



1 production. Farming has occurred on the Bank site for almost a century. Prior to agricultural  
 2 activity in the area, the US Army Corps of Engineers (Mangum 1913 as cited in Rigg 1958)  
 3 historical mapping identified the Fargher Lake area as a treeless swamp. Within the immediate  
 4 vicinity of the Bank site are rolling hills and areas of low topographic relief in which water  
 5 collects or is otherwise routed through drain tiles, ditch systems, and streams, eventually feeding  
 6 into the East Fork Lewis River.

7  
 8 The Bank site consists of upland fields with low topographical relief bisected by a series of  
 9 ditches. No structures are present except for culverts, irrigation equipment, and drain tiles. The  
 10 agricultural fields are currently fallow, although mint was its historic crop. A Type F stream has  
 11 been diverted across (east) the northern portion of the Bank site, then turns to flow south along  
 12 the eastern boundary (**Figure A-3**). The onsite ditches and stream are regulated as Category IV,  
 13 riverine flow-through wetlands (ELS 2009).

14  
 15 The proposed Bank design would re-establish wetlands most similar in form and function to pre-  
 16 agricultural conditions, while operating within the confines of the site and also maintaining the  
 17 existing water rights established on the unnamed tributary to Rock Creek. Post-construction, the  
 18 wetland will be classified as a depressional flow-through wetland under HGM classification.  
 19 Target habitats include forested, scrub-shrub, and emergent wetlands that will be re-established  
 20 or enhanced to reflect the diversity of habitats commonly associated with lake-fringe wetlands  
 21 and depressional flow-through wetlands (**Figure B-2**).

22  
 23 Ecologic performance standards related to hydrology, vegetation, invasive species control, and  
 24 habitat structure enhancement are addressed in Appendix C of this Instrument. **Table 1** includes  
 25 a summary of management activities on the site that generate credits.

26  
 27 Anticipated functional lift post-construction is discussed in detail in Appendix A of this  
 28 Instrument. Generally, all functions related to habitat, water quality, and water quantity are  
 29 expected to increase as a result of design implementation.

30  
 31 The primary ecological goals of the East Fork Lewis Mitigation Bank are as follows:

- 32
- 33     ▪ Restore wetland hydrology by disabling the extensive ditch and drain tile system
- 34     currently used to convey water off of the site.
- 35     ▪ Establish a variety of native wetland habitat types, comparable to pre-agricultural
- 36     conditions and in accordance with targeted hydrologic regimes and elevations across the
- 37     site.
- 38     ▪ Control invasive species, including but not limited to, reed canarygrass (*Phalaris*
- 39     *arundinacea*) and Himalayan blackberry (*Rubus armeniacus*) across the site.
- 40     ▪ Create and enhance wildlife habitat, structure and function of the site.
- 41
- 42

**Table 1 – Credit Generation**

Bank Activity	Area (Acres) of Credit Generation	Credit Ratio (Activity Area: Universal Credit)	Anticipated Number of Credits
Wetland Re-establishment	91.14	1:1	91.14

PEM/PSS/PFO			
Wetland enhancement PEM	0.29	3:1	0.10
<b>Total</b>	<b>91.43</b>		<b>91.24</b>

1  
2 **E. Interagency Review Team.** Whereas, in consideration of the establishment and  
3 maintenance of the Bank, the Interagency Review Team (IRT) is willing to award credits in  
4 accordance with the procedures outlined in this Instrument, which will be made available to  
5 serve as compensatory mitigation pursuant to applicable Federal and Washington State laws and  
6 regulations. The IRT is the group of Federal, State, Tribal and local regulatory and resource  
7 agencies that has reviewed and will advise the Co-chairs regarding, the establishment and  
8 management of the Bank pursuant to the provisions of the Instrument, and consists of:

- 9  
10 1. Co-Chair: U.S. Army Corps of Engineers, Seattle District (Corps)  
11 2. Co-Chair: Washington Department of Ecology (Ecology)  
12 3. U.S. Environmental Protection Agency, Region X (EPA)  
13 4. Clark County, WA  
14

15 NOW, THEREFORE, the Parties agree to the following:  
16  
17

## 18 II. LEGAL AUTHORITIES

19  
20 **A. Authorities.** The establishment, use, operation, and maintenance of the Bank shall be  
21 carried out in accordance with the following principal authorities.  
22

- 23 1. Federal:  
24 a. Clean Water Act (33 USC §§ 1251 et seq.)  
25 b. Rivers and Harbors Act of 1899 (33 USC § 403)  
26 c. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320 -332)  
27 d. Memorandum of Agreement between the Environmental Protection Agency and the  
28 Department of the Army concerning the Determination of Mitigation Under the Clean  
29 Water Act, Section 404(b)(1) Guidelines (February 6, 1990)  
30 e. U.S. Army Corps of Engineers Regulatory Guidance Letter 05-1, *Guidance on Use of*  
31 *Financial Assurances, and Suggested Language for Special Conditions for*  
32 *Department of the Army Permits Requiring Performance Bonds*, U.S. Army Corps of  
33 Engineers, February 14, 2005  
34 f. Guidelines for the Specification of Disposal Sites for Dredged and Fill Material  
35 (“404(b)(1) Guidelines,” 40 CFR Part 230)  
36 g. National Environmental Policy Act (42 USC §§ 4321 et seq.)  
37 h. Council on Environmental Quality Procedures for Implementing the National  
38 Environmental Policy Act (40 CFR Parts 1500-1508)  
39 i. Executive Order 11990 (Protection of Wetlands)  
40 j. Executive Order 11988 (Protection of Floodplains)  
41 k. Executive Order 13112 (Invasive Species)  
42 l. Fish and Wildlife Coordination Act (16 USC §§ 661 et seq.)

- 1 m. Fish and Wildlife Service Mitigation Policy (46 FR 7644-7663, 1981)
- 2 n. Endangered Species Act (16 USC §§ 1531 et seq.)
- 3 o. Magnuson-Stevens Fishery Conservation and Management Act (16 USC §§ 1801 et
- 4 seq.)
- 5 p. National Historic Preservation Act, as amended (16 USC § 470)
- 6
- 7 2. State of Washington:
- 8 a. Washington Water Pollution Control Act, RCW 90.48 et seq.
- 9 b. Washington State Rule on Wetland Mitigation Banking (WAC 173-700,
- 10 Compensatory Wetland Mitigation Banks)
- 11 c. State of Washington Wetlands Mitigation Banking Statute (RCW 90-84)
- 12 d. Washington State Environmental Policy Act (“SEPA” RCW 43.21C and WAC 197-
- 13 11)
- 14 e. Growth Management Act (RCW 36.70A)
- 15 f. Washington State Hydraulic Code (RCW 77.55 Hydraulic Project Approval)
- 16 g. Washington State Shoreline Management Act (RCW 90.58, WAC 173-200 as
- 17 amended)
- 18 h. Washington State Salmon Recovery Act (RCW 75.46)
- 19 i. Washington State Aquatic Resources Act (RCW 79.90, RCW 90.74)
- 20 j. Executive Orders 89-10 and 90-04, Protection of Wetlands
- 21
- 22

### 23 III. ESTABLISHMENT OF THE BANK

24

25 **A. Permits.** The Sponsor shall obtain all appropriate federal, state, and county environmental

26 documentation, permits, and other authorizations needed to establish and maintain the Bank,

27 prior to the award of any mitigation credits. Compliance with this Instrument does not fulfill the

28 requirement, or substitute, for such authorization. Local authorizations and permits include, but

29 are not limited to, Clark County approvals, permits, and authorizations issued under the statutory

30 and regulatory provisions listed in the Appendices of this Instrument.

31

32 **B. Bank Establishment.** The Sponsor agrees to establish the Bank as described in Appendix

33 B and to satisfactorily accomplish all performance standards reflected in Appendix C. In

34 recognition thereof, credits will be awarded to the Sponsor in accordance with the procedures and

35 schedules prescribed in the Appendices, particularly in Appendices C and D. In establishing the

36 Bank, deviations from the prescribed Bank development plan and design, including deviations

37 from any performance standards, may only be made with the prior approval of the Corps and

38 Ecology, following consultation with the other members of the IRT. In the event the Sponsor

39 determines that modifications to the Bank development plan are necessary, the Sponsor shall

40 submit a written request for such modification to the IRT, through the Co-Chairs, for approval.

41 Documentation of implemented modifications shall be made consistent with Article VI.B.2. of

42 this Instrument. The Establishment Period of the Bank is defined in Article IV.K.

43

44 **C. Financial Assurance Requirements.** The Sponsor agrees to provide the following

45 financial assurances for the work described in this Instrument.

46

1           1. The Sponsor shall furnish either a Letter of Credit or a Surety Bond to provide  
2 financial assurance underlying the establishment and initial functionality of the Bank. This Letter  
3 of Credit or Surety Bond must be initiated by the Sponsor, in a form and content approved by the  
4 Corps and Ecology, and shall conform to the requirements of Appendix H, before any  
5 construction or implementation activities may be conducted on-site during the establishment  
6 period of the Bank, as defined in Article IV.K. and prior to the award of any Bank credits. Any  
7 construction or implementation activities conducted on-site prior to the inception of the  
8 establishment period must cease as of the effective date of this Instrument pursuant to Article  
9 VI.B.1, until an approved Letter of Credit or Surety Bond is initiated. The initial award of credits  
10 in recognition of accomplishment of the performance standards under Objective 1, pursuant to  
11 Section D.1.2.A of Appendix D, will serve as the IRT's notification that construction and  
12 implementation activities are authorized to commence. The Corps and Ecology must specifically  
13 approve all terms and conditions of the Letter of Credit or Surety Bond, as well as the identity of  
14 the financial institution issuing and underwriting the Letter of Credit or Surety Bond. For Letters  
15 of Credit, only federally-insured institutions rated investment grade or higher may issue the  
16 Letter of Credit. The Sponsor shall provide the IRT with a credit rating that indicates the  
17 financial institution has the required rating as of the date of first issuance of the Letter of Credit.  
18 This credit rating shall be from a recognized commercial rating service as specified in Office of  
19 Federal Procurement Policy Pamphlet No. 7, available through the website of the Office of  
20 Management and Budget, Executive Office of the President. Provided any required credit rating  
21 is held, approval of the financial institution selected by the Sponsor shall not be unreasonably  
22 withheld.

23  
24           a. The Corps or Ecology, acting independently or in concert, may direct  
25 disbursement from the credit funds account on a Letter of Credit, or payment of the penal sum on  
26 a Surety Bond, as applicable, under the following circumstances: upon abandonment of Bank  
27 establishment efforts, or any failure stemming from any cause to achieve any of the Bank  
28 Objectives or Performance Standards as reflected in Section C.1.2 of Appendix C, including, but  
29 not limited to, deficient design, ineffective establishment, deterioration of functionality or  
30 performance, or financial limitations of the Sponsor. Ninety calendar days prior to accessing  
31 funds pursuant to a Letter of Credit, unless accessing the Letter of Credit funds pursuant to  
32 Section H.1.1.B. of Appendix H, or ninety calendar days prior to requiring payment of the penal  
33 sum on a Surety Bond, the Corps and Ecology shall provide specific and express written direction  
34 for corrective action to the Sponsor in accordance with Article IV.H. of this Instrument and  
35 Section F.1.4. of Appendix F. If, within 90 days of delivery of notice of the demand for  
36 corrective action, the Sponsor has initiated compliance efforts and the Corps and Ecology have  
37 determined, in their sole discretion, that substantial progress has been made toward completion of  
38 corrective action, the Corps and Ecology will defer accessing the Letter of Credit or requiring  
39 payment on the Surety Bond, as applicable.

40  
41           b. Following consultation with the IRT, the Corps and Ecology may access the  
42 funds guaranteed by the Letter of Credit, or require payment on the Surety Bond, as applicable, to  
43 accomplish any of the following objectives or features of the Bank: construction, establishment,  
44 monitoring, maintenance, or adaptive management activities reflected in, or directly supporting  
45 accomplishment of, the Objectives and Performance Standards reflected in Section C.1.2 of  
46 Appendix C. The Corps and Ecology may elect, following consultation with the IRT, to

1 accomplish all of the Objectives and Performance Standards reflected in Section C.1.2 of  
2 Appendix C and for which the Sponsor has assumed responsibility under Article III.B. of this  
3 Instrument. In lieu of accomplishing all Objectives and Performance Standards in Section C.1.2  
4 of Appendix C, the Corps and Ecology, in their sole discretion, following consultation with the  
5 other members of the IRT, may accomplish only that component or those components of the  
6 Objectives and Performance Standards that are deemed reasonably necessary to achieve a project  
7 that is stable, self-sustaining, and provides a level of general benefit to the aquatic resources of  
8 the watershed that the Corps and Ecology deem appropriate under the circumstances. Corrective  
9 or remedial actions determined to be necessary will be accomplished through a Third Party  
10 Designee selected by the Corps and Ecology.

11  
12 c. Any Letter of Credit shall take the general form of an agreement on the part of  
13 the issuing financial institution to honor the engagement reflected therein. Any Surety Bond shall  
14 take the general form of an indemnity contract in a sum certain obliging the surety to pay the full  
15 face value of the bond to the beneficiaries in the event that the Corps and/or Ecology declare that  
16 the principal has failed to fulfill the obligations established in this Instrument. A Letter of Credit  
17 or Surety Bond, as applicable, shall be furnished to guarantee the establishment activities of the  
18 bank, in the following amount:

19  
20 (i): \$162,998  
21

22 d. Upon certification by the IRT that the following performance standards, as  
23 prescribed in Table D-3 of Appendix D have been achieved, the Corps and Ecology will  
24 authorize in writing that the required amount of the Letter of Credit, or the required penal sum of  
25 the Surety Bond, as applicable, be modified as follows:

26  
27 (i) Following submission to, and approval by the IRT of the as-built reports  
28 reflecting completion of grading and planting for the site, the required Letter of Credit or Surety  
29 Bond amount will be \$155,940;  
30

31 (ii) Following achievement of all Year 3 performance standards, the required  
32 Letter of Credit or Surety Bond amount will be \$ 87,840;  
33

34 (iii) Following achievement of all Year 5 performance standards, the required  
35 Letter of Credit or Surety Bond amount will be \$52,200;  
36

37 (iv) Following achievement of all Year 7 performance standards, the required  
38 Letter of Credit or Surety Bond amount will be \$32,760;  
39

40 e. The Corps and Ecology will waive their right to payment under, and authorize  
41 rescission or cancellation of, the financial assurance instrument upon satisfaction of all  
42 Objectives and Performance Standards required in Appendix C, and upon a determination by the  
43 Corps and Ecology that the Sponsor has completed the following:  
44

45 (i) The Sponsor has satisfied the additional requirements reflected in Article  
46 IV.K. of this Instrument for termination of the establishment period of the mitigation bank; or

1  
2 (ii) The Sponsor has been awarded all credits, or the Corps and Ecology have  
3 approved the Sponsor's request to permanently cease banking activities.  
4

5 f. Notwithstanding the fact that the financial assurance may have been accessed, or  
6 that payment upon that financial assurance may have been required, and full or partial remedial  
7 or corrective action may have been taken by the Third Party Designee, unless this Instrument is  
8 terminated pursuant to Article IV.J. or VI.B. the Sponsor shall remain responsible for the timely  
9 and effective achievement of all the Objectives and Performance Standards mandated in Section  
10 C.1.2 of Appendix C.  
11

12 g. Alternatively, the Sponsor may request, and the Corps and Ecology may approve  
13 a substitute financial assurance instrument for any of the financial assurances required under this  
14 Instrument. The form and content of any financial assurance instrument must be specifically  
15 approved before a substitution is utilized in satisfaction of the financial assurance obligations  
16 during the establishment period of the Bank. The Corps and Ecology must specifically approve  
17 the identity of the financial institution issuing and underwriting the financial assurance  
18 instrument. The provisions of the substitute financial assurance instrument must conform to each  
19 of the material requirements of this Article III.C.1., as well as Appendix H, within this  
20 Instrument. In particular, the provisions of the substitute financial assurance instrument must  
21 designate the Corps and Ecology as distinct and independent beneficiaries, and must expressly  
22 authorize either the Corps or Ecology to independently access and direct either partial or full  
23 disbursement of funds secured by that instrument consistent with the other provisions within  
24 Article III.C.1. Each financial assurance instrument will provide that the issuing financial  
25 institution shall honor the credit engagement or other assurance and pay to the Third Party  
26 Designee the directed sum without inquiring whether the directing Beneficiary agency or the  
27 receiving Third Party Designee has a right to make such a demand. Furthermore, the Sponsor  
28 must waive any and all opportunity to challenge or delay any such access or disbursement.  
29 Additionally, the substitute financial assurance must extend for the full period of time that the  
30 financial assurance it replaces must extend, and may be terminated only at the written direction of  
31 both the Corps and Ecology. The replacement financial assurance instrument must be instituted  
32 so that there is no portion of the establishment period, following initiation of construction or  
33 other implementation activities, during which there is no financial assurance in effect. No further  
34 credits will be awarded from the Bank while the Bank lacks an effective financial assurance  
35 instrument.  
36

## 37 **2. Long-Term Management and Maintenance Endowment Fund**

38

39 a. The Sponsor shall institute an endowment fund, established and maintained  
40 through an escrow account, to fund management and maintenance actions as defined in Article  
41 IV.M.1. of this Instrument and Section G.1.2. of Appendix G, following the termination of the  
42 establishment period of the Bank. This Long-Term Management and Maintenance Endowment  
43 Fund shall be incrementally funded throughout the establishment period of the Bank, with the  
44 funds disbursed to a Long-Term Steward upon the Sponsor's relinquishment of responsibility for  
45 long-term maintenance and management of the Bank. The Sponsor agrees to continue to deposit  
46 funds in the Long-Term Management and Maintenance Endowment Fund escrow account,

1 pursuant to Article III.C.2.b. of this Instrument, until the Long-Term Management and  
2 Maintenance Endowment Fund is fully funded in accordance with Article III.C.2.c. of this  
3 Instrument.  
4

5 b. The Long-Term Management and Maintenance Endowment Fund escrow  
6 account shall be funded throughout the establishment period of the Bank by depositing a  
7 designated sum corresponding to each sale, use, or transfer of mitigation credits. This designated  
8 sum shall be \$1,300. per credit sold, used, or transferred. Deposits to the Long-Term  
9 Management and Maintenance Endowment Fund must be completed within 30 days of the sale,  
10 use, or transfer transaction. The Corps and Ecology must specifically approve the identity of the  
11 institution, in which the escrow account is established, as well as the form of that account.  
12 Approval of the identity of the financial institution at which the escrow account is established,  
13 and the form of the investment account, shall not be unreasonably withheld.  
14

15 c. The Long-Term Management and Maintenance Fund shall be considered to be  
16 fully funded when the total value of the escrow account, including the principal amounts  
17 deposited and earnings, has accumulated to a total of \$120,833.  
18

19 d. The Sponsor shall enter into an escrow agreement with both the Corps and  
20 Ecology conforming to the requirements of Section H.1.3 of Appendix H. The escrow agreement  
21 for the Long-Term Management and Maintenance Endowment Fund shall be signed prior to the  
22 release of any credits from the Bank.  
23

24 e. Upon receipt of written instructions signed by the Sponsor, Corps, and Ecology,  
25 the Long-Term Management and Maintenance Endowment Fund escrow account shall be  
26 terminated and all funds disbursed pursuant to the instructions of the Corps and Ecology.  
27

28 **D. Real Estate Provisions.** All real property to be included within the Bank is presently  
29 owned by three different landowners, Perry and Cheryl Gilmour, John Deleganes and Warren and  
30 Sara Sarkinen, as detailed in Appendix A. The Sponsor is responsible for ensuring that the  
31 landowners burden the title to their real property upon which the Bank site is located, through  
32 grants of conservation easements, pursuant to the provisions of Section G.1.1 of Appendix G.  
33 The conservation easements must be approved, initiated, and recorded pursuant to Section G.1.1  
34 of Appendix G, prior to the award of any Bank credits and before any construction or  
35 implementation activities may be conducted on-site during the establishment period of the Bank,  
36 as defined in Article IV.K. Any construction or implementation activities conducted on-site prior  
37 to the inception of the establishment period must cease as of the effective date of this Instrument  
38 pursuant to Article VI.B.1, until approved conservation easements are recorded. The initial  
39 award of credits in recognition of accomplishment of the performance standards under Objective  
40 1, pursuant to Section D.1.2.A of Appendix D, will serve as the IRT's notification that  
41 construction and implementation activities are authorized to commence.  
42  
43

#### 44 **IV. OPERATION OF THE BANK** 45



1 **A. Service Area.** The Bank is approved to provide compensatory mitigation for impacts to  
2 the Waters of the United States and Waters of the State, including wetlands within the Service  
3 Area. A detailed description and maps of the Service Area are included in Appendix E.

4 **1.** The Service Area extends to the limits of the rain-dominated mountainous  
5 hydrogeologic unit, as determined in developing the Watershed Characterization of Clark County  
6 (Ecology 2007). This covers the southwest portion of the Lewis River Water Resources  
7 Inventory Area (WRIA 27). This Hydrogeologic Unit was classified due to its regional climate,  
8 surficial geology, topography (landform), groundwater, and surface flow patterns in relationship  
9 to aquatic ecosystems (Ecology #05-06-027). Gee Creek and Allen Canyon Creek Watersheds,  
10 and the north portion of Mill Creek Sub-watershed are included in the East Fork Lewis River  
11 Service Area, and are areas of special consideration. Gee Creek and Allen Canyon Creek  
12 Watersheds have similar topography and geology to watersheds in the Salmon/Washougal  
13 WRIA (WRIA 28) but they are mapped as occurring in the Lewis River WRIA (WRIA 27).  
14 These watersheds drain to the north to the Lewis River and are similar enough to watersheds in  
15 WRIA 27 to include them in this service area. Conversely, the northern portion of Mill Creek  
16 Sub-watershed is located in WRIA 28 but actually drains to the north into WRIA 27. For these  
17 reasons, these watersheds are included in the East Fork Lewis River Service Area (as described  
18 in Watershed Characterization of Clark County, Ecology 2007). The Bank may be used to  
19 compensate for an impact that occurs within the Service Area if specifically approved by the  
20 regulatory agency(ies) that have jurisdiction over that impact, pursuant to the procedures and  
21 criteria prescribed in Appendix E.

22  
23 **2.** In exceptional situations, the Bank may be used to compensate for an impact that  
24 occurs outside of the Service Area if specifically approved by the regulatory agency(ies) having  
25 jurisdiction over that impact and by the IRT, pursuant to the procedures and criteria prescribed in  
26 Appendix E. If the Corps and Ecology determine that the Sponsor has sold, used, or transferred  
27 credits at any time to provide compensatory mitigation for loss of aquatic resources outside of  
28 the Service Area without prior approval, the Corps and Ecology, in consultation with the other  
29 members of the IRT, may direct that the sale, use, or other transfer of credits immediately cease,  
30 and will determine, in consultation with the IRT, the Sponsor and the appropriate regulatory  
31 authority, what remedial actions are necessary to correct the situation and will direct their  
32 performance prior to the award of any additional mitigation credits. Notwithstanding the fact  
33 that ceasing sale, use, or other transfer of credits may have been required, unless this Instrument  
34 is terminated pursuant to Article IV.J. or VI.B., the Sponsor shall remain responsible for the  
35 timely and effective achievement of all the Objectives and Performance Standards mandated in  
36 Section C.1.2 of Appendix C.

37  
38 **B. Access to the Bank Site.** The Sponsor will allow or otherwise provide for access to the  
39 Bank site by members of the IRT or their agents or designees, as reasonably necessary, for the  
40 purpose of inspection, compliance monitoring, and remediation consistent with the terms and  
41 conditions of this Instrument and the Appendices, throughout the periods of Bank establishment,  
42 operation, and long-term management and maintenance. Inspecting parties shall provide the  
43 Sponsor at least 48 hours prior notice of a scheduled inspection, and shall not unreasonably  
44 disrupt or disturb activities on the property.

45  
46 **C. Availability of Mitigation Credits.**

1  
2       **1. Availability and Debiting of Credits.** Subject to the documentation and scheduling  
3 provisions of Section D.1. of Appendix D, the Sponsor may submit to the IRT written evidence  
4 that particular performance standards have been achieved. If the Corps and Ecology, after  
5 consulting with the other members of the IRT and the Sponsor, concur that certain performance  
6 standards have been achieved in full, the IRT will respond in writing to the Sponsor that the  
7 credits associated with those performance standards are released and available for marketing or  
8 use by the Sponsor. Each instance of sale or any other transfer of credits to a third party shall be  
9 reflected in a transfer agreement. Each agreement that is associated with a permit must indicate  
10 the permit number of the impacting project, the number of universal credits transferred, and must  
11 expressly specify that the Sponsor, and its successors and assigns assumes responsibility for  
12 accomplishment and maintenance of the purchaser's/user's/transferee's compensatory mitigation  
13 requirements associated with the impacting project, upon completion of the credit transfer.  
14

15       **2. Availability of Credits in the Event Financial Assurances are Accessed.** In the  
16 event the Corps or Ecology, acting pursuant to Articles III.C.1.a. and III.C.1.b. of this  
17 Instrument, accesses the Financial Assurances established pursuant to Article III.C.1. of this  
18 Instrument and accomplishes any objectives, performance standards, or features of the Bank, the  
19 Corps and Ecology, in consultation with the other members of the IRT, may award credits for  
20 sale, use, or transfer by the Sponsor, in a quantity reflecting the objectives and performance  
21 standards achieved as a result of such remedial action.  
22

23       **D. Credit Deficit or Fraudulent Transactions.** If the Corps and/or Ecology determine at any  
24 point that the Bank is operating without prior written approval at a deficit, or has engaged in  
25 fraudulent transactions in the sale, use, or other transfer of credits, the Corps and/or Ecology will  
26 direct the Sponsor to immediately cease award and sale, use, or other transfer of credits, and will  
27 determine, in consultation with the IRT and the Sponsor, what remedial actions are necessary to  
28 correct the situation and will direct their performance prior to the award of any additional  
29 mitigation credits.  
30

31       **E. Provisions for Use of the Mitigation Bank Area.** The Corps and/or Ecology may  
32 consider the Sponsor as being in material default of a provision of this Instrument and proceed  
33 accordingly under Article IV.J., should the Corps and/or Ecology, in consultation with the IRT,  
34 determine that either of the following have occurred:  
35

36       1. The grant of additional easements, rights of way, or any other property interest in the  
37 project areas without the written consent of the Corps and Ecology, in consultation with the IRT.  
38

39       2. The use or authorization of the use of any areas within the Bank for any purpose that  
40 is contrary to the provisions of this Instrument or the conservation easement, or which interferes  
41 with the conservation purposes of the Bank.  
42

43       **F. Maintenance Provisions.** Following achievement of the performance standards, the  
44 Sponsor agrees to perform all necessary work to maintain those standards as prescribed in  
45 Section F.1.5 of Appendix F.  
46

1 **G. Monitoring Provisions.** The Sponsor agrees to perform all necessary work, pursuant to  
2 Section F.1.2 of Appendix F, to monitor the Bank during the establishment period to demonstrate  
3 compliance with the performance standards established in Appendix C.  
4

5 **H. Contingency Plans/Remedial Actions.** In the event the Bank fails to achieve by the  
6 specified date one or more of the performance standards delineated in Appendix C, the Sponsor  
7 shall develop necessary contingency plans and implement appropriate remedial and monitoring  
8 actions for the Bank as specified in Section F.1.4 of Appendix F, to attain those project  
9 objectives and performance standards. Prior to their execution, proposals for the contingency  
10 plans and remediation and monitoring activities must be approved by the Corps and Ecology, in  
11 consultation with the Sponsor and the IRT. In the event the Sponsor fails to implement  
12 necessary remedial actions within the prescribed period, the Corps and/or Ecology, following  
13 consultation with the Sponsor and the IRT, will direct remedial, corrective, and/or sanctioning  
14 action in accordance with the procedures specified in Section F.1.4.A. of Appendix F.  
15 Alternatively, the Corps and Ecology may accomplish such remedial action directly, acting  
16 through a Third Party Designee, by accessing the financial assurance instrument pursuant to  
17 Articles III.C.1.a. and III.C.1.b. of this Instrument.  
18

19 **I. Force Majeure.** In the event of substantial damage caused by a natural or human-caused  
20 catastrophic event or a deliberate and unlawful act, that the Corps and Ecology, in consultation  
21 with the Sponsor and the IRT, determine has had a significant adverse impact on the quality of  
22 the aquatic functions, native vegetation, soils, or wildlife of the Bank and is beyond the control  
23 of the Sponsor, its agents, contractors, or consultants to prevent or mitigate: the Sponsor may  
24 request, pursuant to Article III.B. of this Agreement, and the Corps and Ecology, in consultation  
25 with the IRT, may approve changes to the construction, operation, project objectives,  
26 performance standards, or crediting formula of the Bank, pursuant to the standards and  
27 procedures specified in Section F.1.4 of Appendix F. A natural catastrophic event includes, but  
28 is not limited to, a flood equal to or greater in magnitude than the 100-year flood event, an  
29 earthquake of a force projected from an earthquake with a return period of 475 years, drought  
30 that is significantly longer than the periodic multi-year drought cycles that are typical of weather  
31 patterns in the Pacific Northwest, as well as debilitating disease, wildfire, depredation, regional  
32 pest infestation, or fluviogeomorphic change. A human-caused catastrophic event includes, but  
33 is not limited to, war, insurrection, riot or other civil disorders, spill of a hazardous or toxic  
34 substance, or fire. A deliberate and unlawful act includes, but is not limited to, the dumping of a  
35 hazardous or toxic substance, as well as significant acts of vandalism or arson. If any such act  
36 occurs, the IRT, in consultation with the Sponsor, will determine what changes to the Bank  
37 and/or this Instrument will be in the best interest of the Bank and the aquatic environment. The  
38 consequences of any events of force majeure recognized as such by the Corps and Ecology shall  
39 not affect the status of previously released credits, whether or not they have yet been sold, used  
40 or transferred.  
41

42 **J. Default.** Should the Corps and/or Ecology, in consultation with the IRT, determine that the  
43 Sponsor is in material default of any provision of this Instrument, the Corps and/or Ecology may  
44 cease award of mitigation credits, and may notify the Sponsor that the award, sale, and/or  
45 transfer of mitigation credits, or use by the Sponsor of Bank credits as compensatory mitigation  
46 for its own activities causing adverse impacts to the aquatic environment, are suspended until the

1 delineated deficiencies are rectified. Upon written notification of suspension, the Sponsor agrees  
2 to immediately cease any sale, or transfer transactions not yet finally completed, and/or to cease  
3 any use by the Sponsor of Bank credits as compensatory mitigation for its own activities causing  
4 adverse impacts to the aquatic environment where a Corps or Ecology permit or authorization, as  
5 required, has not yet been issued, until informed by the Corps and/or Ecology that award, sale,  
6 use, or transfer of credits may be resumed. Should the Sponsor remain in default for a period of  
7 90 days, the Corps and/or Ecology, following consultation with the IRT, may terminate this  
8 Instrument and any subsequent banking operations. In the event such termination action is  
9 commenced, the Sponsor agrees to fulfill its pre-existing obligations to perform all  
10 establishment, monitoring, maintenance, management, and remediation responsibilities that arise  
11 directly from credits that have already been awarded, sold, used, or transferred at the time of  
12 termination.

13  
14 **K. Establishment Period of the Bank.** The establishment period of the Bank will commence  
15 on the date the Instrument takes effect pursuant to Article VI.B.1. Prior to termination of the  
16 establishment period of the Bank, the Corps and Ecology following consultation with the IRT,  
17 will perform a final compliance inspection to evaluate whether all performance standards have  
18 been achieved. The establishment period for the bank will terminate, and the period of long-term  
19 management and maintenance will commence, when the Corps and Ecology determine, in  
20 consultation with the other members of the IRT and the Sponsor, that the following conditions  
21 have been met:

- 22  
23 (1) all applicable performance standards prescribed in Appendix C have been achieved;  
24 (2) all available credits have been awarded, or the Corps and Ecology have approved the  
25 Sponsors request to permanently cease banking activities;  
26 (3) the Sponsor has prepared a Long-Term Management and Maintenance Plan, that has  
27 been approved by the Corps and Ecology, pursuant to Section G.1.2. of Appendix G;  
28 (4) the Sponsor has either:  
29 (i) assumed responsibilities for accomplishing the Long-Term Management and  
30 Maintenance Plan, in which case the Sponsor will fulfill the role of Long-Term  
31 Steward, or  
32 (ii) has assigned those responsibilities to another Long-Term Steward pursuant to  
33 Article IV.M.2. of this Instrument;  
34 (5) the Long-Term Management and Maintenance Endowment Fund has been fully  
35 funded;  
36 (6) the contents of the Long-Term Management and Maintenance Endowment Fund have  
37 been transferred to the Long-Term Steward; and  
38 (7) the Bank has complied with the terms of this Instrument.

39  
40 **L. Operational Life of the Bank.** The operational life of the Bank will commence on the  
41 date the Instrument takes effect pursuant to Article VI.B.1. Following the termination of the  
42 establishment period of the Bank, and (1) upon sale, transfer, or use by the Sponsor for its own  
43 activities causing adverse impacts to the aquatic environment of all credits, or (2) upon  
44 acceptance by the IRT of a written declaration by the Sponsor that it has permanently ceased  
45 banking activities, the operational life of the Bank will terminate.

