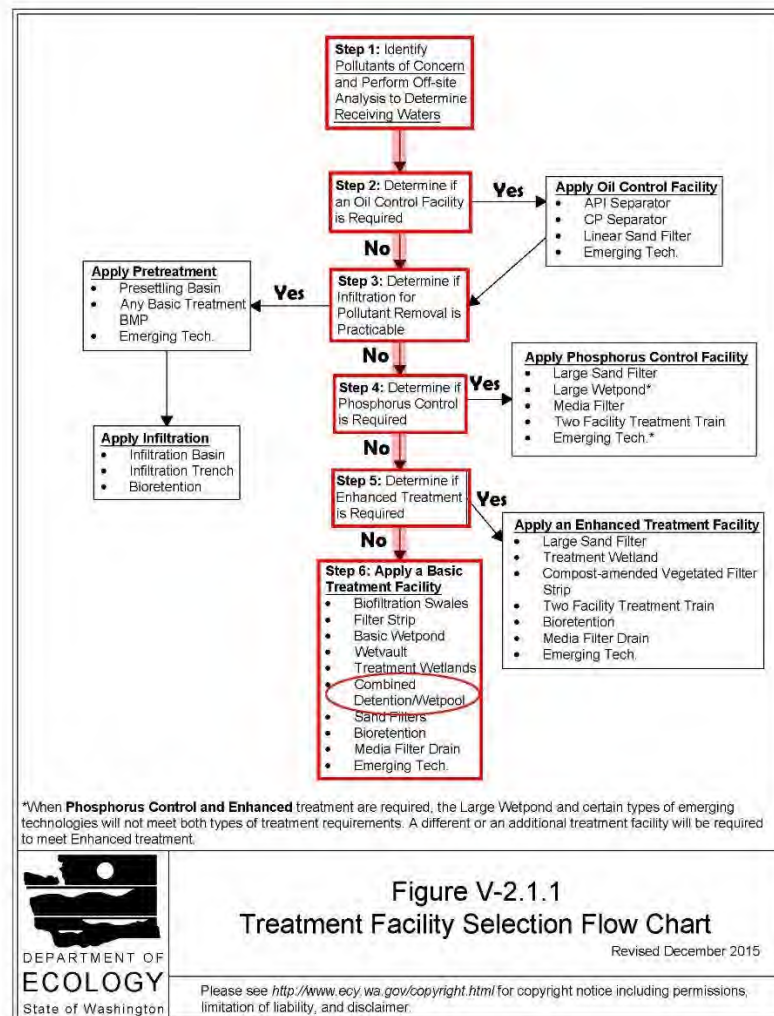
4. *Sheet Flow Dispersion in accordance with BMP T5.12, or Concentrated Flow Dispersion in accordance with BMP T5.11 in Chapter 5 of Volume V.*

Runoff from the lot hardscape areas will have a sheet flow dispersion onto the adjacent landscaped areas. However, no modeling credit can be utilized since the adjacent ground is not an undisturbed native landscaped area.

## 6.6 Minimum Requirement #6: Runoff Treatment

Figure 2.1.1, *Treatment Facility Selection Flow Chart*, from the DOE Manual and shown below, identifies the available water quality treatment options required for projects.

The flow chart Steps are addressed as follows:



*Step 1: Identify Pollutants of Concern and Perform Off-site Analysis to Determine Receiving Waters*

See Section 4.0 of this report for the off-site analysis. The DOE has not identified any 303(d) impaired water way on or adjacent to the site– see figure below. (The purple lines identify waterways.)



Figure A: 303(d) Impaired Waterways

(Downloaded from Department of Ecology Washington State Water Quality Atlas  
<https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=1&Layers=30&Filters=n,y,n,n&F2.1=0&F2.2=0&BBBox=-13612253,6188441,-13603647,6195933>)

*Step 2: Determine if an Oil Control Facility is Required*

Criteria for determining if an oil control facility is required is as follows:

- Average daily traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area.
- An area of a commercial or industrial site subject to petroleum storage and transfer in excess of 1,500 gallons per year, not including routinely delivered heating oil.
- An area of a commercial or industrial site subject to parking, storage or maintenance of 25 or more vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.).
- A road intersection with a measured average daily traffic (ADT) count of 25,000 vehicles or more on the main roadway and 15,000 vehicles or more on any intersecting roadway, excluding projects proposing primarily pedestrian or bicycle use improvements.
- Land uses that may have areas that fall within the definition of “high-use sites” and require oil control treatment, such as:
  - Industrial machinery and equipment, and railroad equipment maintenance areas
  - Log storage and sorting yards
  - Aircraft maintenance areas
  - Railroad yards
  - Fueling stations
  - Vehicle maintenance and repair sites

- Construction businesses (paving, heavy equipment storage and maintenance, storage of petroleum products.)

The project site does not meet any of these conditions, therefore an oil control facility is not required.

*Step 3: Determine if Infiltration for Pollutant Removal is Practicable*

Due to the presence of a high perched groundwater table, infiltration is not feasible.

*Step 4: Determine if Phosphorus Control is Required*

The requirement to control phosphorus in this area, or downstream of the site, has not been identified by the local government, the DOE, or the Environmental Protection Agency (EPA).

*Step 5: Determine if Enhanced Treatment is Required*

Criteria for requiring enhanced treatment is provided in Volume V, Section 3.4 of the DOE Manual. A single-family residence development with an anticipated ADT below 7,500 does not require enhanced treatment. Basin treatment only will be provided.

Based on the land use areas provided Table 1, a WWHM analysis was performed to estimate the Water Quality BMP Flow and Volume for the developed site. A copy of the analysis is provided in Appendix B. The WWHM analysis estimated this volume at 0.0721 acre-feet (3,140 cubic feet).

A combined wetpond and detention pond will be used to provide water quality treatment in accordance with BMP T10.40: *Combined Detention and Wetpool Facilities*. The proposed facility is shown in Figure 2. The layout of the dead storage component provides for a five foot deep first cell (four feet of storage and one foot of sediment storage) and a long narrow flow path to the outlet structure. The table below provides a summary of the areas at each of the dead storage elevation and the associated storage volume. As shown the cumulative volume is 0.075 acre-ft, which is greater than the required 0.0721 acre-ft water quality volume.

Table 2: Wetpond Dead Storage Elevations, Areas, and Volume

Pond Depth	Elevation (ft)	Actual Area (ft <sup>2</sup> )	Actual Area (acres)	Actual Volume per Interval (ft <sup>3</sup> )	Cumulative Volume (ft <sup>3</sup> )	Cumulative Volume (acr-ft)
0	53	2,520	0.058			
(1)	52	1,210	0.028	1,865	1,865	0.043
(2)	51	610	0.014	910	2,775	0.064
(3)	50	144	0.003	377	3,152	0.072
(4)	49	64	0.001	104	3,256	0.075

As discussed in Section 3.2 of this Plan, the approximate perched groundwater elevation in the vicinity of the pond is El. 52.2 ft. Since the bottom of the proposed facility is lower than this elevation, the facility will be lined with either a clay layer or an impervious PVC (or equivalent) liner.



## 6.7 Minimum Requirement #7: Flow Control

Flow control is required since the proposed project will add more than 10,000 square feet of effective impervious surfaces. As specified by the DOE Manual the basin was analyzed using WWHM. Based on the land use areas provided Table 1, a WWHM analysis was performed to estimate the required detention volume. A copy of the analysis is provided in Appendix B.

A combined wetpond and detention pond will be used to provide water quality treatment in accordance with BMP T10.40: *Combined Detention and Wetpool Facilities*. The proposed facility is shown in Figure 2. The detention component of the facility will include three feet of live storage (located above the wetpool dead storage) plus an addition foot of freeboard. The top of the freeboard area is located a minimum of 20 ft from the property lines.

From the WWHM analysis, the required pond bottom has an area of 2,500 square feet, 2(H):1(V) side slopes, and a 3.0 ft riser height, requiring a live storage volume of 9,560 ft<sup>3</sup>. The modeled pond and control structure configuration are as follows:

The screenshot displays the 'Trapezoidal Pond 1 Mitigated' software interface. It includes sections for Facility Name, Facility Type, Downstream Connections, Facility Dimensions, Infiltration, Outlet Structure Data, and Orifice Diameter Height. The Facility Dimensions section shows values for Bottom Length (50.08942091), Bottom Width (50.08942091), Effective Depth (4), and various side slopes (2). The Outlet Structure Data section shows Riser Height (3), Riser Diameter (18), Riser Type (Notched), Notch Type (Rectangular), Notch Height (1.2832), and Notch Width (0.0149). The Orifice Diameter Height section shows three orifices with diameters of 0.663, 0, and 0 inches, and heights of 0, 0, and 0 feet. The Pond Volume at Riser Head is .219 ac-ft. The Show Pond Table button is set to Open Table, and the Initial value is 0.

Facility Name	Facility Type
Trapezoidal Pond 1	

Downstream Connections	Outlet 1	Outlet 2	Outlet 3
	0	0	0

Facility Dimensions	
Facility Bottom Elevation (ft)	0
Bottom Length (ft)	50.08942091
Bottom Width (ft)	50.08942091
Effective Depth (ft)	4
Left Side Slope (H/V)	2
Bottom Side Slope (H/V)	2
Right Side Slope (H/V)	2
Top Side Slope (H/V)	2

Infiltration
NO

Outlet Structure Data	
Riser Height (ft)	3
Riser Diameter (in)	18
Riser Type	Notched
Notch Type	Rectangular
Notch Height (ft)	1.2832
Notch Width (ft)	0.0149

Orifice Number	Diameter (in)	Height (ft)
1	0.663	0
2	0	0
3	0	0

Pond Volume at Riser Head (ac-ft) .219

Show Pond Table Open Table

Initial 0

The proposed detention pond shown in Figure 2 has a bottom area of 2,520 sf: 2(H):1(V) side slopes, three feet of live storage and one foot of freeboard. Table 3 provides information on the flow control facility's performance during the design storm events.

Table 3: Summary of Flow Rates

	Forested Pre-Dev Flow Rate	Post-Dev Undetained Flow Rate	Detained Release Rate
2 Year Storm	0.03 cfs	0.22 cfs	0.02 cfs
10 Year Storm	0.08 cfs	0.39 cfs	0.05 cfs
25 Year Storm	0.10 cfs	0.50 cfs	0.08 cfs
100 Year Storm	0.15 cfs	0.68 cfs	0.15 cfs

### **6.8 Minimum Requirement #8: Wetlands Protection**

As shown in Figure 1, the site contains an existing wetland that continues on to the adjacent property to the east. The site's wetland will be filled with the proposed mitigation to be completed offsite at a wetland mitigation bank. A critical area assessment has been prepared by Aqua-Terr Systems (ATSI). See their report for additional information. Runoff from the project will not discharge into an existing wetland.

### **6.9 Minimum Requirement #9 Operation and Maintenance**

A Stormwater Facilities Operation and Maintenance Manual will be provided with the final stormwater site plan.