46  
47 **M. Long-Term Management and Maintenance.**

1  
2 1. The Sponsor shall develop a Long-Term Management and Maintenance Plan  
3 consistent with the guidelines and objectives specified in Section G.1.2 of Appendix G, and  
4 submit the Plan for approval by the Corps and Ecology, in consultation with the other members  
5 of the IRT. The Sponsor is responsible, as Long-Term Steward for execution of the approved  
6 Plan. The Sponsor may only deviate from the approved Plan upon written approval of the Corps  
7 and Ecology, following consultation with the Sponsor and the IRT.  
8

9 2. The Sponsor may assign its long-term management and maintenance responsibilities  
10 to a third party assignee, which will then serve as Long-Term Steward in place of the Sponsor.  
11 The identity of the assignee and the terms of the long-term management and maintenance  
12 agreement between the Sponsor and the assignee must be approved by the Corps and Ecology,  
13 following consultation with the IRT, in advance of assignment.  
14

15 3. Upon execution of a long-term management and maintenance assignment agreement  
16 and the transfer of the contents of the Long-Term Management and Maintenance Endowment  
17 Fund, and upon satisfaction of the remaining requirements for termination of the establishment  
18 period of the Bank under Article IV.K. of this Instrument, the Sponsor shall be relieved of all  
19 further long-term management and maintenance responsibilities under this Instrument.  
20

21 **N. Accomplishment of Sponsorship Responsibilities; Transfer of Ownership of the Bank**  
22 **Site.** The Sponsor shall remain responsible for complying with the provisions of this Instrument  
23 throughout the operational life of the Bank, regardless of the ownership status of the underlying  
24 real property, unless those responsibilities have been assigned pursuant to the provisions of  
25 Article VI.C. of this Instrument. The sponsor shall provide written notice within 60 days of  
26 transfer of fee title or any portion of the ownership interest in all or a portion of the Bank real  
27 property to another party, by any of the real property owners, or their successors or assigns.  
28  
29

## 30 **V. RESPONSIBILITIES OF THE CORPS AND ECOLOGY**

31  
32 A. The Corps and Ecology agree to provide appropriate oversight in carrying out provisions of  
33 this Instrument.  
34

35 B. The Corps and Ecology agree to review and provide comments on project plans, monitoring  
36 reports, contingency and remediation proposals, and similar submittals from the Sponsor in a  
37 timely manner. As Co-Chairs, the Corps and Ecology will coordinate their review with the other  
38 members of the IRT.  
39

40 C. The Corps and Ecology agree to review requests to modify the terms of this Instrument,  
41 determine achievement of performance standards in order to evaluate the award of credits for the  
42 Bank, or approve the Long-Term Management and Maintenance Plan. As Co-Chairs, the Corps  
43 and Ecology will coordinate review with the members of the IRT so that a decision is rendered  
44 or comments detailing deficiencies are provided in a timely manner. The Corps and Ecology  
45 agree to not unreasonably withhold or delay decisions on such requests.  
46

1 D. The Corps and Ecology agree to act in good faith when rendering decisions about  
2 acceptability of financial assurances, requiring corrective or remedial actions, requiring long-  
3 term management and maintenance actions, awarding credits and making decisions on requests  
4 to modify wetland credit generation ratios or the credit award schedule. The Corps and Ecology  
5 will exercise good judgment in accessing financial assurances, and will utilize those monies only  
6 to the extent they reasonably and in good faith conclude that such remedial or corrective actions  
7 are an effective and efficient expenditure of resources. In implementing the process delineated  
8 in Article III.C.1 of this Instrument, the Corps and Ecology will act in good faith in determining  
9 the scope and nature of corrective actions to be undertaken; shall act in good faith in conducting  
10 monitoring, developing reports, and assessing compliance with performance standards; and will  
11 not unreasonably limit corrective action activities or otherwise apply their discretion so as to  
12 unduly prejudice the Sponsor as to the timing or number of credits awarded. Corps and Ecology  
13 approval of the identity of any assignee responsible for executing the Long-Term Management  
14 and Maintenance Plan, and approval of the terms of any long-term management and maintenance  
15 assignment agreement, will not be unreasonably withheld.  
16

17 E. The Corps and Ecology will periodically inspect the Bank site as necessary to evaluate, in  
18 consultation with the other members of the IRT, the achievement of performance standards, to  
19 assess the results of any corrective measures taken, to monitor implementation of the Long-Term  
20 Management and Maintenance Plan, and, in general, to verify the Sponsor's compliance with the  
21 provisions of this Instrument.  
22

23 F. Upon satisfaction of the requirements of Article IV.K. under this Instrument, the Corps and  
24 Ecology will certify, following consultation with the Sponsor and the other members of the IRT,  
25 that the establishment period of the Bank has terminated, and that the period of long-term  
26 management and maintenance has commenced. Upon satisfaction of the requirements of Article  
27 IV.L. of this Instrument, the Corps and Ecology, following consultation with the other members  
28 of the IRT, will jointly issue a letter certifying that the operational life of the Bank has  
29 terminated.  
30

## 31 VI. GENERAL PROVISIONS

32

33 **A. Decision Making by Consensus.** The Corps and Ecology will strive to achieve consensus  
34 among the IRT regarding issues that arise pertaining to the establishment, operation,  
35 maintenance, and management of the Bank. As Chairs, the Corps and Ecology will coordinate  
36 the review and oversight activities of the IRT so as to best facilitate opportunity to reach the  
37 desired consensus. Review and oversight decisions will take into account the views of the  
38 Sponsor to the maximum extent practicable. Where consensus cannot otherwise be reached  
39 within a reasonable timeframe, following full consideration of the comments of the members of  
40 the IRT and following consultation with the Sponsor, the Corps holds the responsibility and  
41 authority under Section 404 of the Clean Water Act, and Ecology holds independent  
42 responsibility and authority under Section 401 of the Clean Water Act and ch. 90.84 RCW, to  
43 make final decisions regarding the application of the terms of this Instrument.  
44

45 **B. Entry into Effect, Modification or Amendment, and Termination of the Instrument.**  
46

1           1. This Instrument, consisting of both this Basic Agreement and the Appendices, will  
2 enter into effect upon the signature by authorized representatives of each of the Corps, Ecology,  
3 and the Sponsor, as of the date of the last of these signatures.  
4

5           2. This Basic Agreement portion of the Instrument may be amended or modified only  
6 with the written approval of the Sponsor, the Program Manager for Shorelands and  
7 Environmental Assistance on behalf of Ecology, and the Seattle District Engineer on behalf of  
8 the Corps, or their designees. Any such modifications or amendments will take effect following  
9 consultation with the other members of the IRT. Amendment of the provisions of the  
10 Appendices may be effectuated through an exchange of letters signed by the Sponsor, the  
11 Mitigation Banking Specialist serving as Co-Chair on behalf of the Corps, and the Wetland  
12 Section Manager serving as Co-Chair on behalf of Ecology, following consultation with the  
13 other members of the IRT, provided the exchange of letters expresses mutual agreement as to the  
14 exact language to be deleted or modified, and the exact language to be inserted.  
15

16           3. This Instrument may be terminated by the mutual agreement of the Sponsor, Corps,  
17 and Ecology, following consultation with the IRT, or may be terminated under the terms of  
18 Article IV.J. of this Instrument in the case of default by the Sponsor. In the event any  
19 termination action is commenced, the Sponsor agrees to fulfill its pre-existing obligations to  
20 perform all establishment, monitoring, maintenance, management, and remediation  
21 responsibilities that arise directly from credits that have already been awarded, sold, used, or  
22 transferred at the time of termination.  
23

24           4. Upon termination of the operational life of the Bank pursuant to Article IV.L., and  
25 certification to that effect pursuant to Article V.F., this Instrument shall terminate without further  
26 action by any Party. Thereafter, the Long-Term Management and Maintenance Plan developed,  
27 approved, and instituted in accordance with Article IV.M. shall govern the continuing  
28 obligations of the Sponsor, or its assignee as applicable.  
29

30 **C. Assignment of Obligations under this Instrument.** The Sponsor may be permitted to  
31 assign its obligations, responsibilities, and entitlements under this Instrument to a third party.  
32 The Corps and Ecology, following consultation with the IRT, must approve the identity of the  
33 assignee in order for any assignment to effectively relieve the Sponsor of those obligations. In  
34 evaluating a prospective assignee, the Corps and Ecology may consider characteristics such as  
35 environmental mitigation expertise, wetlands mitigation project or analogous experience, and  
36 financial strength and stability. Approval of the identity of the assignee will not be unreasonably  
37 withheld. The assignee must execute a mitigation banking instrument with the Corps and  
38 Ecology under terms identical, to the extent practicable, to the present Instrument. The  
39 applicable financial assurances established pursuant to Articles III.C.1. and III.C.2. of this  
40 Instrument must be initiated. The obligations, responsibilities, and entitlements under this  
41 Instrument may reside in only a single entity at any one time, and may not be severed or  
42 transferred piecemeal. However, the physical ownership of the Bank site real property and the  
43 obligations, responsibilities, and entitlements under this Instrument are separate and distinct;  
44 thus, ownership may be transferred, pursuant to the provisions of Article IV.N., independently of  
45 assignment of this Instrument. Once assignment has been properly accomplished, the Sponsor  
46 will be relieved of all its obligations and responsibilities under this Instrument. Specific

1 additional provisions pertaining to the assignment of long-term management and maintenance  
2 obligations are described at Article IV.M.  
3

4 **D. Specific Language of this Basic Agreement Shall Be Controlling.** To the extent that  
5 specific provisions of this Basic Agreement portion of the Instrument are inconsistent with any  
6 terms and conditions contained in the Appendices, or inconsistent with other documents that are  
7 incorporated into this Instrument by reference and that are not legally binding, the specific  
8 language within this Basic Agreement shall be controlling.  
9

10 **E. Notice.** Any notice required or permitted hereunder shall be deemed to have been given  
11 either (i) when delivered by hand, or (ii) three (3) days following the date deposited in the United  
12 States mail, postage prepaid, by registered or certified mail, return receipt requested, or (iii)  
13 when sent by Federal Express or similar next-day nationwide delivery system, addressed as  
14 follows (or addressed in such other manner as the party being notified shall have requested by  
15 written notice to the other party):  
16

17 **EFL Mitigation Partners**

18 15600 NE 173<sup>rd</sup> St  
19 Woodinville WA 98072  
20 425-785-8428  
21

22 **U.S. Army Corps of Engineers, Seattle District**

23 Mitigation Banking Specialist/Co-chair of the IRT  
24 Regulatory Branch  
25 Seattle District, Corps of Engineers  
26 4735 E. Marginal Way South  
27 P.O. Box 3755  
28 Seattle, WA 98124-3755  
29 206-764-3495  
30

31 **Washington State Department of Ecology**

32 Mitigation Banking Specialist/ Co-chair of the IRT  
33 Shorelands and Environmental Assistance Program  
34 P.O. Box 47600  
35 300 Desmond Drive  
36 Olympia, WA 98504-7600  
37 360-407-6000  
38

39 Any other communications called for under this Instrument between the Co-Chairs and the other  
40 members of the IRT may be carried out through electronic mail, telephone communications, or  
41 regular mail addressed as indicated in the above sub-paragraph and as follows:  
42

43 **US Environmental Protection Agency**

44 Region 10  
45 Aquatic Resources Unit  
46 ETPA-083



1                   1200 Sixth Ave  
2                   Seattle WA 98101  
3

4                   **Clark County**

5                   Brent Davis  
6                   Lead Biologist  
7                   Clark County Environmental Services  
8                   1300 Franklin Street  
9                   Vancouver, WA 98660  
10

11 **F. Entire Agreement.** This Instrument, consisting of both this Basic Agreement and the  
12 Appendices, constitutes the entire agreement between the parties concerning the subject matter  
13 hereof.  
14

15 **G. Invalid Provisions.** In the event any one or more of the provisions contained in this  
16 Instrument are held to be invalid, illegal, or unenforceable in any respect, such invalidity,  
17 illegality, or unenforceability will not affect any other provisions hereof, and this Instrument shall  
18 be construed as if such invalid, illegal, or unenforceable provision had not been contained herein.  
19

20 **H. Effect of Agreement.** This Instrument does not in any manner affect statutory authorities  
21 and responsibilities of the signatory Parties. This Instrument is not intended, nor may it be relied  
22 upon, to create any rights in third parties enforceable in litigation with the United States or the  
23 State of Washington. This Instrument does not authorize, nor shall it be construed to permit, the  
24 establishment of any lien, encumbrance, or other claim with respect to the Bank property,  
25 with the sole exception of the right on the part of the Corps and Ecology to require the Sponsor  
26 to implement the provisions of this Instrument, including recording the conservation easement,  
27 required as a condition of the issuance of permits for discharges of dredged and fill material into  
28 waters of the United States associated with construction and operation and maintenance of the  
29 Bank.  
30

31 **I. Attorneys' Fees.** If any action at law or equity, including any action for declaratory relief,  
32 is brought to enforce or interpret the provisions of this Instrument, each party to the litigation  
33 shall bear its own attorneys' fees and costs of litigation.  
34

35 **J. Availability of Funds.** Implementation of this Instrument is subject to the requirements of  
36 the Anti-Deficiency Act, 32 U.S.C. § 1341, and the availability of appropriated funds. Nothing  
37 in this Instrument may be construed to require the obligation, appropriation, or expenditure of  
38 any money from the United States Treasury, in advance of an appropriation for that purpose.  
39

40 **K. Headings and Captions.** Any paragraph heading or caption contained in this Instrument  
41 shall be for convenience of reference only and shall not affect the construction or interpretation  
42 of any provision of this Instrument.  
43

44 **L. Counterparts.** This Instrument may be executed by the Parties in any combination, in one  
45 or more counterparts, all of which together shall constitute one and the same instrument.  
46

1 **M. Binding.** This Instrument, consisting of both this Basic Agreement and the Appendices,  
2 shall be immediately, automatically, and irrevocably binding upon the Sponsor and its heirs,  
3 successors, assigns and legal representatives upon execution by the Sponsor, Ecology, and the  
4 Corps.  
5

1 IN WITNESS WHEREOF, the Parties hereto have executed this Instrument on the date herein  
2 below last written.

3  
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46

**PARTIES**

By the Sponsor:

\_\_\_\_\_  
Victor Woodward  
Manager, EFL Mitigation Partners, LLC

\_\_\_\_\_  
Date

By the Corps:

\_\_\_\_\_  
Anthony O. Wright  
Colonel, Corps of Engineers  
Seattle District Engineer

\_\_\_\_\_  
Date

By Ecology:

\_\_\_\_\_  
Gordon White  
Program Manager, Shorelands and Environmental Assistance Program  
Washington State Department of Ecology

\_\_\_\_\_  
Date

Other IRT Members:

Signature by other IRT members indicates assent on the part of the represented organization to the provisions of the Instrument, but does not give rise to any affirmative obligations, express or implied. This Instrument is not binding on the other IRT members.

\_\_\_\_\_  
Richard Parkin  
Acting Director  
Office of Ecosystems, Tribal and Public Affairs  
US Environmental Protection Agency

\_\_\_\_\_  
Date

\_\_\_\_\_  
Marc Boldt  
County Commissioner  
Clark County, WA

\_\_\_\_\_  
Date

\_\_\_\_\_  
Tom Mielke  
County Commissioner  
Clark County, WA

\_\_\_\_\_  
Date

1 \_\_\_\_\_  
2 Steve Stewart  
3 Chair of the County Commissioners  
4 Clark County, WA

\_\_\_\_\_  
Date

**EAST FORK LEWIS RIVER  
WETLAND MITIGATION BANK**

Appendices to the Mitigation Banking Instrument

EFL Mitigation Partners, LLC  
15600 NE 173<sup>rd</sup> Street  
Woodinville, WA 98072

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## APPENDIX A GENERAL BANK INFORMATION

### APPENDIX A.1:

#### A.1.1. Business Purpose and Ecological Goals of the Bank

The purpose of the Bank is to generate mitigation credits for projects that will have an adverse impact on the aquatic environment, and that need to compensate for those impacts as a condition of their permits or other regulatory requirements resulting from project impacts.

The primary ecological goals of the East Fork Lewis Wetland Mitigation Bank are as follows:

- Restore wetland hydrology by disabling the extensive ditch and drain tile system currently used to convey water off of the site.
- Establish a variety of native wetland habitat types, comparable to pre-agricultural conditions and in accordance with targeted hydrologic regimes and elevations across the site.
- Control invasive species, including but not limited to, reed canarygrass (*Phalaris arundinacea*) and Himalayan blackberry (*Rubus armeniacus*) across the site.
- Create and enhance wildlife habitat, structure and function of the site.

Relevant documentation supporting the technical information in these appendices is included in a separate Resource Folder. The Resource Folder is not considered part of the MBI but is prepared by the Sponsor and provided to all IRT members to serve as a reference document. The resource folder includes the wetland delineation report, wetland function assessment results, vegetation survey, hydrologic monitoring and modeling, Basis of Design Report and other technical information that was used to establish baseline conditions at the bank and support the design for the site.

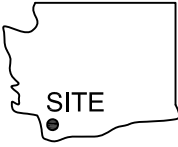
#### A.1.2. Bank Location and Legal Description

The Bank is located in the southeast quarter of Section 23, Township 5 North, Range 2 East of the Willamette Meridian, near La Center, Washington (**Figure A-1, Vicinity Map**). The site encompasses approximately 113.26 acres and is comprised of tax parcel numbers 264409000, 264355000, 264413000, 264402000, 264412000, 264411000 and 264352000 (**Figure A-2, Survey of Bank Boundaries**). The legal description of the Bank site is provided in Exhibit A at the end of Appendix A. Clark County maps the Bank site in the Rock Creek (north) Sub-basin of Water Resource Inventory Area (WRIA) 27. Agricultural land and NE Reid Road border the Bank site to the north, undeveloped forest borders to the west, agricultural land borders on the east, and rural residential homes border the Bank site to the south.

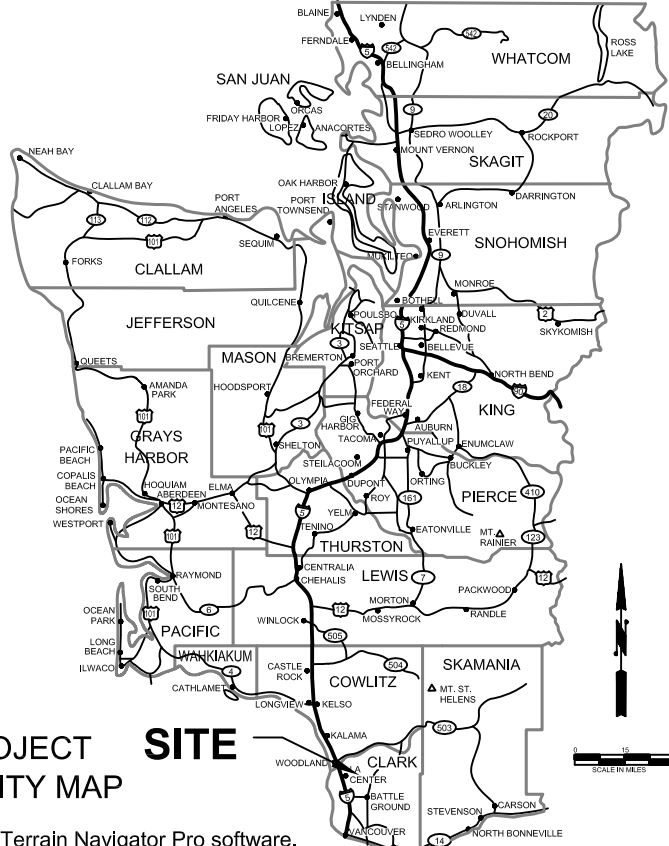
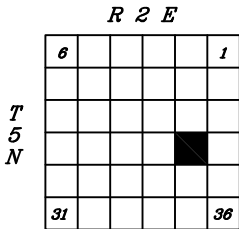
All real property to be included within the Bank site area (tax parcels 264409000, 264355000, 264413000, 264402000, 264412000, 264411000 and 264352000), as more completely described

4/13/2007 4:12 PM S:\Clark-WA\County-Projects\1209-Habitat Banc NW\1209.05-East Fork Lewis Mitigation Bank\1209.05-Figures\2010\A-1 Vicinity Map.dwg Brian Bottorff

WASHINGTON

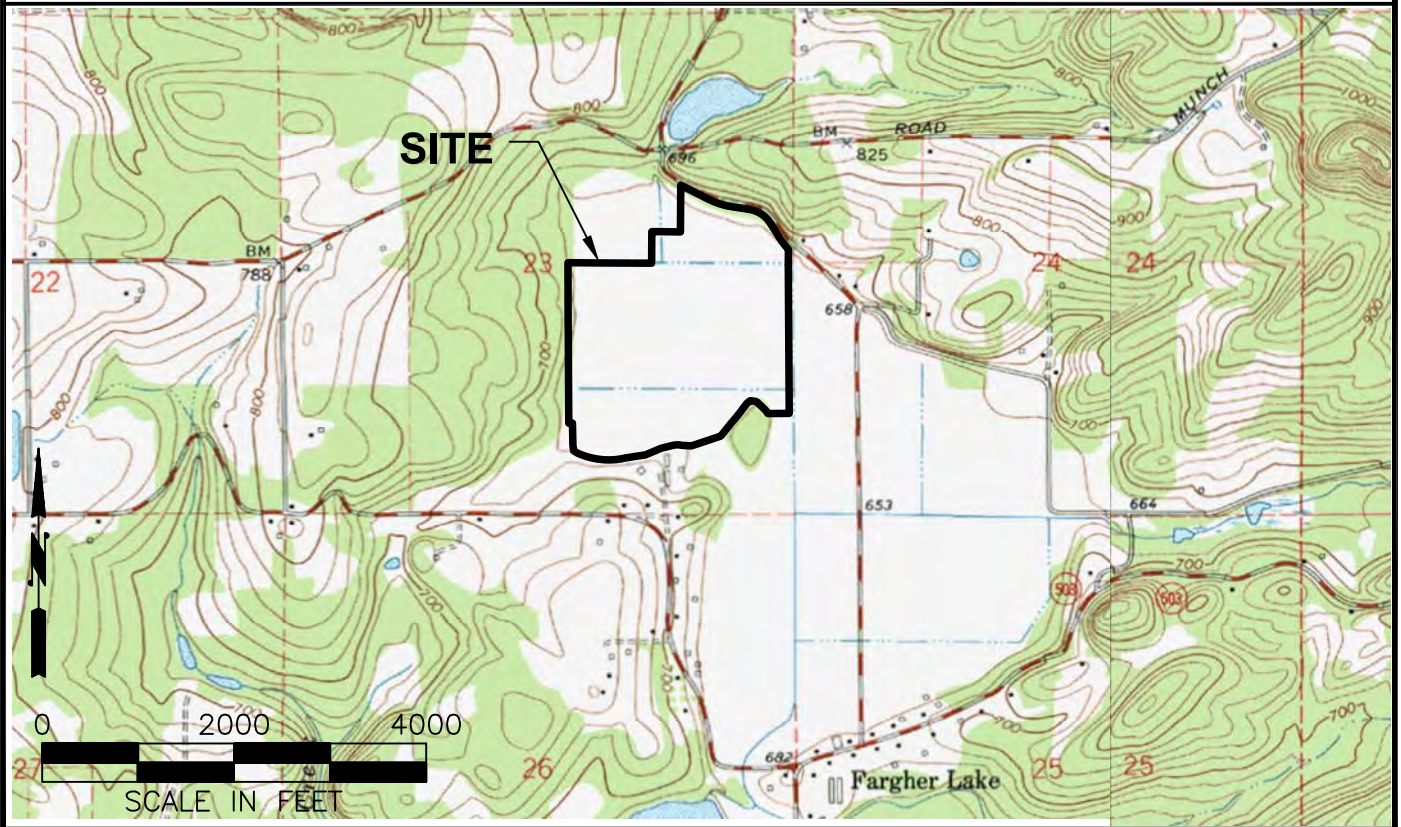


45° 53' 54" N Latitude  
 122° 30' 58" W Longitude  
**LOCATION MAP**



**PROJECT SITE VICINITY MAP**

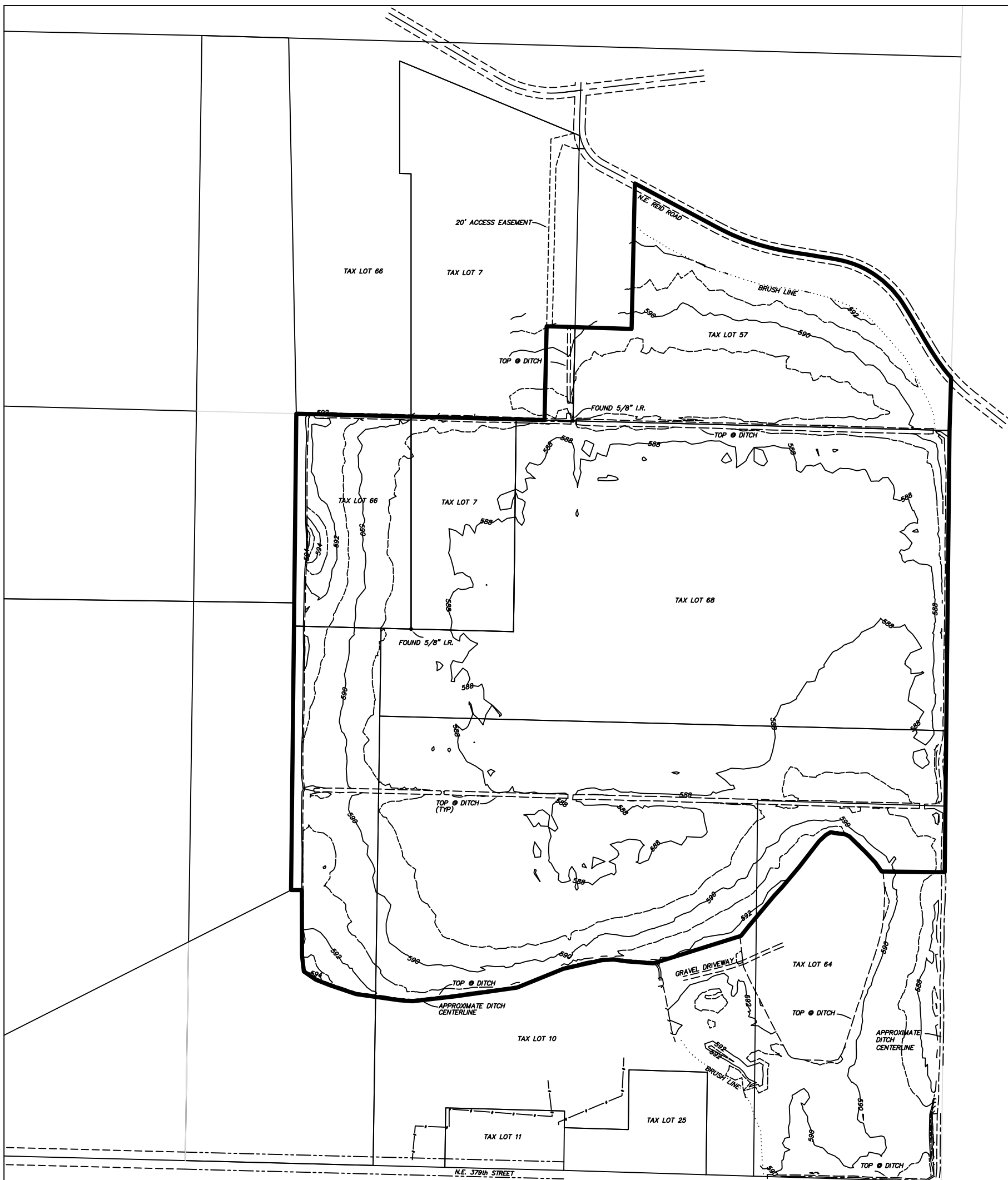
**NOTE:**  
 USGS topographic quadrangle map reproduced using MAPTECH Inc., Terrain Navigator Pro software.



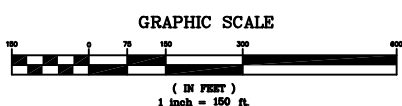
**ECOLOGICAL LAND SERVICES, INC.**  
 1157 3rd Ave., Suite 220 Longview, WA 98632  
 (360) 578-1371 Fax: (360) 414-9305

DATE: 4/9/10  
 DWN: BCB  
 REQ. BY: TK  
 PRJ. MGR: FN  
 CHK:  
 APPR:  
 PROJ.#: 1209.05

**Figure A-1  
 VICINITY MAP  
 Fargher Lake Site  
 East Fork Lewis Wetland Mitigation Bank  
 Clark County, Washington  
 Section 23, Township 5N, Range 2E, W.M.**




TOPOGRAPHIC SURVEY  
 FOR  
 HABITAT BANC NW  
 OF THE  
 PERRY GILMOUR PROPERTY  
 IN THE E 1/2 OF SECTION 23, T5N, R2E,  
 W.M., CLARK COUNTY, WASHINGTON  
 DATE: AUGUST 20, 2007



NOTES

DATE OF SURVEY: JUNE 21 AND 22, 2007  
 BASIS OF BEARINGS: RECORD OF SURVEY 55-70  
 VERTICAL DATUM: ASSUMED  
 1 FOOT CONTOUR INTERVAL SHOWN

FIGURE A-2  
 SITE SURVEY

 <b>HAGEDORN, INC.</b> Surveying and Engineering 1924 Broadway, Vancouver, WA 98663 Ph: (360) 696-4428 FAX 694-8934		
SCALE: 1"=100' DATE: 06-26-07 JOB NO: 07-131	CALC. BY: BPT DRAWN BY: BPT CHECKED BY:	DWG # 07131TOPO.DWG SHEET 1 OF 1

in the legal description attached as Exhibit A to this Instrument, is owned in fee simple by three parties: Perry and Cheryl Gilmour, John Delegates, and Warren and Sara Sarkinen. The properties have been pledged for use in the Bank in a manner consistent with this Instrument. The overall bank property size is approximately 113.26 acres. The inclusion of the aforementioned property in the Bank and the granting of conservation easements restricting future land uses for the benefit of the Bank shall not convey or establish any property interest on the part of any Party to this Instrument, nor convey or establish any interest in Bank credits. The Instrument does not authorize, nor shall it be construed to permit, the establishment of any lien, encumbrance, or other claim with respect to the property, with the sole exception of the right on the part of the Corps and Ecology to require the Sponsor to implement elements of this Instrument, including recording the conservation easements, as a condition of a permit issued under Sections 404 and 401 of the Clean Water Act for discharges of dredged and fill material into Waters of the United States associated with construction and operation and maintenance of the Bank.

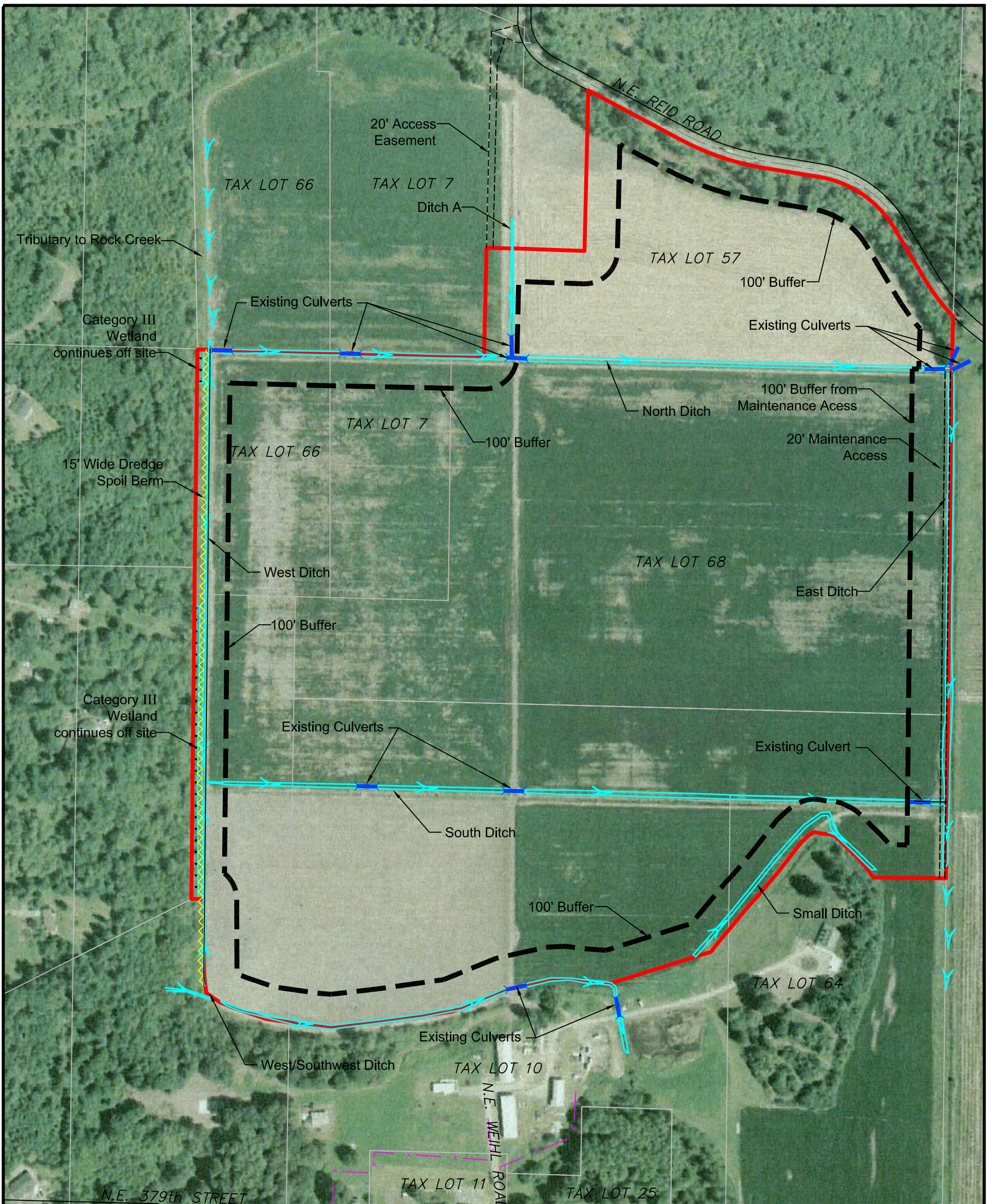
### **A.1.3. Site Description and Baseline Conditions**

#### **A.1.3.1 Site Description**

The Bank site is located in the northwestern portion of the greater Fargher Lake system, a large, shallow basin that is part of the 423-acre peat deposit thought to have formed in an ancient volcanic caldera (Rigg 1958). Because of the productive, organic soils, the lake was extensively drained, ditched, and tilled to facilitate agricultural crop production. Farming has occurred on the Bank site for almost a century. Prior to agricultural activity in the area, the US Army Corps of Engineers (Mangum 1913 as cited in Rigg 1958) historical mapping identified the Fargher Lake area as a treeless swamp. Within immediate vicinity of the Bank site are rolling hills and areas of low topographic relief in which water collects or is otherwise routed through drain tiles, ditch systems, and streams, eventually feeding into the East Fork Lewis River.

The Bank site consists of upland fields with low topographical relief bisected by a series of ditches. Elevations across the site range from approximately 662 feet at the western site boundary to 655 feet in the middle of the site (**Figure A-4, Site Topography**). No structures are present except for culverts, irrigation equipment, and drain tiles. The agricultural fields are currently fallow, although mint was its historic crop. A Type F stream has been diverted across (east) the northern portion of the Bank site, then turns to flow south along the eastern boundary (**Figure A-3, Existing Conditions**). The onsite ditches and stream are regulated as Category IV, riverine flow-through wetlands (HGM). A forested wetland is located within the narrow strip of land along the western property boundary, west of the West Ditch. This wetland extends offsite to the west and is considered a Category III, slope/depressional flow-through wetland (ELS 2009).

Ecological Land Services Inc. (ELS) prepared a wetland delineation report for the Bank site in May 2007 that was revised in October 2009. Additional environmental information prepared for the project includes a geotechnical soils analysis conducted by GeoDesign, Inc. (GeoDesign; 2009), a soils and hydrology report completed by Pacific Rim Soils & Water, Inc. (PRSW; 2008), which describes the onsite ditches and flow patterns in detail, hydrologic modeling of



**LEGEND:**

- Site Boundary
- 100' Buffer
- ~ Dredge Spoil Berm
- Category IV Riverine Wetland (Jurisdictional Wetland) (~1.28 ac.)
- Category III Depressional/Slope Wetland (~0.39 ac. on site)
- Culvert

- Right of Way and Centerline
- x Fence
- Parcel Line



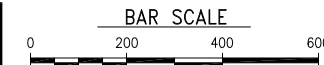
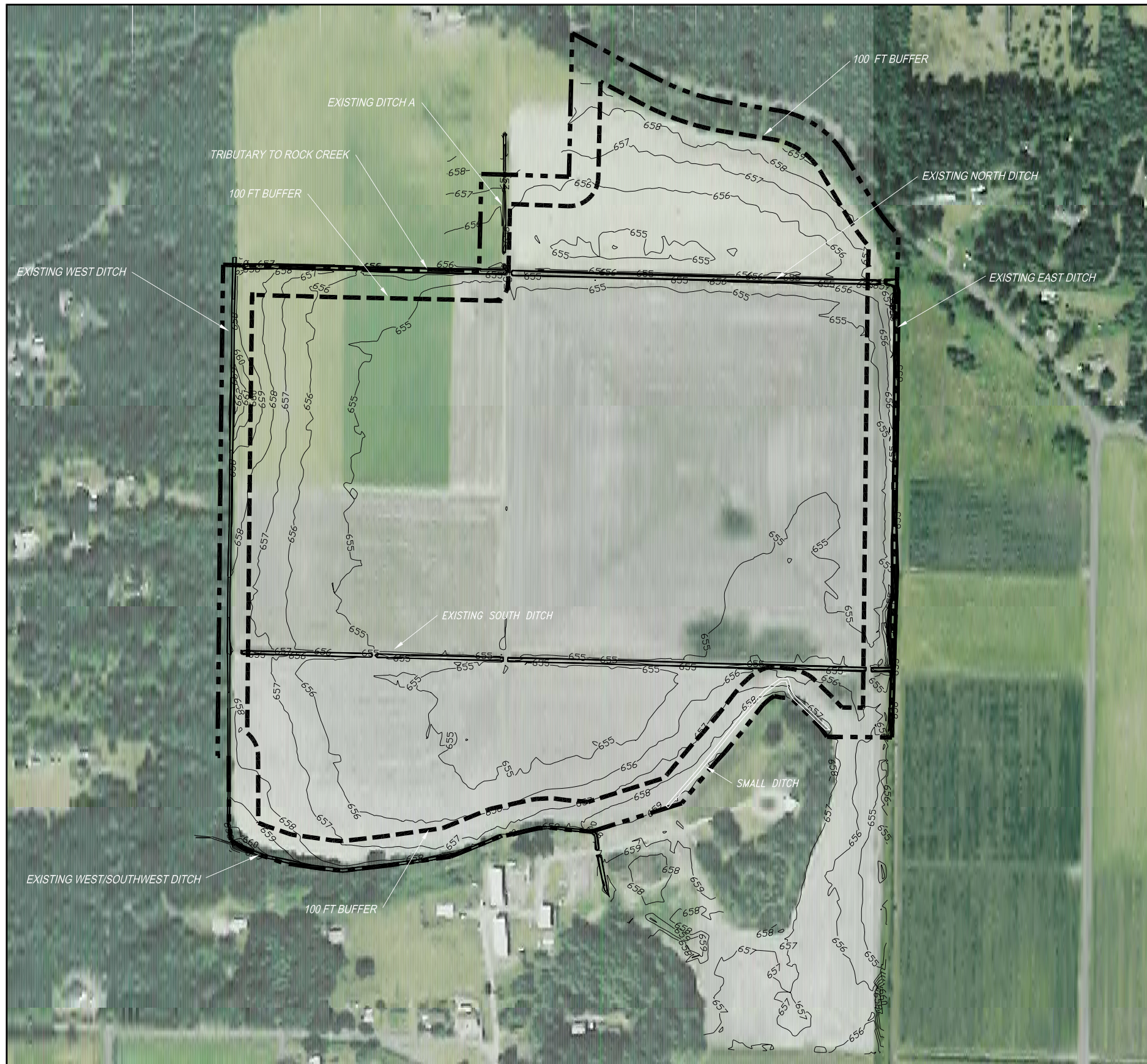
**NOTES:**

1. Ecological Land Services, Inc. evaluated the site for wetlands Spring 2007, February 2009, and March 2010.
2. Hydrological monitoring wells were assessed March 13 - May 15, 2007.
3. Wetland categorization follows the Washington Department of Ecology-Wetland Rating System for Western Washington.
4. 2006 aerial photograph provided by Google Earth™.

**ECOLOGICAL LAND SERVICES, INC.**  
 1157 3rd Ave., Suite 220 Longview, WA 98632  
 (360) 578-1371 Fax: (360) 414-9305

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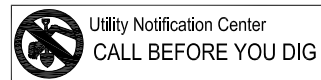
Figure A-3  
 EXISTING CONDITIONS  
 Fargher Lake Site  
 East Fork Lewis Wetland Mitigation Bank  
 Clark County, Washington  
 Section 23, Township 5N, Range 2E, W.M.



SECTIONS: 23  
 TOWNSHIP: T5N  
 RANGE: R2E  
 LAT = 45° 54' 4.62"N  
 LONG = 122° 31' 9.61"W

**LEGEND**

- SITE BOUNDARY (113.26 AC)
- BUFFER (20.95 AC)
- EXISTING TOPOGRAPHIC CONTOURS



UNAUTHORIZED CHANGES & USES  
 THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

NOTE: DUCKS UNLIMITED WILL PROVIDE CONSTRUCTION STAKING AND/OR VERTICAL CONTROL FOR THE CONTRACTOR.

SURVEY DATUM	
SURVEY DATE:	10-30-08
HORIZONTAL DATUM:	WASHINGTON STATE PLANE SOUTH ZONE NAD83
VERTICAL DATUM:	NAVD88
GEOID MODEL:	03
CONTOUR INTERVAL:	1'
AERIAL PHOTO:	2005 CLARK COUNTY

REVISIONS		DATE	APPROVED
REV. NO.	DESCRIPTION		
1	Add buffer and text.	January 2010	

**DUCKS UNLIMITED INC.**  
 PacNW Field Office  
 (360) 885-2011  
 DATE: JULY 09  
 SHEET NO. 2

PROJECT NO. WA-223-1	GENERAL INFORMATION
<b>FIGURE A-4 SITE TOPOGRAPHY</b>	DESIGNED BY: JTS
	DRAWN BY: DMC
	SURVEYED BY: JPS
	CHECKED BY:
APPROVED BY:	

stormwater completed by Ducks Unlimited (DU) in 2009, and a topographic survey completed by DU in 2008. All reports are provided in the Resource Folder. One of the current landowners, Perry Gilmour, who resides on the property and has farmed the site for many years, has also been a valuable resource regarding how the Bank site and surrounding area functions hydrologically at various times of the year. Mr. Gilmour has provided detailed knowledge of the extensive drainage system and other valuable site history.

### **A.1.3.2 Baseline Conditions**

There are four main ditches on the property, labeled North Ditch, South Ditch, East Ditch and West Ditch. Three other smaller ditches also convey water onto or around the site, the West/Southwest Ditch along the southern Bank boundary, Ditch A, which flows into the North Ditch, and the Small Ditch located in the southeast corner of the Bank site (**Figure A-3**). All ditches are regulated as Category IV, riverine wetlands following the *Washington State Wetland Rating System for Western Washington* (Hruby 2006). In addition to the ditches, there is a Category III deciduous, forested, depression/slope wetland west of the West Ditch that continues offsite to the west. Total wetland acreage within the Bank site boundary is 1.67 acres.

The North and East Ditches are the same water course, which is an unnamed tributary to Rock Creek (regulated as a riverine wetland). The tributary is mapped as fish-bearing (Washington Department of Natural Resources 2007) and has perennial flow, which is used for irrigation on farmlands downstream of the Bank site. The remaining onsite ditches contain seasonal flow.

Groundwater at the site is controlled by the extensive ditch and drain tile system and averages between 3 and 4 feet below ground surface (bgs) (PRSW 2008). It fluctuates higher during winter and spring months, and was documented to be at 2 feet bgs between March and May of 2008 (ELS 2009). The surrounding hillsides to the west and southwest also contribute runoff into the ditch system. The entire Bank site can become submerged for brief periods during the rainy season and during flood events.

Precipitation feeds the surface and groundwater sources described above. National Oceanic and Atmospheric Administration (NOAA) precipitation stations at Merwin/Ariel Dams (about 5 miles north of the project site) indicate that annual rainfall in the Fargher Lake area is much greater than in Vancouver. Vancouver average annual rainfall is reported as being about 40 inches per year (in/yr) while average annual precipitation in the Merwin/Ariel Dam area is 72 to 75 in/yr. Precipitation rates increase rapidly to the north and east, with NOAA data indicating 114 in/yr at Peterson's Ranch (about 15 miles farther north) and 84 in/yr at the Carson Fish Hatchery about 25 miles to the east (PRSW 2008). The current landowner, Mr. Gilmour, indicated that it is not uncommon to receive as much as 90 inches of annual precipitation in the area immediately around the project site.

Drain tiles are ubiquitous throughout the site, keeping the groundwater deep enough for agricultural production. Information provided by Mr. Gilmour indicates that there are at least three different types of subsurface drain tile systems installed in the farm fields: plastic drain pipe, clay drain tiles, and Douglas-fir box drains. The drain tiles are buried between 4 and 6 feet bgs. Several are visible in the sidewalls of the ditches.

Farming practices have altered the upper 2 feet of the soil profile and possibly deeper, mixing the peat with clay and silt deposits washed down from the surrounding hillside and silt deposited by flood events on the tributary. Soils onsite are mapped as Cinebar stony silt loam, 3 to 30% slopes (CrE), Cove silty clay loam, 0-3% slopes (CvA), Minniece silty clay loam, 0 to 3% slopes (MnA), Olequa silty clay loam, heavy variant, 3 to 20% slopes (OhD), Olympic clay loam, 3 to 8% slopes (OIB), Olympic clay loam, 8 to 20% slopes (OID), Semiahmoo muck (Sr), Semiahmoo muck, shallow variant (Su), and Tisch silt loam, 0 to 3% slopes (ThA) as referenced on the U.S.D.A. Natural Resources Conservation Service website (NRCS 2006). The dominant mapped soil type is Semiahmoo muck. The State of Washington *Hydric Soils List for Washington* identifies Minniece silty clay loam, Semiahmoo muck, and Tisch silt loam as hydric soils (NRCS 2006). A soil map and detailed soil descriptions are included in the wetland delineation report and the PRSW soil and hydrology analysis in the Resource Folder.

The majority of the Bank site is regularly sprayed to eliminate weeds when fallow. In the fall of 2009, Mr. Gilmour planted the site with native grasses as an alternative to spraying for weed control. When test plot data sheets 1 through 6 were collected in 2007 (ELS 2009), the dominant vegetation was tall fescue (*Schedonorus phoenix*, FAC). The vegetation along the jurisdictional ditch and within the forested wetland along the western property boundary consisted of western crabapple (*Malus fusca*, FACW), Oregon ash (*Fraxinus latifolia*, FACW), vine maple (*Acer circinatum*, FAC), and red-osier dogwood (*Cornus sericea*, FACW) in the shrub and tree strata. Reed canarygrass (*Phalaris arundinacea*, FACW) and other non-native grasses were common in the herbaceous stratum.

ELS conducted a botanical survey of existing plant species at the Bank site on July 3, 2007. A total of 44 plant species were identified onsite (see the Botanical Survey in the Resource Folder). The field was planted in a mix of pasture grasses. The ditch corridors, which had the majority of the species diversity, had been recently sprayed. No federal endangered, threatened, proposed, candidate, or species of concern were found onsite. Likewise, no state endangered, threatened, or sensitive species were identified (WDNR 2007). Clark County follows the Washington Department of Natural Resources, Natural Heritage Program for its listing of rare plants (WDNR 2007).

#### **A.1.4. Functional Assessment**

A wetland function assessment in accordance with the *Washington State Method for Assessing Wetland Functions (WAFAM): Volumes I and II* (Hruby et al, 1999) was performed on the ditches only (riverine flow-through wetlands) and is included in the Resource Folder. The wetlands are located in the bottom of the agricultural ditches that currently drain the site. The assessment unit (AU) evaluated for the ditches is approximately 1.28 acres (**Figure A-3**). The AU boundary is mainly limited to the Bank site except along the eastern boundary where it encompasses the entire width of the tributary to Rock Creek. The assessment did not include the downstream area of the ditched tributary.

Table A-1 summarizes functional values and opportunity currently existing within the AU and compares that to anticipated changes at the site, post-Bank construction (approximately 20



years). Given the structure of the WAFAM model and the existing condition of wetlands only located in agricultural ditches, it is not entirely possible to compare the wetland functions provided under the existing conditions at the site with those expected post-Bank construction. For instance, wetland associated mammal habitat functions are equal under the existing and proposed conditions in the table but wetland associated mammal habitat is expected to increase significantly across the site with the reestablishment of multiple habitat classes and vegetation stratum. In general, wetland function is expected to significantly increase across the site post-Bank construction for all function categories. The total extent of existing wetland area evaluated on the site is small, compared to the anticipated size of the wetland post-construction.

The area of the contributing basin is approximately 910 acres (368 hectares). The Rock Creek (north) Sub-basin watershed map of the East Fork Lewis River and a topographical map were used to calculate the area of the contributing basin (see **Figure-1** in the Functional Assessment located in the Resource Folder).

**Table A-1. Function assessment summary.**

Function	Riverine Flow-through Wetland Existing Conditions			Anticipated Change in Function Post-Bank Construction	
	Index Potential <sup>1</sup>	Existing Opportunity			
Water Quality	Sediment Removal	4	Moderate to High	7	Increase
	Nutrient Removal	4	Moderate to High	5	Increase
	Metals & Toxic Organics Removal	2	Moderate to High	5	Increase
Water Quantity	Peak Flow Reduction	5	Moderate	8	Increase
	Downstream Erosion Reduction	4	Moderate	7	Increase
	Groundwater Recharge <sup>2</sup>	1	High	6	Increase
Habitat	General Habitat Suitability	3	Low	7	Increase
	Invertebrate Habitat	4	Low	9	Increase
	Amphibian Habitat	5	Low	7	Increase
	Anadromous Fish Habitat	2	Low	3	Increase
	Resident Fish Habitat	8	Low	8	--
	Wetland-Associated Bird Habitat	7	Low	8	Increase
	Wetland-Associated Mammal Habitat	8	Low to Moderate	8	--
	Native Plant Richness	3	Low	5	Increase

Function	Riverine Flow-through Wetland Existing Conditions		Anticipated Change in Function Post-Bank Construction	
	Index Potential <sup>1</sup>	Existing Opportunity		
Primary Production and Export	3	Moderate to High	5	Increase

<sup>1</sup> Index ranges from 1 (low), 6 (moderate), 10 (high). <sup>2</sup> Assumed high for all western Washington wetlands (Hruby *et al.* 1999).

#### A.1.4.1 Water Quality

The Assessment Unit has a low potential, but a moderate to high opportunity for removing sediments, nutrients, heavy metals, and toxic organics. The upstream contributing watershed is largely undeveloped, but immediate, adjacent land use is mainly agricultural, providing a high opportunity for sediments, nutrients, metals, and toxins to enter into the AU. Untreated stormwater runoff from NE Reid Road also flows into the AU. The AU is a series of ditches with open outlets and limited vegetation to slow flow velocity, filter sediments, and uptake nutrients, metals, and toxic organics. Most pollutants entering the AU are immediately transported downstream rendering a low index potential for removal.

#### A.1.4.2 Water Quantity

The AU has a moderate to low potential for reducing peak flows and decreasing downstream erosion because the upstream watershed is a mix of undeveloped areas and agricultural fields providing a moderate to low amount of runoff. The ditches are deep (approximately 7 feet) so they have a moderate storage capacity above normal flow, but the outlet is not constricted, and there is limited woody vegetation to slow velocity and anchor bank sediment during flood events; therefore index potentials are mostly low. In general, the ditch banks are vegetated with grasses; however material was observed to have sloughed from the sides in many areas. All wetlands in western Washington are assumed to have a link to ground water and, therefore, have a high potential for recharging ground water (Hruby *et al.* 1999). However, because the AU is a series of ditches, the index potentials are low because water is conveyed almost immediately downstream.

#### A.1.4.3 Habitat

The overall habitat suitability for fauna in the AU ranges from low to high. The high ratings from the WAFAM for resident fish, birds, and mammals, however, do not accurately reflect conditions onsite. The AU is in proximity to lakes and large fields and contains permanent and seasonal water regimes with varied depths. The AU, however, is a series of vegetated ditches that are regularly maintained so there is little vegetation and habitat structure. Vegetation within the AU is mainly limited to the ditch banks and a narrow strip along the side of the ditch bottoms. Overall, the AU has two different vegetation strata, emergent and some deciduous scrub-shrub. Aquatic bed vegetation is present, but it covers less than 10 percent of the AU. The emergent areas within the AU are dominated by non-native grasses and forbs. All potential wildlife corridors are bisected by rural residences, roads, and/or active agricultural fields. The habitat immediately adjacent to the AU (Bank site interior) is an agricultural field that lies fallow

a large portion of the year and is intensively managed for weeds. The varied water depths, permanently flowing and seasonally flowing water regimes within the AU are beneficial to wildlife, but because flow is contained within regularly maintained ditches, much of the habitat opportunity is lost.

Anadromous fish, amphibian, and invertebrate habitat is present, but is of low to moderate quality due to lack of overhanging vegetation, undercut banks, large woody debris, and rigid vegetation structure for egg laying, refuge, and temperature regulation. There is ongoing beaver activity within the AU, and a recently constructed beaver dam is present onsite. An abundance of willow, red-osier dogwood, and alder saplings are growing within and along the edges of the western AU boundary and a portion of the southern AU boundary, which is providing preferable habitat for beavers and other small mammals.

Native plant richness is low because of the ongoing ditch maintenance. Native scrub-shrub vegetation is present, but only within 20 percent of the AU. Emergent vegetation is present throughout the majority of the AU, but occurs as narrow strips along the ditch bottoms and up the banks. The majority of emergent vegetation consists of invasive reed canarygrass. Primary production and organic export is high because nearly all organic material produced falls directly into the ditches and is conveyed downstream.

#### **A.1.4.4 Summary**

In summary, the AU generally has a moderate to low index potential for sediment trapping and nutrient removal even though the opportunity is moderately high. The AU has a moderately low index potential for peak-flow reduction and downstream erosion, and a high index potential for organic material export. The opportunity of these functions to be performed is moderately high because the surrounding agricultural fields contribute sediments, herbicides and potentially other pollutants.

Existing index potentials for wildlife habitat range from low to high because the AU consists of regularly maintained agricultural ditches; however, the AU is in proximity to lakes and large fields. The high ratings from the WAFAM for resident fish, bird, and mammal habitat do not accurately represent site conditions because of these factors. The land immediately adjacent to the AU (Bank site interior) currently provides few habitat benefits. For the last two years it has been fallow; over 100 acres of land immediately surrounding the AU has contained no vegetation (bare soil) due to intensive weed management, and no crop was planted in anticipation of Bank development. Native grasses were planted over the Bank site as an alternative to spraying for weeds in the fall of 2009. Opportunity for habitat is moderate because the contributing basin and outlying areas are mostly undeveloped, and there are lakes and large fields in proximity to the AU.

#### **A.1.5. Post-Construction Functional Assessment**

##### **A.1.5.1 Anticipated Functional Lift**

The Bank site has been extensively farmed for nearly a century, drastically altering the hydrology through tiling and ditching, the soils from plowing, and the vegetation from agricultural production. Much of the year, the site lies barren and is intensively managed for weeds providing very limited ecological function. The wetlands evaluated within the AU are located in the ditches, which are classified as riverine flow-through wetlands. The proposed Bank design will significantly improve all aspects of ecological function over its current degraded state by re-establishing high quality Category I (ELS 2009) forested, scrub-shrub, and emergent depressional flow-through wetlands where there is currently bare soil or crops, depending on the season.

#### **A.1.5.2 Hydrology**

Groundwater, runoff, and flood water from the tributary to Rock Creek entering the Bank site is quickly and effectively conveyed downstream through the extensive drain tile and ditch system. Disabling drain tiles and plugging ditches will allow the site to saturate, creating new wetland area, which will significantly increase floodwater storage within the watershed. This will reduce peak flows downstream of the Bank, decrease downstream erosion, and provide groundwater recharge that will help alleviate low flows downstream of the site during the dry season.

#### **A.1.5.3 Water Quality**

The Bank's contributing basin includes some residences and paved roads that will continue to contribute stormwater runoff to the Bank site that has not been treated or detained. Because the contributing basin is largely undeveloped, it is expected that future land use in the surrounding area will only increase the level of sediments, nutrients, and toxics that could potentially enter the site. Additionally, the Bank site itself directly contributes agricultural runoff high in sediment and herbicides. After construction of the Bank, wetland functions related to water quality, such as removing sediments, nutrients, metals, and toxic organic substances will significantly increase. Specifically, the wetland will store water seasonally and during flood events, slowing and reducing sediment transport, and multiple vegetative classes will filter metals and toxic organic substances and remove nutrients in the increased aerobic conditions. In addition, onsite agricultural practices will cease, eliminating the potential for chemical contaminants to enter the downstream watershed from the site. Furthermore, trees and shrubs planted along the tributary to Rock Creek will help keep the stream temperature cooler during the hot summer months.

#### **A.1.5.4 Wildlife Habitat**

Overall habitat suitability for invertebrates, amphibians, wetland-associated birds, and wetland-associated mammals will improve tremendously over existing conditions (although not reflected in WAFAM scores), specifically because of an increase in wetland area which will contain a variety of hydroperiods (permanent, seasonal, and occasional inundation and/or saturation), vegetative species richness, habitat interspersions, the addition of habitat features (large woody debris and bird nesting boxes), eventual canopy closure of forested wetland areas, and maintaining corridors to adjacent upland areas. Although the site has been designed to exclude resident and anadromous fish to prevent stranding, fish habitat in the onsite ditches and downstream will be enhanced because plantings along the tributary to Rock Creek will provide

temperature regulation and leaf litter. The wetlands will also increase groundwater recharge that will supplement low flows during the dry season, and the wetland vegetation will improve water quality entering the stream.

#### **A.1.5.5 Summary**

In summary, the Bank site will re-establish high quality wetlands and associated wildlife habitat where there is currently a mostly barren, ditched agricultural field. Wetlands on site are expected to be rated as Category I wetlands after the project is completed. The Bank site location within the landscape and overall design will provide a significant ecological benefit not only to the immediate, surrounding area, but throughout a large portion of the watershed. The post-construction Bank site will consist of a forested, scrub-shrub, and emergent depressional flow-through wetland system that will contain a seasonal stream and a fish-bearing, perennial stream. A variety of water regimes, vegetation interspersions, and habitat features will provide diverse habitat opportunity for wildlife. The re-established wetlands will also increase flood storage, improve water quality, help prevent downstream erosion, recharge groundwater to supplement low summer flows and keep summer water temperatures cooler, similar to pre-agricultural conditions.

#### **References**

- Ecological Land Services, Inc. (ELS). Revised October 14, 2009. *Wetland Delineation Report for the East Fork Lewis Wetland Mitigation Bank*.
- Ecological Land Services, Inc. (ELS). 2009. *Post Construction Wetland Rating for the East Fork Lewis Wetland Mitigation Bank*.
- Hruby, T. 2006. *Wetland Rating System for Western Washington (Revised)*. Washington State Department of Ecology. Publication #04-06-025. Olympia, Washington.
- Hruby, T., T. Granger, K. Brunner, S. Cooke, K. Dublanica, R. Gersib, L. Reinelt, K. Richter, D. Sheldon, E. Teachout, A. Wald, and F. Weinmann. July 1999. *Methods for Assessing Wetland Functions. Volume I: Riverine and Depressional Wetlands in the Lowlands of Western Washington*. Washington State Department of Ecology Publications #99-115 and #99-116. Olympia, Washington.
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Rigg, G. 1958. *Peat Resources of Washington*. Bulletin No. 44. Division of Mines and Geology. Department of Conservation. Olympia, Washington.

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www.hagedornse.com

February 1, 2010

## Exhibit A-1

### **99.93 ACRE WETLAND MITIGATION SITE ON THE "GILMOUR TRACT":**

A portion of the Northeast quarter and Southeast quarter of Section 23, Township 5 North, Range 2 East, Willamette Meridian, Clark County, Washington, described as follows:

BEGINNING at a 5/8 inch iron rod marking the Northwest corner of the Southwest quarter of the Northeast quarter of Section 23, as shown in Book 55 of Surveys, page 70, Clark County Auditor's Records; thence South 88° 23' 22" East, along the North line of the Southwest quarter of the Northeast quarter of Section 23, for a distance of 304.82 feet to a 1/2 inch iron rod (Survey 55-70) marking the Northeast corner of the "Bruley tract" as described under Clark County Auditor's File No. 3288928; thence South 01° 10' 00" East, along the East line of the "Bruley tract" and the Southerly extension thereof, 1322.41 feet to a 1/2 inch iron rod (Survey 55-70) on the East line of another "Bruley tract", as described under Clark County Auditor's File No. 3288928; thence South 00° 44' 00" West, along the East line of the latter "Bruley tract", 662.72 feet to a 1/2 inch iron rod (Survey 55-70) at the Southeast corner of the latter "Bruley tract" and the Northeast corner of the "Denis tract" as described under Clark County Auditor's File No. 7908280003; thence South 00° 34' 44" West, along the East line of the "Denis tract", 81.55 feet to the TRUE POINT OF BEGINNING; thence continuing South 00° 34' 44" West, along the East line of the "Denis tract" and its Southerly extension, 927.89 feet to the Southeast corner of the "Wray tract", as described under Clark County Auditor's File No. 7708120034; thence South 90° 00' 00" East, 37.82 feet to the centerline of a drainage ditch; thence South 00° 13' 00" East, along said centerline 229.71 feet; thence South 06° 30' 00" East, 57.00 feet; thence South 55° 53' 00" East, 51.00 feet; thence South 68° 28' 00" East, 53.00 feet; thence South 71° 15' 00" East, 97.00 feet; thence South 82° 00' 00" East, 154.00 feet; thence South 85° 40' 00" East, 46.00 feet; thence North 83° 25' 00" East, 153.00 feet; thence North 82° 02' 00" East,

**Exhibit A-1**

**99.93 ACRE WETLAND MITIGATION SITE ON THE "GILMOUR TRACT":**

February 1, 2010

Page 2

217.00 feet; thence North 67° 50' 00" East, 176.00 feet; thence North 77° 30' 00" East, 139.00 feet; thence North 86° 50' 00" East, 41.00 feet; thence South 82° 15' 00" East, 45.00 feet; thence South 85° 30' 00" East, 95.00 feet; thence leaving said centerline North 72° 35' 00" East, 323.00 feet to the centerline of another drainage ditch; thence North 38° 30' 00" East, along the centerline of the second ditch, 45.00 feet; thence North 39° 50' 00" East, 138.00 feet; thence North 43° 00' 00" East, 43.00 feet; thence North 40° 00' 00" East, 90.00 feet; thence North 37° 50' 00" East, 116.00 feet; thence North 47° 15' 00" East, 31.45 feet; thence North 59° 23' 00" East, 19.50 feet; thence South 79° 00' 00" East, 25.00 feet; thence South 85° 52' 00" East, 24.50 feet; thence South 63° 53' 00" East, 19.00 feet; thence South 45° 42' 00" East, 81.00 feet; thence South 43° 21' 00" East, 48.00 feet; thence South 35° 23' 00" East, 39.00 feet; thence leaving the centerline of the second ditch, at right angles to the East line of the Southeast quarter of Section 23, South 89° 22' 27" East, 221.50 feet to the East line of the Southeast quarter of Section 23; thence North 00° 37' 33" East, along said East line, 1552.00 feet to the Southeast corner of the Northeast quarter of Section 23; thence North 01° 45' 38" East, along the East line of the Northeast quarter of Section 23, for a distance of 185.90 feet to the centerline of NE Reid Road; thence, following the centerline of NE Reid Road, along the arc of a 600.00 foot radius curve to the right (the radial bearing of which is North 47° 51' 24" East), through a central angle of 11° 21' 36", for an arc distance of 118.96 feet; thence North 30° 47' 00" West, 180.00 feet; thence along the arc of a 350.00 foot radius curve to the left, through a central angle of 50° 00' 00", for an arc distance of 305.43 feet; thence North 80° 47' 00" West, 167.00 feet; thence along the arc of an 800.00 foot radius curve to the right, through a central angle of 18° 55' 00", for an arc distance of 264.13 feet; thence North 61° 52' 00" West, 328.71 feet; thence leaving said centerline, South 01° 17' 57" West, parallel with the East line of the Southwest quarter of the Northeast quarter of Section 23, for a distance of 511.45 feet; thence North 87° 57' 42" West, 198.60 feet to the East line of the Southwest quarter of the Northeast quarter of Section 23; thence along said East line, South 01° 17' 57" West, 330.00 feet to the Southeast corner of the Southwest quarter of the Northeast quarter of Section 23; thence North 88° 31' 27" West, along the



**Exhibit A-1**

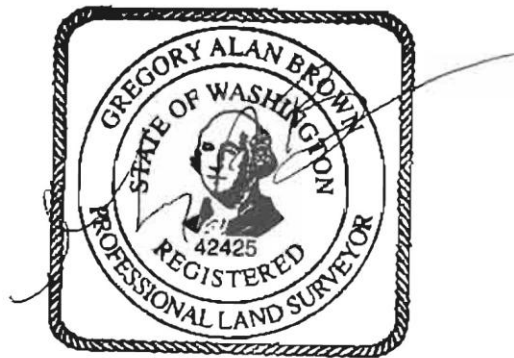
**99.93 ACRE WETLAND MITIGATION SITE ON THE "GILMOUR TRACT":**

February 1, 2010

Page 3

South line of the Southwest quarter of the Northeast quarter of Section 23, said South line being on the approximate centerline of a third drainage ditch, 199.73 feet; thence South  $00^{\circ} 42' 12''$  West, 746.17 feet; thence North  $88^{\circ} 31' 27''$  West, 772.56 feet to the TRUE POINT OF BEGINNING.

LD-2010\Habitat Bank-Exh A-Gilmour trt.gab  
07-131



2-1-2010

PAGE 1 OF 2  
 EXHIBIT SKETCH SHOWING  
**THE WETLAND MITIGATION SITE**  
 on the GILMOUR PROPERTY  
 in the NE 1/4 and SE 1/4 of  
 SECTION 23, T5N, R2E, W.M.  
 CLARK COUNTY, WA.

POSITION OF 5/8" IRON  
 ROD WITH YPC STAMPED  
 "HAGEDORN 9579" AS  
 SHOWN IN R.O.S. 55-70.  
 POINT OF BEGINNING



BEARINGS BASED ON  
 R.O.S. 55-70

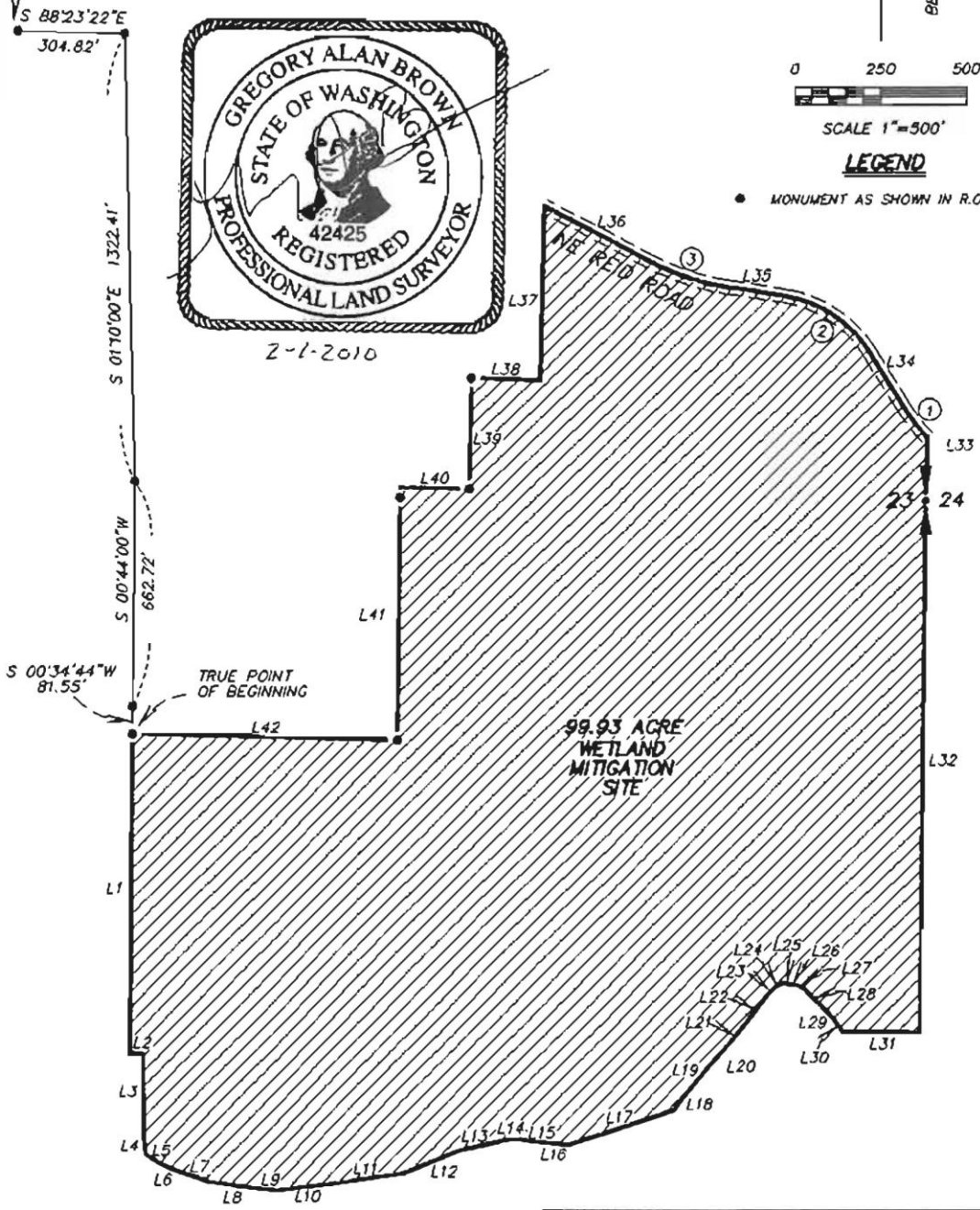
0 250 500  
 SCALE 1"=500'

**LEGEND**

● MONUMENT AS SHOWN IN R.O.S. 55-70



Z-1-2010



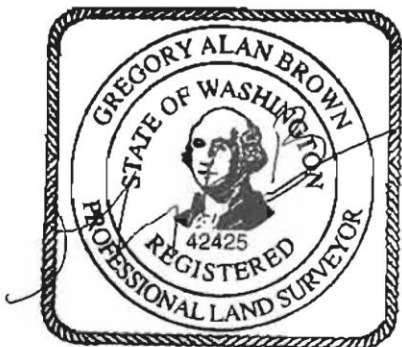
SCALE: 1"=500' JOB NO.: 07-131 DRAWN BY: CC  
 DATE: 2/01/10 CALC. BY: GAB DWG# 07-131GILMOUR

PAGE 2 OF 2  
 EXHIBIT SKETCH SHOWING  
**THE WETLAND MITIGATION SITE**  
**on the GILMOUR PROPERTY**  
 in the NE 1/4 and SE 1/4 of  
 SECTION 23, T5N, R2E, W.M.  
 CLARK COUNTY, WA.