## **FIGURES**

- Figure 1: Existing Conditions
- Figure 2: Developed Conditions
- Figure 3: Stormwater Off-Site Analysis



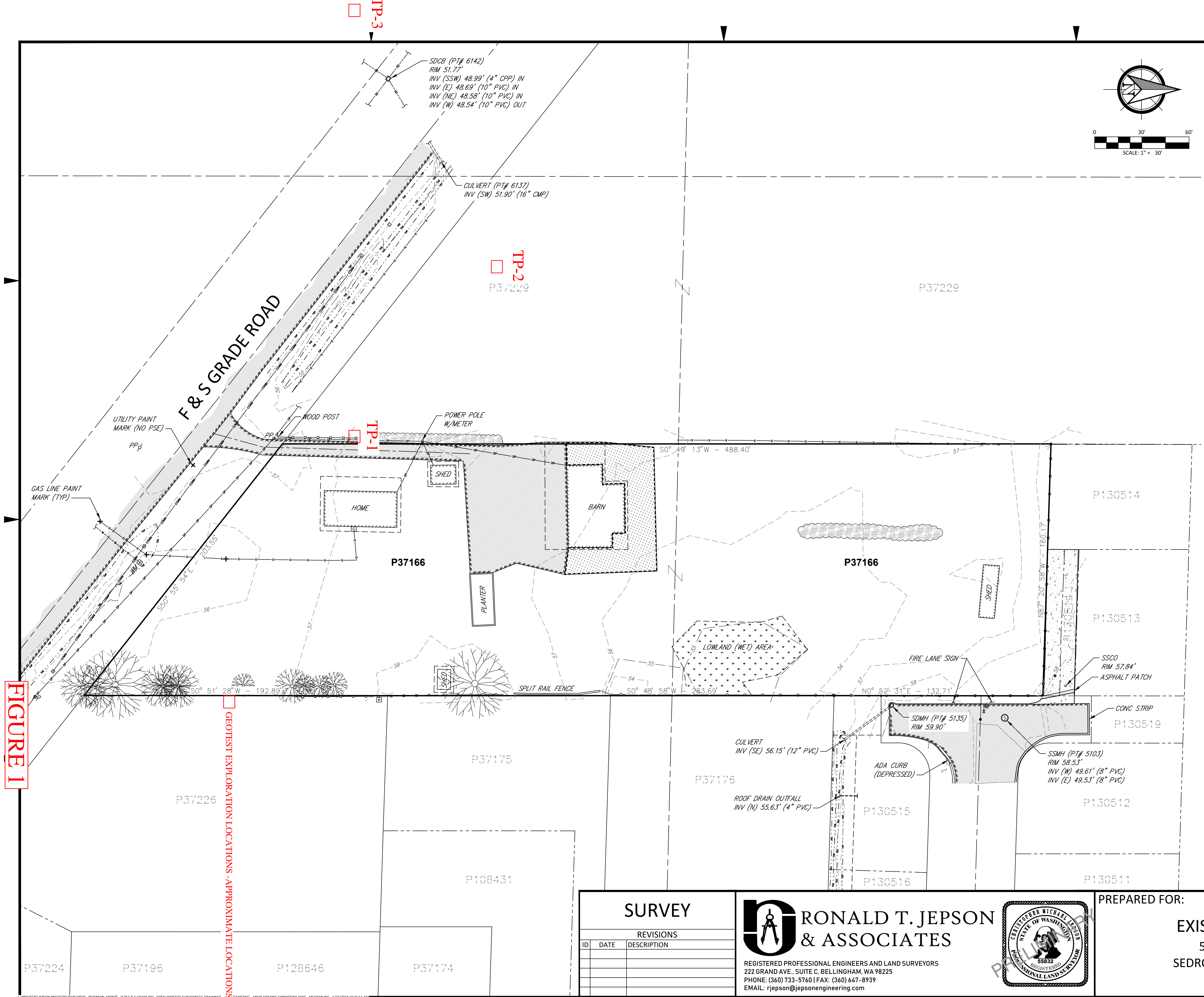


FIGURE 1

### HORIZONTAL DATUM

NAD83  
NE CORNER SECTION 23, TOWNSHIP 35 NORTH, RANGE 4 EAST, W.M. AS PROJECT BENCHMARK.

### VERTICAL DATUM

NAVD88  
PROJECT BENCH MARK (PER ABOVE) - ELEVATION 59.37'

### BASIS OF BEARING

HELD BEARING OF S 00° 51' 13" W, 2,627.53' BETWEEN FOUND BRASS DISC AT NE CORNER OF SECTION 23 (INTERSECTION OF GARDEN OF EDEN ROAD & EAST JONES ROAD) AND THE FOUND BRASS DISC AT THE EAST MID-SECTION POINT OF SECTION 23 (INTERSECTION OF GARDEN OF EDEN ROAD AND COOK ROAD).

**LEGAL DESCRIPTION**

COMMENCING AT A POINT 487 FEET WEST AND 423 FEET SOUTH OF THE NORTHEAST CORNER OF THE NORTHEAST 1/4 OF THE NORTH EAST 1/4 OF SECTION 23, TOWNSHIP 35 NORTH, RANGE 4 EAST, W.M.;

THENCE RUN SOUTH 484 FEET TO THE FAIRHAVEN AND SOUTHERN RAILWAY RIGH-OF-WAY; THENCE RUN ON AN ANGLE SOUTHEAST PARALLEL WITH THE SAID RIGHT-OF-WAY A DISTANCE OF 200 FEET; THENCE RUN NORTH 610 FEET; THENCE WEST 160 FEET TO THE PLACE OF BEGINNING.

ALL SITUATE IN SKAGIT COUNTY, WASHINGTON.

- FEATURE LEGEND**
- 250 CONTOUR (MAJOR W/ ELEV)
  - CONTOUR (MINOR)
  - TOP OF SLOPE
  - TOE OF SLOPE
  - FENCE LINE (WIRE MESH)
  - FENCE LINE (PICKET)
  - FENCE LINE (BARBED WIRE)
  - STORM DRAIN LINE
  - COMMUNICATIONS LINE (UNDERGROUND)
  - POWER LINE (OVERHEAD)
  - GAS LINE
  - WATER LINE
  - POWER POLE
  - POWER VAULT
  - FIRE HYDRANT
  - CATCH BASIN (STORM)
  - MANHOLE (SEWER)
  - UNDERGROUND UTILITY (SURFACE MARKER)
  - SIGN
  - ASPHALT PAVEMENT
  - CONCRETE PAVEMENT
  - GRAVEL PAVEMENT
  - LOWLAND AREA (WET)
  - VEGETATED AREA (SHRUBS, BUSHES, TREES)

**BURIED UTILITIES NOTE:**

ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE IN APPROXIMATE LOCATIONS ONLY AND THERE IS NO GUARANTEE THAT ALL UTILITIES ON THIS SITE ARE SHOWN. THE CONTRACTOR MUST FIELD VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT THE WASHINGTON STATE UTILITY LOCATE CENTER AT 8-1-1 AT LEAST 48 HOURS BEFORE CONSTRUCTION.



## SURVEY

REVISIONS		
ID	DATE	DESCRIPTION

**RONALD T. JEPSON & ASSOCIATES**

REGISTERED PROFESSIONAL ENGINEERS AND LAND SURVEYORS  
222 GRAND AVE., SUITE C, BELLINGHAM, WA 98225  
PHONE: (360) 733-5760 | FAX: (360) 647-8939  
EMAIL: rjepson@jepsonengineering.com

PREPARED FOR: MONTE PETERSON

**EXISTING CONDITIONS**

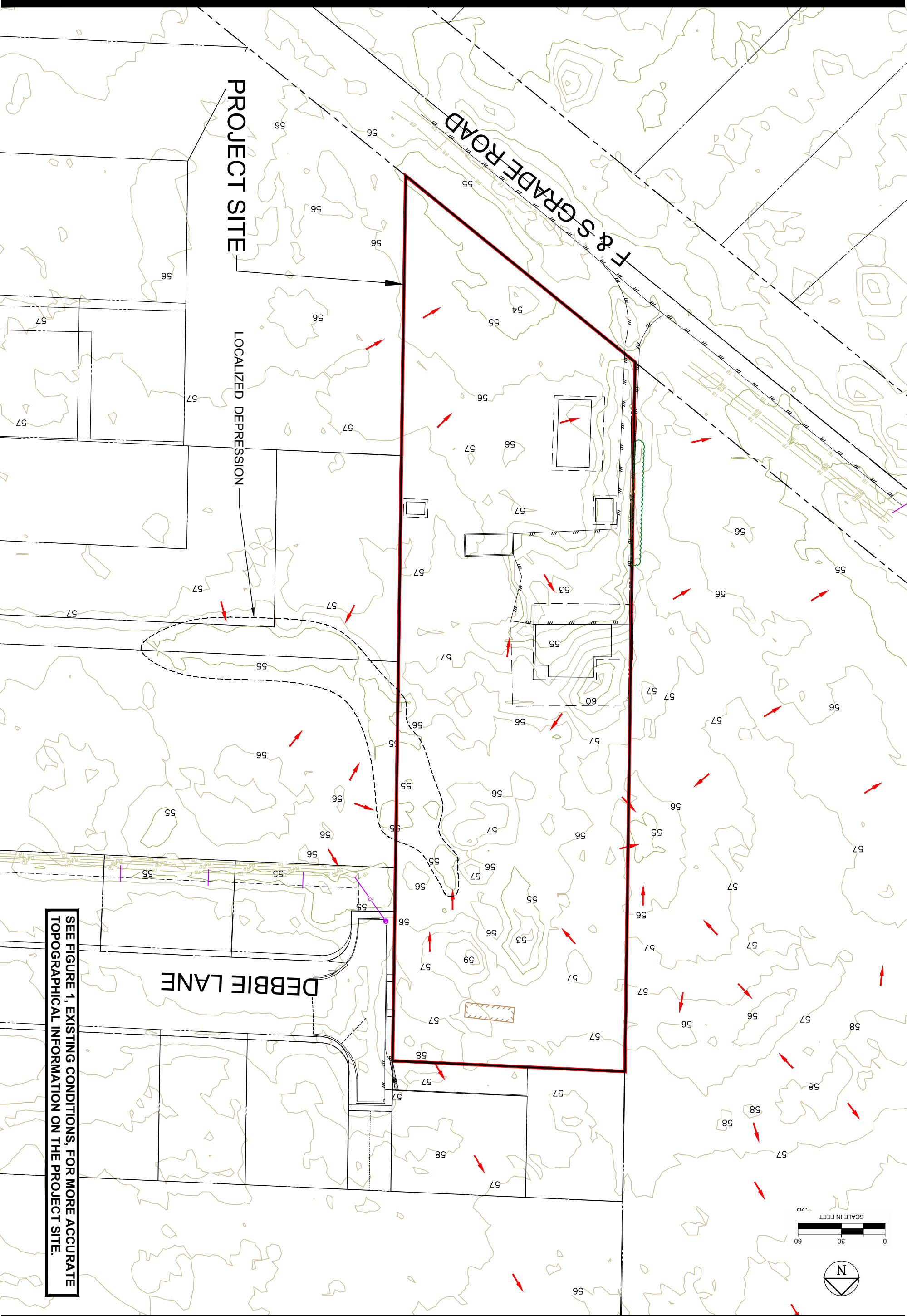
528 F & S GRADE ROAD  
SEDRO WOOLLEY, WASHINGTON

PROJ. NO.:	18029
ISSUED:	05/23/2018
FIELD BK:	18-02B
DRWN BY:	M. SPARLING
CHK'D BY:	C. JEPSON
SHEETNO:	1 of 1









## **APPENDIX A**

### **Soils Information**


- NRCS Soils Information (4 pages)
- Geotest Report, *Infiltration Feasibility Evaluation, (Peterson Long Plat) 528 F and S Grade Road, Sedro Woolley, Washington*, May 25, 2018 (18 pages)
- Geotest Report, *Infiltration Evaluation – Pilot Infiltration Test, (Peterson Long Plat) 528 F and S Grade Road, Sedro Woolley, Washington*, August 1, 2018 (6 pages)
- Excerpt from 2014 DOE Manual, *Outwash Soils Over High Groundwater ...*, Volume III, Appendix III-B, Page B-4 (1 page)

Hydrologic Soil Group—Skagit County Area, Washington



## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines


 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points






 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available


### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Skagit County Area, Washington  
 Survey Area Data: Version 18, Sep 10, 2018

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

Date(s) aerial images were photographed: Jul 24, 2012—Oct 10, 2016

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

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
92	Minkler silt loam	B/D	3.2	100.0%
<b>Totals for Area of Interest</b>			<b>3.2</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified



*Tie-break Rule:* Higher



**GEOTEST**

741 Marine Drive  
Bellingham, WA 98225

20611-67<sup>th</sup> Avenue NE  
Arlington, WA 98223

PHONE  
360 733\_7318

TOLL FREE  
888 251\_5276

FAX  
360 733\_7418

May 25, 2018  
Job No. 18-0304

**Monte Peterson**

528 F and S Grade Road  
Sedro Woolley, Washington 98284

**Re: Infiltration Feasibility Evaluation**

528 F and S Grade Road  
Sedro Woolley, Washington 98284

Dear Mr. Peterson

As requested, GeoTest Services, Inc. (GTS) is pleased to submit this report summarizing the results of our stormwater infiltration feasibility evaluation associated with new construction planned on the approximately 2 acre lot located at the above referenced address, as shown on the Vicinity Map (Figure 1). This report has been prepared in general accordance with the terms and conditions established in our service agreement dated March 16, 2018 and authorized by Monte Peterson.

The purpose of this evaluation was to assess the existing subsurface conditions for use in designing stormwater infiltration systems associated with the proposed development. This report summarizes our conclusions and recommendations regarding the potential for on-site stormwater infiltration. Specifically, our services included the following:

1. Evaluation of 4 test pits explorations with a tracked excavator within the subject property. Test pits explorations were advanced to between 8 and 9.5 feet below the ground surface (BGS).
2. Review of the information collected during this phase of the investigation in order to provide recommendations for the project. Our findings and recommendations are summarized in this site-specific report and contain the following information:
  - A site plan showing pertinent existing site features and the approximate location of the explorations accomplished for this project.
  - Logs of our explorations and results of our laboratory testing including a chart illustrating the soil classification criteria and the terminology and symbols used on the exploration logs.
  - Laboratory determinations of soil classification. Infiltration feasibility is based on USDA soil gradation analysis, in general accordance with the 2012 *Stormwater Management Manual for Western Washington* (SMMWW) amended December 2014. Laboratory evaluation on collected soils included USDA sieve analyses and moisture contents. The feasibility of on-site soil for stormwater treatment was determined by testing 4 soil samples for Cation Exchange Capacity, pH, and Organic Content.

The scope of services for this report included stormwater infiltration only, it does not include a groundwater mounding analysis, critical areas assessment or geotechnical recommendations with regards to the planned building foundation support, settlement, potential seismic considerations such as liquefaction and/or other geologic hazards that may exist within this property.

## **PROJECT DESCRIPTION**

We understand that there are plans to develop new multifamily residences on the approximately 2-acre lot located on the north side of F and S Grade Road near the corner of F and S Grade Road and Garden of Eden Road in Sedro Woolley, Washington. As part of the proposed development, stormwater management practices and facilities are proposed to accommodate onsite stormwater runoff from proposed impervious surfaces.

## **SITE CONDITIONS**

This section discusses the general surface and subsurface conditions observed at the project site at the time of our field investigation. Interpretations of the site conditions are based on the results of our review of available information, site reconnaissance, subsurface explorations, laboratory testing, and our experience in the project vicinity.

### **Surface Conditions**

At the time of our visit on May 8, 2018, the subject property was bordered to the south by F and S Grade Road, and by residential properties in all other directions. The site currently consists of a single-family home, one large shed, and two smaller sheds. The single-family home is located at the southwest corner of the property, the large shed is located on the west edge at the center of the property, one of the smaller sheds is located at the north side of the site, and the other is located at the east edge of the property. A paved asphalt driveway extends from F and S Grade Road along the west edge of the home. Site vegetation consists of short grass, various shrubs and trees, deciduous and coniferous trees along the eastern edge and northern half of the property. The site topography is relatively flat, with just a few feet of elevation change over the entirety of the site. No surface water was observed on-site. Figure 1 and 2 on the following page show conditions on-site at the time of visit.



*Figure 1. View of front of home. View looking north.*



*Figure 2. View of back of home. View looking north.*

## **Site Geology**

Geologic information for the project site was obtained from the map interactive *Geologic Map of Washington State*, published by the Washington State Department of Natural Resources (DNR). According to the map, subsurface soils within the subject property consist of Quaternary age Alluvial Deposits (QvI) described as moderately to well-sorted, locally well-stratified volcanic sand, gravelly sand, sandy gravel, and cobble gravel with minor silt and clay. Based on our subsurface explorations, the near surface site soils appeared to be consistent with the mapped Alluvial Deposits.

## **Subsurface Soil Conditions**

Subsurface conditions were explored by excavating 4 test pits (TP-1 through TP-4) on May 8, 2017. Approximate locations of these explorations have been plotted on the Site and Exploration Plan, Figure 2.

The test pits were advanced with a tracked excavator to depths of between 8.0 and 9.5 feet below grade surface (BGS). After test pit explorations were completed, the pits were backfilled with the excavated soils and compacted with the bucket of the excavator.

Within the exploratory test pit TP-1, silty sand was present to the full depth of the exploration. Within exploratory test pits TP-2 through TP-4, silt with varying amounts of sand was observed. The density within each exploration was considered loose to medium dense (coarse grain soils) or soft to stiff (fine grain soils). The soils encountered in all explorations were characterized as Alluvial Deposits, and extended to the full depth of each exploration.

Please refer to the attached exploration logs for more detail (Figures 4 and 5).

## **Groundwater Seepage and Seasonal Groundwater**

For the purposes of this report, observed groundwater seepage represents either the existing surface of a groundwater table or the surface of perched seepage. The groundwater table is referred to as the atmospheric pressure surface that coincides with the top of the zone of saturation and is the surface that dictates the development design recommendations in this report. Perched seepage is referred to as a saturated zone that develops where a restrictive surface (i.e. dense, fine grained soils or bedrock) limits the vertical, downward migration of near-surface water.

### *Groundwater Observations*

At the time of our visit on May 8, 2017 slight groundwater seepage was observed within all test pits. Within test pit explorations TP-1 and TP-2, seepage was encountered at approximately 3.3 and 3.5 feet BGS respectively. Seepage was encountered at 7.0 feet BGS within test pit exploration TP-3, and at 4.8 feet BGS within test pit TP-4. GTS considers the groundwater that was encountered to be representative of a perched groundwater condition.

As groundwater table elevations and seepage rates are typically not static, it is anticipated that groundwater conditions will vary depending on local subsurface conditions, season, precipitation, changes in land use both on and off site and other factors. Markedly, we anticipate that groundwater conditions on-site are largely influenced by seasonal variations of precipitation. Groundwater conditions were observed on-site on May 8, 2018. The subject property and vicinity of the site experienced an unusually high volume of rainfall during April 2018. GTS anticipates the groundwater elevations observed on-site to be generally indicative of a seasonal high groundwater table.



## RESULTS AND CONCLUSIONS

Based upon an evaluation of the data collected during this investigation, it is our opinion that soils within the project vicinity have a varied potential for infiltration based on facility location.

According to the Department of Ecology 2012 *Stormwater Management Manual for Western Washington* as Amended in 2014 (SWMMWW) and the 2012 *Low Impact Development Technical Guidance Manual for Puget Sound*, separation between the bottom of an infiltration facility and the seasonal high groundwater table must be a minimum of 1 to 3 feet depending on the facility type. If separation between the bottom of the infiltration facility and seasonal high groundwater table is less than 5 feet, groundwater mounding analysis or in-situ infiltration testing will be required. GTS understands that the subject development is in the preliminary design phase and that groundwater mounding or a Pilot Infiltration Test (PIT) may not be appropriate at this stage in the design.

The SWMMWW supplies a method for estimating saturated hydraulic conductivity using grain size distribution and calculation within Section 3.3.6. However, this method applies to soils primarily consisting of sands and gravels (greater than 50% retained the U.S. No. 200 sieve). Soils within the test pit explorations did not meet this criterion, and therefore the grain size distribution method is not applicable to determining infiltration rates on-site.

Soils primarily containing silt have highly variable infiltration rates based on the density and moisture of soil on-site. Based on our test pit explorations, GTS does not recommend conventional infiltration facilities due to the anticipated low-permeability of the subsurface soil. However, Low Impact Development (LID) infiltration facilities may be possible.

Groundwater is considered a restrictive layer by the SWMMWW. The elevation of groundwater will significantly influence the feasibility of any LID facilities on-site. Within test pit explorations TP-1, TP-2, and TP-4 groundwater is located within the upper 5-feet BGS. Within TP-3, groundwater is located at approximately 7 feet BGS. LID may be possible within all locations on-site with the application of long-term design rates determined by in-situ infiltration studies. Due to greater depth of groundwater within TP-3, GTS anticipates that infiltration potential within the vicinity of TP-3 is greater than within the vicinity of the other exploratory test pits on-site.

### Stormwater Pollutant Treatment

The stormwater facilities on-site may require some form of pollutant pre-treatment or treatment with an amended soil prior to on-site infiltration or off-site discharge. It is our opinion, based on past experience, that the re-use of onsite topsoil is often the most sustainable and cost effective method for pollutant treatment purposes. Table 1 below shows the cation exchange capacities, organic contents, and pH of site subsurface soils. These parameters were determined to establish their pollutant treatment suitability. Soils with cation exchange capacities of greater than or equal to 5.0 meq/100 grams, and organic content greater than 1% are considered suitable for treatment purposed by the 2012 DOE Stormwater Management Manual of Western Washington.

Testing was performed by Northwest Agricultural Consultants on two samples collected from the seven test pits. A summary of the laboratory test results is presented in Table 1 below.

TABLE 1 Cation Exchange Capacity, Organic Content, and pH Laboratory Test Results					
Test Pit ID	Sample Depth (ft)	Geologic Unit	Cation Exchange Capacity (meq/100 grams)	Organic Content (%)	pH
TP-1	1.5	Alluvial Deposits	9.2	3.02	6.6
TP-2	3.5	Alluvial Deposits	10.9	3.25	6.2
TP-3	8.5	Alluvial Deposits	1.8	1.03	6.4
TP-4	0.5	Alluvial Deposits	23.1	12.60	5.7

Based on the results listed in Table 1, the native soil deposits at the upper 3.5 feet appear to be suitable for onsite pollutant treatment purposes based on the SSC-6 of the 2012 Washington State Department of Ecology *Stormwater Management Manual for Western Washington* amended December 2014.

The scope of services for this report included stormwater infiltration only. This report is not intended to address other geotechnical concerns with regards to the planned building foundation support, settlement, potential seismic considerations such as liquefaction and/or other geologic hazards that may exist within this property. GeoTest can perform additional geotechnical evaluation and/or analysis, with regards to the above mentioned geotechnical items, upon request.

## LIMITATIONS

The analyses, conclusions, and recommendations provided in this report are based on conditions encountered at the time of the subsurface exploration performed by GeoTest Services, Inc., information from previous studies and our experience and judgment. Our work has been performed in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in this area. GeoTest Services has prepared this report for the exclusive use of Monte Peterson and his representatives for specific application to the proposed development located at 528 F and S Grade Road in Sedro-Woolley, Washington. No warranty, expressed or implied, is made.

We must presume the subsurface conditions encountered are representative for the proposed site for the purposes of formulating our recommendations. However, you should be aware that subsurface conditions may vary with time and between exploratory locations, and unanticipated conditions may be encountered. If construction reveals differing conditions or the design is modified, we should be retained to reevaluate our recommendations and provide written confirmation or modification, as needed.

We appreciate the opportunity to be of service to you on this project. If any questions should arise regarding this report, please contact the undersigned.

Respectfully Submitted,  
**GeoTest Services, Inc.**



Erin Belsvik, E.I.T  
Project Engineer



Edwardo Garcia, P.E.  
Geotechnical Engineering Manager

#### Attachments

Figure 1	Vicinity Map
Figure 2	Site and Exploration Plan
Figure 3	Soil Classification System and Key
Figures 4 -5	Logs of Test Pits
Figures 6-7	Grain Size Distribution
Northwest Agricultural Results (1 page)	
ASFE - Report Limitations and Guidelines For Its Use (3 pages)	

#### References

DNR, Washington Division of Geology and Earth Resources, 2018, Washington Geologic Information Portal: <https://geologyportal.dnr.wa.gov/> (accessed May 16, 2018).

Washington State Department of Ecology, 2012 (amended December 2014). *Stormwater Management Manual for Western Washington*.