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 00°34'44" W	927.89
L2	N 90°00'00" E	37.82
L3	S 00°13'00" E	229.71
L4	S 06°30'00" E	57.00
L5	S 55°53'00" E	51.00
L6	S 68°28'00" E	53.00
L7	S 71°15'00" E	97.00
L8	S 82°00'00" E	154.00
L9	S 85°40'00" E	46.00
L10	N 83°25'00" E	153.00
L11	N 82°02'00" E	217.00
L12	N 67°50'00" E	176.00
L13	N 77°30'00" E	139.00
L14	N 86°50'00" E	41.00
L15	S 82°15'00" E	45.00
L16	S 85°30'00" E	95.00
L17	N 72°35'00" E	323.00
L18	N 38°30'00" E	45.00
L19	N 39°50'00" E	138.00
L20	N 43°00'00" E	43.00
L21	N 40°00'00" E	90.00
L22	N 37°50'00" E	116.00
L23	N 47°15'00" E	31.45
L24	N 59°23'00" E	19.50
L25	S 79°00'00" E	25.00

LINE TABLE (cont.)		
LINE	BEARING	DISTANCE
L26	S 85°52'00" E	24.50
L27	S 63°53'00" E	19.00
L28	S 45°42'00" E	81.00
L29	S 43°21'00" E	48.00
L30	S 35°23'00" E	39.00
L31	S 89°22'27" E	221.50
L32	N 00°37'33" E	1552.00
L33	N 01°45'38" E	185.90
L34	N 30°47'00" W	180.00
L35	N 80°47'00" W	167.00
L36	N 61°52'00" W	328.71
L37	S 01°17'57" W	511.45
L38	N 87°57'42" W	198.60
L39	S 01°17'57" W	330.00
L40	N 88°31'27" W	199.73
L41	S 00°42'12" W	746.17
L42	N 88°31'27" W	772.56

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
1	11°21'36"	600.00	118.96
2	50°00'00"	350.00	305.43
3	18°55'00"	800.00	264.13



Z-1-Zc10

SCALE: 1"=500'    JOB NO.: 07-131    DRAWN BY: CC  
 DATE: 2/01/10    CALC. BY: GAB    DWG# 07-131GILMOUR



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www.hagedornse.com

February 1, 2010

**Exhibit A-2**

**6.99 ACRE WETLAND MITIGATION SITE ON THE "DELEGANES TRACT":**

A portion of the Northwest quarter of the Southeast quarter of Section 23, Township 5 North, Range 2 East, Willamette Meridian, Clark County, Washington, described as follows:

BEGINNING at a 5/8 inch iron rod marking the Northwest corner of the Southwest quarter of the Northeast quarter of Section 23, as shown in Book 55 of Surveys, page 70, Clark County Auditor's Records; thence South  $88^{\circ} 23' 22''$  East, along the North line of the Southwest quarter of the Northeast quarter of Section 23, for a distance of 304.82 feet to a 1/2 inch iron rod (Survey 55-70) marking the Northeast corner of the "Bruley tract" as described under Clark County Auditor's File No. 3288928; thence South  $01^{\circ} 10' 00''$  East, along the East line of the "Bruley tract" and the Southerly extension thereof, 1320.51 feet to a point on the South line of the Northeast quarter of Section 23 and the TRUE POINT OF BEGINNING; thence continuing South  $01^{\circ} 10' 00''$  East, 1.90 feet to a 1/2 inch iron rod (Survey 55-70) on the East line of another "Bruley tract", as described under Clark County Auditor's File No. 3288928; thence South  $00^{\circ} 44' 00''$  West, along the East line of the latter "Bruley tract", 662.72 feet to a 1/2 inch iron rod (Survey 55-70) at the Southeast corner of the latter "Bruley tract" and the Northeast corner of the "Denis tract" as described under Clark County Auditor's File No. 7908280003; thence South  $00^{\circ} 34' 44''$  West, along the East line of the "Denis tract", 81.55 feet; thence leaving the East line of the "Denis tract", South  $88^{\circ} 31' 27''$  East, parallel with the North line of the Southeast quarter of Section 23, for a distance of 412.56 feet; thence North  $00^{\circ} 00' 00''$

**Exhibit A-2**

**6.99 ACRE WETLAND MITIGATION SITE ON THE "DELEGANES TRACT":**

February 1, 2010

Page 2

East, 746.35 feet to a point on the South line of the Northeast quarter of Section 23; thence North 88° 31' 27" West, 403.29 feet to the TRUE POINT OF BEGINNING.

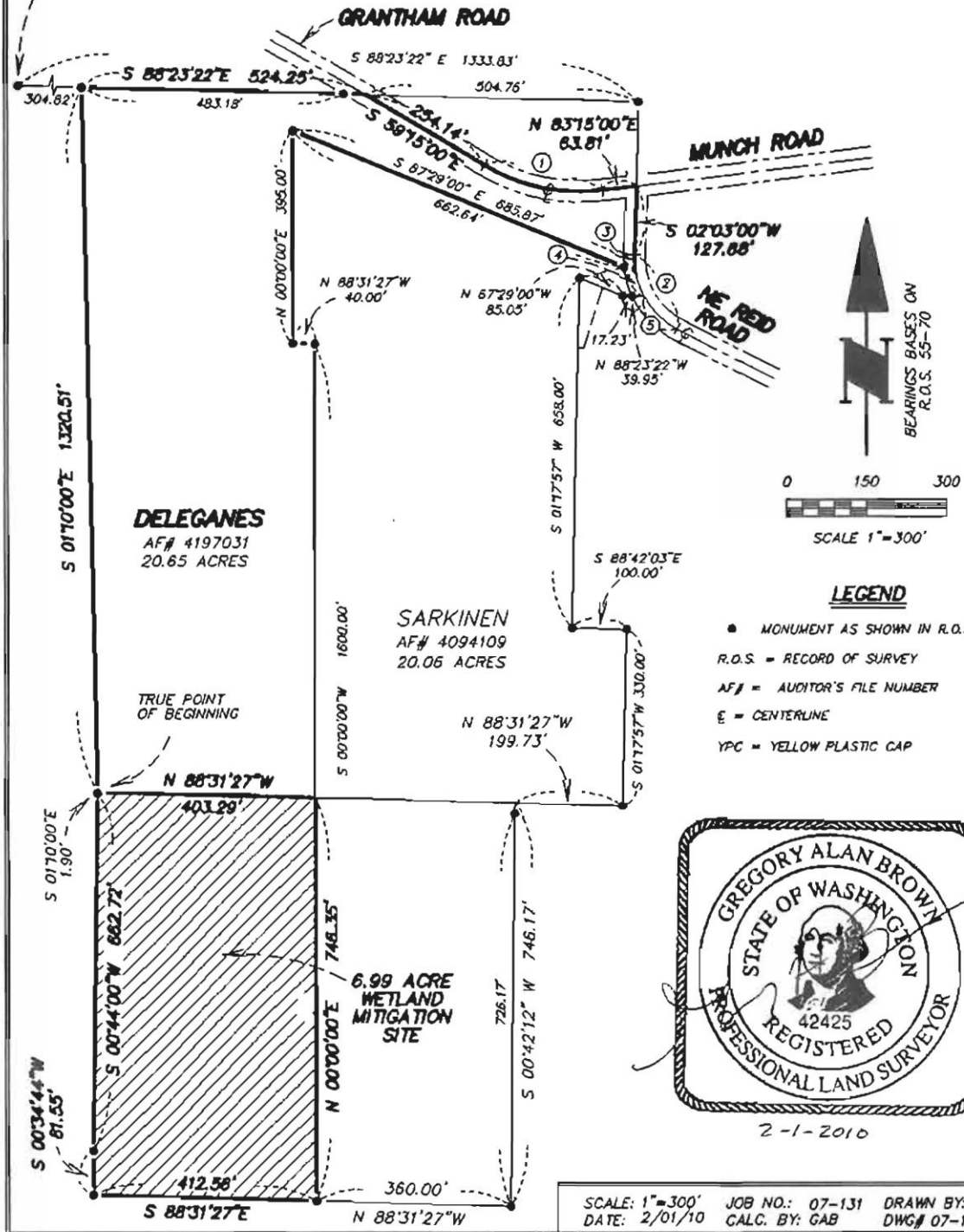
LD-2010\Habitat Bank-Exh A-Deleganes trt.gab  
07-131



EXHIBIT SKETCH SHOWING  
**THE WETLAND MITIGATION SITE**  
 on the **DELEGANES PROPERTY**  
 in the NW 1/4 SE 1/4 of  
 SECTION 23, T5N, R2E, W.M.  
 CLARK COUNTY, WA.

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
1	37°30'00"	350.00	229.07
2	63°55'00"	150.00	167.34
3	127°38'00"	150.00	32.19
4	18°27'22"	150.00	48.32
5	33°09'59"	150.00	86.83

POSITION OF 5/8" IRON  
 ROD WITH YPC STAMPED  
 "HAGEDORN 9579" AS  
 SHOWN IN R.O.S. 55-70.  
 POINT OF BEGINNING



2-1-2010

SCALE: 1"=300' JOB NO.: 07-131 DRAWN BY: CC  
 DATE: 2/01/10 CALC. BY: GAB DWG# 07-131WETLAND



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www.hagedornse.com

February 1, 2010

**Exhibit A-3**

**6.24 ACRE WETLAND MITIGATION SITE ON THE "SARKINEN TRACT":**

A portion of the Southeast quarter of Section 23, Township 5 North, Range 2 East, Willamette Meridian, Clark County, Washington, described as follows:

BEGINNING at a 5/8 inch iron rod marking the Northwest corner of the Southwest quarter of the Northeast quarter of Section 23, as shown in Book 55 of Surveys, page 70, Clark County Auditor's Records; thence South  $88^{\circ} 23' 22''$  East, along the North line of the Southwest quarter of the Northeast quarter of Section 23, for a distance of 304.82 feet to a 1/2 inch iron rod (Survey 55-70) marking the Northeast corner of the "Bruley tract" as described under Clark County Auditor's File No. 3288928; thence South  $01^{\circ} 10' 00''$  East, along the East line of the "Bruley tract" and the Southerly extension thereof, 1322.41 feet to a 1/2 inch iron rod (Survey 55-70) on the East line of another "Bruley tract", as described under Clark County Auditor's File No. 3288928; thence South  $00^{\circ} 44' 00''$  West, along the East line of the latter "Bruley tract", 662.72 feet to a 1/2 inch iron rod (Survey 55-70) at the Southeast corner of the latter "Bruley tract" and the Northeast corner of the "Denis tract" as described under Clark County Auditor's File No. 7908280003; thence South  $00^{\circ} 34' 44''$  West, along the East line of the "Denis tract", 81.55 feet; thence leaving the East line of the "Denis tract", South  $88^{\circ} 31' 27''$  East, parallel with the North line of the Southeast quarter of Section 23, for a distance of 412.56 feet to the TRUE POINT OF BEGINNING; thence North  $00^{\circ} 00' 00''$  East, 746.35 feet to a point on the South line of the Northeast quarter of Section 23; thence South  $88^{\circ} 31' 27''$  East, 369.17 feet; thence, leaving said South line, South  $00^{\circ} 42' 12''$  West, parallel

**Exhibit A-3**

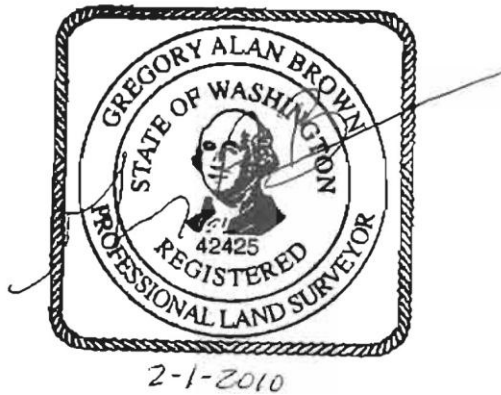
**6.24 ACRE WETLAND MITIGATION SITE ON THE "SARKINEN TRACT":**

February 1, 2010

Page 2

with the East line of the Northwest quarter of the Southeast quarter of Section 23, for a distance of 746.17 feet; thence North 88° 31' 27" West, 360.00 feet to the TRUE POINT OF BEGINNING.

LD-2007\Habitat Bank-Exh A-Sarkinen trt.gab  
07-131







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February 1, 2010

## Exhibit A-4

### **0.76 ACRE WETLAND MITIGATION SITE ON THE "SARKINEN TRACT":**

A portion of the Northeast quarter of Section 23, Township 5 North, Range 2 East, Willamette Meridian, Clark County, Washington, described as follows:

BEGINNING at a 5/8 inch iron rod marking the Northwest corner of the Southwest quarter of the Northeast quarter of Section 23, as shown in Book 55 of Surveys, page 70, Clark County Auditor's Records; thence South  $88^{\circ} 23' 22''$  East, along the North line of the Southwest quarter of the Northeast quarter of Section 23, for a distance of 304.82 feet to a 1/2 inch iron rod (Survey 55-70) marking the Northeast corner of the "Bruley tract" as described under Clark County Auditor's File No. 3288928; thence South  $01^{\circ} 10' 00''$  East, along the East line of the "Bruley tract" and the Southerly extension thereof, 1322.41 feet to a 1/2 inch iron rod (Survey 55-70) on the East line of another "Bruley tract", as described under Clark County Auditor's File No. 3288928; thence South  $00^{\circ} 44' 00''$  West, along the East line of the latter "Bruley tract", 662.72 feet to a 1/2 inch iron rod (Survey 55-70) at the Southeast corner of the latter "Bruley tract" and the Northeast corner of the "Denis tract" as described under Clark County Auditor's File No. 7908280003; thence South  $00^{\circ} 34' 44''$  West, along the East line of the "Denis tract", 81.55 feet; thence leaving the East line of the "Denis tract", South  $88^{\circ} 31' 27''$  East, parallel with the North line of the Northeast quarter of Section 23, for a distance of 772.56 feet; thence North  $00^{\circ} 42' 12''$  East, 746.17 feet to the South line of the Southwest quarter of the Northeast quarter of Section 23; thence South  $88^{\circ} 31' 27''$  East, along the South line of the Southwest quarter of the Northeast quarter of Section 23, for a distance of 99.73 feet to the TRUE POINT OF BEGINNING; thence continuing South  $88^{\circ} 31' 27''$  East, 100.00 feet to the Southeast corner of the Southwest quarter of the Northeast quarter of Section 23; thence North  $01^{\circ} 17' 57''$  East, along the East line of the Southwest quarter of the Northeast quarter of Section 23, for a distance of 330.00 feet; thence at right angles to the East line of the Southwest quarter of the Northeast quarter of Section 23, North  $88^{\circ} 42' 03''$  West, 100.00

**Exhibit A-4**

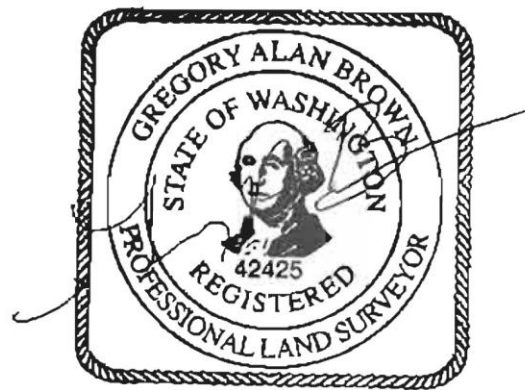
**0.76 ACRE WETLAND MITIGATION SITE ON THE "SARKINEN TRACT":**

February 1, 2010

Page 2

feet; thence South  $01^{\circ} 17' 57''$  West, 329.69 feet to the TRUE POINT OF BEGINNING.

LD-2010\Habitat Bank-Exh B-Sarkinen trt.gab  
07-131



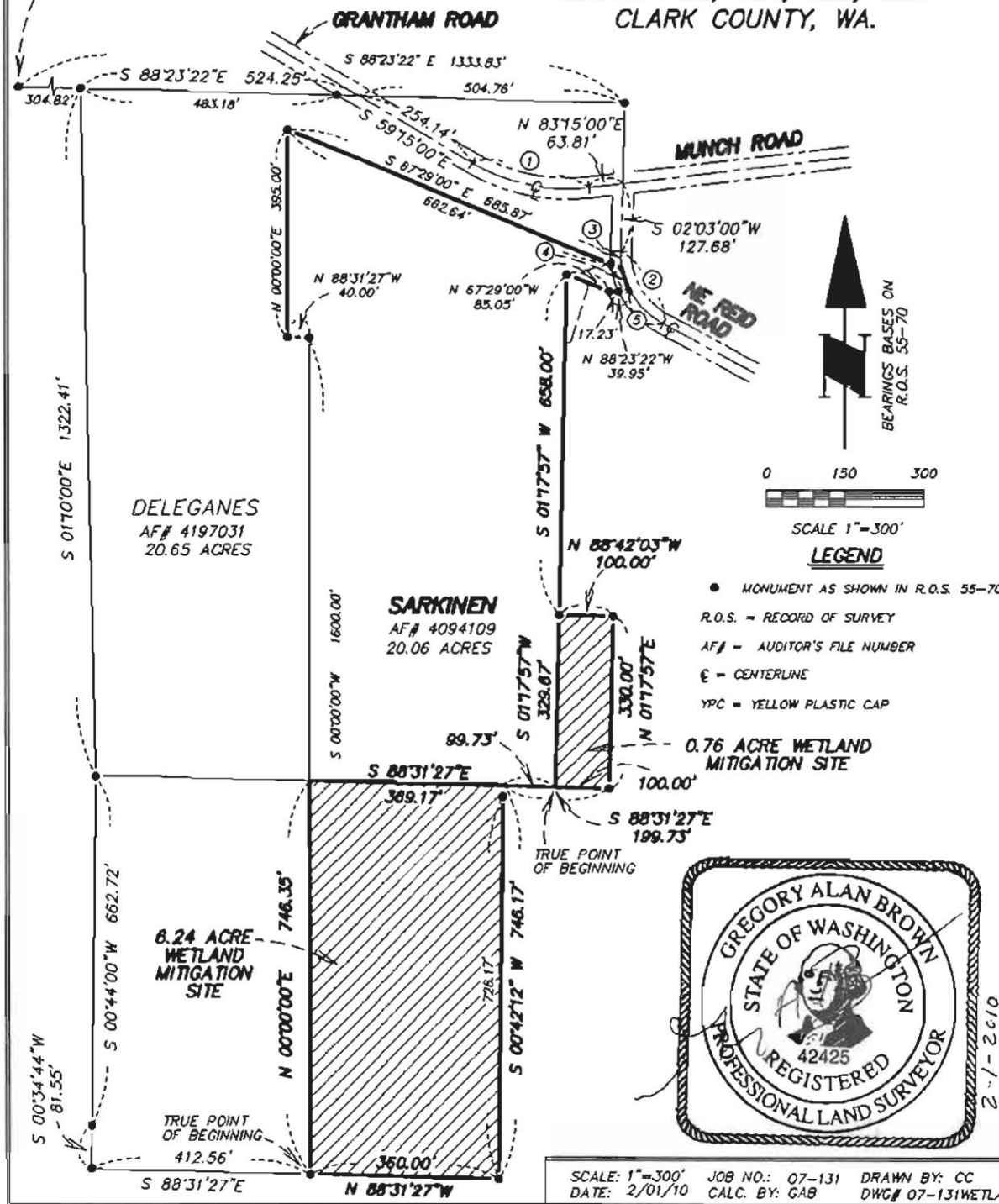
2-1-2010

# EXHIBIT SKETCH SHOWING THE WETLAND MITIGATION SITE on the SARKINEN PROPERTY

in the SW 1/4 NE 1/4 and in the NW 1/4 SE 1/4 of SECTION 23, T5N, R2E, W.M. CLARK COUNTY, WA.

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
1	37°30'00"	350.00	229.07
2	63°55'00"	150.00	167.34
3	12°17'39"	150.00	32.19
4	18°27'22"	150.00	48.32
5	33°09'59"	150.00	86.83

POSITION OF 5/8" IRON ROD WITH YPC STAMPED "HAGEDORN 9579" AS SHOWN IN R.O.S. 55-70. POINT OF BEGINNING



SCALE: 1"=300' JOB NO.: 07-131 DRAWN BY: CC  
 DATE: 2/01/10 CALC. BY: GAB DWG# 07-131WETLAND

## APPENDIX B BANK DEVELOPMENT PLAN AND DESIGN

### APPENDIX B.1

#### B.1.1 Development Plan – Overview

The general goal of the Bank site design is to restore the site similar to its pre-agricultural condition, while operating within the confines of the participating and neighboring property owners. The historical wetlands on the site were part of the greater Fargher Lake wetland system, a large, shallow basin that is part of the 423-acre peat deposit (**Figure B-1**) thought to have formed in an ancient volcanic caldera (Rigg 1958). Because of the productive, organic soils, the lake and surrounding wetlands were extensively drained, ditched, and tilled to facilitate agricultural crop production. Currently, the remaining wetlands on the site are found in the bottom of agricultural ditches and are classified as riverine flow-through wetlands (HGM) based on the altered hydrologic regimes created by the ditch system. The proposed Bank design would re-establish wetlands most similar in form and function to pre-agricultural conditions, while operating within the confines of the site and also maintaining the existing water rights established on the unnamed tributary to Rock Creek. Post-construction, the wetland will be classified as a depressional flow-through wetland under HGM classification. Target habitats including forested, scrub-shrub, and emergent wetlands will be re-established or enhanced to reflect the diversity of habitats commonly associated with lake-fringe wetlands and depressional flow-through wetlands (**Figure B-2**). The overall design of the mitigation bank was determined based on review of historic information including studies by Rigg (1958) and Hansen (1947) in combination with current analyses of the Bank site including a geotechnical soils analysis conducted by GeoDesign, Inc. (2009), a soil and hydrology analysis completed by Pacific Rim Soil and Water, Inc. (PRSW 2008), hydrologic modeling of stormwater completed by Ducks Unlimited (DU) in 2009, a wetland delineation report completed by Ecological Land Services, Inc. (ELS 2009), a basic topographical survey completed by Hagedorn, Inc., and a refined topographic survey completed by DU in 2008.

Wetlands will be re-established or enhanced over 108.49 acres of the 113.26-acre Bank site. Existing forested upland areas are located along the northern property boundary and a portion of the western property boundary that are included in the proposed buffer of the Bank. The wetlands onsite will exhibit multiple hydrologic regimes throughout the year from seasonally flooded to seasonally saturated conditions. A seasonal, non-fish bearing and perennial, fish bearing stream will be located within the Bank site boundaries. The post-construction wetland rates as a Category I wetland under the 2006 *Western Washington Rating Form* scoring a 30 for water quality functions, 20 for hydrologic functions, and 23 for habitat functions.

Hydrology will be restored to the site by disrupting the existing tile system and plugging and filling the ditches, requiring minimal ground disturbance (**Figure B-3**). Material for ditch filling activities will be generated by excavating a shallow swale. The existing West/Southwest Ditch will be diverted into the site from the south, directing seasonal flows from the surrounding southwest hills onto the site. The banks of the South Ditch will be shaped to create contours that display a more natural appearance and function. A rock weir outfall structure will be installed on



# DUCKS UNLIMITED

DUCKS UNLIMITED, INC.  
 PACIFIC NORTHWEST FIELD OFFICE  
 17800 S. E. MILL PLAIN BLVD.  
 VANCOUVER, WA. 98683 PH.  
 (360) 885-2011

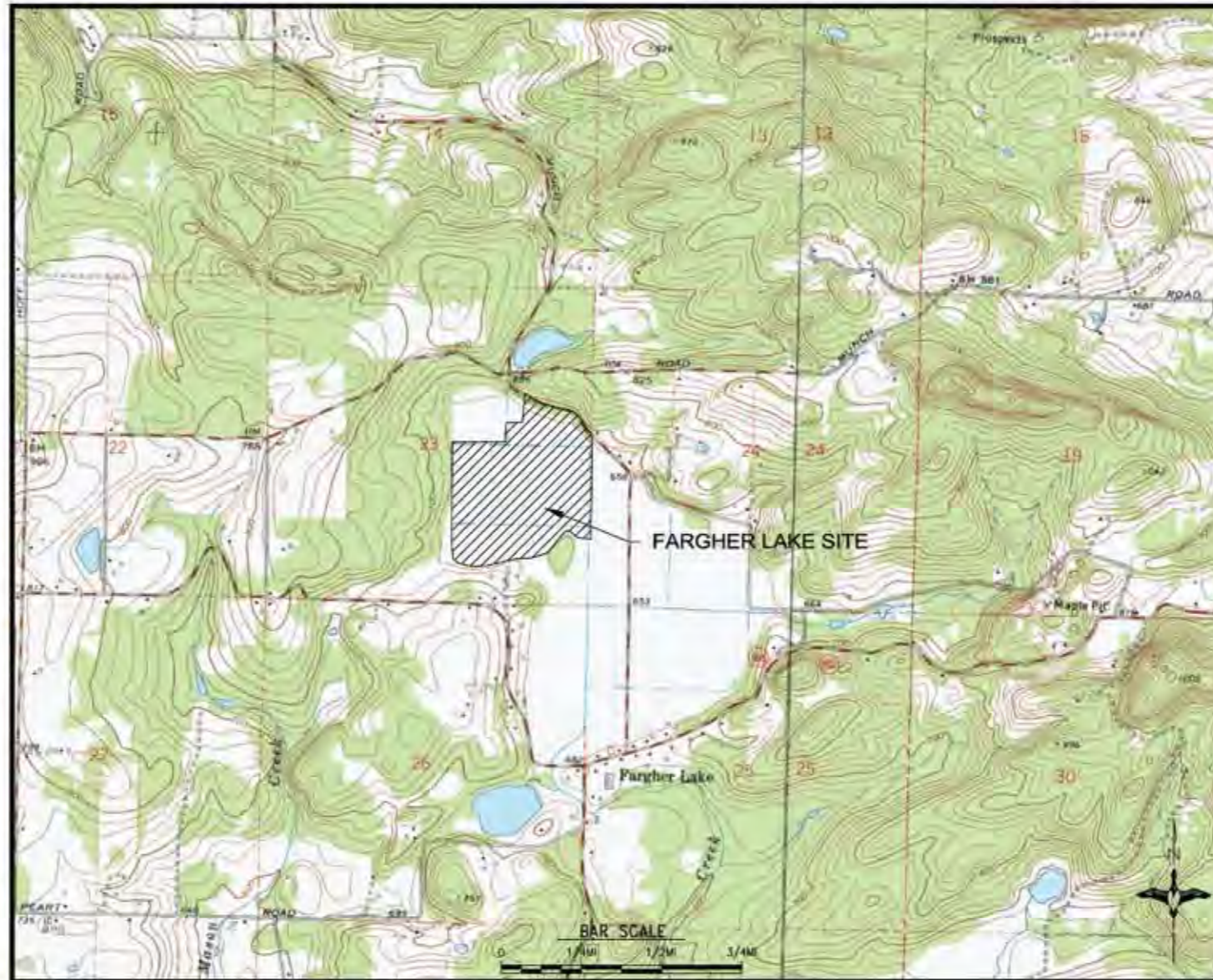
# EAST FORK LEWIS WETLAND MITIGATION BANK

EFL Mitigation Partners, LLC  
 15600 NE 173rd Street  
 Woodinville, Washington 98072

ECOLOGICAL LAND SERVICES, INC.  
 1157 3rd Ave., Suite 220 Longview, WA 98632  
 (360) 578-1371 Fax: (360) 414-9305

### GENERAL NOTES:

1. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THE DRAWINGS, HE SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
2. SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.
3. DUCKS UNLIMITED MAKES NO REPRESENTATIONS AS TO THE EXISTENCE OR NONEXISTENCE OF UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH THE PROVISIONS OF ORS 757.541 TO 757.571. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR WILL BE LIABLE FOR ANY DAMAGE TO UTILITIES CAUSED BY CONSTRUCTION ACTIVITIES.
4. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. EXCAVATIONS SHALL MEET THE REQUIREMENTS OF OSHA 29 CFR 1926, SUBPART P, EXCAVATIONS. THE DUTIES OF THE PROJECT ENGINEER DO NOT INCLUDE THE REVIEW OF THE ADEQUACY OF THE CONTRACTORS SAFETY IN, ON OR NEAR THE JOBSITE.
5. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.



SITE MAP  
 CLARK COUNTY  
 WASHINGTON  
 SECTIONS: 23  
 TOWNSHIP: 15N  
 RANGE: R2E  
 LAT = 45° 54' 4.62"N  
 LONG = -122° 31' 9.61"W



VICINITY MAP

### ABBREVIATIONS

C-C	CENTER TO CENTER	N	NORTH
CMP	CORRUGATED METAL PIPE	NO	NUMBER, NORTH
DIA	DIAMETER	NTS	NOT TO SCALE
Dp	PIPE DIAMETER	OC	ON CENTER
Dr	RISER DIAMETER	PP	POWER POLE
DU	DUCKS UNLIMITED, INC.	PSI	POUNDS PER SQUARE INCH
EL.	ELEVATION	PVC	POLYVINYL CHLORIDE
EX	EXISTING	R	RIGHT
FB	FLASHBOARD	RD	ROAD
FG	FINISHED GRADE	REF	REFERENCE DIMENSION
FL	FLOW LINE	REQD	REQUIRED
FT	FOOT, FEET	SCH	SCHEDULE
FTG	FITTING	SO	SOUTH
GA	GAUGE	SP	SPECIAL
H	RISER HEIGHT	STA	STATION
ID	INSIDE DIAMETER	TE	TOP ELEVATION
IE	INVERT ELEVATION	TYP	TYPICAL
IN	INCH, INCHES	USA	UNDERGROUND SERVICE ALERT
INV	INVERT	VLV	VALVE
L	LENGTH, LEFT	WI	WIDTH
LBF	POUNDS-FORCE	W	WATER
LF	LINEAR FEET	WS	SURFACE
MAX	MAXIMUM	WWF	WELDED WIRE FABRIC
MIN	MINIMUM	WCS	WATER CONTROL STRUCTURE
MISC	MISCELLANEOUS		

UNAUTHORIZED CHANGES & USES  
 THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

NOTE: DUCKS UNLIMITED WILL PROVIDE CONSTRUCTION STAKING AND/OR VERTICAL CONTROL FOR THE CONTRACTOR.

SURVEY DATUM		REVISIONS		
SURVEY DATE:	10-30-08	REV. NO.	DESCRIPTION	DATE
HORIZONTAL DATUM:	WASHINGTON STATE PLANE SOUTH ZONE NAD83	1		
VERTICAL DATUM:	NAVDB88	2		
GEOD MODEL:	05	3		
CONTOUR INTERVAL:	1'	4		
AERIAL PHOTO:	X	5		
		6		
		7		
		8		
		9		
		10		



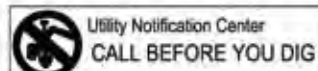
PROJECT NO. WA-223-1

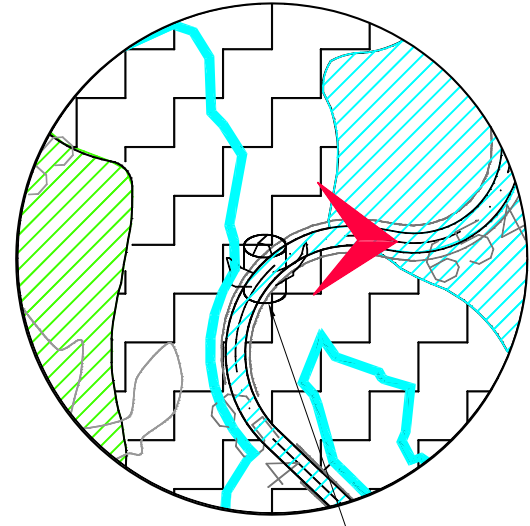
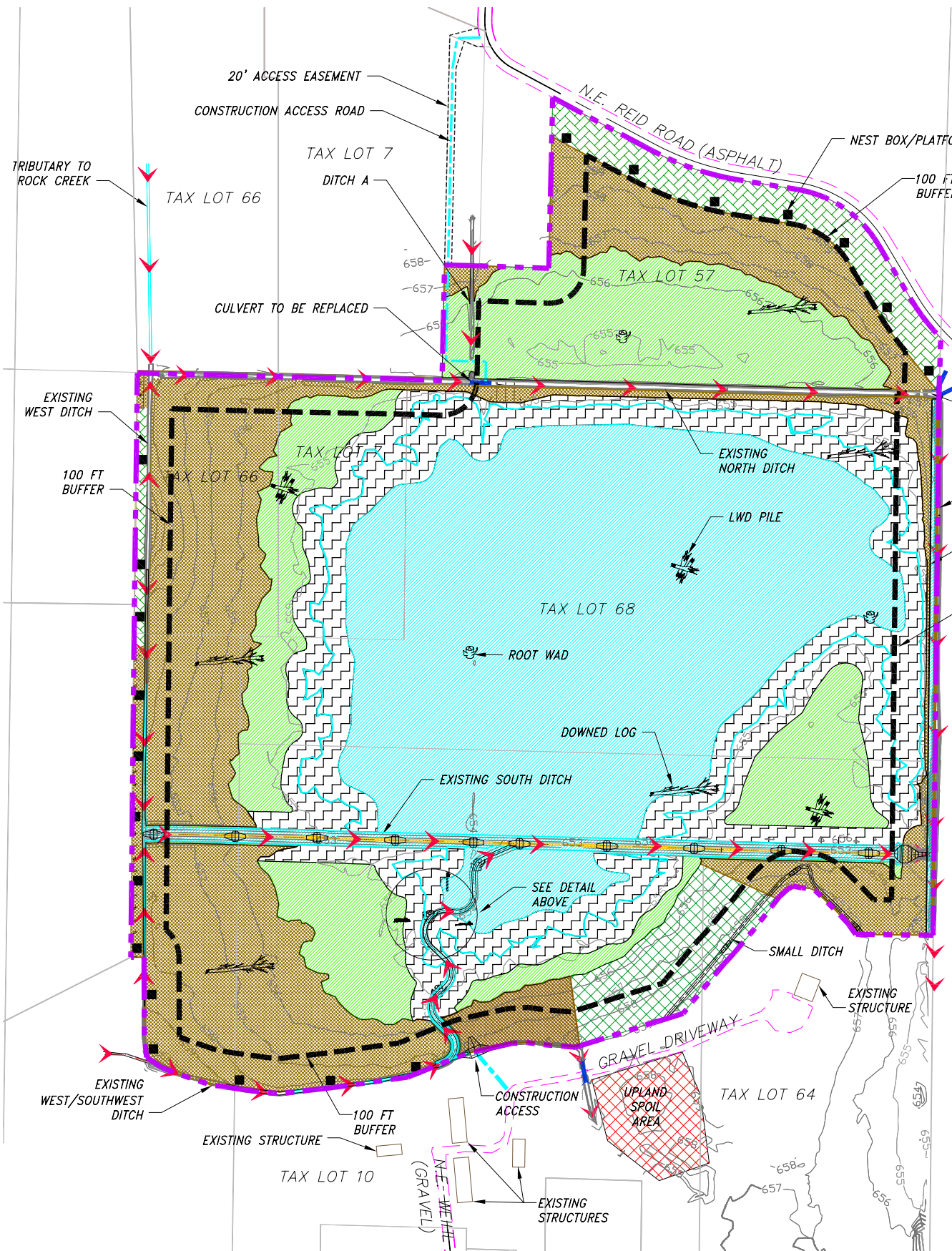
Figure B-1  
 Project Location

GENERAL INFORMATION  
 DESIGNED BY: JTS  
 DRAWN BY: DMC  
 SURVEYED BY: JPS  
 CHECKED BY:

DATE: JULY 09  
 SHEET NO. 1

APPROVED BY:





**Detail A** (See Detail M)  
Large Woody Debris Placement in Swale

**Proposed Habitat Features**

Type*	Amount
Large woody debris	14 (approx. 1 per 8 ac.)
Wood duck box	5
Standard bird nest box	8
Nest platform	2
Purple martin nest gourd	2
Bat house	3

\*See Figures B-3F and B-3G for specifications.