# **GEOTEST SERVICES, INC.**

741 Marine Drive  
Bellingham, WA 98225

phone: (360) 733-7318  
fax: (360) 733-7418

Date: 5-8-18

By: ZC

Scale: As Shown

Project

## **VICINITY MAP**

**F AND S GRADE ROAD**  
**528 F AND S GRADE ROAD**  
**SEDRO WOOLLEY, WASHINGTON**

**18-0304**

Figure


**1**





50 Feet



 TP-# = Approximate Test Pit Location

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Project

## **SITE AND EXPLORATION PLAN**

**F AND S GRADE ROAD**

**528 F AND S GRADE ROAD**

**SEDRO WOOLLEY, WASHINGTON**

**18-0304**

Figure

**2**



## Soil Classification System

	MAJOR DIVISIONS		GRAPHIC SYMBOL	USCS LETTER SYMBOL	TYPICAL DESCRIPTIONS <sup>(1)(2)</sup>
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL	CLEAN GRAVEL (Little or no fines)		<b>GW</b>	Well-graded gravel; gravel/sand mixture(s); little or no fines
				<b>GP</b>	Poorly graded gravel; gravel/sand mixture(s); little or no fines
	(More than 50% of coarse fraction retained on No. 4 sieve)	GRAVEL WITH FINES (Appreciable amount of fines)		<b>GM</b>	Silty gravel; gravel/sand/silt mixture(s)
				<b>GC</b>	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL	CLEAN SAND (Little or no fines)		<b>SW</b>	Well-graded sand; gravelly sand; little or no fines
				<b>SP</b>	Poorly graded sand; gravelly sand; little or no fines
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			<b>SM</b>	Silty sand; sand/silt mixture(s)
				<b>SC</b>	Clayey sand; sand/clay mixture(s)
				<b>ML</b>	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
	SILT AND CLAY (Liquid limit greater than 50)			<b>CL</b>	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				<b>OL</b>	Organic silt; organic, silty clay of low plasticity
				<b>MH</b>	Inorganic silt; micaceous or diatomaceous fine sand
HIGHERLY ORGANIC SOIL				<b>CH</b>	Inorganic clay of high plasticity; fat clay
				<b>OH</b>	Organic clay of medium to high plasticity; organic silt
	HIGHERLY ORGANIC SOIL			<b>PT</b>	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		<b>AC or PC</b>	Asphalt concrete pavement or Portland cement pavement
ROCK		<b>RK</b>	Rock (See Rock Classification)
WOOD		<b>WD</b>	Wood, lumber, wood chips
DEBRIS		<b>DB</b>	Construction debris, garbage

Notes: 1. Soil descriptions are based on the general approach presented in the *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*, as outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the *Standard Test Method for Classification of Soils for Engineering Purposes*, as outlined in ASTM D 2487.

2. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent: > 50% - "GRAVEL," "SAND," "SILT," "CLAY," etc.

Secondary Constituents: > 30% and ≤ 50% - "very gravelly," "very sandy," "very silty," etc.  
> 12% and ≤ 30% - "gravelly," "sandy," "silty," etc.

Additional Constituents: > 5% and ≤ 12% - "slightly gravelly," "slightly sandy," "slightly silty," etc.  
≤ 5% - "trace gravel," "trace sand," "trace silt," etc., or not noted.

Drilling and Sampling Key			Field and Lab Test Data	
SAMPLE NUMBER & INTERVAL	SAMPLER TYPE		Code	Description
	Code	Description		
	a	3.25-inch O.D., 2.42-inch I.D. Split Spoon	PP = 1.0	Pocket Penetrometer, tsf
	b	2.00-inch O.D., 1.50-inch I.D. Split Spoon	TV = 0.5	Torvane, tsf
	c	Shelby Tube	PID = 100	Photoionization Detector VOC screening, ppm
	d	Grab Sample	W = 10	Moisture Content, %
	e	Other - See text if applicable	D = 120	Dry Density, pcf
	1	300-lb Hammer, 30-inch Drop	-200 = 60	Material smaller than No. 200 sieve, %
	2	140-lb Hammer, 30-inch Drop	GS	Grain Size - See separate figure for data
	3	Pushed	AL	Atterberg Limits - See separate figure for data
	4	Other - See text if applicable	GT	Other Geotechnical Testing
Groundwater			CA	Chemical Analysis
			Approximate water elevation at time of drilling (ATD) or on date noted. Groundwater levels can fluctuate due to precipitation, seasonal conditions, and other factors.	

## TP-1

## SAMPLE DATA

## SOIL PROFILE

## GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Test Data	Graphic Symbol	USCS Symbol	Excavation Method: <u>Tracked Excavator</u> Ground Elevation (ft): <u>Not Determined</u>	
0							
1	1	d			SM/OL SM	Loose, dark brown, moist, silty SAND with rootlets and organic material (Topsoil)	
2						Loose, light brown to gray, moist, silty SAND (Weathered Alluvial Deposits)	
3	2	d			SM	-Orange mottling observed at ~2.5-3' BGS	
4						Loose, gray to light brown, moist, silty SAND (Alluvial Deposits)	
5	3	d	W = 29 GS		SM	Medium dense, gray, damp to wet, slightly silty SAND (Alluvial Deposits)	
6						-Caving of sidewalls occurred at ~5' BGS	
7							
8							
9							
10							

Test Pit Completed 04/08/18  
Total Depth of Test Pit = 8.0 ft.

▽ Slight groundwater seepage encountered at 3.5 ft.

## TP-2

## SAMPLE DATA

## SOIL PROFILE

## GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Test Data	Graphic Symbol	USCS Symbol	Excavation Method: <u>Tracked Excavator</u> Ground Elevation (ft): <u>Not Determined</u>	
0							
1	4	d			SM/OL ML	Loose, dark brown, moist, silty SAND with rootlets and organic material (Topsoil)	
2						Soft, light brown to gray, moist, sandy SILT (Weathered Alluvial Deposits)	
3	5	d			ML	-Pocket penetrometer reading of 0.25 TSF at ~2' BGS	
4						Soft to medium stiff, gray, moist, sandy SILT (Alluvial Deposits)	
5	6	d	W = 39 GS		ML/CL CL	-Abandoned clay pipe observed at ~3' BGS	
6						-Pocket penetrometer reading of 0.75 TSF at ~4' BGS	
7						-Orange mottling observed at ~ 5' BGS	
8	7	d	W = 44 GS			Medium stiff, gray, damp to wet, sandy SILT/CLAY (Alluvial Deposits)	
9						-Caving of sidewalls occurred at ~8' BGS	
10							

Test Pit Completed 04/08/18  
Total Depth of Test Pit = 9.5 ft.

▽ Slight groundwater seepage encountered at 3.3 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
  2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
  3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

GEOTEST

F and S Grade Road  
528 F and S Grade Road  
Sedro Woolley, WA

Log of Test Pits

Figure

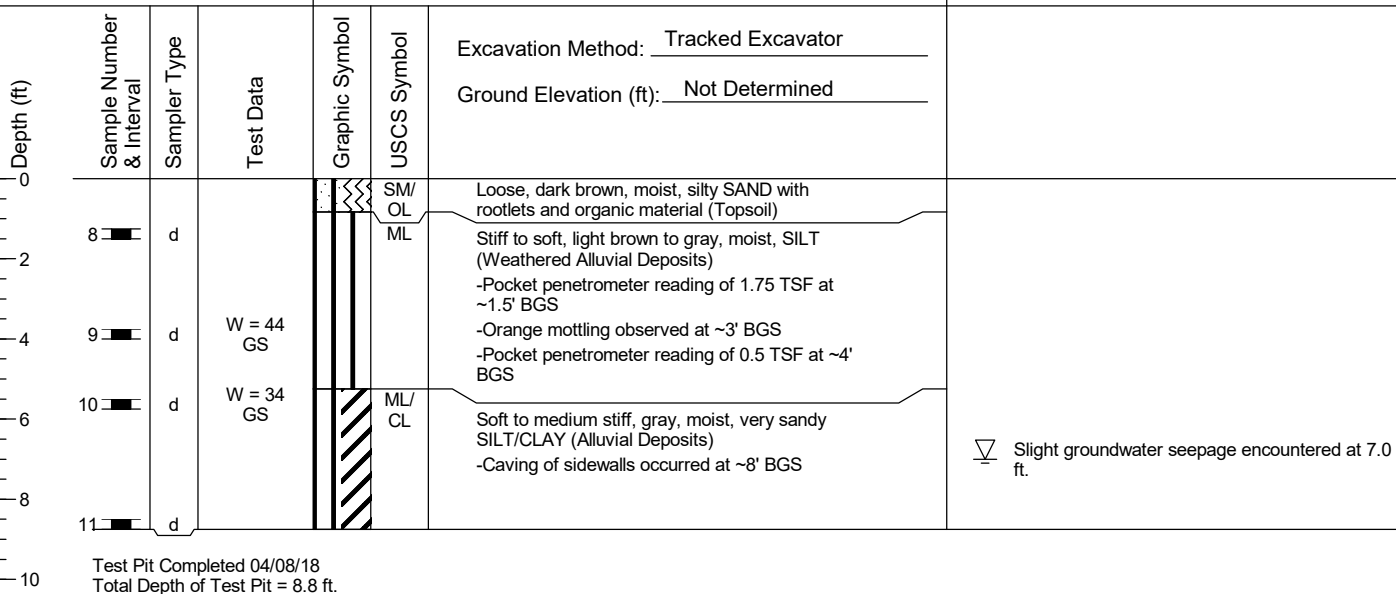
4

## TP-3

## SAMPLE DATA

## SOIL PROFILE

## GROUNDWATER

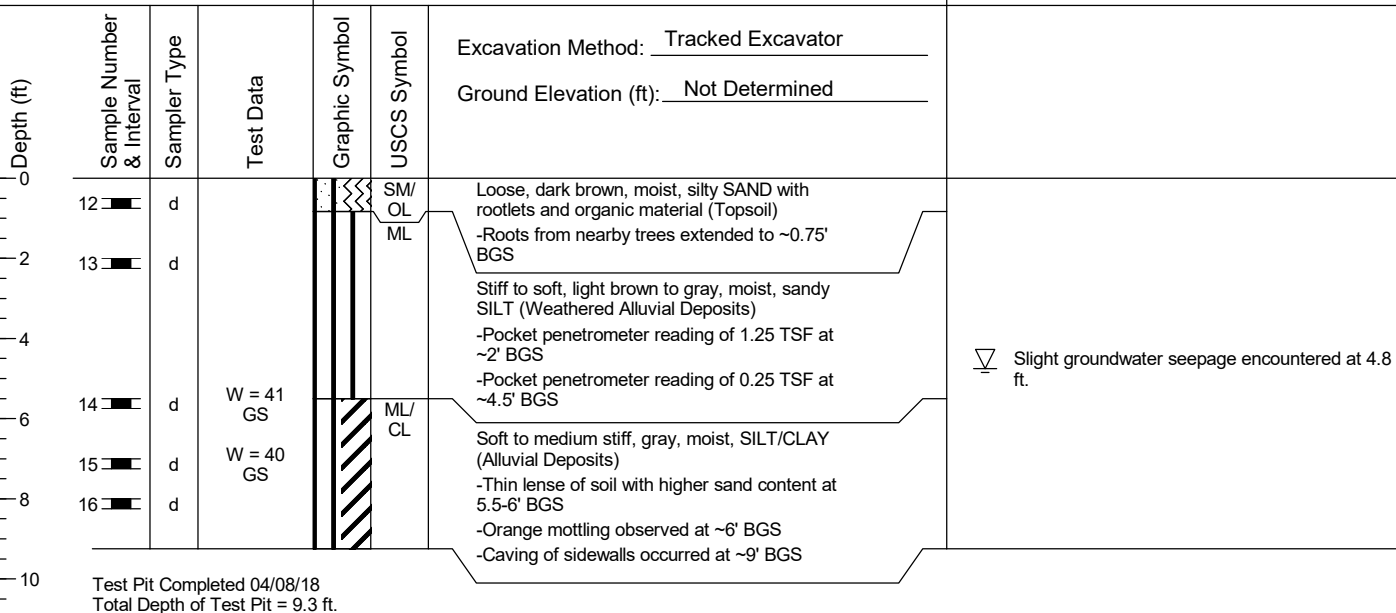


## TP-4

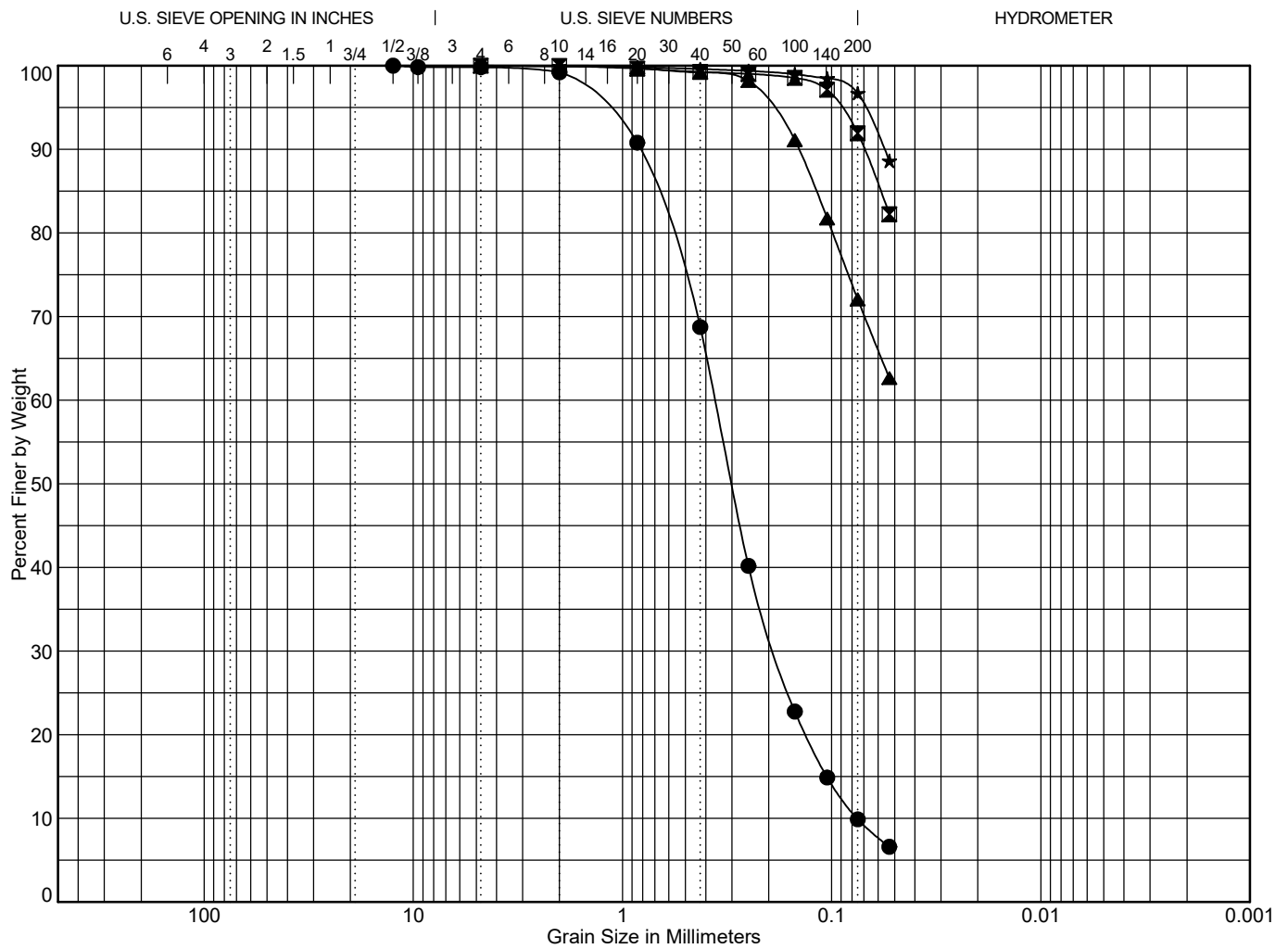
## SAMPLE DATA

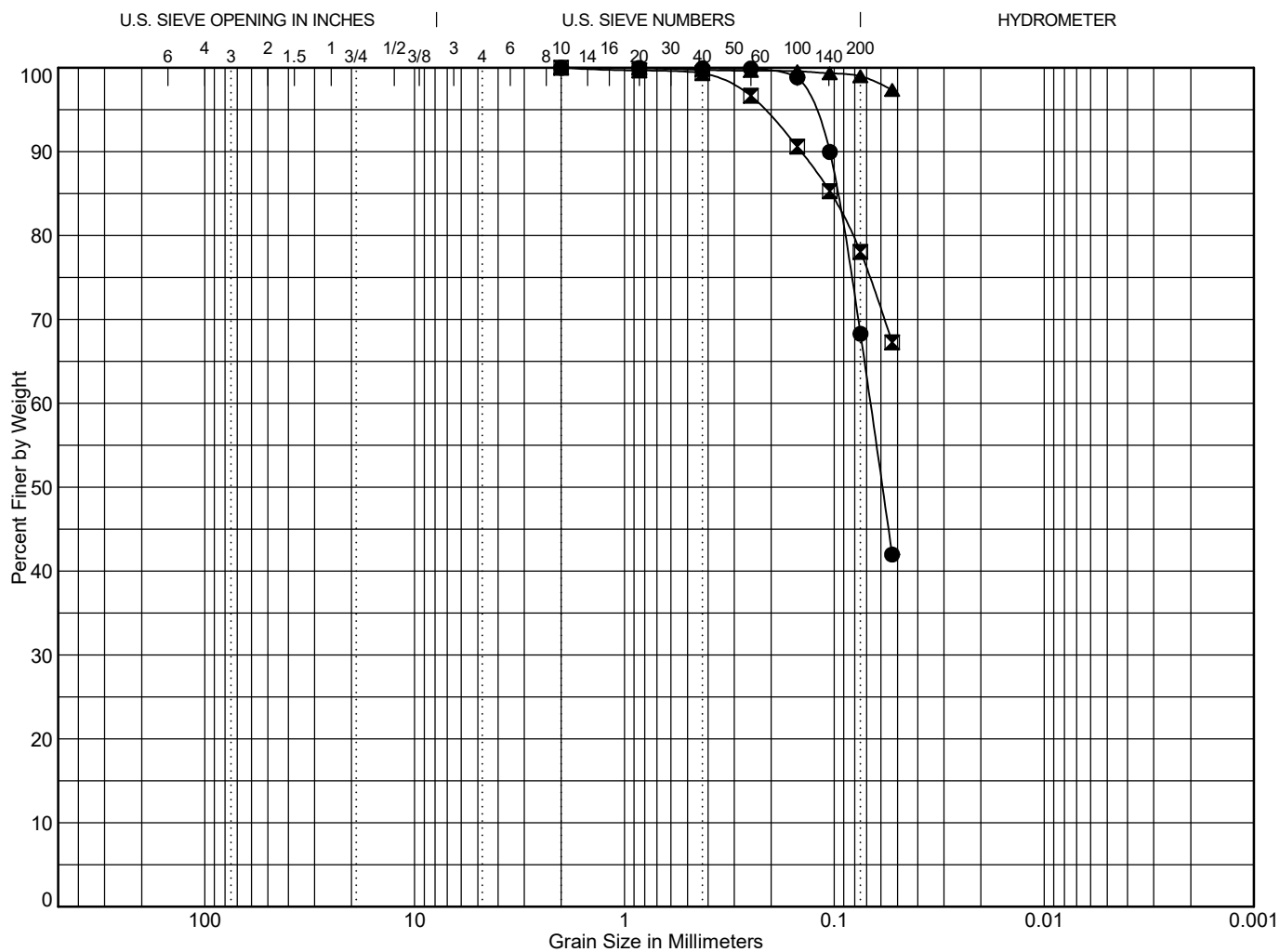
## SOIL PROFILE

## GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
  2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
  3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.





Cobbles	Gravel		Sand			Silt or Clay
	coarse	fine	coarse	medium	fine	

Point	Depth	Classification								LL	PL	PI	C <sub>c</sub>	C <sub>u</sub>	
●	TP-3	5.5	VERY SANDY SILT/CLAY (ML/CL)												
☒	TP-4	5.5	SANDY SILT/CLAY (ML/CL)												
▲	TP-4	7.0	SILT/CLAY (ML/CL)												
Point	Depth	D <sub>100</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>10</sub>	%Coarse Gravel	% Fine Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Fines			
●	TP-3	5.5	2	0.067	0.059			0.0	0.0	0.0	0.1	31.6	68.3		
☒	TP-4	5.5	2					0.0	0.0	0.0	0.6	21.3	78.1		
▲	TP-4	7.0	2					0.0	0.0	0.0	0.3	0.8	99.0		

$$C_c = D_{30}^2 / (D_{60} * D_{10})$$

$$C_u = D_{60} / D_{10}$$

To be well graded:  $1 < C_c < 3$  and  $C_u > 4$  for GW or  $C_u > 6$  for SW

**GEOTEST**

F and S Grade Road  
528 F and S Grade Road  
Sedro Woolley, WA

Grain Size Test Data

Figure  
**7**





**Northwest Agricultural  
Consultants**

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lab@nwag.com

PAP-Accredited



GeoTest Services Inc.  
741 Marine Drive  
Bellingham, WA 98225

**Report:** 44828-1  
**Date:** May 10, 2018  
**Project No:** 18-0304  
**Project Name:** F&S Grade Road

Sample ID	pH	Organic Matter	Cation Exchange Capacity
TP-1 @ 1.5'	6.6	3.02%	9.2 meq/100g
TP-2 @ 3.5'	6.2	3.25%	10.9 meq/100g
TP-3 @ 8.5'	6.4	1.03%	1.8 meq/100g
TP-4 @ 0.5'	5.7	12.60%	23.1 meq/100g
Method	SM 4500-H <sup>+</sup> B	ASTM D2974	EPA 9081

## REPORT LIMITATIONS AND GUIDELINES FOR ITS USE<sup>1</sup>

Subsurface issues may cause construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help:

### **Geotechnical Services are Performed for Specific Purposes, Persons, and Projects**

At GeoTest our geotechnical engineers and geologists structure their services to meet specific needs of our clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of an owner, a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared solely for the client. No one except you should rely on your geotechnical engineer who prepared it. And no one – not even you – should apply the report for any purpose or project except the one originally contemplated.

### **Read the Full Report**

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

### **A Geotechnical Engineering Report is Based on a Unique Set of Project-Specific Factors**

GeoTest's geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the clients goals, objectives, and risk management preferences; the general nature of the structure involved its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless GeoTest, who conducted the study specifically states otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed, for example, from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed construction,
- alterations in drainage designs; or
- composition of the design team; the passage of time; man-made alterations and construction whether on or adjacent to the site; or by natural alterations and events, such as floods, earthquakes or groundwater fluctuations; or project ownership.

Always inform GeoTest's geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

<sup>1</sup>Information in this document is based upon material developed by ASFE, Professional Firms Practicing in the Geosciences(asfe.org)



## **Subsurface Conditions Can Change**

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. Do not rely on the findings and conclusions of this report, whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. Always contact GeoTest before applying the report to determine if it is still relevant. A minor amount of additional testing or analysis will help determine if the report remains applicable.

## **Most Geotechnical and Geologic Findings are Professional Opinions**

Our site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoTest's engineers and geologists review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in your report. Retaining GeoTest who developed this report to provide construction observation is the most effective method of managing the risks associated with anticipated or unanticipated conditions.

## **A Report's Recommendations are *Not* Final**

Do not over-rely on the construction recommendations included in this report. Those recommendations are not final, because geotechnical engineers or geologists develop them principally from judgment and opinion. GeoTest's geotechnical engineers or geologists can finalize their recommendations only by observing actual subsurface conditions revealed during construction. GeoTest cannot assume responsibility or liability for the report's recommendations if our firm does not perform the construction observation.

## **A Geotechnical Engineering or Geologic Report may be Subject to Misinterpretation**

Misinterpretation of this report by other design team members can result in costly problems. Lower that risk by having GeoTest confer with appropriate members of the design team after submitting the report. Also, we suggest retaining GeoTest to review pertinent elements of the design teams plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having GeoTest participate in pre-bid and preconstruction conferences, and by providing construction observation.

## **Do not Redraw the Exploration Logs**

Our geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors of omissions, the logs included in this report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable; but recognizes that separating logs from the report can elevate risk.