**LEGEND**

- PALUSTRINE FORESTED WETLAND (27.80 AC) ELEV. 655.5+/656.5+ (10.09 AC IN BANK BUFFER)
- PALUSTRINE SCRUB-SHRUB WETLAND (17.86 AC) ELEV. 654.8-655.5/656.5 (2.70 AC IN BANK BUFFER) (ADDITIONAL 0.24 AC. IN SOUTH DITCH)
- PALUSTRINE SCRUB-SHRUB/EMERGENT WETLAND TRANSITION AREA (22.55 AC) (1.89 AC IN BANK BUFFER)
- PALUSTRINE EMERGENT WETLAND VARIANT (3.09 AC) ELEV. 655.5-656.5 (1.57 AC IN BANK BUFFER)
- PALUSTRINE EMERGENT WETLAND REESTABLISHMENT (36.90 AC) ELEV. 653.0-654.8 (0.81 AC IN BANK BUFFER)
- SOUTH DITCH PALUSTRINE EMERGENT WETLAND ENHANCEMENT (0.29 AC) ELEV. 653.0
- FORESTED UPLAND (3.63 AC) (3.63 AC IN BANK BUFFER)
- SITE BOUNDARY (113.26 AC)
- LOT BOUNDARY
- BUFFER (20.95 AC)
- EXISTING CULVERTS
- DESIGN WATER SURFACE ELEVATION = 654.8
- MAJOR CONTOURS
- MINOR CONTOURS
- FLOW ARROWS
- SWALE

SECTIONS: 23  
TOWNSHIP: T5N  
RANGE: R2E  
LAT = 45° 54' 4.62"N  
LONG = 122° 31' 9.61"W

SURVEY DATUM		REVISIONS				ECOLOGICAL LAND SERVICES, INC. 1157 3rd Ave., Suite 220 Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305	DATE: JUNE 2010	SHEET NO.	APPROVED BY:
DATE:	DESCRIPTION	REV. NO.	DATE	APPROVED					
SURVEY DATE: 10-30-08		1							
HORIZONTAL DATUM: WASHINGTON STATE PLANE SOUTH ZONE NAD83		2							
VERTICAL DATUM: NAVD88		3							
GEIOD MODEL: 03	Revised plant communities table and acreages, Revised buffer.	4	June 2010						
CONTOUR INTERVAL: 1'	Add culverts, existing roads, Added plant communities table, Added silt fencing.	5	Feb, 2010						
AERIAL PHOTO:	Add buffer bank boundary, PSS/emergent transition boundary, recalculate wetland acreages.	6	January 2010						

Existing Conditions	Mitigation Bank Site Total (acres)	Area in Bank Buffer (acres)	Creditable Area (acres)
Upland Ag	107.96	16.65	--
Forested Upland	3.63	3.63	--
Palustrine Forested Wetland	0.39	0.39	--
Palustrine Emergent Wetland (includes all existing ditches on site)	1.28	0.28	--
<b>Total Existing Conditions</b>	<b>113.26</b>	<b>20.95</b>	<b>--</b>
Proposed Conditions	Mitigation Bank Site Total (acres)	Area in Bank Buffer (acres)	Creditable Area (acres)
Palustrine Forested Wetland (reestablishment)	27.80	10.09	17.71
Palustrine Scrub-Shrub Wetland (reestablishment)	17.86	2.70	15.16
Palustrine Scrub Shrub/Emergent Transition Wetland (reestablishment)	22.55	1.89	20.66
Palustrine Emergent Wetland Variant (reestablishment)	3.09	1.57	1.52
Palustrine Emergent Wetland (reestablishment)	36.90	0.81	36.09
South Ditch	0.29	0	0.29
Palustrine Emergent Wetland (enhancement)	0.29	0	0.29
North Ditch Non-Creditable Area	0.43	0.26	0
East Ditch/Maintenance Access Non-Creditable Area	0.71	0	0
Upland Forest	3.63	3.63	0
<b>Total Bank Site Area 113.26</b>	<b>113.26</b>	<b>20.95*</b>	<b>91.43**</b>

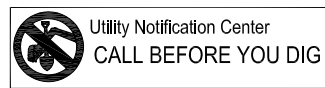
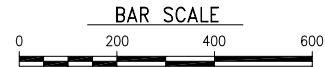
\*Does not include 0.71 acres of East Ditch/maintenance access which is considered non-creditable and not part of the buffer.

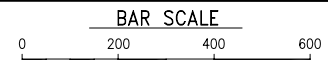
\*\*Does not include 0.17 acres of the North Ditch which is considered non-creditable.

- NOTES:**
- Survey prepared by Ducks Unlimited.
  - Grading plan prepared by Ducks Unlimited and Ecological Land Services.
  - Planting Plan prepared by Ecological Land Services.

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NOTE: DUCKS UNLIMITED WILL PROVIDE CONSTRUCTION STAKING AND/OR VERTICAL CONTROL FOR THE CONTRACTOR.





**Proposed Grading Quantities**

Type	Amount
Cut	6,000 cy
Fill (generated onsite)	6,000 cy
Imported structural fill	653 cy
Imported quarry spalls	75 cy
Anticipated excess*	0
<b>Total fill: 6,728 cubic yards</b>	

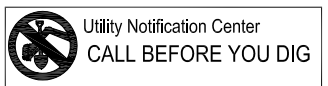
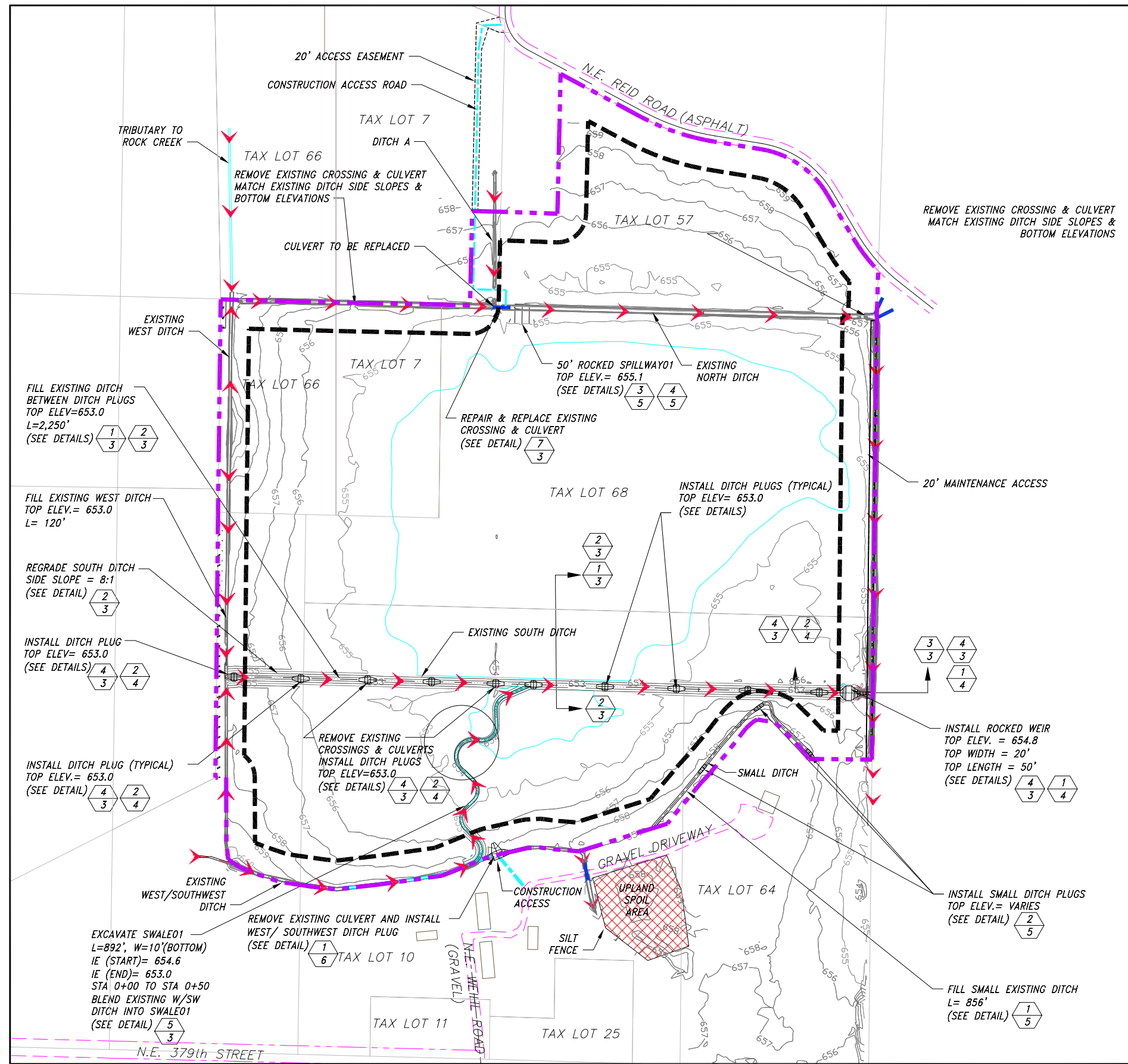
\*If excess fill material is generated it will be disposed of on the upland spoil area shown on Figures B-1 and B-2.

SECTIONS: 23  
TOWNSHIP: T5N  
RANGE: R2E  
LAT = 45° 54' 4.62"N  
LONG = 122° 31' 9.61"W

**LEGEND**

- SITE BOUNDARY (113.26 AC)
- LOT BOUNDARY
- BUFFER (20.95 AC)
- SILT FENCING
- CULVERT
- DESIGN WATER SURFACE ELEVATION = 654.8
- TRENCH LINE (SEE NOTE 4)
- MAJOR CONTOURS (655)
- MINOR CONTOURS (656)
- FLOW ARROWS
- SWALE01

- NOTES:**
1. Survey prepared by Ducks Unlimited.
  2. Grading plan prepared by Ducks Unlimited and Ecological Land Services.
  3. Planting Plan prepared by Ecological Land Services.
  4. Two continuous trenches will be excavated 30' and 130' from the North, East, and South ditches to disable all drain tile lines.



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SURVEY DATUM		REVISIONS			
SURVEY DATE:	10-30-08	REV. NO.	DESCRIPTION	DATE	APPROVED
HORIZONTAL DATUM:	WASHINGTON STATE PLANE SOUTH ZONE NAD83	1			
VERTICAL DATUM:	NAVD88	2			
GEOID MODEL:	03	3			
CONTOUR INTERVAL:	1'	4	Revised buffer bank boundary.	June 2010	
AERIAL PHOTO:	2005 CLARK COUNTY	5	Add buffer bank boundary, PSS/emergent transition boundary, recalculate wetland acreages.	January 2010	

ECOLOGICAL LAND SERVICES, INC.  
1157 3rd Ave., Suite 230  
Longview, WA 98632  
Phone: (360) 578-1371 Fax: (360) 414-9305

**FIGURE B-3  
BANK SITE GRADING  
PLAN**

GENERAL INFORMATION  
DESIGNED BY: JTS  
DRAWN BY: DMC  
SURVEYED BY: JPS  
CHECKED BY:

DATE: June 2010 SHEET NO.

APPROVED BY:

the South Ditch in the southeast corner of the site. The weir will block fish access per WDFW request (see correspondence in Resource Folder), and will prevent erosion from water leaving the site. An overflow rock spillway will be constructed along the tributary in the northern portion of the site to provide emergency overflow protection during extreme high water events. In the spring following grading and construction, the Bank site will be planted in a mixture of native tree, shrub, and emergent wetland species based on topographic elevation and observed water levels.

## **B.1.2 Site Construction**

### **B.1.2.1 Stages of Construction**

The construction of the project is being planned in two distinct stages. The first stage will take place in the fall and will include grading of the site, breaking of drain tiles, constructing the weir and outflow structures, removing culverts, replacing a culvert, and seeding native grasses and emergent species throughout the site. The second stage would take place the second spring after grading and include the planting of the forested and scrub-shrub habitat areas. The staged approach allows post-construction site hydrology to be observed for a full season, to ensure shrub and tree species are planted in the appropriate hydrologic regime. A transition zone between the emergent and scrub-shrub habitat types of approximately 200 feet will be monitored after initial construction during the first fall, winter, and spring period to observe where the boundary between seasonally flooded areas and areas of saturated soil occurs. In the second spring after site grading, the scrub-shrub habitat will be extended to the seasonally flooded zone and planting will be completed. Overall, the transition zones between trees, shrubs, and emergent areas on this site may move seasonally depending upon micro-topography, soils, hydrology, and wind conditions making this area difficult to predict in advance.

#### **B.1.2.1.1 Implementation Schedule**

The following schedule will be implemented for the Bank site construction activities. Some activities may overlap or be performed concurrently with other activities:

- Mobilize and store all erosion control and soil stabilization products
- Install silt fencing in those areas designated
- Install temporary construction entrances
- Install temporary stream bypasses upstream of culvert removal areas in the unnamed tributary to Rock Creek (North Ditch)
- Replace one existing culvert and crossing area in the unnamed tributary to Rock Creek
- Remove remaining culverts and crossing areas in the unnamed tributary to Rock Creek
- Install rock spillway
- Remove temporary stream bypasses
- Remove culverts and crossings in South Ditch using temporary sandbag dams or a temporary stream bypass if needed
- Install rock weir



- Grade South Ditch banks
- Fill South Ditch, West Ditch, and Small Ditch and install ditch plugs
- Create swale to re-route flows from the West/Southwest Ditch
- Break drain tiles
- Remove temporary construction access roads
- Remove West/Southwest crossing and culvert and install ditch plug
- Seed spoil disposal area
- Seed and plant Bank site according to specifications
- Remove silt fencing once 80 percent ground cover has been established

### **B.1.2.2 Site Preparation**

#### **B.1.2.2.1 Erosion Control**

Erosion control measures will be installed prior to heavy equipment accessing the site. Two temporary construction access points will provide access to the site. The southern construction access will follow the existing driveway. The northern access will be created off of NE Reid Road and will parallel Ditch A, providing access to the area north of the tributary to Rock Creek. Silt fencing will be installed between the construction road and Ditch A. Temporary stream bypasses will be constructed within the tributary during culvert removal/replacement and spillway installation to prevent sedimentation within the stream. Minimal grading is necessary for the project. Grading will occur along a small portion of the West Ditch and within the South Ditch. If water is present within these ditches, temporary sandbag dams will be constructed to hold back water, or a temporary bypass may be needed to pump water around the work area. Erosion control products including hay bales and a drum containing absorbent pads and shovel (for potential fuel leaks) will be located on site in case of an emergency. A stormwater pollution prevention plan (SWPPP) will be prepared for the project prior to construction.

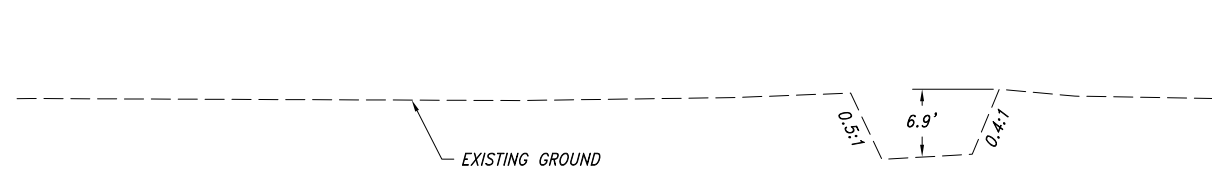
#### **B.1.2.2.2 Culvert Removal and Replacement**

All culverts and crossings not essential to the site access and design will be removed to improve fish passage and prevent the need for future maintenance. Culverts within the South Ditch, West/Southwest Ditch, and West Ditch will be removed when the ditches are dry. If water is present, a temporary sand bag dam or a temporary coffer dam can be installed within the ditch to block flow, or route flow around the work area if necessary. Culvert removal within the tributary (North and East Ditches) and Ditch A will be done during the Washington Department of Fish and Wildlife (WDFW) approved in-water work window. A temporary stream bypass will be constructed to route the stream around the work areas prior to removal.

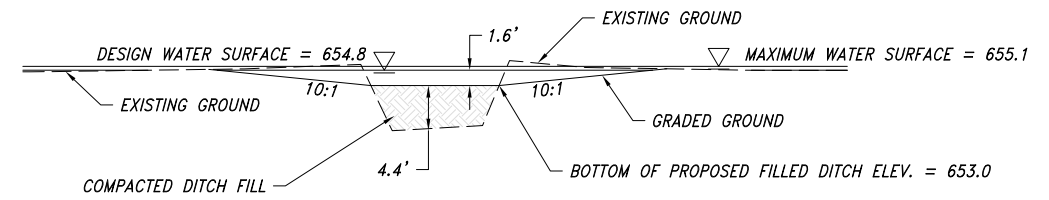
An existing 42-inch metal culvert in the North Ditch will be replaced with a 60-inch culvert to meet fish passage standards (**Figure B-3A**). The crossing will be upgraded and will be used during plant installation and for maintenance and monitoring visits. The side slopes extending into the ditch will be armored with rock to prevent erosion and scour.

#### **B.1.2.2.3 Maintenance Access**

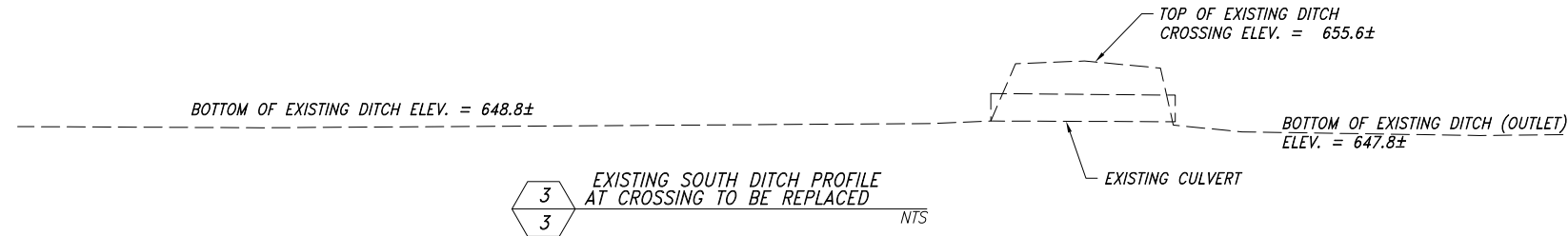
A 20-foot wide maintenance access way will be maintained along the East Ditch, between the ditch and forested wetland area (**Figure B-2**). The maintenance access way includes .71 acres within the bank site that is a non-creditable area. The maintenance access will be seeded with a



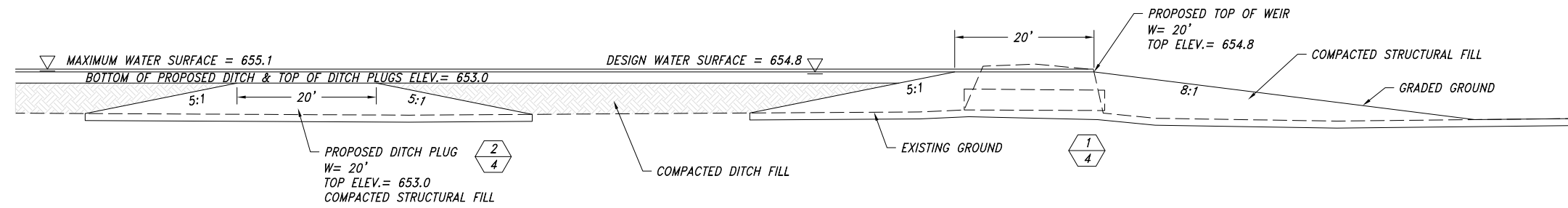
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3 EXISTING SOUTH DITCH CROSS SECTION TYPICAL NTS



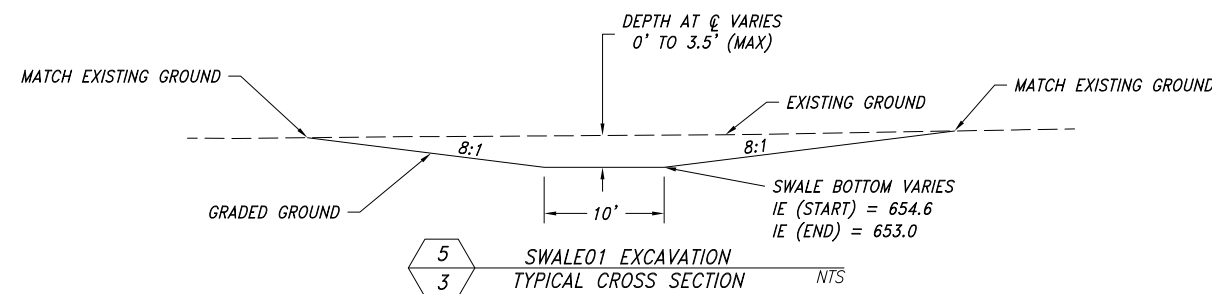
2  
3 PROPOSED SOUTH DITCH CROSS SECTION TYPICAL NTS



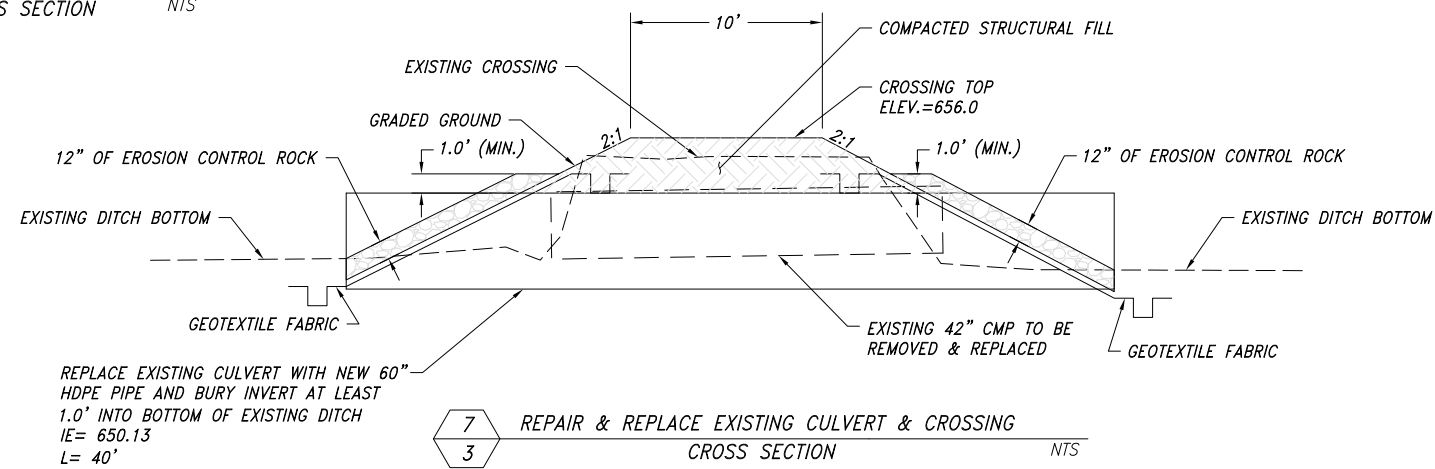
3  
3 EXISTING SOUTH DITCH PROFILE AT CROSSING TO BE REPLACED NTS



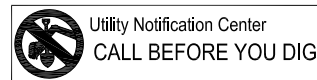
4  
3 PROPOSED SOUTH DITCH PROFILE AT CROSSING TO BE REPLACED WITH PROPOSED WEIR, DITCH PLUG, & DITCH FILL NTS



5  
3 SWALE01 EXCAVATION TYPICAL CROSS SECTION NTS



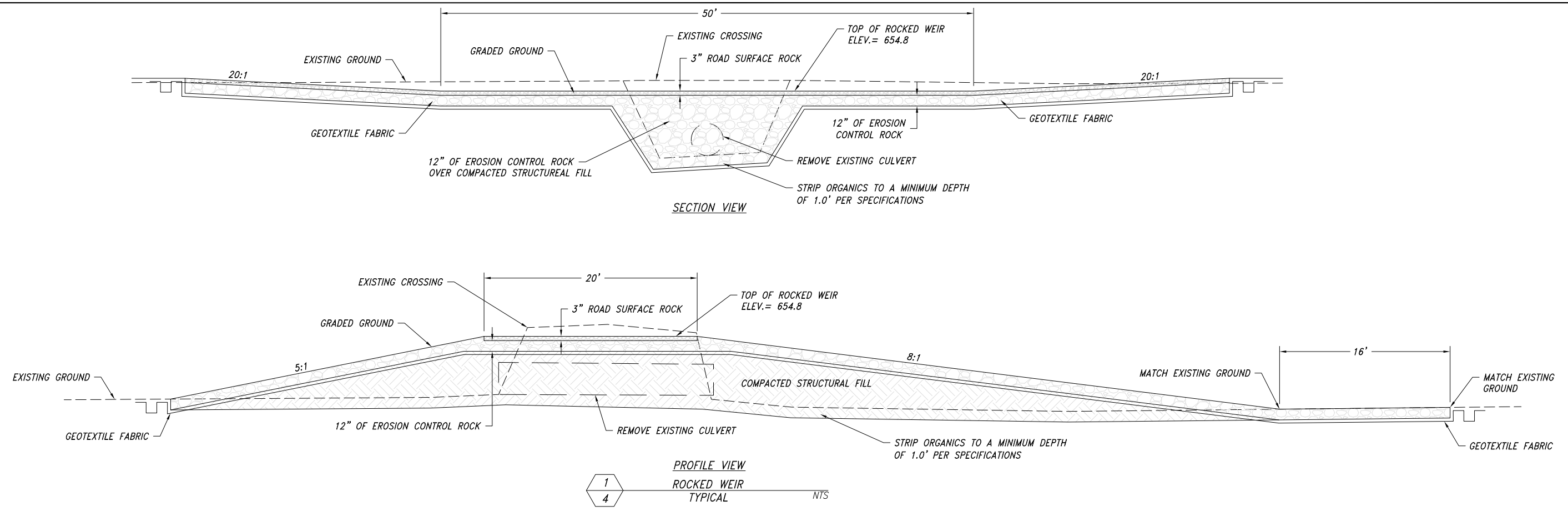
7  
3 REPAIR & REPLACE EXISTING CULVERT & CROSSING CROSS SECTION NTS



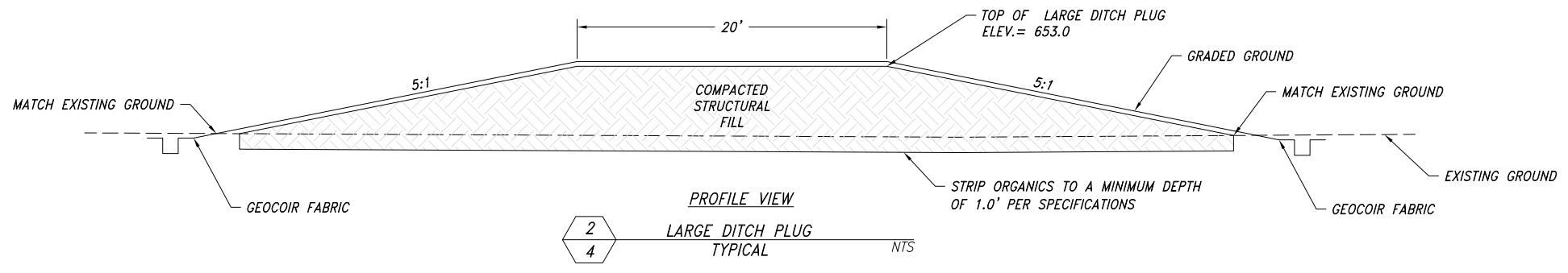
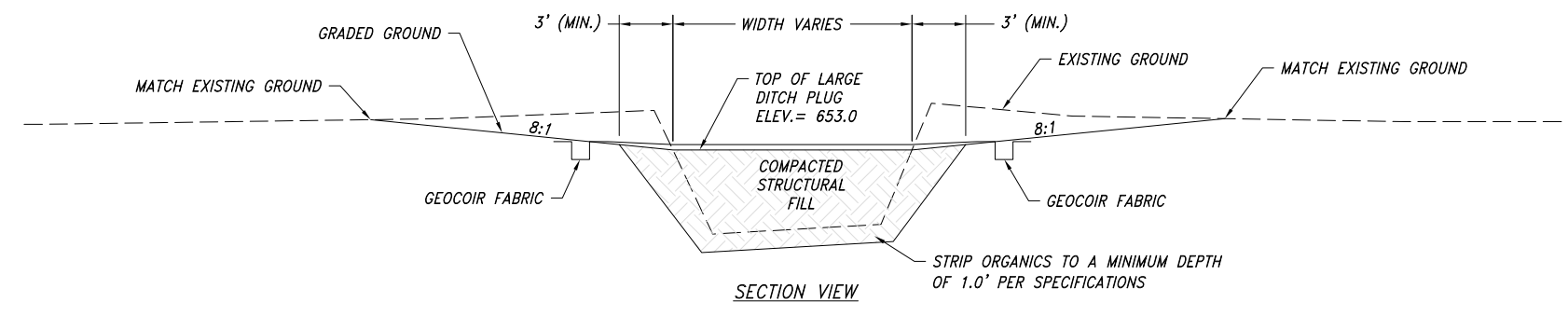
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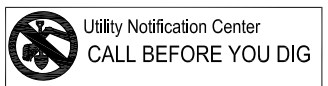
ECOLOGICAL LAND SERVICES, INC. 1157 3rd Ave., Suite 220 Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305	<b>FIGURE B-3A GRADING CROSS SECTIONS</b>		GENERAL INFORMATION DESIGNED BY: JTS DRAWN BY: DMC SURVEYED BY: JPS CHECKED BY:
	DATE: FEB. 2010	SHEET NO.	APPROVED BY:



1  
4  
ROCKED WEIR  
TYPICAL  
NTS



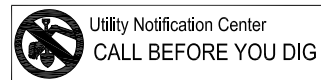
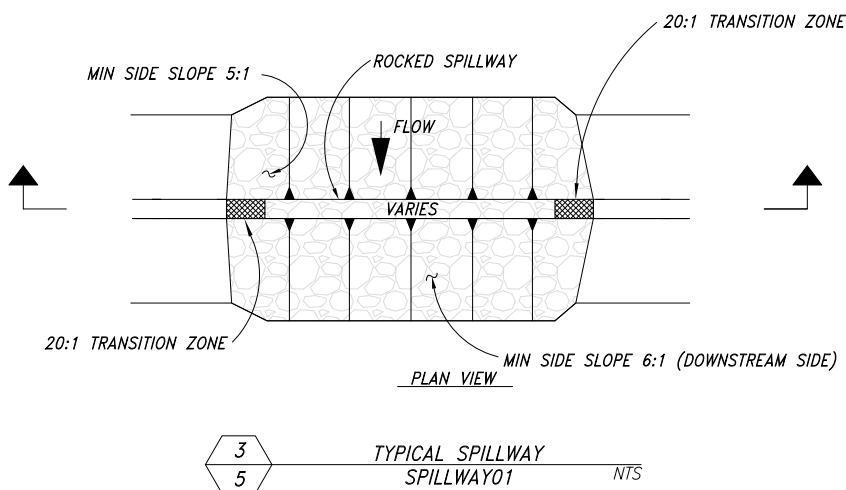
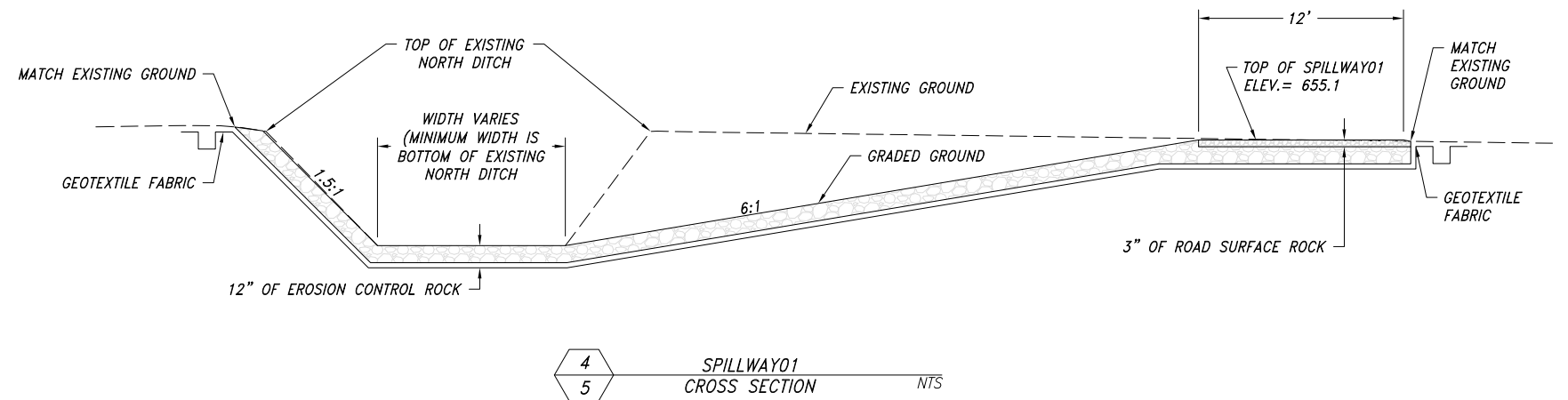
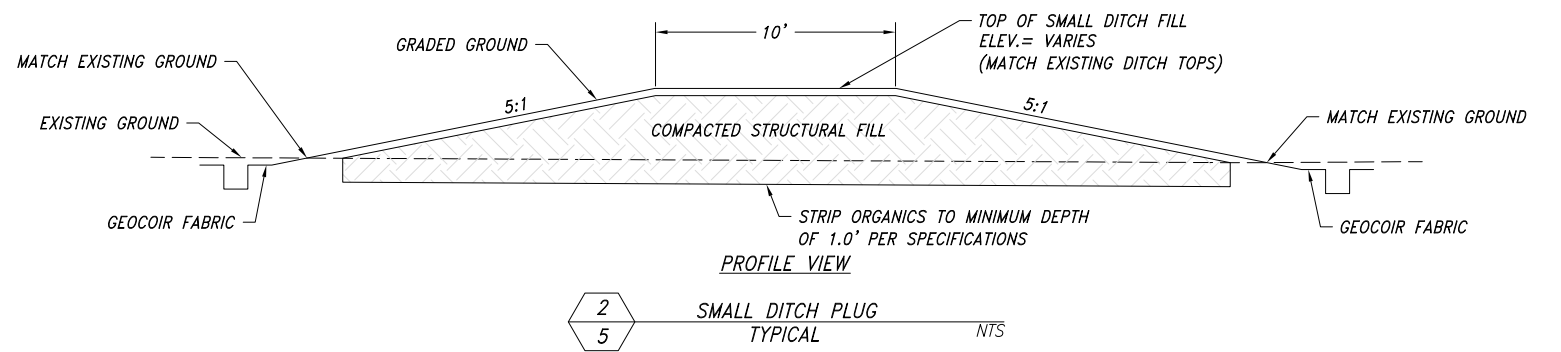
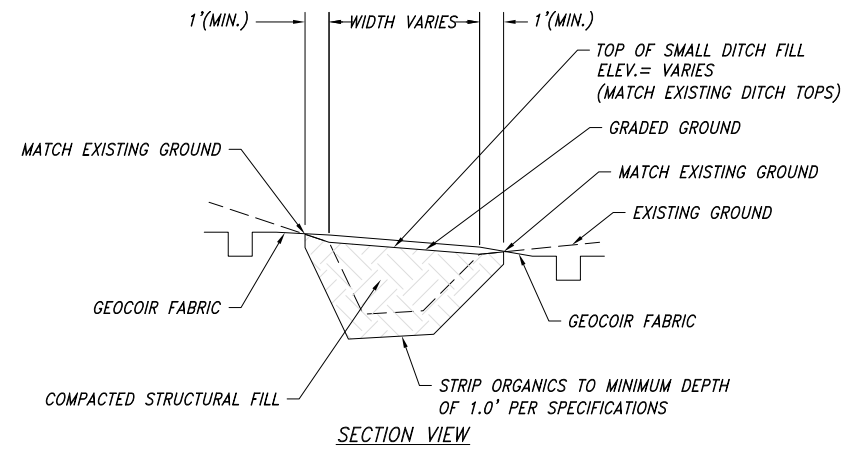
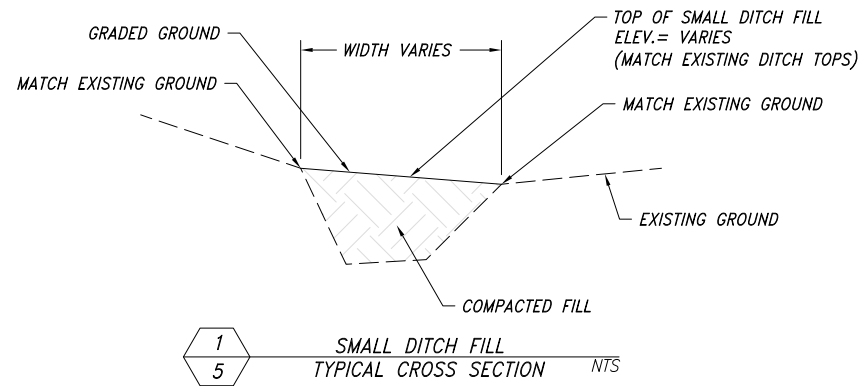
2  
4  
LARGE DITCH PLUG  
TYPICAL  
NTS



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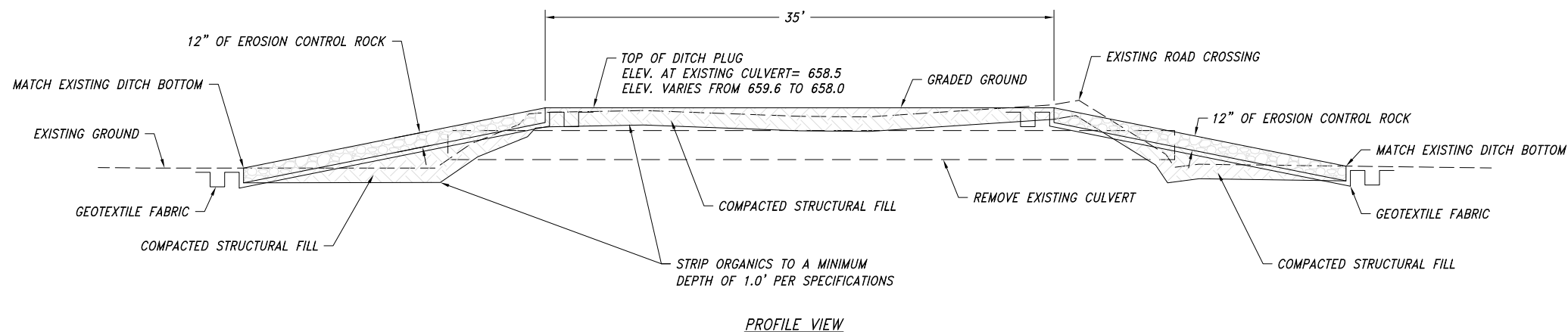
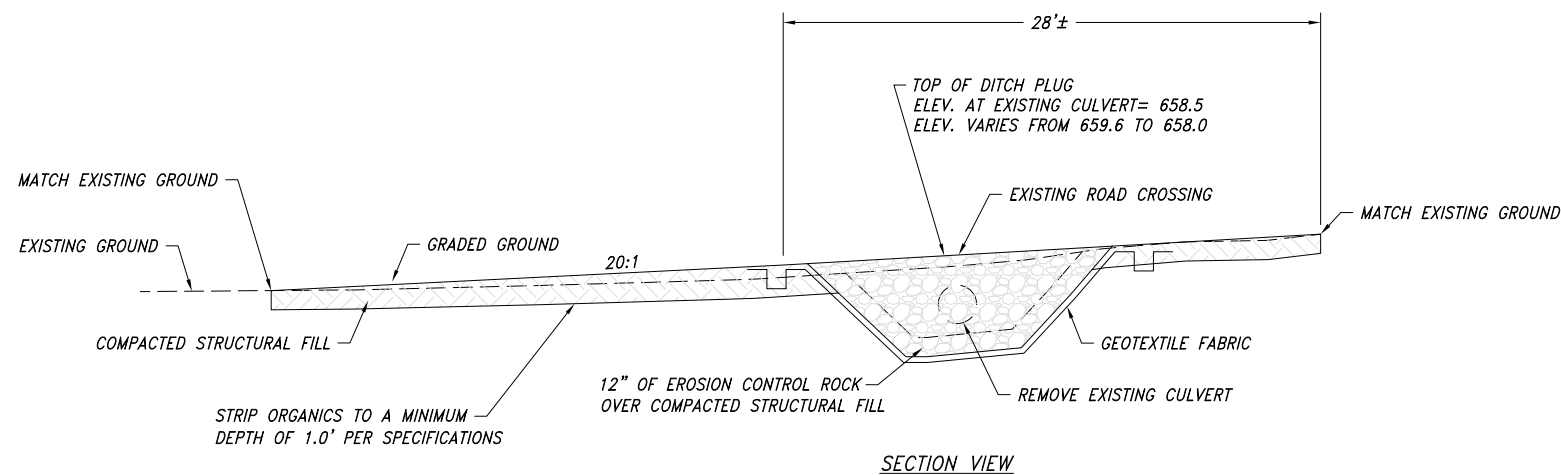
 1157 3rd Ave., Suite 220 Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305	<b>FIGURE B-3B GRADING CROSS SECTIONS</b>		GENERAL INFORMATION DESIGNED BY: JTS DRAWN BY: DMC SURVEYED BY: JPS CHECKED BY:
	DATE: FEB. 2010	SHEET NO.	APPROVED BY:



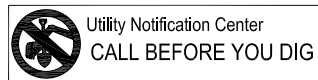
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 ECOLOGICAL LAND SERVICES, INC. 1157 3rd Ave., Suite 220 Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305	<b>FIGURE B-3C          GRADING CROSS          SECTIONS</b>		GENERAL INFORMATION DESIGNED BY: JTS DRAWN BY: DMC SURVEYED BY: JPS CHECKED BY:
	DATE: FEB. 2010	SHEET NO.	APPROVED BY:



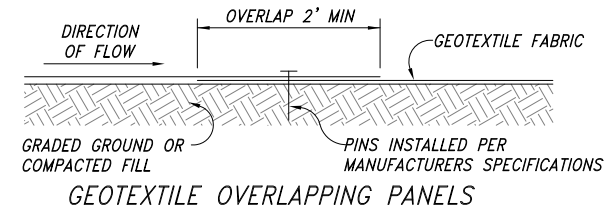
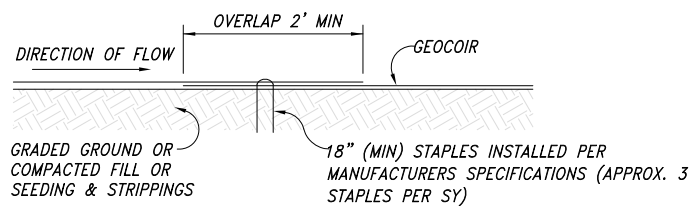
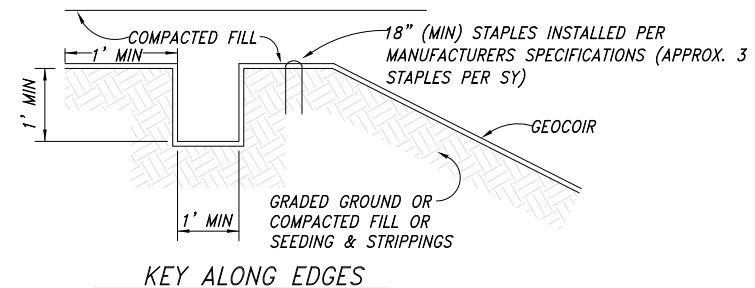
1  
6 EXISTING WEST/SOUTHWEST DITCH PLUG  
TYPICAL NTS



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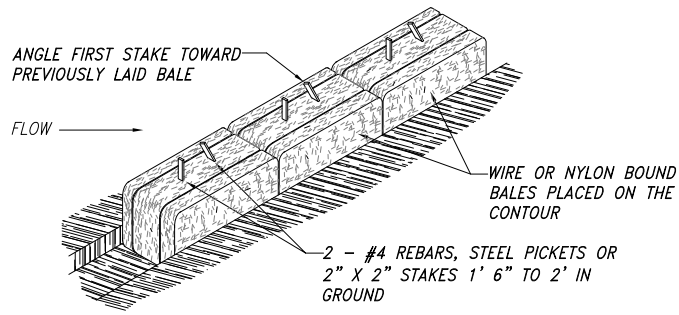
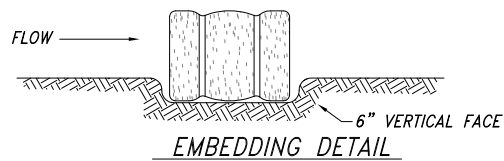
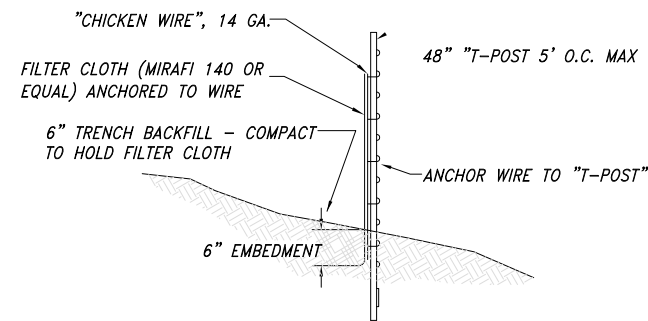
NOTE: DUCKS UNLIMITED WILL PROVIDE CONSTRUCTION STAKING AND/OR VERTICAL CONTROL FOR THE CONTRACTOR.

 1157 3rd Ave., Suite 220 Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305	<b>FIGURE B-3D GRADING CROSS SECTIONS</b>		GENERAL INFORMATION DESIGNED BY: JTS DRAWN BY: DMC SURVEYED BY: JPS CHECKED BY:
	DATE: FEB. 2010	SHEET NO.	APPROVED BY:

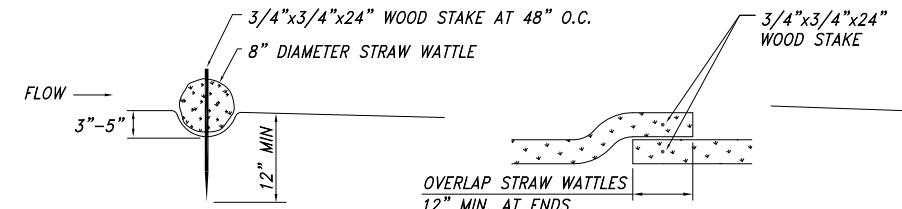
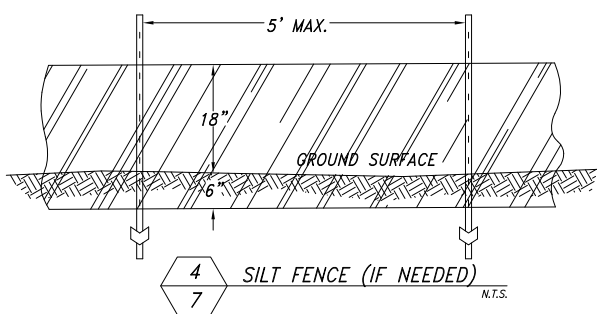


2  
7  
GEOCOIR INSTALLATION  
N.T.S.

3  
7  
GEOTEXTILE INSTALLATION  
N.T.S.



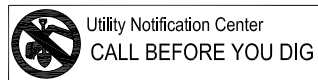
NOTE:  
APPLICATION OF EROSION & SEDIMENTATION CONTROL MEASURES SHALL BE DETERMINED BY THE SITE ENGINEER IN THE FIELD DURING CONSTRUCTION AND MAY INCLUDE, BUT IS NOT NECESSARILY LIMITED TO THOSE SHOWN HERE. OTHER MEASURES MAY BE REQUIRED DEPENDING ON FIELD CONDITIONS AND SHALL BE DETERMINED BY THE SITE ENGINEER.



4  
7  
SILT FENCE (IF NEEDED)  
N.T.S.

5  
7  
STRAW BALE CHECK (IF NEEDED)  
N.T.S.

6  
7  
STRAW WATTLE  
TYPICAL DETAIL  
N.T.S.

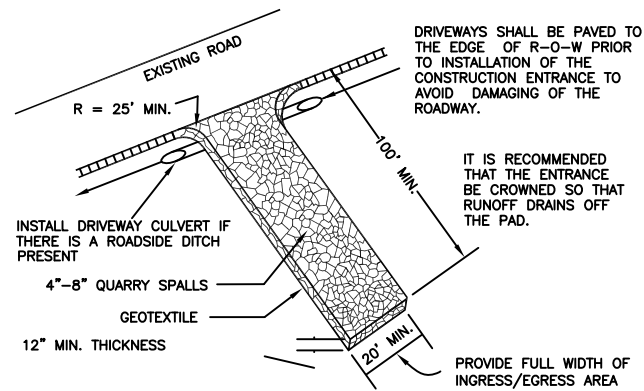


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THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

NOTE: DUCKS UNLIMITED WILL PROVIDE CONSTRUCTION STAKING AND/OR VERTICAL CONTROL FOR THE CONTRACTOR.

ECOLOGICAL LAND SERVICES, INC. 1157 3rd Ave., Suite 220 Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305	<b>FIGURE B-3E GRADING CROSS SECTIONS</b>		GENERAL INFORMATION DESIGNED BY: JTS DRAWN BY: DMC SURVEYED BY: JPS CHECKED BY:
	DATE: FEB. 2010	SHEET NO.	APPROVED BY:

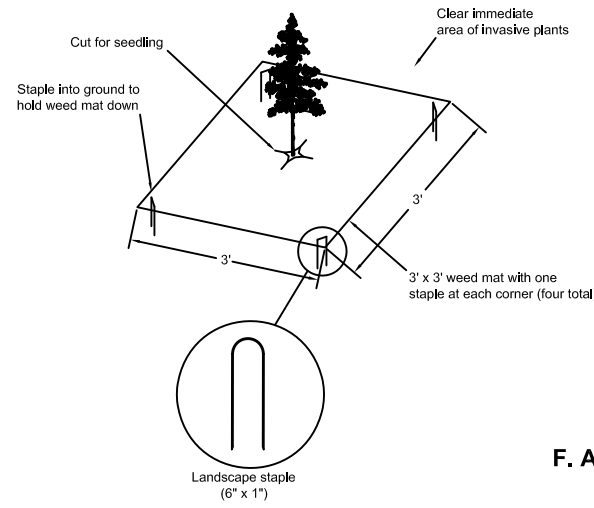
### A. STABILIZED CONSTRUCTION ENTRANCE



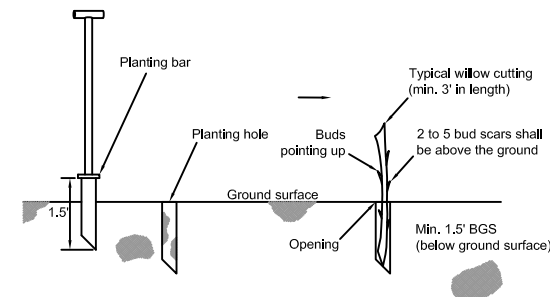
#### NOTES:

1. IF THE ENTRANCE SITS ON A SLOPE, PLACE A FILTER FABRIC FENCE DOWN GRADIENT.
2. TOP DRESS THE PAD WITH CLEAN 3" MINUS ROCK WHEN THE CONSTRUCTION ENTRANCE BECOMES CLOGGED WITH SEDIMENTS.
3. ANY SEDIMENT CARRIED FROM THE SITE ONTO THE STREET SHALL BE CLEANED UP IMMEDIATELY.
4. IF EQUIPMENT TRAVELS EXTENSIVELY ON UNSTABILIZED ROADS ON THE SITE, A TIRE AND VEHICLE UNDERCARRIAGE WASH NEAR THE ENTRANCE WILL BE NEEDED. PERFORM WASHING ON CRUSHED ROCK. WASH WATER WILL REQUIRE TREATMENT IN A SEDIMENT POND OR TRAP.

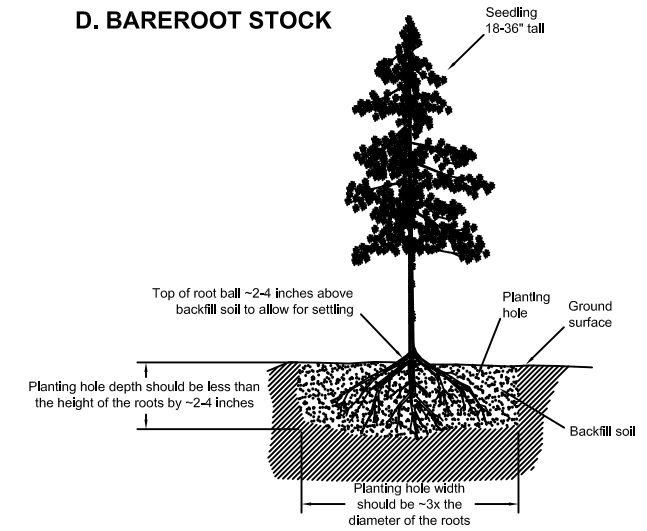
### B. WEED BARRIER



### C. CUTTING STOCK



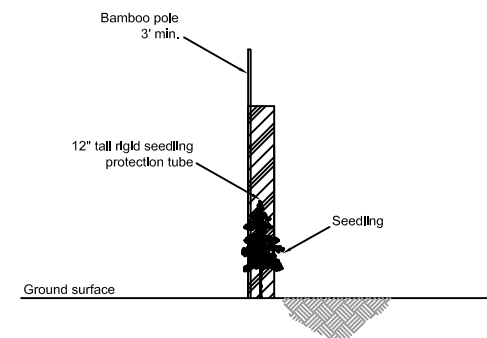
### D. BAREROOT STOCK



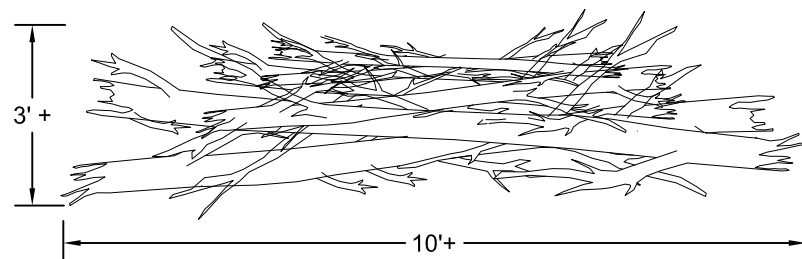
#### NOTES:

1. Use a shovel to slice into the loose soil; gently compact the soil and do not step on the backfill.
2. Water heavily after transplanting.
3. Do not add soil amendments or fertilizers in the planting hole.

### F. ANTI-HERBIVORY DEVICE



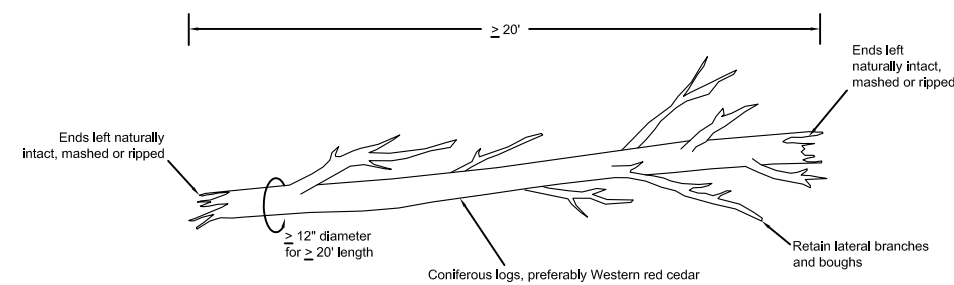
### E. BRUSH PILE



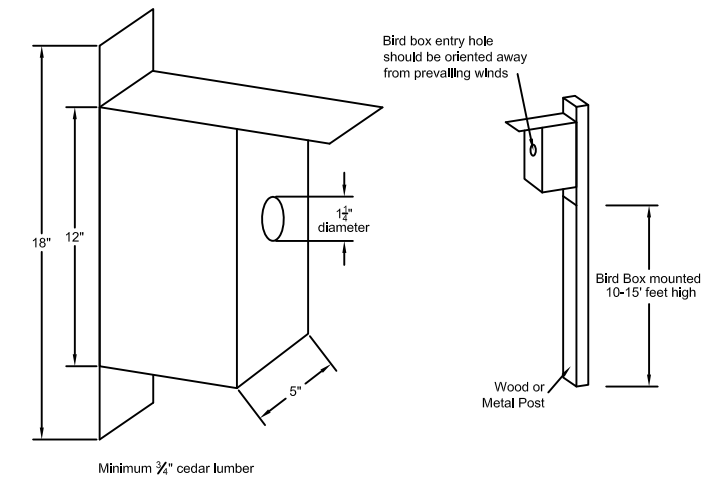
#### Brush Pile Specifications:

1. Contain 3 layers of brush (ranging from approximately 1/4- to 6-inch in diameter) with the largest diameter brush layer on the bottom of the pile, with progressively smaller diameter brush towards the top of the pile.

### H. HORIZONTAL LOG

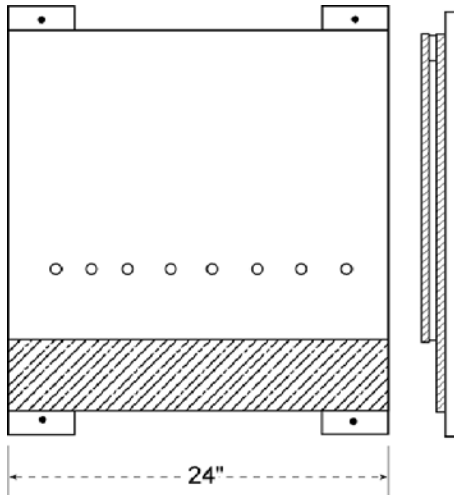


### G. WESTERN RED CEDAR BIRD BOX



<p>ECOLOGICAL LAND SERVICES, INC. 1157 3rd Ave., Suite 220 Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305</p>	<p><b>FIGURE B-3F TYPICALS</b></p>		<p>GENERAL INFORMATION</p>
	<p>DATE: FEB. 2010</p>	<p>SHEET NO.</p>	<p>APPROVED BY:</p>

### H. ECONOMY BAT HOUSES



#### Materials (makes one)

- 1/4 sheet of 1/2" exterior plywood
- 1 - 1 x 2 x 8" fir board (furring strip)
- 1 - 1 x 4 x 8" cedar board (mounting board)
- 25 - 1 1/4" outdoor wood screws
- 1 pint of latex paint

#### Construction Procedure

1. Cut plywood into two pieces: 26 1/2" x 24" and 21 1/2" x 24".
2. Cut furring strip into one 24" and two 20 1/4" pieces.
3. Cut cedar board into one 17" and two 30" pieces.
4. Screw back to furring. Start with the 24" piece on top.
5. Roughen all sides of plywood, including the back but not the front exterior, with a claw hammer or other tool. Remove any splintered wood.
6. Screw front to furring, top piece first.
7. Attach cedar mounting boards to back with screws entering through plywood and furring.
8. Paint with dark exterior latex paint at least twice. If necessary, roughen landing area below front sheet again.
9. Caulk all seams that aren't tight with paintable silicone caulk.

#### Materials (makes one)

- 1/2 sheet (2' x 8') of 1/2" exterior plywood
- 1 - 1 x 2 x 8" fir board (furring strip)
- 1 - 1 x 4 x 8" cedar board (mounting board)
- 40 - 1 1/4" outdoor wood screws
- 1 pint of latex paint

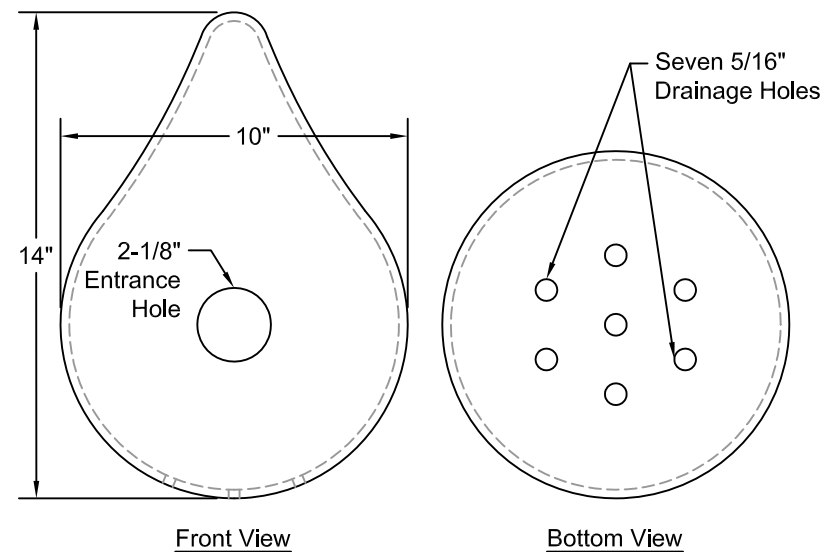
#### Construction Procedure

1. Cut plywood into two pieces: 51" x 24" and 45" x 24".
2. Cut furring strip into one 17" and two 43 3/4" pieces.
3. Cut cedar board into one 24" and two 58" pieces.
4. Follow steps 4-9 for the Small Economy Bat House.

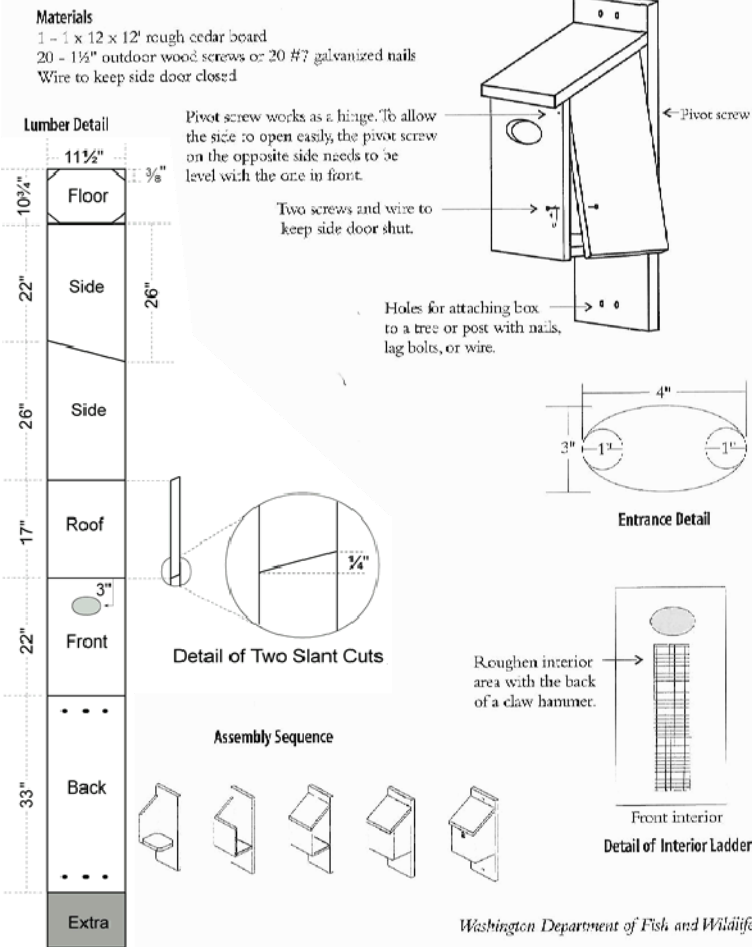
- In hot climates, drill 8 to 10, 1/2" holes in the front of the box approximately 5" up from the bottom. Vent holes may not be necessary in cooler climates.
- Attach a 1 x 4 board to the top as a roof (recommended).
- Attach a 1 x 4 board in back of the box at the top in between the two furring strips to create a chamber.
- Two bat boxes can be placed back-to-back and mounted on a pole. Build two houses the same size. Drill 4 - 3/4" holes on the back of each to permit movement of bats between the houses. The holes should be about 10" from the bottom edge of the back piece.

Washington Department of Fish and Wildlife

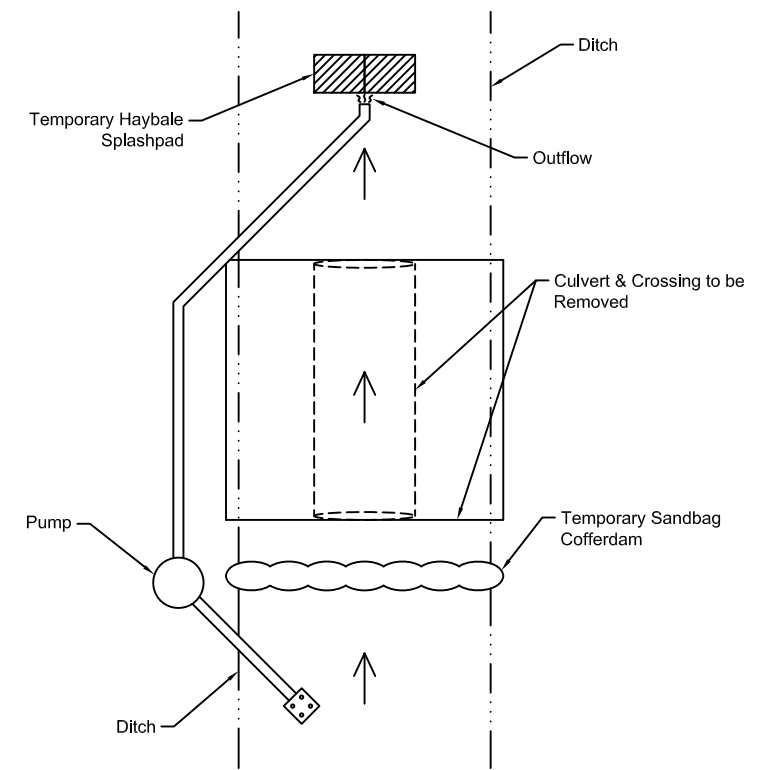
### K. PURPLE MARTIN GOURD NEST



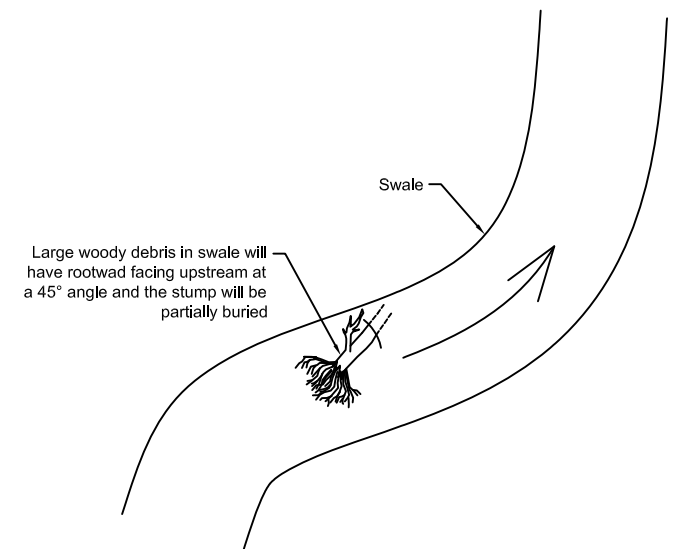
### I. WOOD DUCK NEST BOX



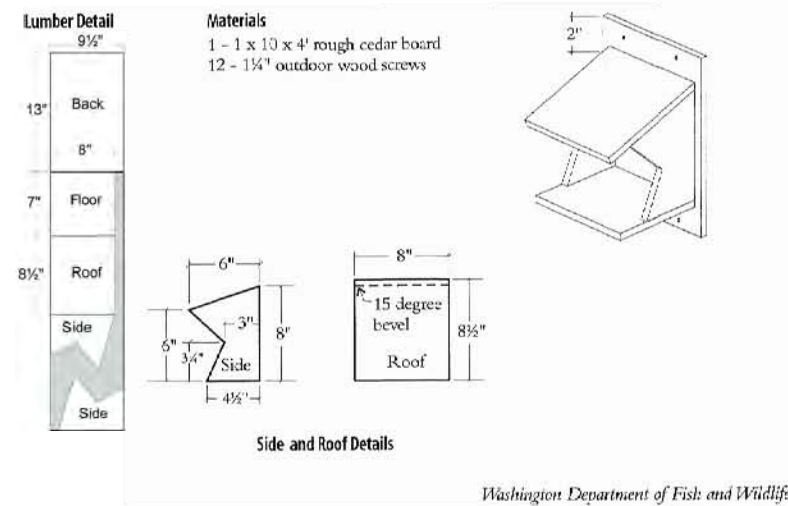
### J. TEMPORARY STREAM BYPASS



### M. LARGE WOODY DEBRIS IN SWALE



### L. ROBIN, BARN SWALLOW, AND PHOEBE NEST PLATFORM



<p>ECOLOGICAL LAND SERVICES, INC. 1157 3rd Ave., Suite 220 Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305</p>	<b>FIGURE B-3G TYPICALS</b>		<b>GENERAL INFORMATION</b> DESIGNED BY: JTS DRAWN BY: DMC SURVEYED BY: JPS CHECKED BY:
	DATE: <b>FEB. 2010</b>	SHEET NO.	APPROVED BY:



native grass seed mix and will be kept free of trees and shrubs. The area allows access for possible ditch maintenance of the East Ditch and spoil placement on the west side of the ditch. The dredge spoils will be evenly spread along the access way and will be monitored for invasive weed growth.

### **B.1.2.3 Grading**

Construction activities will generally avoid the unnamed tributary to Rock Creek (North and East Ditches) except for culvert removal/replacement and spillway installation. Grading activities will generate approximately 6,000 cubic yards of material. The majority of this material will be used to fill ditches to a top elevation of 653.0 feet. Ditch plugs will be constructed from compacted structural fill from an approved offsite source with a top elevation of 653.0 feet, which is the new bottom elevation of the ditches (**Figure B-3B**).

#### **West/Southwest Ditch**

The western portion of this ditch will be rerouted to flow into the Bank site interior along the south-central Bank site boundary at a natural low point. A 10-foot wide meandering swale with 8 to 1 side slopes will be excavated to convey water north providing additional hydrology to the site. Depth of the swale will vary with the deepest point being 3.5 feet. An existing culvert will be removed just east of the newly created swale and will be replaced with a ditch plug (**Figures B-3, B-3A, and B-3B**). Excess material not used for ditch filling will be moved to the disposal site to the south.

#### **South Ditch and West Ditch**

Approximately 120 feet of the West Ditch near its intersection with the South Ditch will be filled to a top elevation of 653.0 feet. The banks of the South Ditch are nearly vertical and will be shaped to create 8 to 1 slopes for a more natural appearance. This will also prevent erosion and allow the water to flood more easily into the interior of the Bank site. The majority of the excavated material will be replaced in the ditch to raise the bottom elevation to 653.0 feet. Ten ditch plugs will be installed in regular intervals along the length of the South Ditch and the weir as described above will be installed at the confluence of the South Ditch and East Ditch (unnamed tributary to Rock Creek). Three culverts will also be removed from the South Ditch (**Figures B-3, B-3A, and B-3B**).

#### **Small Ditch**

Approximately 856 feet of the existing Small Ditch in the southeast corner of the Bank site will be completely filled and three ditch plugs will be installed (**Figure B-3C**).