## **Give Contractors a Complete Report and Guidance**

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, but preface it with a clearly written letter of transmittal. In that letter, consider advising the contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the GeoTest and/or to conduct

<sup>1</sup>Information in this document is based upon material developed by ASFE, Professional Firms Practicing in the Geosciences([asfe.org](http://asfe.org))



additional study to obtain the specific types of information they need or prefer. A pre-bid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might you be in a position to give contractors the best information available, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. In addition, it is recommended that a contingency for unanticipated conditions be included in your project budget and schedule.

### **Read Responsibility Provisions Closely**

Some clients, design professionals, and contractors do not recognize that geotechnical engineering or geology is far less exact than other engineering disciplines. This lack of understanding can create unrealistic expectations that can lead to disappointments, claims, and disputes. To help reduce risk, GeoTest includes an explanatory limitations section in our reports. Read these provisions closely. Ask questions and we encourage our clients or their representative to contact our office if you are unclear as to how these provisions apply to your project.

### **Environmental Concerns Are Not Covered in this Geotechnical or Geologic Report**

The equipment, techniques, and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated containments, etc. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. Do not rely on environmental report prepared for some one else.

### **Obtain Professional Assistance to Deal with Biological Pollutants**

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts biological pollutants from growing on indoor surfaces. Biological pollutants includes but is not limited to molds, fungi, spores, bacteria and viruses. To be effective, all such strategies should be devised for the express purpose of prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional biological pollutant prevention consultant. Because just a small amount of water or moisture can lead to the development of severe biological infestations, a number of prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of this study, the geotechnical engineer or geologist in charge of this project is not a biological pollutant prevention consultant; none of the services preformed in connection with this geotechnical engineering or geological study were designed or conducted for the purpose of preventing biological infestations.

<sup>1</sup>Information in this document is based upon material developed by ASFE, Professional Firms Practicing in the Geosciences([asfe.org](http://asfe.org))





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August 1, 2018  
Job No. 18-0304

**Monte Peterson**  
528 F and S Grade Road  
Sedro-Woolley, Washington 98284

**Re: Infiltration Evaluation – Pilot Infiltration Test**  
528 F and S Grade Road  
Sedro-Woolley, Washington 98284

Dear Mr. Peterson,

As requested, GeoTest Services, Inc. (GTS) is pleased to submit this report summarizing the results of our stormwater infiltration evaluation associated with the proposed development at the above referenced address in Sedro-Woolley, Washington.

The purpose of this evaluation was to assess the existing subsurface conditions for use in designating stormwater infiltration systems associated with the proposed development at this site. This report summarizes the results of the on-site small-scale Pilot Infiltration Test and provides an analysis of groundwater mounding conditions below the proposed stormwater facility. Cascade Engineering Group provided GTS with preliminary information regarding stormwater management on-site. Cascade Engineering Group anticipates the construction of a pond with infiltration at the south end of the site. The footprint of the pond is anticipated to be between 1,900 and 2,800 square feet.

Project information, site conditions, site geology, subsurface site conditions, and geotechnical recommendations for the above referenced project are discussed in detail in the report titled *Infiltration Feasibility Evaluation* by GeoTest Services dated May 25, 2018.

### **Small-Scale Pilot Infiltration Test**

GTS visited the site on July 12, 2018 to perform a Small-Scale Pilot Infiltration Test (PIT) per the 2012 Washington State Department of Ecology *Stormwater Management Manual of Western Washington* as Amended in 2014 (SWMMWW) in order to determine the initial saturated hydraulic conductivity rate ( $K_{sat}$ ) in inches per hour. The PIT was performed on the western edge of the property within the southern half of the site (See Figure 1: Site and Exploration Plan). The PIT was excavated to a depth of approximately 2.5 feet below ground surface (BGS). The base of the test was located within loose to medium dense Alluvial Deposits consisting of sandy silt. The base of the PIT had dimensions of approximately 5.17 feet wide by 5.75 feet long. The PIT was allowed to “presoak” from a time of 0 to 300 minutes. From 300 to 360 minutes, a constant head infiltration test was performed. A falling head test was conducted between 360 and 430



minutes. The depth of water within the excavation dropped approximately 9 inches during this time.

At the end of the PIT, the remaining water was scooped from the excavation, and the bottom of the PIT was excavated an additional 5 feet to a depth of approximately 7.5 feet BGS to determine if a restrictive layer or indication of groundwater was present. The soil under the PIT location was observed to be Alluvial Deposits consisting of sandy to very sandy silt. Groundwater was not observed within the excavation.

Based on the results of the constant head test and falling head test, GTS determined the uncorrected infiltration rate of the native Alluvial Deposits at a depth of approximately 2.5 feet BGS to be 2.9 inches per hour. A groundwater mounding analysis and correction factors pertaining to site variability, test method, and sediment build-up are discussed in the sections below and shall be applied to this measured, uncorrected infiltration rate to establish a long-term design infiltration rate.

### **Groundwater Mounding Analysis**

A groundwater mounding analysis of the proposed infiltration facility on-site was calculated using the United States Geological Survey publication titled *Simulation of Groundwater Mounding Beneath Hypothetical Stormwater Infiltration Basins* and accompanying software (Carleson, 2010). This model uses the 1967 Hantush equation which incorporates the size of the infiltration basin, infiltration rate, horizontal hydraulic conductivity of the soil, specific yield of the soil, duration of the infiltration period, and the thickness of the underlying aquifer to quantify the height of the groundwater mound underlying the basin.

The following inputs were entered in to the Hantush equation in order to establish a groundwater mound with a height of 0.84 feet beneath the center of the infiltration facility at the end of a two-day infiltration period.

#### Recharge Rate

The recharge rate, or infiltration rate was determined by the results of the constant head test and falling head test, as discussed in the Small-Scale Pilot Infiltration Test. GTS determined the uncorrected infiltration rate ( $K_{sat}$ ) of the native Alluvial Deposits at a depth of approximately 2.5 feet BGS to be 2.9 inches per hour. The correction factors that were applied to the initial  $K_{sat}$  as described in the SWMMWW in order to determine the recharge rate are small-scale PIT ( $CF_v=0.5$ ), siltation build-up ( $CF_m=0.9$ ) and site variability ( $CF_v=0.6$ ) for a total safety factor of 3.7. GTS established a recharge rate of 0.78 inches per hour for infiltration facilities located on the south west side of the site, or 1.56 feet per day.

#### Specific Yield

Specific yield is a dimensionless number that indicates how much water the unsaturated zone under the infiltration facility can store once the recharge reaches the water table. A typical value for silt soils is 20% or 0.20.

### Horizontal Hydraulic Conductivity

According to the USGS *Simulation of Groundwater Mounding Beneath Hypothetical Stormwater Infiltration Basins* publication, horizontal hydraulic conductivity is assumed to be equal to ten times the vertical soil permeability. The vertical soil permeability as established above is 1.56 feet per day. Therefore, the horizontal hydraulic conductivity is 15.6 feet per day.

### Basin Dimensions

The dimensions of the stormwater infiltration facility influences the groundwater mound underlying the basin. GTS utilized information provided by Cascade Engineering Group for the dimensions of the stormwater facility. Based on their preliminary design, a conservative surface area of the bottom of the basin is approximately 2,800 square feet. The width of the basin was determined to be approximately 20 feet, and the length of the basin was determined to be approximately 140 feet.

### Duration of Infiltration Period

The Washington State Department of Ecology SWMMWW site suitability criteria indicate that a drawdown period of no greater than 48 hours shall be required after a single storm event. Based on this requirement, a duration of infiltration period of 2 days was selected for use in the Hantush equation.

### Initial Thickness of Saturated Zone

The initial thickness of the saturated zone refers to the total depth of the aquifer below the facility prior to infiltration. This is the distance between the bottom of the aquifer and the seasonal high groundwater elevation. GTS utilized boring and well logs published by the Washington State Department of Natural Resources, and a publication titled *Hydrogeologic Framework, Groundwater Movement, and Water Budget in Tributary Subbasins and Vicinity, Lower Skagit River Basin, Skagit and Snohomish Counties, Washington* by the USGS to determine an average depth of the aquifer within the project vicinity. Based on this research, the initial thickness of the saturated zone at the project location is at least 100 feet but has the potential to be up to 150 feet. A conservative value of 100 feet was selected for use in the Hantush equation.

### Depth to Groundwater

Initial subsurface investigations on May 8, 2018 indicated that groundwater elevations within the area of the proposed stormwater facility were located between 5.0 and 7.0 feet BGS. The wet season, as determined by the Washington State Department of Ecology occurs between October 1<sup>st</sup> and April 30<sup>th</sup>. Therefore, the subsurface investigations were performed just outside of the wet season. However, during the month of April 2018, Skagit County experienced more than double the average rainfall for April. GTS anticipates that the observations made on May 8, 2018 were indicative of a typical wet season value. In addition, GTS observed wet season well and boring logs within the project vicinity, published by the Washington State Department of Natural

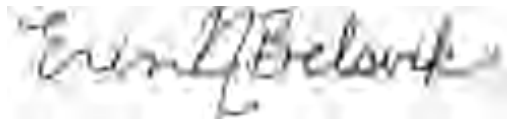
Resources. Groundwater depths within these logs appeared to be approximately 6 feet BGS. GTS considers the high groundwater elevation below the proposed stormwater facility to be at 5.0 feet BGS.

## Results and Conclusions

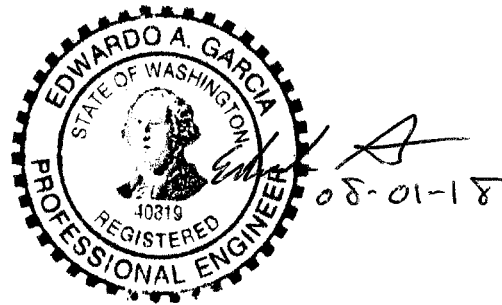
GTS recommends that a **design infiltration rate of 0.78 inches per hour** be appropriate for the design of the proposed stormwater facility with the bottom of the facility located 3.0 feet BGS or higher. The high groundwater elevation is assumed to be located at 5.0 feet BGS. The groundwater mound is calculated to be 0.84 feet above the groundwater table at the center of the facility for the recommended design infiltration rate and facility with a surface area of 2,800 square feet or less.

We appreciate the opportunity to provide geotechnical services on this project and look forward to assisting you during the construction phase. If you have any questions or comments regarding the information provided, or if we may be of further service, please call.

Respectfully Submitted,  
GeoTest Services, Inc.



Erin N. Belsvik, E.I.T.  
Project Engineer



Edwardo Garcia, P.E.  
Geotechnical Engineering Manager

Attachments:    Figure 1                      Site and Exploration Plan  
                         Figure 2                      Pilot Infiltration Test Pit Log

## REFERENCES

Carleton, G.B., 2010, Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins: U.S. Geological Survey Scientific Investigations Report 2010–5102

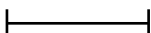
United States, Congress, Washington State Department of Natural Resources. "Geologic Information Portal." *Geologic Information Portal*. <https://www.dnr.wa.gov/geologyportal>

United States, Congress, United States Geological Survey, et al. "Hydrogeologic Framework, Groundwater Movement, and Water Budget in Tributary Subbasins and Vicinity, Lower Skagit River Basin, Skagit and Snohomish Counties, Washington." *Hydrogeologic Framework, Groundwater Movement, and Water Budget in Tributary Subbasins and Vicinity, Lower Skagit River Basin, Skagit and Snohomish Counties, Washington*, Scientific Investigations Report, 2009.

Washington State Department of Ecology Water Quality Program. December 2014. *2012 Stormwater Management Manual for Western Washington*. Publication Number 14-10-055.