##### **B.1.2.3.1 Tile Disruption**

There are at least three different types of subsurface drain tile systems installed in the farm fields: plastic drain pipe, clay drain tiles, and old Douglas-fir box drains. The drain tiles are buried between 4 and 6 feet below ground surface. Removing the entire tile line is not necessary. Drain tiles can be broken or plugged in place, and will no longer function since water is being held on the site. The drain tiles will be disrupted approximately 30 feet landward from the top of the bank of the respective ditch and 10 feet landward from the outer limits of excavation on the South Ditch (**Figure B-3**). A continuous trench will be dug with a trenching

machine, excavator, or similar piece of equipment perpendicular to the drain tile. Douglas-fir box tiles will be cut and 3 foot sections will be removed. Clay drain tiles will be crushed in place in 3-foot sections, and plastic drain tiles will either be cut in 3 foot sections or pulled by an excavator until a large section is broken. Additional trenches will be dug through the drain tile system, up slope from the ditches to insure that the drains do not continue to function, as deemed necessary during construction.

#### **B.1.2.3.2 Weir and Spillway Installation**

A 20 foot-wide, 50 foot-long rock weir will be constructed at the outlet of the South Ditch to the East Ditch (**Figures B-3 and B-3B**). The weir will be constructed out of erosion control rock underlain by geotextile fabric and will be topped with road surface rock. It will prevent erosion from water leaving the site and also function to block fish passage per WDFW. The top elevation of the weir will be 654.8 feet.

A 50 foot-long, 12 foot-wide rock spillway will be constructed south and east of the confluence of the North Ditch and Ditch A (**Figures B-3 and B-3C**). The spillway will function as an emergency overflow during flooding events and will be constructed similar to the rock weir. The top elevation of the spillway will be 655.1 feet.

The majority of material generated from grading activities will be used to fill the South, West, and Small Ditches. Any excess material will be disposed on property owned by Mr. Gilmour that is contiguous with the Bank site (**Figure B-3**). Once all the excess material is stockpiled and shaped appropriately, it will be seeded to prevent erosion.

#### **B.1.2.4 Planting**

The Bank site will be planted to develop into three different habitat types: Palustrine forested, scrub-shrub, and emergent wetlands based on topographic elevation and anticipated water levels. Plant communities were developed according to the anticipated hydrologic regime and individual species were selected based upon the forested wetland reference site (Resource Folder – EFL Mitigation Bank Reference Site Data), or for the corresponding growing environment. Given the unstable characteristics of the soil when hydrated and the variability in depth and location of the organic material within the site, it will be difficult to predict which tree and shrub species are able to establish root structures in this soil strong enough to withstand wind storms. A dynamic tree and shrub zone may exist that remains in a constant state of disruption due to winds periodically uprooting taller or less stable species. Within the transition zone (**Figure B-2**) which is 100 feet on either side of the design water surface level boundary, there will be seasonally ponded water at the ground surface and saturated ground. The saturated ground will be planted with shrubs and the area with seasonally ponded water will be planted as emergent habitat. The project sponsors will seed or plant the site with the species listed in Table B-3 below and will follow up with supplemental plantings based on which species are most successfully establishing themselves. This will help to determine the final outcome for acreage of each habitat type. The sponsors will be required to maintain minimum acreages of forested habitat types and maximum acreage of emergent habitat. If natural forces cause the boundaries for specific habitat types to change, monitoring methods will be adjusted according to the correct habitat type to ensure applicable performance standards are met and conditions will be

documented in the monitoring reports. These species will provide cover, forage, screening, and structure for all types of wildlife. Trees and shrubs will be planted at an initial density of 500 stems per acre (**Figure B-4**). **Table B-3** below is a list of species to be planted at the site according to each stratum.

After the completion of grading and construction, the outer extent of ponding will be observed at least twice a month and/or after rain events and staked in various locations over the site as a guide to determining the boundary between the seasonally ponded zone and the saturated zone. Shrubs will be planted up to the approximated boundary of the seasonal ponding and Emergent species will be seeded or planted immediately after construction as well as during the shrub and tree planting stage if necessary.

**Table B-3. Species list by stratum.**

<b>Forested</b>		
Black cottonwood (FAC) <i>Populus balsamifera</i> <i>ssp. trichocarpa</i>	Scouler willow (FAC) <i>Salix Scouleriana</i>	Oregon ash (FACW) <i>Fraxinus latifolia</i>
Oregon white oak (UPL) <i>Quercus garryana</i>	Red alder (FAC) <i>Alnus rubra</i>	Cascara (FAC) <i>Rhamnus purshiana</i>
Douglas fir (FACU) <i>Pseudotsuga menziesii</i>		
<b>Scrub-shrub</b>		
Sitka willow (FACW) <i>Salix sitchensis</i>	Black hawthorn (FAC) <i>Crataegus douglasii</i>	Nootka rose (FAC) <i>Rosa nutkana</i>
Red elderberry (FACU) <i>Sambucus racemosa</i>	Pacific ninebark (FACW) <i>Physocarpus capitatus</i>	Black twinberry (FAC) <i>Lonicera involucrata</i>
Common snowberry (FACU) <i>Symphoricarpos albus</i>	Western crabapple (FACW) <i>Malus fusca</i>	Salmonberry (FAC) <i>Rubus spectabilis</i>
Geyer Willow (FACW) <i>Salix geyeriana</i>	Scouler willow (FAC) <i>Salix Scouleriana</i>	
Red osier dogwood (FACW) <i>Cornus sericea</i>		
<b>Herbaceous</b>		
Horsetail sedge (OBL) <i>Dulichium arundinaceum</i>	Dense sedge (OBL) <i>Carex densa</i>	Western mannagrass (OBL) <i>Glyceria occidentalis</i>
Small-fruited bulrush (OBL) <i>Scirpus microcarpos</i>	Saw-beak sedge (FACW) <i>Carex stipata</i>	Daggerleaf rush (FACW) <i>Juncus ensifolius</i>
American slough grass (OBL) <i>Beckmannia syzigachne</i>	One-sided sedge (FACW) <i>Carex unilateralis</i>	Slender rush (FACW) <i>Juncus tenuis</i>
Simple-stem bur-reed (OBL) <i>Sparganium emersum</i>	California oatgrass (FACU) <i>Danthonia californica</i>	Blue-eyed grass (FACW) <i>Sisyrinchium idahoense</i>
Slough sedge (OBL) <i>Carex obnupta</i>	Tufted hairgrass (FACW) <i>Deschampsia caespitosa</i>	Needle spikerush (OBL) <i>Eleocharis acicularis</i> var. <i>acicularis</i>
Broadleaf water-plantain <i>Alisma plantago-aquatica</i>	Broadleaf arrowhead <i>Sagittaria latifolia</i>	Creeping spikerush (OBL) <i>Eleocharis palustris</i>

### Bareroot Specifications

1. Bareroot species will be grown by a native plant nursery.

## Figure B-4: Plant Quantities

Classification	Forested Wetland	Scrub-shrub Wetland	Emergent Wetland*
Acres	28	29	53
Plants Per Acre:	500	500	
<b>Common name</b>	<b>Percentage</b>	<b>Plants</b>	
<b>Forested Wetland</b>			
Black Cottonwood ( <i>Populus balsamifera</i> ssp. <i>Trichocarpa</i> )	20%	2780	
Red Alder ( <i>Alnus rubra</i> )	20%	2780	
Oregon Ash ( <i>Fraxinus latifolia</i> )	30%	4170	
Cascara ( <i>Rhamnus purshiana</i> )	9%	1251	
Oregon White Oak ( <i>Quercus garryana</i> )	2%	278	
Scouler Willow <i>Salix scouleriana</i> )	17%	2363	
Douglas Fir ( <i>Pseudotsuga menziesii</i> )	2%	278	
<b>TOTAL PLANTS:</b>	<b>100%</b>	<b>13900</b>	
<b>Scrub-Shrub Wetland</b>			
Sitka Willow ( <i>Salix sitchensis</i> )	20%	2900	
Scouler Willow ( <i>Salix scouleriana</i> )	15%	2175	
Geyer Willow ( <i>Salix geyeriana</i> )	15%	2175	
Red elderberry ( <i>Sambucus racemosa</i> )	5%	725	
Common snowberry ( <i>Symphoricarpus albus</i> )	2%	290	
Red osier dogwood ( <i>Cornus sericea</i> )	15%	2175	
Black hawthorn ( <i>Crataegus douglasii</i> )	2%	290	
Pacific ninebark ( <i>Physocarpus capitatus</i> )	2%	290	
Nootka rose ( <i>Rosa nutkana</i> )	10%	1450	
Black twinberry <i>Lonicera involucrata</i> )	10%	1450	
Salmonberry ( <i>Rubus spectabilis</i> )	2%	290	
Western Crabapple ( <i>Malus fusca</i> )	2%	290	
<b>TOTAL PLANTS:</b>	<b>100%</b>	<b>14500</b>	
<b>Palustrine Emergent Wetland</b>			
Horsetail sedge-T ( <i>Dulichium arundinaceum</i> )			
Small-fruited bulrush-D ( <i>Scirpus microcarpus</i> )			
American slough grass-S ( <i>Beckmannia syzigachne</i> )			
Simple-stem bur-reed-T ( <i>Sparganium emersum</i> )			
Slough sedge-D ( <i>Carex obnupta</i> )			
Dense sedge-S ( <i>Carex densa</i> )			
Saw-barked sedge-S ( <i>Carex stipata</i> )			
One-sided sedge-S ( <i>Carex unilateralis</i> )			
California oatgrass-T ( <i>Danthoia californica</i> )			
Tufted hairgrass-S ( <i>Deschampsia cespitosa</i> )			
Western mannagrass-D ( <i>Glyceria occidentalis</i> )			
Daggerleaf rush-S ( <i>Juncus ensifolius</i> )			
Slender rush-S ( <i>Juncus tenuis</i> )			
Blue-eyed grass-T ( <i>Sisyrinchium idahoense</i> var. <i>macounii</i> )			
Needle spikerush-S ( <i>Eleocharis acicularis</i> )			
Creeping spikerush-S ( <i>Eleocharis palustris</i> )			
Broadleaf water-plantain-S ( <i>Alisma plantago-aquatica</i> )			
Broadleaf arrowhead-S ( <i>Sagittaria latifolia</i> )			
D=Dominant species occupy >20% cover, S=subordiant species occupy 6-19% cover, T=trace species occupy <5% cover.			
* Includes 3 acres of emergent wetland variant			



ECOLOGICAL LAND SERVICES, INC.

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DATE: 4/13/10  
DWN: JKJ  
REQ. BY: ST  
PRJ. MGR: MMM  
CHK:  
APPR:  
PROJ.#: 1209.05

Figure B-4  
PLANT LIST  
Fargher Lake Site  
East Fork Lewis Wetland Mitigation Bank  
Clark County, Washington  
Section 23, Township 5N, Range 2E, W.M.

2. Bareroot stock will be 2-0 stock or similar, depending on availability from grower.
3. The bareroot stock will have well-developed roots and sturdy stems, with an appropriate root-to-shoot ratio.
4. Bareroot stock will be kept cool and moist prior to being planted.
5. No damaged or desiccated roots or diseased plants will be accepted.
6. Unplanted bareroot stock will be properly stored at the end of each planting day to prevent drying out.

### **Willow Cutting Specifications**

1. Cuttings will be purchased from a local native plant nursery or cut from local sources.
2. Cuttings will be a minimum of 3-feet long and greater than ¼-inch diameter.
3. Cuttings will be kept cool and moist prior to being planted.
4. Cutting stock should be installed within approximately 1 week of cutting.
5. Unplanted cutting stock will be properly stored at the end of each planting day to prevent desiccation.

### **Seeding**

Seed mixes will either be broadcast or drilled in on site following final grading and construction. Rates of broadcast vary depending on seed size, seeding method and habitat type. Roughly, 5,000,000 seeds per acre are anticipated to be seeded. Variations from this estimate will be noted in the as-built report.

### **Plugs**

Plugs will be planted by hand following final grading and construction. Additional plugs may be added to the emergent areas if necessary after final grading and construction if planting shows that specific areas of the site are more conducive to certain species.

#### **B.1.2. Habitat Structure Installation**

A total of thirty-four habitat structures will be installed on the site after grading is finalized, but before the site has been seeded. Fourteen of the habitat structures will be large woody debris which include: brush piles, root wads and down logs. Twenty habitat structures will be nest boxes which include: eight standard song bird nest boxes, two purple martin gourds, five, wood duck boxes, three bat houses, and two American robin nest platforms. Nest boxes will be installed on posts or existing trees located at least 4 feet above the ground throughout the site at the time the site is planted. Nest boxes will be installed according to WDFW protocols (**Figures B-3F and B-3G**).

#### **B.1.3 Maintenance**

General maintenance will be performed throughout the year to address conditions that may limit the success of the bank and attain the performance standards and objectives described in Appendix C. Anticipated maintenance activities fall into two main categories and include, but are not limited to, vegetative maintenance and general maintenance. Vegetative maintenance includes such activities as watering, replanting failed plants to meet performance standards, repairing any areas subject to erosion, controlling invasive plants, mowing, and deterring

herbivores such as voles, beaver, and deer. Spraying weeds at the base of trees and shrubs to discourage voles and root competition may occur for up to two years following planting. General maintenance activities include: re-installing signs, maintaining nest boxes, and removing garbage. All maintenance activities will be documented in monitoring reports.

### **B.1.3.1 Invasive Species Control**

Weed control will occur as needed, throughout the growing season, and will target reed canarygrass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus armeniacus*), any invasive knotweed, and any non-native invasive species that attempt to colonize the site. Japanese knotweed (*Polygonum cuspidatum*), English ivy (*Hedera helix*), and purple loosestrife (*Lythrum salicaria*) will be immediately eradicated if found on site. Invasive control will follow methods recommended by the Clark County Weed Management Department. Invasive plants will be controlled by repeated spraying of Washington State Department of Agriculture-approved herbicides. Weed control will occur prior to planting, and will continue throughout the active life of the bank. Weed control methods will include hand pulling and spot spraying and weed wiping with appropriate herbicides according to the species and Washington Department of Agriculture regulations.

### **B.1.4 Erosion and Sediment Control (ESC) Plan**

A copy of the Stormwater Pollution Prevention Plan (SWPPP), prepared in compliance with NPDES permit requirements, is provided in the Resource Folder. This SWPPP was prepared by Ecological Land Services, Inc., and submitted to Clark County as a part of the grading permit application required to implement the East Fork Lewis Mitigation Bank. The purpose of the SWPPP is to describe the proposed construction activities and all temporary and permanent erosion and sediment control (TESC) measures, pollution prevention measures, inspection/monitoring activities, and recordkeeping that will be implemented during the proposed construction project.

#### **B.1.4.1 Inspection and Monitoring**

All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. Site inspections shall be conducted by a person who is knowledgeable in the principles and practices of erosion and sediment control. This person has the necessary skills to assess the site conditions and construction activities that could impact the quality of stormwater, and assess the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

- A Certified Erosion and Sediment Control Lead shall be onsite or on-call at all times.
- Whenever inspection and/or monitoring reveals that the BMPs identified in the SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, appropriate BMPs or design changes shall be implemented as soon as possible.

### **B.1.4.2 Maintaining an Updated Construction SWPPP**

- The SWPPP shall be retained onsite or within reasonable access to the site.
- The SWPPP shall be modified whenever there is a change in the design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.
- The SWPPP shall be modified if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The SWPPP shall be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP shall be completed within seven (7) days following the inspection.

### **References**

Rigg, G. 1958. *Peat Resources of Washington*. Bulletin No. 44. Division of Mines and Geology. Department of Conservation. Olympia, Washington

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## **APPENDIX C BANK OBJECTIVES AND PERFORMANCE STANDARDS**

### **APPENDIX C.1:**

#### **C.1.1. Requirements for Bank Objectives and Performance Standards:**

A. Implementation of the East Fork Lewis Wetland Mitigation Bank is anticipated to result in substantial gains in aquatic ecosystem functions, as compared to those now present, or those that would likely accrue on the site if the Bank were not constructed. The Sponsor must be able to demonstrate tangible aquatic ecosystem gains before Bank credits can be awarded for sale, use, or other transfer, because these functional gains will be used to offset comparable losses to other components of the aquatic environment in the Bank service area. The Bank's success will be measured by the enumerated objectives, each of which is subdivided into specific performance standards. The prescribed performance standards each provide a gauge for measuring the success of the ecological restoration and enhancement efforts at the Bank.

B. Unless otherwise noted, all documentation required for demonstrating attainment of performance standards will be submitted to the IRT for review and approval as a condition of credit award. Documentation can typically be included in required monitoring reports. IRT award of credits will be reflected in a letter issued using a joint letterhead and signed by the Co-Chairs.

C. Recreational, educational, and scientific activities that do not conflict with the use limitations or other provisions of the conservation easement, do not interfere with the delineated purposes and goals of the Bank, and do not adversely affect the ecological viability and functionality of the Bank may take place on the Bank site. Specifically, the site may be used by the owners and guests for walking, bird watching and other passive recreation including hunting and fishing.

D. All performance standards apply to the entire bank site including the buffer area.

#### **C.1.2. Bank Objectives and Performance Standards**

##### **Objective 1: Protect Aquatic Ecosystem Functions**

Permanently protect aquatic ecosystem functions at the Bank by instituting the Instrument and implementing a conservation easement with permanent funding for site stewardship. Each of the performance standards associated with this objective must be met before any Bank credits may be awarded, and before any construction or other implementation activities may be initiated pursuant to this Instrument. Any construction or implementation activities conducted on-site prior to the inception of the establishment period must cease as of the effective date of this Instrument pursuant to Article VI.B.1, until the Objective 1 performance standards have been accomplished. The initial award of credits in recognition of accomplishment of these performance standards will serve as the IRT's notification that construction and implementation activities are authorized to commence.



<b>Performance Standard</b>	<b>Documentation</b>
1A. Complete the development of an appropriate Mitigation Banking Instrument and Appendix.	Mitigation Banking Instrument has been signed by the Sponsor and the applicable regulatory agencies. An original signed Instrument must be provided to each of the signatories.
1B. Protect ecosystem function by placing IRT-approved conservation easements on the property.	Provide the IRT copies of the signed, IRT-approved conservation easements and evidence that they have been recorded with Clark County and placed on the property title.
1C. Provide financial assurance by establishing an IRT-accepted financial assurance mechanism pursuant to the requirements established in Article III.C.1. of the Instrument.	Demonstrate to the IRT that a compliant and acceptable financial assurance mechanism has been established to provide financial assurance for the establishment period.
1D. Establish a Long-Term Management and Maintenance Endowment Fund escrow account and develop an escrow agreement, all pursuant to the requirements established in Article III.C.2 of the Instrument.	Demonstrate to the IRT that a Long-Term Management and Maintenance Endowment Fund has been initiated through establishment of a compliant and acceptable escrow account. Enter into an escrow agreement with the Corps and Ecology.

### **Objective 2: Hydrology**

Restore wetland hydrology by disabling the extensive ditch and drain-tile system currently used to convey water off of the site. Reconnect streams that are currently ditched and directed off site.

<b>Performance Standard</b>	<b>Documentation</b>
2A. Disable drain tiles and drainage ditches on site. Redirect surface flows onto the site, remove unnecessary existing culverts, and reshape selected existing ditches to improve floodplain connectivity. Grading of the site and construction of rock weir and outfall structure completed according to IRT approved plans.	As-built drawings and photographs showing completed grading and rock outfall structure areas and key elevations are approved by the IRT. This grading as-built report can be submitted before site planting is complete.
2B. A minimum of 93 acres of the site will have wetland hydrology present at 3 years following approval of As-built grading plan.	To demonstrate wetland hydrology, soil will be saturated to the surface, or there will be free water in soil pits or shallow water wells at 12 inches or less below the soil surface for at least 10% of the growing season, where the growing season is defined as March 1 through October 31. A monitoring report showing the data from wells and/or soil pits sufficient to document the extent of

	wetland hydrology on the site is approved by the IRT.
2C. A minimum of 93 acres of wetland will be present on the site at years 5 and 10 following approval of As-built grading report.	The wetlands on site will be delineated according to the 1987 Corps of Engineers Delineation Manual and appropriate supplements as well as the current Washington State wetland delineation manual in effect at the time of delineation. Wetland delineation report is approved by the IRT.
2D. In years 3, 5, and 10, permanently ponded areas lacking any vegetation will comprise less than 5% of the total creditable area of the bank site.	Measure permanently ponded areas with GPS and document with photographs during August or September in years 3, 5 and 10.
2E. Surface flows at high levels pass properly over the rock weir outfall structure and rock spillway structure and do not cause excessive erosion at any point in the restored system.	Monitor flow through the outfall structure and spillway at different flow rates. Document flows, any erosion problems encountered, and any remedial action taken in monitoring reports for years 1, 3, 5, 7 and 10.

### Objective 3: Vegetation

Establish native wetland vegetation communities comparable to pre-agricultural conditions on the site and in accordance with the targeted hydrologic regimes across the site.

*Note: “Cover” is used in this MBI to mean the actual proportion of the ground surface of the sample plot that is covered by a vertical projection of foliage (by single species or defined group of species) as viewed from above (or below for taller shrubs and trees), or by bare substrate.*

### Performance Standards for All Areas of the Site:

Performance Standard	Documentation
3A. Planting of site completed according to IRT approved plans. Provide a modified financial assurance that conforms to the required amount for a letter of Credit, or the required penal sum for a Surety Bond, as specified in Article III.C.1.d.(i) of the Instrument.	As-built planting plan showing completed planting, approved by the IRT. Include a species list, plant spacing and density, seeding rate and final planted acreages of vegetative community types. Demonstrate to the IRT that a compliant and acceptable modified financial assurance has been established.
3B. Within each habitat type (PEM, PSS, and PFO) Himalayan blackberry, scotch broom, tansy ragwort, Canada thistle, and bull thistle do not collectively exceed 10% cover at 3, 5, 7, and 10 years following approval of As-built planting plan. Cover is not averaged for the entire site – maximum applies to each habitat type. Additional species may be added to this list based on site conditions, as negotiated between the Sponsor and IRT.	Monitoring reports documenting non-native invasive species presence and percent cover approved by IRT. Document the percent cover of invasives in each data plot at years 3, 5, 7, and 10.

3C. Within each habitat type (PEM, PSS, and PFO) cover of reed canarygrass and meadow foxtail does not collectively exceed 20% at 3, 5, 7, and 10 years following approval of As-built planting plan. Cover is not averaged for the entire site – maximum applies to each habitat type.	Monitoring reports documenting non-native invasive species presence and percent cover approved by IRT. Document the percent cover of invasives in each data plot at years 3, 5, 7 and 10.
3D. Over the entire site, zero tolerance of Japanese knotweed (and related hybrids), purple loosestrife, and English ivy colonization is maintained. Map any specimens and eradicate during growing season of same year. Additional species may be added to this list based on site conditions, as negotiated between the Sponsor and IRT.	Monitoring reports documenting identification and eradication approved by the IRT. Inventory annually and include in monitoring reports at years 1, 3, 5, 7, and 10.

### Performance Standards for Palustrine Emergent Wetland:

Performance Standard	Documentation
3E. In the Palustrine Emergent Wetland area including the emergent variant, there will be at least 5 native facultative and wetter species present. At least 3 native facultative or wetter species will each have a minimum of 5% cover	In years 3, 5, 7, and 10, monitoring reports documenting species presence are approved by the IRT. Provide photos from established photo points.
3F. In the Palustrine Emergent Wetland, including the emergent variant, native emergent plant species have a minimum of 20% cover at 1 year, 40% cover at 3 years, 50% cover at year 5, 60% cover at year 7 and 70% at 10 years following approval of As-built planting plan.	In years 1, 3, 5, 7, and 10, monitoring reports documenting native species percent cover in random sampling plots are approved by the IRT.
3G. A maximum of 60 acres of Palustrine Emergent Wetland including the emergent variant, will be established within the bank site at years 3, 5 and 10.	Wetland habitat areas will be mapped by a qualified biologist at years 3, 5 and 10 using a handheld sub-meter GPS and computer aided mapping software. For the purposes of this performance standard the Palustrine Emergent Wetland is defined as areas with 30% or less cover of woody species.

### Performance Standards for Palustrine Scrub-shrub Wetland:

Performance Standard	Documentation
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3H. In the Palustrine Scrub-shrub Wetland, native woody species have a minimum of 30% cover at 3 years, 40% cover at 5 years, 50% cover at 7 years, and 60% cover at 10 years following approval of the As-built planting plan.	Monitoring reports documenting percent cover of native woody vegetation in years 3, 5, 7, and 10 are approved by the IRT.
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### Performance Standards for Palustrine Forested Wetland:

Performance Standard	Documentation
3I. Native trees in the Palustrine Forested wetland shall have a minimum density of at least 225 stems/acre at year 1, 200 stems/acre at years 3, 180 stems/acre at year 5, 160 stems/acre at year 7 and 140 stems/acre at year 10, following approval of the As-built planting plan.	Monitoring reports documenting tree stem density approved by the IRT. Stem density for trees within PFO plots will be recorded for years 1, 3, 5, 7, and 10. Trees are defined as those species that have the potential to reach greater than 20 feet in height at maturity.
3J. In the Palustrine Forested Wetland, native trees and shrubs have a minimum of 30% cover at 3 years, 40% cover at 5 years, 50% cover at 7 years, and 60% cover at 10 years following approval of the As-built planting plan.	Monitoring reports documenting cover of native trees and shrubs are approved by the IRT.
3K. Within the bank site, Palustrine Forested Wetland areas will have a minimum total acreage of 25 acres at year 3, 5, and 10, following approval of As-built planting plans.	Wetland habitat areas will be mapped by a qualified biologist at years 3, 5 and 10 using a handheld sub-meter GPS and computer aided mapping software. For the purposes of this performance standard the Palustrine Forested Wetland includes areas with at least 30% of the vegetation present defined as trees, with the potential to reach greater than 20 feet in height at maturity.

### Performance Standards for Existing Forested Upland Buffer:

Performance Standard	Documentation
3L. Native woody species in the existing Forested Upland Buffer area will retain a minimum stem density of 300 stems per acre in years 3, 5, 7 and 10 following approval of As-built planting plans.	Monitoring reports documenting stem density approved by the IRT. Native woody species within the Forested Upland Buffer plots will be recorded for years 3, 5, 7, and 10 following approval of As-built planting plans.
3M. Within the Forested Upland Buffer area Himalayan blackberry, Evergreen blackberry, scotch broom, tansy ragwort, Canada thistle, and bull thistle do not collectively exceed 15% cover in years 3, 5, 7 and 10 following	Monitoring reports documenting non-native invasive species presence and percent cover approved by IRT. Document the percent cover of invasive species in each data plot at years 3, 5, 7, and 10 following approval of

approval of As-built planting plans.	As-built planting plans.
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**Objective 4: Wildlife**

Create and improve habitat for wildlife on the site by installing habitat features and removing unnecessary culverts and ditch crossings.

<b>Performance Standard</b>	<b>Documentation</b>
4A. New fish passable culvert installed in “North ditch”.	As-built drawings showing installation of new fish passable culvert and removal of old culvert in “North Ditch”, approved by the IRT. Installation of culvert approved by Washington Department of Fish and Wildlife.
4B. Brush piles, down logs, root wads and nest boxes installed according to IRT approved plan.	As-built drawings showing location of habitat features are approved by the IRT.
4C. A minimum of 80% of the original number, as shown on the approved as-built drawings of each type of habitat feature will be present at 10 years following approval of the As-built plans. Habitat features include: brush piles, root wads, downed logs and nest boxes.	Monitoring reports documenting the location of habitat features approved by the IRT. Document location of habitat features at year 10.

## APPENDIX D CREDIT GENERATION AND AWARD SCHEDULE

### APPENDIX D.1:

#### D.1.1. Generation of Credits:

A. Credits will be established and awarded to the Bank upon the Sponsor's demonstration that the performance standards reflected in Appendix C, Section C.1.2. have been met.

B. A credit is defined as a unit of measure representing the increase in the ecological value of the bank site. A credit for this Bank represents the increase in functions, values, and areal extent of the wetland systems on the project site. This increase in function results from the re-establishment and enhancement of wetlands on the Bank site. The anticipated credits reflected in Table D-1 are determined based on the anticipation that the Bank will rate as a high functioning system at maturity. The wetland systems anticipated at the Bank include areas that would be classified as both depressional wetlands under the HGM classification system and palustrine wetlands under Cowardin classification system. A credit is also based on the water quality, water quantity and habitat functions the Bank will provide as performance standards are met.

C. The precise number of credits actually generated by the Bank cannot be determined until the project is constructed and the success of restoration and enhancement activities is assessed by the IRT. The final number of credits will be determined by the IRT and will be based on achievement of the performance standards set forth in Appendix C of this instrument.

D. Credits generated by the Bank will be calculated as shown in the table below:

**Table D-1: Wetland Credit Generation by Bank Development Activity**

<b>Bank Activity</b>	<b>Area (Acres) of Credit Generation</b>	<b>Credit Ratio (Activity Area: Universal Credit)</b>	<b>Anticipated Number of Credits</b>
Wetland re-establishment PEM/PSS/PFO	91.14 Acres	1:1	91.14
Wetland Enhancement PEM	0.29 Acres	3:1	0.10
<b>Total</b>	<b>91.43 Acres</b>		<b>91.24</b>

Table D-2 provides an overview of changes in habitat type anticipated to result from Bank site construction.

**Table D-2: Change in Habitat Type  
Summary of Existing and Proposed Habitat Types**

	<b>Existing Acreage</b>	<b>Proposed Acreage</b>	<b>Activity Proposed</b>
Total Upland Area	111.59	3.63	Disrupt drainage system and drain tiles, plant emergent vegetation, shrubs and trees to re-establish wetlands
Total Wetland Area	1.67	109.63	Fill ditches, disrupt drainage system and drain tiles, plant emergent vegetation, shrubs and trees to enhance wetland
Total Bank Site Area	113.26	113.26	
<b>Wetland Area by Cowardin Classification:</b>			
PFO	.39*	27.80	Re-establishment
PSS	0	17.86	Re-establishment
PSS/PEM Transition Area**	0	22.55	Re-establishment
PEM Variant	0	3.09	Re-establishment
PEM	1.28	37.19	Re-establishment/Enhancement
Total Wetland Area	1.67	108.49	

\* The .39 Acres of existing PFO wetland is within the bank's buffer and will not be enhanced.

\*\* The final area of PSS and PEM will depend on site hydrology and will be mapped at the completion of the planting phase.

#### **D.1.2. Credit Award Schedule:**

A. Credits will be awarded to the Bank for sale, use, or other transfer as the performance standards associated with those credits are met, with the following exceptions: (1) no credits may be awarded prior to meeting all of the performance standards associated with Objective 1, and (2) no credits associated with the Year 10 performance standards may be awarded until at least 60% of all possible credits associated with Years 0 through 9 have been awarded.

B. The IRT will typically approve the award of credits according to the schedule in Table D-3, below. Credits may not be awarded sooner than specified in Table D-3, except where otherwise noted or in extraordinary situations with the written approval of the Corps and Ecology, in consultation with the other members of the IRT. If the Bank is not able to meet a particular performance standard by the year indicated in Table D-3, the Sponsor may submit documentation of successful satisfaction of that performance standard during a subsequent year, and the IRT will give full consideration to the award of appropriate credits for sale, use, or transfer without reduction or other penalty.

C. The Corps and Ecology may, at their discretion following consultation with the IRT, award partial credit for partial accomplishment of a performance standard. In the event a specific

performance standard is not met, but the IRT feels that the site is progressing satisfactorily, the Corps and Ecology may at their discretion following consultation with the IRT award credits.

D. Once a credit is awarded, the Bank may sell, use, or otherwise transfer that credit at any time, subject to the provisions of this Instrument.

E. If the institution of an adaptive management or remedial action plan as described in Section F.1.4 of Appendix F causes delay in the achievement of a performance standard, the timeline for achievement of each subsequent milestone for that performance standard will be deferred for a like interval, unless otherwise specifically approved by the Corps and Ecology, following consultation with the IRT. The Corps and Ecology, following consultation with the IRT and with the Sponsor, will determine what remedial actions are necessary to correct the situation, pursuant to Article IV.H. and Section F.1.4, and direct their performance prior to the award of any additional mitigation credits.