50 Feet



TP-# = Approximate Test Pit Location



PIT-1 = Approximate Pilot Infiltration Test Location

# **GEOTEST SERVICES, INC.**

741 Marine Drive  
Bellingham, WA 98225

phone: (360) 733-7318  
fax: (360) 733-7418

Date: 7-27-18

By: ZC/ ENB

Scale: As shown

Project

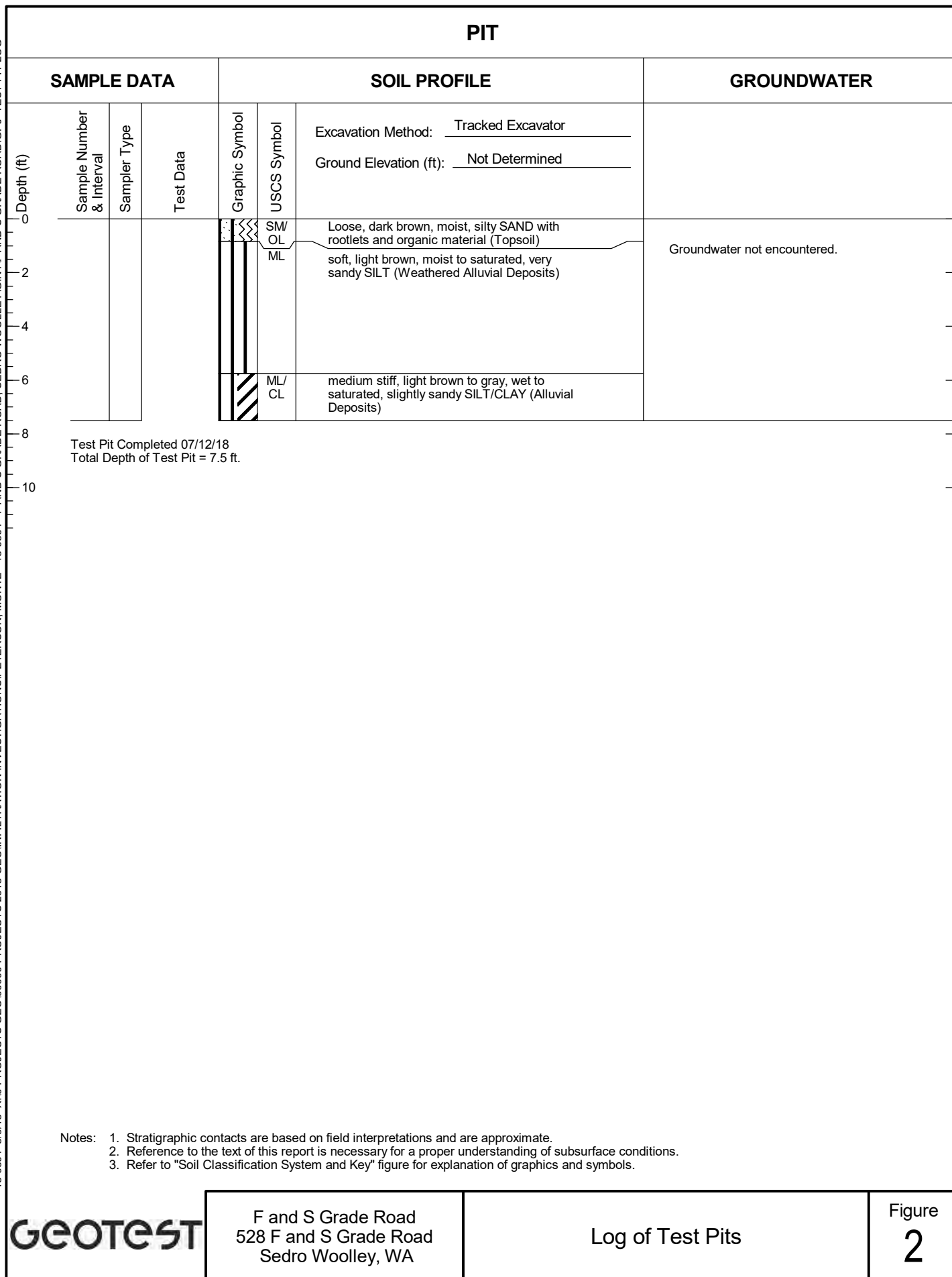
## **SITE AND EXPLORATION PLAN**

**F AND S GRADE ROAD  
528 F AND S GRADE ROAD  
SEDRO WOOLLEY, WASHINGTON**

**18-0304**

Figure

**1**





general user. The advanced user will have the ability to change the coefficient for a specific site. However, such changes will be recorded in the WWHM output.

#### **4. Soil data.**

Soil type, along with vegetation type, greatly influences the rate and timing of the transformation of rainfall to runoff. Sandy soils with high infiltration rates produce little or no surface runoff; almost all runoff is from ground water. Soils with a compressed till layer slowly infiltrate water and produce larger amounts of surface runoff during storm events.

WWHM uses three predominant soil type to represent the soils of western Washington: till, outwash, and saturated

Till soils have been compacted by glacial action. Under a layer of newly formed soil lies a compressed soil layer commonly called "hardpan". This hardpan has very poor infiltration capacity. As a result, till soils produce a relatively large amount of surface runoff and interflow. A typical example of a till soil is an Alderwood soil (SCS class C). Where field infiltration tests indicate a measured (initial) infiltration rate less than 0.30 in/hr, the user may model the site as a class C soil.

Outwash soils have a high infiltration capacity due to their sand and gravel composition. Outwash soils have little or no surface runoff or interflow. Instead, almost all of their runoff is in the form of ground water. An Everett soil (SCS class A) is a typical outwash soil.

Outwash soils over high ground water or an impervious soil layer have low infiltration rates and act like till soils. Where ground water or an impervious soil layer is within 5 feet from the surface, outwash soils may be modeled as till soils in the WWHM.

Saturated soils are usually found in wetlands. They have a low infiltration rate and a high ground water table. When dry, saturated soils have a high storage capacity and produce very little runoff. However, once they become saturated they produce surface runoff, interflow, and ground water in large quantities. Mukilteo muck (SCS class D) is a typical saturated/wetland soil.

The user will be required to investigate actual local soil conditions for the specific development planned. The user will then input the number of acres of outwash (A/B) till (C/D), and saturated/wetland soils for the site conditions.

Alluvial soils are found in valley bottoms. These are generally fine-grained and often have a high seasonal water table. There has been relatively little experience in calibrating the HSPF model to runoff from these soils, so in the absence of better information, these soils may be modeled as till soils.

Additional soils will be included in the WWHM if appropriate HSPF parameter values are found to represent other major soil groups.

The three predominant soil types are represented in the WWHM by specific HSPF parameter values that represent the hydrologic characteristics of these soils. More information on these parameter values is presented below.

#### **5. Vegetation data.**

As with soil type, vegetation types greatly influence the rate and timing of the transformation of rainfall to runoff. Vegetation intercepts precipitation, increases its ability to percolate through the soil, and evaporates and transpires large volumes of water that would otherwise become runoff.

## **APPENDIX B**

### **Hydrologic and Hydraulic Analysis**

- WWHM Results – Peterson Long Plat, Pond w/ 3 ft Live Storage, February 18, 2019, (7 pages)

WWHM2012  
PROJECT REPORT

---

**Project Name:** CEGX06-Pond3ft  
**Site Name:** CEGX06: Peterson Long Plat  
**Site Address:** Pond w/ 3 ft. Live; 2:1 sideslopes  
**City** : 2-18-2019  
**Report Date:** 2/18/2019  
**Gage** : Burlington  
**Data Start** : 1948/10/01  
**Data End** : 2009/09/30  
**Precip Scale:** 1.00  
**Version Date:** 2018/10/10  
**Version** : 4.2.16

---

**Low Flow Threshold for POC 1** : 50 Percent of the 2 Year

---

**High Flow Threshold for POC 1:** 50 year

---

**PREDEVELOPED LAND USE**

**Name** : Basin 1  
**Bypass:** No

**GroundWater:** No

<u>Pervious Land Use</u>	<u>acre</u>
C, Forest, Flat	1.41
<b>Pervious Total</b>	<b>1.41</b>
<u>Impervious Land Use</u>	<u>acre</u>
Impervious Total	0
<b>Basin Total</b>	<b>1.41</b>

---

<b>Element Flows To:</b>		
Surface	Interflow	Groundwater

---

**MITIGATED LAND USE**

**Name** : Basin 1  
**Bypass:** No

**GroundWater:** No

<u>Pervious Land Use</u>	<u>acre</u>
C, Pasture, Flat	.92

Pervious Total 0.92

<b><u>Impervious Land Use</u></b>	<b><u>acre</u></b>
ROADS FLAT	0.21
ROOF TOPS FLAT	0.23
POND	0.05

Impervious Total 0.49

Basin Total 1.41

**Element Flows To:**

<b>Surface</b>	<b>Interflow</b>	<b>Groundwater</b>
Trapezoidal Pond 1	Trapezoidal Pond 1	

**Name** : Trapezoidal Pond 1  
**Bottom Length:** 50.09 ft.  
**Bottom Width:** 50.09 ft.  
**Depth:** 4 ft.  
**Volume at riser head:** 0.2195 acre-feet.  
**Side slope 1:** 2 To 1  
**Side slope 2:** 2 To 1  
**Side slope 3:** 2 To 1  
**Side slope 4:** 2 To 1  
**Discharge Structure**  
**Riser Height:** 3 ft.  
**Riser Diameter:** 18 in.  
**Notch Type:** Rectangular  
**Notch Width:** 0.015 ft.  
**Notch Height:** 1.283 ft.  
**Orifice 1 Diameter:** 0.663 in. **Elevation:** 0 ft.

**Element Flows To:**

Outlet 1 Outlet 2

**Pond Hydraulic Table**

<b>Stage(feet)</b>	<b>Area(ac.)</b>	<b>Volume(ac-ft.)</b>	<b>Discharge(cfs)</b>	<b>Infilt(cfs)</b>
0.0000	0.057	0.000	0.000	0.000
0.0444	0.058	0.002	0.002	0.000
0.0889	0.058	0.005	0.003	0.000
0.1333	0.058	0.007	0.004	0.000
0.1778	0.059	0.010	0.005	0.000
0.2222	0.059	0.013	0.005	0.000
0.2667	0.060	0.015	0.006	0.000
0.3111	0.060	0.018	0.006	0.000
0.3556	0.060	0.021	0.007	0.000
0.4000	0.061	0.023	0.007	0.000
0.4444	0.061	0.026	0.008	0.000
0.4889	0.062	0.029	0.008	0.000
0.5333	0.062	0.032	0.008	0.000

Stage (feet)	Area (ac.)	Volume (ac-ft.)	Discharge (cfs)	Infilt (cfs)
0.5778	0.063	0.034	0.009	0.000
0.6222	0.063	0.037	0.009	0.000
0.6667	0.063	0.040	0.009	0.000
0.7111	0.064	0.043	0.010	0.000
0.7556	0.064	0.046	0.010	0.000
0.8000	0.065	0.049	0.010	0.000
0.8444	0.065	0.052	0.011	0.000
0.8889	0.066	0.054	0.011	0.000
0.9333	0.066	0.057	0.011	0.000
0.9778	0.066	0.060	0.011	0.000
1.0222	0.067	0.063	0.012	0.000
1.0667	0.067	0.066	0.012	0.000
1.1111	0.068	0.069	0.012	0.000
1.1556	0.068	0.072	0.012	0.000
1.2000	0.069	0.076	0.013	0.000
1.2444	0.069	0.079	0.013	0.000
1.2889	0.070	0.082	0.013	0.000
1.3333	0.070	0.085	0.013	0.000
1.3778	0.071	0.088	0.014	0.000
1.4222	0.071	0.091	0.014	0.000
1.4667	0.071	0.094	0.014	0.000
1.5111	0.072	0.098	0.014	0.000
1.5556	0.072	0.101	0.014	0.000
1.6000	0.073	0.104	0.015	0.000
1.6444	0.073	0.107	0.015	0.000
1.6889	0.074	0.111	0.015	0.000
1.7333	0.074	0.114	0.015	0.000
1.7778	0.075	0.117	0.016	0.000
1.8222	0.075	0.121	0.017	0.000
1.8667	0.076	0.124	0.019	0.000
1.9111	0.076	0.127	0.020	0.000
1.9556	0.077	0.131	0.022	0.000
2.0000	0.077	0.134	0.023	0.000
2.0444	0.077	0.138	0.025	0.000
2.0889	0.078	0.141	0.027	0.000
2.1333	0.078	0.145	0.029	0.000
2.1778	0.079	0.148	0.031	0.000
2.2222	0.079	0.152	0.033	0.000
2.2667	0.080	0.155	0.036	0.000
2.3111	0.080	0.159	0.038	0.000
2.3556	0.081	0.162	0.040	0.000
2.4000	0.081	0.166	0.042	0.000
2.4444	0.082	0.170	0.045	0.000
2.4889	0.082	0.173	0.047	0.000
2.5333	0.083	0.177	0.049	0.000
2.5778	0.083	0.181	0.052	0.000
2.6222	0.084	0.184	0.054	0.000
2.6667	0.084	0.188	0.056	0.000
2.7111	0.085	0.192	0.059	0.000
2.7556	0.085	0.196	0.061	0.000
2.8000	0.086	0.200	0.064	0.000
2.8444	0.086	0.203	0.067	0.000
2.8889	0.087	0.207	0.070	0.000
2.9333	0.087	0.211	0.073	0.000
2.9778	0.088	0.215	0.076	0.000
3.0222	0.088	0.219	0.131	0.000



Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
3.0667	0.089	0.223	0.352	0.000
3.1111	0.089	0.227	0.666	0.000
3.1556	0.090	0.231	1.049	0.000
3.2000	0.090	0.235	1.483	0.000
3.2444	0.091	0.239	1.956	0.000
3.2889	0.091	0.243	2.454	0.000
3.3333	0.092	0.247	2.962	0.000
3.3778	0.092	0.251	3.466	0.000
3.4222	0.093	0.255	3.951	0.000
3.4667	0.093	0.260	4.406	0.000
3.5111	0.094	0.264	4.817	0.000
3.5556	0.094	0.268	5.177	0.000
3.6000	0.095	0.272	5.481	0.000
3.6444	0.096	0.276	5.730	0.000
3.6889	0.096	0.281	5.929	0.000
3.7333	0.097	0.285	6.094	0.000
3.7778	0.097	0.289	6.330	0.000
3.8222	0.098	0.294	6.507	0.000
3.8667	0.098	0.298	6.678	0.000
3.9111	0.099	0.303	6.845	0.000
3.9556	0.099	0.307	7.009	0.000
4.0000	0.100	0.311	7.168	0.000
4.0444	0.100	0.316	7.324	0.000

---

**ANALYSIS RESULTS**

**Stream Protection Duration**

---

Predeveloped Landuse Totals for POC #1  
Total Pervious Area:1.41  
Total Impervious Area:0

---

Mitigated Landuse Totals for POC #1  
Total Pervious Area:0.92  
Total Impervious Area:0.49

---

**Flow Frequency Return Periods for Predeveloped. POC #1**

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	0.030489
5 year	0.05539
10 year	0.075172
25 year	0.103584
50 year	0.12707
100 year	0.152434

---

**Flow Frequency Return Periods for Developed Unmitigated (701) POC #1**

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	0.2209
5 year	0.3175
10 year	0.3915
25 year	0.4972

50 year 0.5853  
100 year 0.6819

**Flow Frequency Return Periods for Mitigated. POC #1**

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	0.01948
5 year	0.03679
10 year	0.053857
25 year	0.084028
50 year	0.114444
100 year	0.153351

---

**Stream Protection Duration**

POC #1

The Facility PASSED

The Facility **PASSED.**

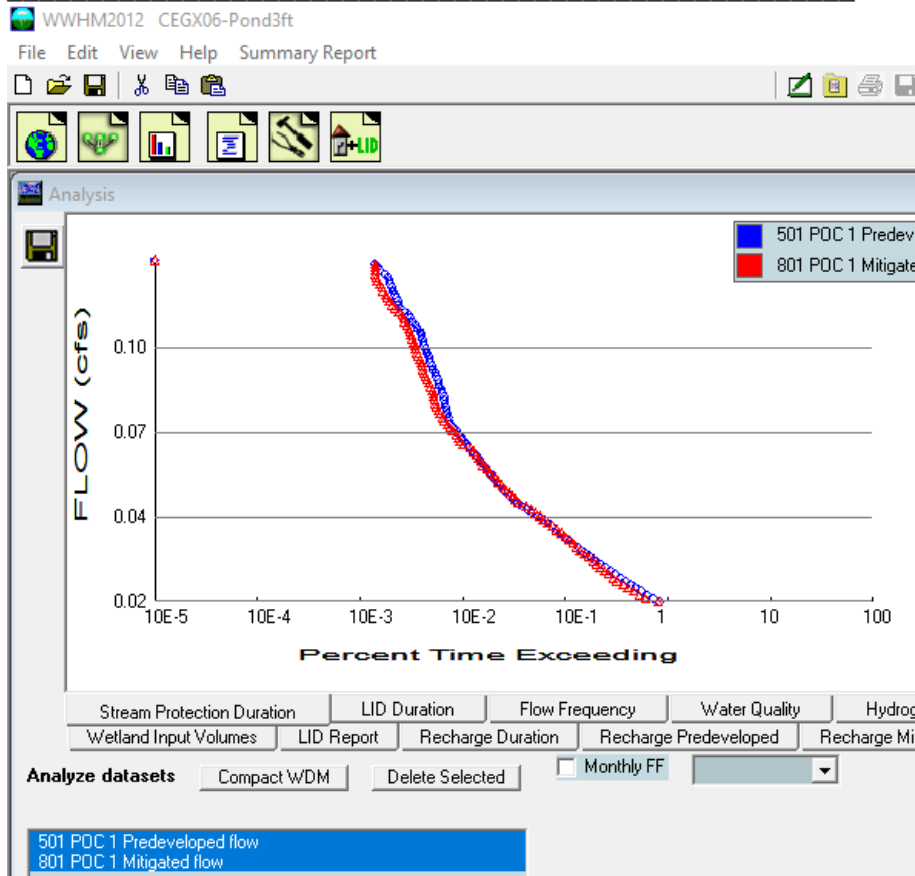
Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0152	17834	17244	96	Pass
0.0164	15490	12870	83	Pass
0.0175	13503	11276	83	Pass
0.0186	11796	9912	84	Pass
0.0198	10406	8761	84	Pass
0.0209	9304	7856	84	Pass
0.0220	8307	6881	82	Pass
0.0232	7401	6218	84	Pass
0.0243	6554	5606	85	Pass
0.0254	5867	5125	87	Pass
0.0265	5232	4654	88	Pass
0.0277	4682	4314	92	Pass
0.0288	4229	3961	93	Pass
0.0299	3794	3602	94	Pass
0.0311	3435	3290	95	Pass
0.0322	3089	2967	96	Pass
0.0333	2808	2716	96	Pass
0.0344	2485	2539	102	Pass
0.0356	2224	2344	105	Pass
0.0367	2064	2138	103	Pass
0.0378	1906	1941	101	Pass
0.0390	1748	1770	101	Pass
0.0401	1591	1597	100	Pass
0.0412	1452	1429	98	Pass
0.0424	1316	1305	99	Pass
0.0435	1159	1209	104	Pass
0.0446	1010	1099	108	Pass
0.0457	907	995	109	Pass
0.0469	803	878	109	Pass
0.0480	722	752	104	Pass
0.0491	658	690	104	Pass
0.0503	604	647	107	Pass
0.0514	558	605	108	Pass
0.0525	526	558	106	Pass
0.0536	495	518	104	Pass
0.0548	461	473	102	Pass
0.0559	433	454	104	Pass
0.0570	404	433	107	Pass

CEGX06: Peterson Long Plat  
Wetpond w/ 3 ft. of live storage

March 18, 2019  
Page 6

0.0582	381	392	102	Pass
0.0593	362	368	101	Pass
0.0604	346	339	97	Pass
0.0616	318	320	100	Pass
0.0627	303	303	100	Pass
0.0638	288	290	100	Pass
0.0649	267	274	102	Pass
0.0661	245	255	104	Pass
0.0672	234	213	91	Pass
0.0683	218	202	92	Pass
0.0695	209	194	92	Pass
0.0706	198	186	93	Pass
0.0717	185	170	91	Pass
0.0729	172	161	93	Pass
0.0740	160	151	94	Pass
0.0751	157	142	90	Pass
0.0762	155	137	88	Pass
0.0774	150	127	84	Pass
0.0785	148	123	83	Pass
0.0796	147	117	79	Pass
0.0808	143	116	81	Pass
0.0819	141	114	80	Pass
0.0830	139	111	79	Pass
0.0841	137	111	81	Pass
0.0853	133	108	81	Pass
0.0864	126	103	81	Pass
0.0875	124	100	80	Pass
0.0887	121	96	79	Pass
0.0898	119	92	77	Pass
0.0909	116	90	77	Pass
0.0921	108	87	80	Pass
0.0932	106	86	81	Pass
0.0943	102	85	83	Pass
0.0954	101	81	80	Pass
0.0966	99	79	79	Pass
0.0977	95	77	81	Pass
0.0988	92	74	80	Pass
0.1000	90	73	81	Pass
0.1011	88	72	81	Pass
0.1022	87	68	78	Pass
0.1033	85	67	78	Pass
0.1045	82	65	79	Pass
0.1056	77	64	83	Pass
0.1067	74	61	82	Pass
0.1079	69	57	82	Pass
0.1090	66	57	86	Pass
0.1101	64	55	85	Pass
0.1113	58	51	87	Pass
0.1124	54	47	87	Pass
0.1135	51	44	86	Pass
0.1146	50	41	82	Pass
0.1158	48	39	81	Pass
0.1169	46	38	82	Pass
0.1180	45	36	80	Pass
0.1192	43	35	81	Pass
0.1203	42	33	78	Pass
0.1214	41	31	75	Pass

0.1226	40	31	77	Pass
0.1237	37	30	81	Pass
0.1248	33	30	90	Pass
0.1259	32	30	93	Pass
0.1271	30	30	100	Pass



#### Water Quality BMP Flow and Volume for POC #1

On-line facility volume: 0.0721 acre-feet

On-line facility target flow: 0.0774 cfs.

Adjusted for 15 min: 0.0774 cfs.

Off-line facility target flow: 0.0434 cfs.

Adjusted for 15 min: 0.0434 cfs.

#### PerlnD and Implnd Changes

No changes have been made.

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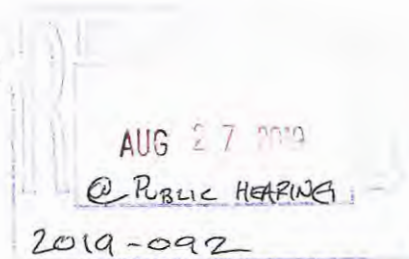
Regarding the proposed development:  
Monte & Nicole Petersen  
LP-2019, Plat of Samish Estates

I have three concerns. The proposed development for seven houses includes existing designated wetland area. If one lot were to be eliminated, the existing wetland area would not need to be filled. When I first moved to my home, there were Great Herons who regularly came to this area. It was previously designated wetland when the developer of Debbie Lane put in his development. He was not permitted to build on that site. All the same, existing neighbors were aware that at that time, multiple truckloads of dirt were dumped there. According to my neighbor, the city was contacted regarding this, but nothing was done.

Drainage is another concern. Who will maintain the proposed drainage? I was told that the owner(s) would be responsible, and that if they did not, then the city would take over and hand them the bill. Why then, does this not happen with the development just north of me? That retention pond is filled with growth that has not been removed to my knowledge since it was built. It concerns me that this could repeat itself. I would like to see a time frame included to this project as to the frequency of maintenance and at what point the city would step in. The city does an excellent job of maintaining their retention ponds on F & S just off Highway 20, and do that on a regular basis. It would be good if they took on the oversight of these retention ponds as well, to see that they are not neglected.

Finally, with the amount of development that the city has permitted in this area, little has been done to improve traffic safety along this stretch of Garden of Eden. Four way stop signs at the intersections at both ends of this stretch of Garden of Eden would increase safety and reduce the speed at which cars use this road. A mid-line would also help. These improvements are not that great. If the city is going to continue with its philosophy of growth, I would like also to see care taken that it is done safely for all who reside in the surrounding area.

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**EXHIBIT M (13)**  
PLAT OF SAMISH ESTATES