**Table D-3 Credit Release Schedule**

Potential credits to be released - 91.24	Pre-Construction Credits	Year 0 Credits	Year 1 Credits	Year 3 Credits	Year 5 Credits	Year 7 Credits	Year 10 Credits	Total Credits
<b>Objective 1. Administrative Protections</b>								
1A MBI Signed	3.19							3.19
1B CE Recorded	3.19							3.19
1C Financial Assurances Completed	3.19							3.19
1D Long-Term M & M Fund and Escrow Agreement Created	3.19							3.19
<b>Objective 2. Hydrology</b>								
2A Grading As-built		5.00						5.00
2B Establish WL Hydrology in Year 3				3.00				3.00
2C Minimum Wetland Acreage in Years 5, 10					2.50		4.00	6.50
2D Permanently Poned Area Less Than 5% Of Creditable Area. Years 3,5,10				1.50	1.50		2.00	5.00
2E Surface Flows Over Weir Do Not Cause Erosion. Years 1,3,5,7,10			1.00	0.70	0.80	1.00	0.81	4.31
<b>Objective 3. Vegetation - All Areas of Site</b>								
3A Planting Plan As-built approved Financial Assurance Modified		5.00						5.00
3B Maximum Cover Invasives. Years 3,5,7,10				0.45	0.65	0.70	0.15	1.95
3C Maximum Cover RCG and Meadow foxtail. Years 3,5,7,10				0.50	0.50	0.70	0.15	1.85
3D Zero Tolerance Invasives. Years 1,3,5,7,10			1.15	0.50	0.50	0.50	0.25	2.90
<b>Palustrine Emergent Wetlands</b>								
3E PEM Species Richness. Years 3,5,7,10				0.50	1.00	1.50	0.15	3.15
3F PEM Species % Cover. Years 1,3,5,7,10			1.15	0.90	1.50	1.50	0.25	5.30
3G PEM Maximum Acreage. Years 3,5,10				0.90	1.50	1.50	0.25	4.15
<b>Palustrine Scrub-shrub Wetland</b>								0.00
3H PSS % Cover. Years 3,5,7,10				2.50	3.30	3.37	0.35	9.52
<b>Palustrine Forested Wetland</b>								

<b>3I PFO Stem and Tree Density. Years 1,3,5,7,10</b>			<b>1.15</b>	<b>1.00</b>	<b>1.20</b>	<b>1.40</b>	<b>0.25</b>	<b>5.00</b>
<b>3J PFO % Cover. Years 3,5,7,10</b>				<b>1.00</b>	<b>1.40</b>	<b>2.00</b>	<b>0.25</b>	<b>4.65</b>
<b>3K PFO Minimum Acreage. Years 3,5,10</b>				<b>0.75</b>	<b>0.65</b>		<b>0.25</b>	<b>1.65</b>
<b>Forested Upland Buffer</b>								
<b>3L Minimum Stem Density Years 3,5,7,10</b>				<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.05</b>	<b>0.35</b>
<b>3M Maximum Cover Invasives Years 3,5,7,10</b>				<b>0.05</b>	<b>0.05</b>	<b>0.05</b>	<b>0.05</b>	<b>0.20</b>
<b>Objective 4. Wildlife</b>								<b>0.00</b>
<b>4A Fish Passable Culvert installed</b>		<b>2.00</b>						<b>2.00</b>
<b>4B Habitat Features Installed per MBI</b>		<b>2.00</b>						<b>2.00</b>
<b>4C Habitat Features Remain per MBI Year 10</b>							<b>5.00</b>	<b>5.00</b>
<b>Total Credits Available in the Period</b>	<b>12.76</b>	<b>14.00</b>	<b>4.45</b>	<b>14.35</b>	<b>17.15</b>	<b>14.32</b>	<b>14.21</b>	<b>91.24</b>

*\* Year 0 is the calendar year during which construction is completed and the as-built drawings are submitted by the Sponsor and approved by the IRT. Year 1 is the first year of site monitoring following approval of the as-built drawings.*

**APPENDIX E  
PROCEDURES FOR USE OF MITIGATION BANK  
CREDITS AND DEBIT USE**

**APPENDIX E.1:**

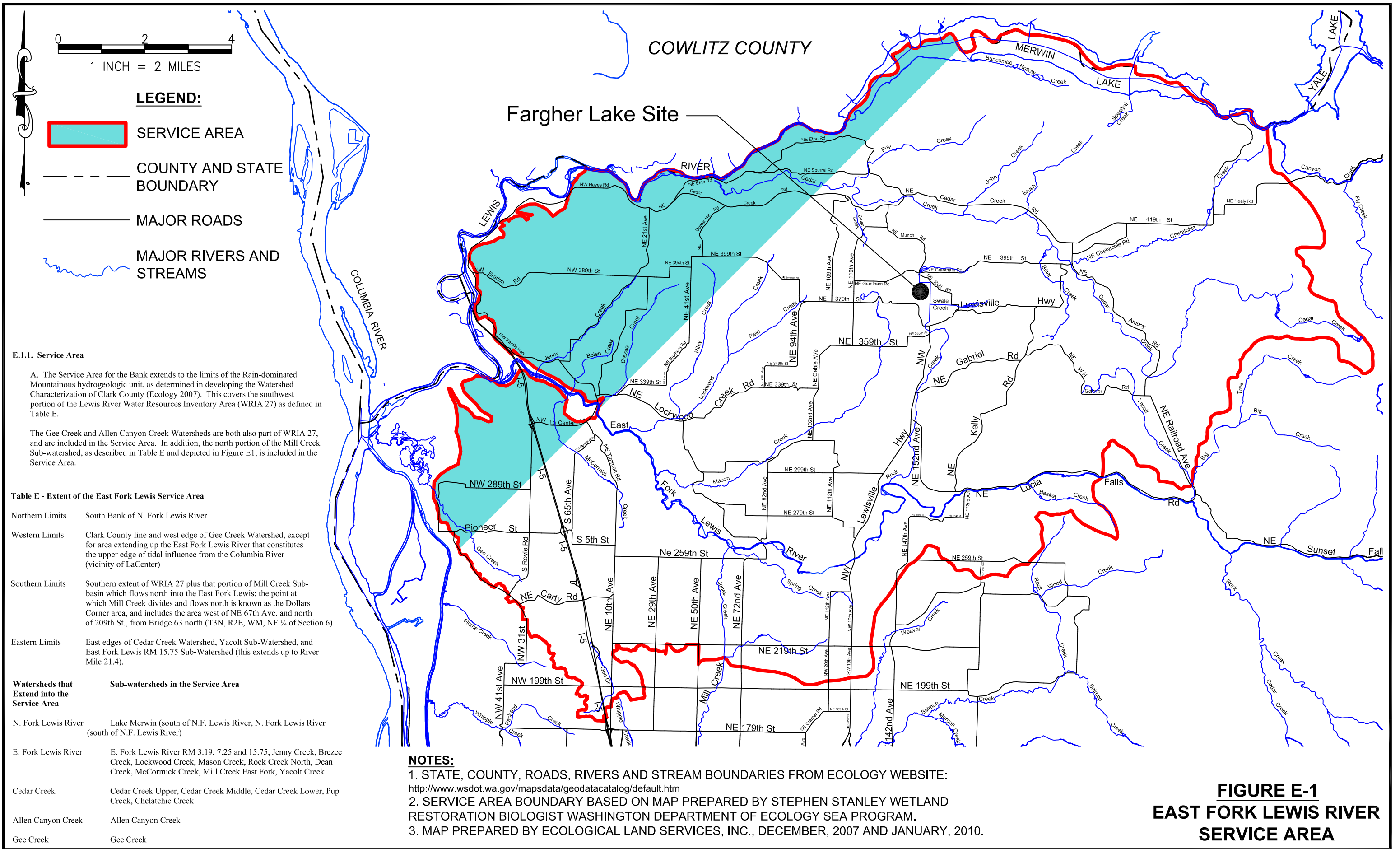
**E.1.1. Service Area**

A. The Service Area for the Bank extends to the limits of the Rain-dominated Mountainous Hydrogeologic Unit, as determined in developing the Watershed Characterization of Clark County (Ecology 2007). This covers the southwest portion of the Lewis River Water Resources Inventory Area (WRIA 27) as defined in Table E-1. This Hydrogeologic Unit was classified due to its regional climate, surficial geology, topography (landform), groundwater, and surface flow patterns in relationship to aquatic ecosystems (Ecology #05-06-027).

The Gee Creek and Allen Canyon Creek Watersheds are both also part of WRIA 27, and are included in the Service Area. In addition, the north portion of the Mill Creek Sub-watershed, as described in Table E-1 and depicted in Figure E-1 is included in the Service Area.

**Table E-1. Extent of East Fork Lewis River Service Area.**

<b>Limits of East Fork Lewis River Service Area</b>	
Northern Limits	South bank of N. Fork Lewis River
Western Limits	County line and west edge of Gee Creek Watershed, except for area extending up the East Fork Lewis River that constitutes the upper edge of tidal influence from the Columbia River (vicinity of La Center)
Southern Limits	Southern extent of WRIA 27 plus that portion of Mill Creek Sub-watershed which flows north into the East Fork Lewis. The point at which Mill Creek divides and flows north is known as the Dollars Corner area, and includes the area west of NE 67 <sup>th</sup> Avenue and north of 209 <sup>th</sup> Street, from Bridge 63 north (T3N, R2E, WM, NE ¼ of Section 6).
Eastern Limits	East edges of Cedar Creek Watershed, Yaolt Sub-watershed, and East Fork Lewis RM 15.75 Sub-watershed (this extends up to River Mile 21.4).
<b>Watersheds that extend into Service Area</b>	<b>Sub-watersheds in Service Area</b>
N. Fork Lewis River	Lake Merwin (south of N. F. Lewis River), N. Fork Lewis River Lower (south of N.F. Lewis River)
E. Fork Lewis River	E. Fork Lewis River RM 3.19, 7.25 and 15.75, Jenny Creek, Brezee Creek, Lockwood Creek, Mason Creek, Rock Creek North, Dean Creek, McCormick Creek, Mill Creek East Fork, Yaolt Creek
Cedar Creek	Cedar Creek Upper, Cedar Creek Middle, Cedar Creek Lower, Pup Creek, Chelatchie Creek
Allen Canyon Creek	Allen Canyon Creek
Gee Creek	Gee Creek Upper, Gee Creek Lower
Salmon Creek	North portion of Mill Creek



**LEGEND:**

- SERVICE AREA
- COUNTY AND STATE BOUNDARY
- MAJOR ROADS
- MAJOR RIVERS AND STREAMS

**E.1.1. Service Area**

A. The Service Area for the Bank extends to the limits of the Rain-dominated Mountainous hydrogeologic unit, as determined in developing the Watershed Characterization of Clark County (Ecology 2007). This covers the southwest portion of the Lewis River Water Resources Inventory Area (WRIA 27) as defined in Table E.

The Gee Creek and Allen Canyon Creek Watersheds are both also part of WRIA 27, and are included in the Service Area. In addition, the north portion of the Mill Creek Sub-watershed, as described in Table E and depicted in Figure E1, is included in the Service Area.

**Table E - Extent of the East Fork Lewis Service Area**

Northern Limits	South Bank of N. Fork Lewis River
Western Limits	Clark County line and west edge of Gee Creek Watershed, except for area extending up the East Fork Lewis River that constitutes the upper edge of tidal influence from the Columbia River (vicinity of LaCenter)
Southern Limits	Southern extent of WRIA 27 plus that portion of Mill Creek Sub-basin which flows north into the East Fork Lewis; the point at which Mill Creek divides and flows north is known as the Dollars Corner area, and includes the area west of NE 67th Ave. and north of 209th St., from Bridge 63 north (T3N, R2E, WM, NE ¼ of Section 6)
Eastern Limits	East edges of Cedar Creek Watershed, Yacolt Sub-Watershed, and East Fork Lewis RM 15.75 Sub-Watershed (this extends up to River Mile 21.4).

Watersheds that Extend into the Service Area	Sub-watersheds in the Service Area
N. Fork Lewis River	Lake Merwin (south of N.F. Lewis River, N. Fork Lewis River (south of N.F. Lewis River)
E. Fork Lewis River	E. Fork Lewis River RM 3.19, 7.25 and 15.75, Jenny Creek, Brezee Creek, Lockwood Creek, Mason Creek, Rock Creek North, Dean Creek, McCormick Creek, Mill Creek East Fork, Yacolt Creek
Cedar Creek	Cedar Creek Upper, Cedar Creek Middle, Cedar Creek Lower, Pup Creek, Chelatchie Creek
Allen Canyon Creek	Allen Canyon Creek
Gee Creek	Gee Creek

- NOTES:**
- STATE, COUNTY, ROADS, RIVERS AND STREAM BOUNDARIES FROM ECOLOGY WEBSITE: <http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm>
  - SERVICE AREA BOUNDARY BASED ON MAP PREPARED BY STEPHEN STANLEY WETLAND RESTORATION BIOLOGIST WASHINGTON DEPARTMENT OF ECOLOGY SEA PROGRAM.
  - MAP PREPARED BY ECOLOGICAL LAND SERVICES, INC., DECEMBER, 2007 AND JANUARY, 2010.

**FIGURE E-1  
EAST FORK LEWIS RIVER  
SERVICE AREA**

Gee Creek and Allen Canyon Creek Watersheds, and the north portion of Mill Creek Sub-watershed are included in the East Fork Lewis River Service Area, and are areas of special consideration. Gee Creek and Allen Canyon Creek Watersheds have similar topography and geology to watersheds in the Salmon/Washougal WRIA (WRIA 28) but they are mapped as occurring in the Lewis River WRIA (WRIA 27). These watersheds drain to the north to the Lewis River and are similar enough to watersheds in WRIA 27 to include them in this service area. Conversely, the northern portion of Mill Creek Sub-watershed is located in WRIA 28 but actually drains to the north into WRIA 27. For these reasons, these watersheds are included in the East Fork Lewis River Service Area (as described in Watershed Characterization of Clark County, Ecology 2007). The Bank may be used to compensate for permitted impacts that are located within the service area if specifically approved by the appropriate agencies requiring mitigation.

B. The Bank may be used to compensate for permitted impacts outside the service area if specifically approved by the appropriate agencies requiring mitigation and the co-chairs of the IRT, namely the Corps and Ecology, following consultation with the IRT, provided that such mitigation would be practicable and environmentally preferable to other mitigation alternatives. As such, out-of-service-area impacts will only be allowed in special circumstances, which will be evaluated on a case-by-case basis (e.g., projects that span multiple basins such as transportation and utility corridors and pipelines, and settlement of enforcement actions).

### **E.1.2. Credit-Debit Ratios**

A. Bank credits may be used, subject to the approval of the regulatory agencies with jurisdiction over the impact, to compensate for authorized permanent or temporary impacts, as well as to resolve enforcement or permit compliance actions such as replacing previously implemented project-specific mitigation that has partially or completely failed.

Each credit transaction agreement that is associated with a permit must indicate the permit number of the impacting project, the number of universal credits transacted, and must expressly specify that the Sponsor, its successors and assigns assumes responsibility for accomplishment and maintenance of the permittee's compensatory mitigation requirements associated with the impacting project, upon completion of the credit transfer.

B. The following table depicts the approximate number of Bank credits typically required by the IRT agencies to compensate for each unit of permanent loss of listed aquatic resource type and functional level. The actual number of Bank credits required to compensate for an adverse impact to aquatic resources in any particular situation depends on many factors (e.g., whether the impact is permanent or temporary) and will be determined on a case-by-case basis by the regulatory agency(ies) authorizing the impact. The wetland functional categories are based on the Washington State Wetland Rating System for Western Washington, revised (Ecology Publication # 04-06-025). Units of loss are measured in acres for wetland and buffer impacts and may be measured in either acres or linear feet for stream impacts. Due to the variety and

typically high level of functioning of both streams and Category I wetland, compensation for impacts to these resources by Bank credits will be determined by the regulatory agencies on a case-by-case basis.

**Table E-1: Typical Credit-Debit Ratios**

<b>Resource Impact</b>	<b>Bank Credits: Impact Acreage</b>
Wetland, Category I	Case-by-Case
Wetland, Category II	1.2:1
Wetland, Category III	1:1
Wetland, Category IV	.85:1
Critical Area Buffer	Case-by-Case

**E.1.3 Procedures for Use of Mitigation Bank Credits**

A. Use of Mitigation Bank Credits: Public and private proponents of activities regulated under Sections 401 and 404 of the Clean Water Act (33 U.S. Code §§ 1341, 1344), Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code § 403), Washington State Water Pollution Control Act (Chapter 90.48, RCW), Shoreline Management Act (RCW 90.58), Growth Management Act (RCW 36.70A), Hydraulic Code (RCW 75.20), and other Federal, State, and local authorities may be eligible to use the Bank as mitigation for unavoidable impacts. The Bank will be eligible to serve public and private end users by providing advance compensatory mitigation for authorized impacts to regulated areas that require mitigation to settle enforcement claims. The Bank is intended to provide replacement of lost functions and values including: wetlands, endangered species habitat, riparian habitat, and upland/buffer habitat.

B. An applicant seeking a permit for a project with adverse impacts to the aquatic environment within the service area must generally obtain the approval of each regulatory agency with jurisdiction over that project, in order to use the Bank as a source of compensatory mitigation. To receive approval to use the Bank, the applicant must demonstrate to the satisfaction of the pertinent regulatory agencies that the project complies with all applicable requirements pertaining to alternatives and mitigation sequencing and that purchasing credits from the Bank for compensatory mitigation would be environmentally preferable. Specifically, a permit applicant must generally be able to demonstrate to the satisfaction of the involved regulatory agencies that:

- (1) There is no practicable alternative to adversely impacting the water body, critical area, buffer, or other regulated area; and
- (2) All appropriate and practicable measures to minimize adverse impacts to the aquatic ecosystem have been considered and included in the project.

It is solely the determination of the agency(ies) permitting the project with adverse impacts as to whether a proposed use of Bank credits within the service area is environmentally preferable and appropriate to other mitigation alternatives.

C. Local jurisdictions may establish policies where the best management practices for small impacts to low value, isolated wetlands are for the permittee to go directly to the Bank for credit. Upon receiving permission to utilize credits from the Bank the permittee must contact the Sponsor to ensure that credits are available. Upon completion of the transaction, the Sponsor will inform the permitting agencies of each completed transaction, via email or letter with an attached copy of the accounting ledger.

D. Other types of credit users may include, but are not necessarily limited to, purchases made that will not be associated with a particular project or impact (i.e., “good will” purchase), purchases made by natural resource stewards resulting from expenditures from in-lieu-fees (or similar type funds), and other conservation purposes.

E. The Sponsor may use the Bank site to provide compensatory mitigation to offset impacts to environmental elements other than aquatic resources. Such use shall result in no physical changes to the Bank site unless approved by the IRT. The Sponsor must obtain approval from the Corps and Ecology, following consultation with the IRT, prior to establishing currencies other than the wetland mitigation credits that are established by Appendix D of this Instrument. The agencies that regulate those specific environmental elements are responsible for establishing the value of the currency and release schedules, and determining the appropriateness of using the Bank as compensatory mitigation for impacts to those elements. The IRT will determine how withdrawal of those currencies will affect the amount of potential wetland mitigation credits remaining. The Sponsor shall record the award and use of all currencies on the Bank ledger and otherwise follow the procedures as outlined in Appendix E.1.4. Use of the Bank for compensatory mitigation for other environmental elements shall not conflict with the provisions of this Instrument.

#### **E.1.4 Accounting Procedures**

A. The Sponsor shall establish and maintain for inspection and reporting purposes a ledger of all credit that are awarded through the achievement of specified performance standards, as well as credits that are sold, used or transferred. The Sponsor will record each credit withdrawal transaction that receives a permit with the Clark County Auditor, and submit a copy of the recorded transaction to the IRT within 30 days from the stamped registration date.

B. The ledger must follow the current ledger template approved by the Corps and Ecology. The following information will be recorded in the ledger for each transaction:

(1) Date of transaction.

(2) Number of credits transacted.

(3) For credits awarded, reference the performance standard(s) to which the awarded credits correspond.

(4) For credit sales/use/transfers, include the name, address, and telephone number of user/purchaser; permit number(s), permit issuance date, and name of the regulatory agency(ies) requiring permits; location of the project for which the credits are being purchased/used/transferred; the size of the impacts; and a brief description of the project impacts requiring compensatory mitigation (e.g., nature and quality of aquatic resources affected).

(5) For credits withdrawn from the ledger for reasons other than credit sale/use/transfer, include the specific reason for withdrawal.

(6) Bank balance after the award or transaction.

C. The Sponsor will provide an updated ledger to the IRT each time credits are awarded, sold, used, transferred, or otherwise withdrawn. This must be provided within 30 days of any credit transaction. The Sponsor will also submit an annual ledger by February 1 of each year. The annual ledger must show a cumulative tabulation of all credit transactions at the Bank to date. This ledger will be submitted in conjunction with the monitoring reports until (1) all credits have been awarded and sold, used, or otherwise transferred; or (2) until the IRT has accepted the Sponsor's written certification that it has terminated all banking activity.

## References

Stanley, S., J. Brown, and S. Grigsby. 2005. *Protecting Aquatic Ecosystems: A Guide for Puget Sound Planners to understand Watershed Processes*. Washington State Department of Ecology. Publication #05-06-027. Olympia, WA.

Washington State Department of Ecology, Shorelands and Environmental Assistance Program. 2009. *Watershed Characterization and analysis of Clark County*. Washington State Department of Ecology. Publication # 09-06-019. Olympia, Washington

Hruby, T. 2006. *Wetland Rating System for Western Washington (Revised)*. Washington State Department of Ecology. Publication #04-06-025. Olympia, Washington





## **APPENDIX F ESTABLISHMENT PERIOD MONITORING, REPORTING, MAINTENANCE, AND REMEDIAL ACTION**

### **APPENDIX F.1 Establishment Period Monitoring, Reporting, Maintenance, and Remedial Action:**

During the establishment period, the Sponsor shall monitor and report on the progress of the Bank toward achieving the goals, objectives, and performance standards established by these Appendices and take all actions directed by the Corps and Ecology, following consultation with the IRT, to remediate any consideration that prevents a component of the Bank from achieving the goals, objectives and performance standards of the Bank. Procedures for as-built reports, monitoring reports and remedial actions are described below.

#### **F.1.1. As-Built Reports:**

As-built reports will be submitted to the IRT upon the completion of construction to verify topography, hydrology, and planting. This may be one report that describes all construction, or it may be separated into two reports that are submitted at different times, one following grading and related construction, the other following completion of planting. At a minimum, the following components should be included in one or both (as appropriate) of the as-built reports:

- Name and contact information for the parties responsible for the Bank construction site including the Bank Sponsor, engineers, and wetland professional on site during construction
- Ecology, Corps, and Local permit numbers
- Dates when activities began and ended such as grading, removal of invasive plants, installing plants, and installing habitat features
- Photographs of the site at as-built conditions taken from photo stations (panoramic photos are recommended)
- Description of any problems encountered and solutions implemented (with reasons for changes) during construction of the Bank site
- List of any follow-up actions needed with a schedule
- 11x17 maps of the Bank site showing:
  - Topography with one-foot contours surveyed by a licensed surveyor. Include relevant elevations of rock weir and outfall structure. Include a description of how elevations were determined
  - Installed planting scheme – quantities, densities, sizes, approximate locations, and the sources of plant material
  - Locations of monitoring wells, and staff gauges that remain after construction
  - Locations of habitat features
  - Locations of permanent photo stations
  - Date when the maps were produced and, if applicable, when information was collected

As-built reports will be submitted to each member of the IRT within 90 days of completing construction of the Bank, and must demonstrate compliance with Appendix B and any modifications to the Bank development plan and design, approved by the Corps and Ecology prior to their construction or implementation, following consultation with the other members of the IRT.

Permanent photo points will be established in Year 0 to document the progression of each habitat type. Photo point locations will be documented in the as-built report. An EFL Mitigation Bank construction manager will document Year 0 post-construction conditions in the as-built report for grading, plantings, large woody debris and other habitat features; and will include photographs and as-built drawings.

Planned grading elevations as well as existing contours of the site, will be surveyed by a licensed surveyor to 1-foot contours to ensure establishment of desired contours. Relevant elevations of the rock weir and outfall structure will also be surveyed.

### **F.1.2 Establishment Period Monitoring:**

A performance monitoring program will be implemented to determine the degree of success of the mitigation effort during the establishment period. Monitoring will include periodic surveys and site evaluations to establish the foundation on which the Bank can demonstrate to the IRT that pertinent performance standards have been achieved and continue to be maintained. Monitoring will include measurements and observations of site stabilization, wetland hydrology, vegetative cover, plant survival, vegetation structure, as well as species composition, functional values, and noxious weed invasion.

#### **F.1.2.1 Overview of Monitoring Requirements:**

As-built and on-going monitoring requirements specific to each performance standard (see Section C1.2 of Appendix C) are summarized below.

#### **Ecologic Goal #1: Restore wetland hydrology to the site:**

- Document the disabling of drain tiles and ditches that presently convey water off the site and reshape selected existing ditches to improve floodplain connectivity to the site (Performance Standard 2A).
- Submit as-built report indicating surveyed final grades of the site; construction of rock weir outfall structure and permanent hydrologic monitoring points, (Performance Standard 2A).
- Submit wetland determination in Year 3 (Performance Standard 2B).
- Submit wetland delineations in Years 5 and 10, documenting wetland acreage, vegetation and soil development (Performance Standard 2C).
- Document permanently ponded areas in Years 3, 5, and 10 (Performance Standard 2D).
- Monitor surface flows over rock weir outfall structure in Years 1, 3, 5, 7 and 10 (Performance Standard 2E).

**Ecologic Goal #2: Establish a variety of native wetland habitat types comparable to pre-agricultural conditions on the site and in accordance with the targeted hydrologic regimes across the site, and,**

**Ecologic Goal #3: Control invasive species across the site:**

For all habitat types on site:

- Submit as-built report showing plant locations, planted acreages, species, planting quantities and planting densities (Performance Standard 3A).
- Submit monitoring reports for Years 3, 5, 7, and 10 documenting non-native invasive species presence and cover (Performance Standard 3B).
- Submit monitoring reports for Years 3, 5, 7, and 10 documenting cover of reed canarygrass and meadow foxtail (Performance Standard 3C).
- Annual inventory for aggressive non-native invasive species including Japanese knotweed, Purple loosestrife, and English Ivy, presence and eradication reported in monitoring reports for Years 1, 3, 5, 7, and 10 (Performance Standard 3D).

**For Palustrine Emergent Habitat Type and Emergent Variant Habitat:**

- Document species presence and percent cover within sampling plots for Years 1, 3, 5, 7, and 10 (Performance Standard 3E, 3F).
- Document acreage of Emergent Wetland Habitat on site in Years 3, 5 and 10 (Performance Standard 3G).

**For Palustrine Scrub-shrub Habitat Type:**

- Document percent cover within PSS sampling plots for Years 3, 5, 7, and 10 (Performance Standard 3H).

**For Palustrine Forested Habitat Type:**

- Document stem density and percent cover within PFO sampling plots for Years 1, 3, 5, 7, and 10 (Performance Standards 3I and 3J).
- Document acreage of Palustrine Forested Wetland Habitat on site in Years 3, 5 and 10 (Performance Standard 3K).

**For Existing Forested Upland Buffer Habitat Type:**

- Document stem density within existing forested upland buffer sampling plots for Years 3, 5, 7 and 10 (Performance Standard 3L).
- Document percent cover of non-native invasive species in sampling plots in Years 3, 5, 7 and 10 (Performance Standard 3M).

**Ecologic Goal #4: Enhance wildlife habitat structure and function at the Bank site.**

- Submit as-built report showing installation of new fish passable culvert in “North ditch” (Performance Standard 4A)
- Submit as-built report showing location and installation of brush piles, downed logs, root wads and nest boxes (Performance Standard 4B).
- Submit monitoring report at Year 10 showing existing habitat features on site (performance standard 4C).

### **F.1.2.2 Monitoring Protocol**

Formal monitoring will include both qualitative and quantitative monitoring to address fulfillment of the Bank objectives and performance standards (see Appendix C). Formal monitoring will occur throughout Years 1, 3, 5, 7, and 10 according to the monitoring schedule and sampling protocol described below. For Year 3, formal monitoring will include a wetland determination which includes spot checking in the areas that are intended to be wetland to determine if site characteristics related to the extent and duration of wetland hydrology are establishing. The areas that have been checked for wetland characteristics will be recorded in order to be shown on a determination map. For Years 5 and 10, formal monitoring will include a full wetland delineation on the entire site, using the *1987 Corps of Engineers Wetland Delineation Manual* (U.S. Army Corps of Engineers 1987) and appropriate supplements as well as the Washington State wetland delineation manual in effect at the time of delineation. The wetland edge will be clearly marked in the field by a qualified wetland biologist. The wetland edge will be surveyed and mapped by a licensed land surveyor. A GPS-based survey method is acceptable as long as it has sub-meter accuracy and the resulting map is stamped by a licensed land surveyor.

Computer-aided drawing software will be used to calculate the size of each wetland area after the determination and delineation have been completed. Results from both formal and informal monitoring will be summarized in the Monitoring Reports submitted to the IRT.

Informal monitoring provides a general overview of site progress, and will be conducted during Years for which there is no formal quantitative monitoring reporting requirement to ensure that the site appears to be progressing towards meeting performance standards. Specifically, a qualitative visual inspection of the Bank will be conducted during periodic site visits to identify concerns associated with meeting Bank objectives and performance standards, if any. Informal monitoring will usually include observation notes and site photos. Informal monitoring may quantitatively address some performance standards for upcoming years, but may be less statistically rigorous than formal monitoring. Informal monitoring will be the only monitoring method during the years for which there are no performance standards, although it will also be employed during years of formal monitoring.

### **F.1.2.3 Vegetation**

A stratified random sampling approach as described in Elzinga et al. (1998) will be used to collect data to assess attainment of performance standards related to vegetation (Performance Standards 3A through 3M). Each vegetation community will be treated as a separate stratum. The vegetation communities are: Palustrine Emergent Wetland including the Emergent Wetland Variant, Palustrine Scrub-Shrub Wetland and Palustrine Forested Wetland. Those vegetation communities that lie within the Bank's buffer will be treated as a separate stratum defined as "Buffer Habitat" and will be sampled under the same monitoring protocols as the creditable portion of the bank. Within the Bank's northern buffer area there is 3.63 acres of existing forested upland that will not be planted or altered during the establishment period of the Bank. This area will be formally monitored under the same monitoring protocols used for other vegetation strata across the site but separate performance standards (Performance standards

3L and 3M) will be applied to it in order to verify that it is not negatively impacted from bank establishment activities.

Using AutoCAD, 4 grid patterns will be generated to fit each vegetation stratum (PEM, PSS, PFO, Buffer Habitat) and overlaid onto each corresponding vegetation community as defined on the final as-built planting plan. The length and distance of grid-pattern lines and intersections will be evenly spaced over each vegetation community at distances able to generate an adequate number of potential monitoring points within each stratum. Grid-pattern line intersections falling within the vegetation stratum will be utilized while intersections falling outside the vegetation stratum will be discarded. Potential monitoring points will be identified at each grid pattern line intersection. Within each stratum, all grid-pattern line intersections will be assigned numbers and monitoring points will be randomly selected using a random number generator, utilizing that number set. The amount of randomly generated monitoring points will depend on the monitoring protocols for that vegetation stratum being sampled. A minimum of 1% of the total acreage of PSS and PFO vegetation communities will be sampled and a minimum of 3 plots per acre of the PEM Habitat will be sampled. The coordinates of each random monitoring plot location will be compiled using the computer program AutoCAD Civil 3D. Monitoring plot coordinates will then be entered into a hand held Global Positioning System (GPS) unit and located in the field.

Plot locations will be field-verified and if a plot is determined to be unusable during field sampling, (e.g., lies in the middle of an access path) another randomly located plot will be substituted. An example of locating monitoring points using the stratified random sampling approach and grid pattern line intersections is shown on **Figure F-1**. Final plot locations will be shown on site maps in monitoring reports and the same plot locations will be sampled during each monitoring period.

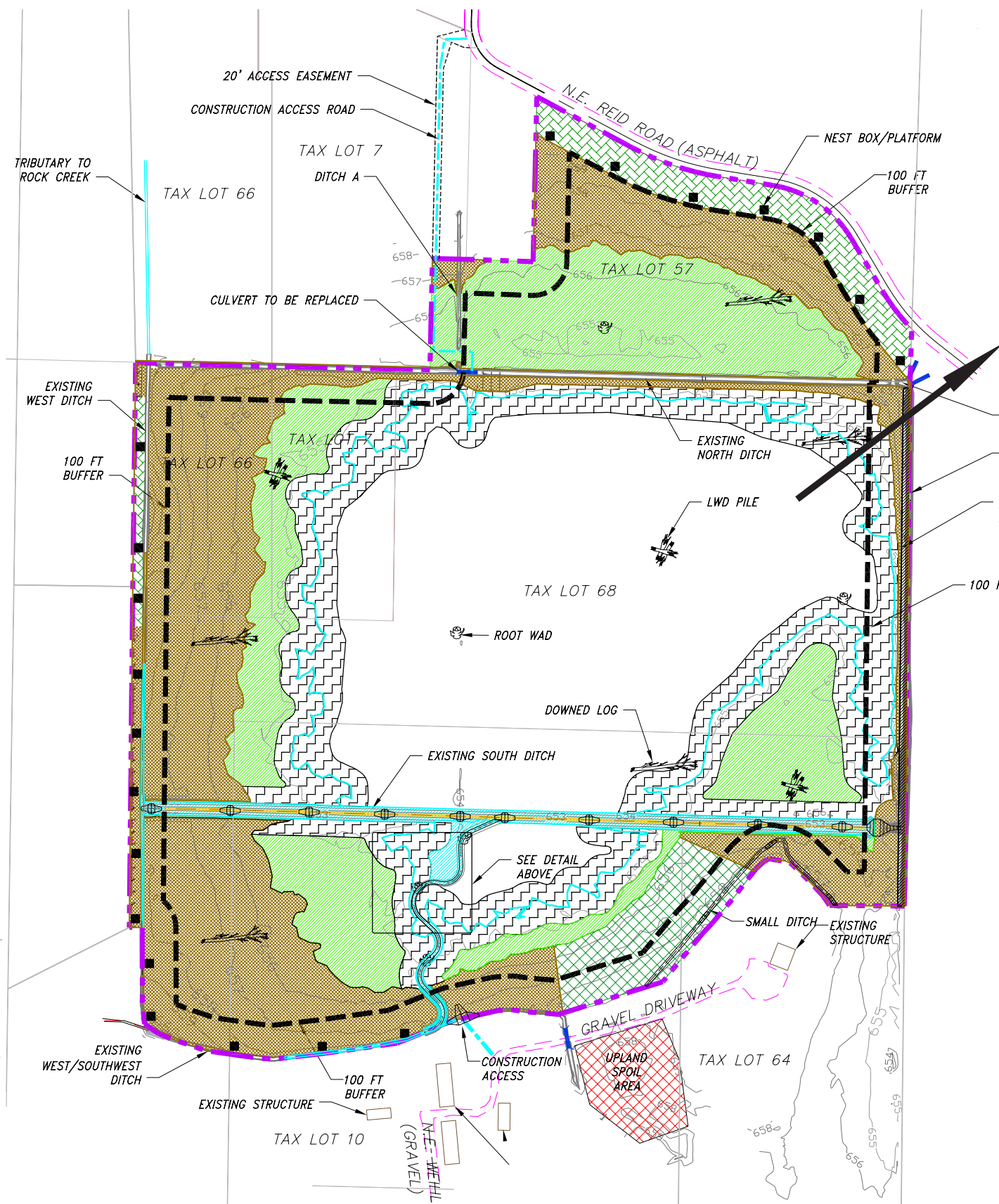
Sampling plots are established to measure species presence, percent cover and stem density of vegetation to determine site progress in meeting performance standards. Where it occurs in a sample plot, bare soil will be counted towards percent cover. Minimum sampling requirements are established by the acreage of each habitat type, where at least 1% of the area of each forested and shrub habitat type (Palustrine Forested Wetland, Palustrine Scrub-shrub wetland) is sampled, and a minimum of 3 plots per acre are sampled in the herbaceous habitat types (Palustrine Emergent Wetland). The minimum sampling area for each habitat type was determined based on methods described in Tiner (Wetland Indicators: A Guide to Wetland Identification, Delineation, Classification, and Mapping, 1999) and Krebs (Ecological Methodology, 1999), and in consultation with the IRT.

**Sample Plot Sizes:**

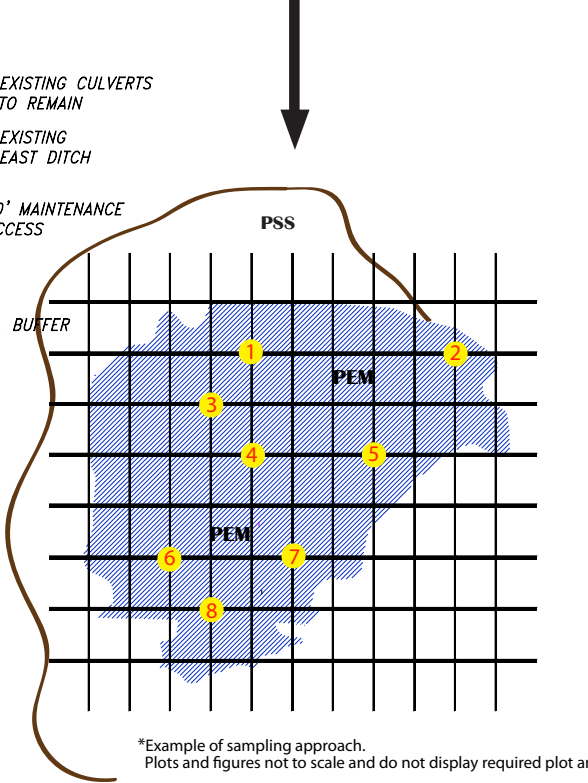
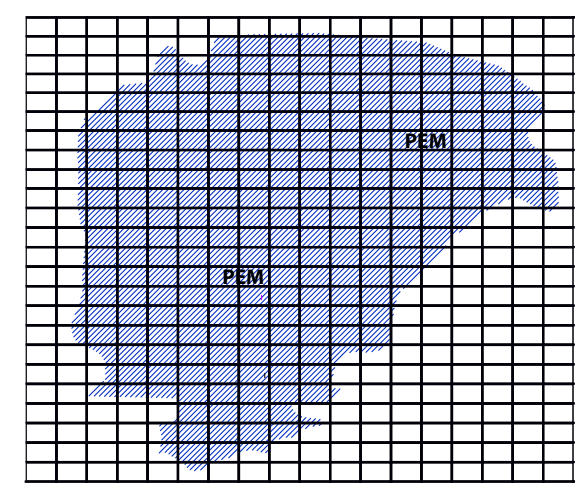
Forested and Shrub communities (PFO, PSS including those areas within Buffer Habitat) shall be sampled with a 30-foot radius circle (area of the sample plot equals 2,826 square feet).

Herbaceous communities (PEM, including Emergent Variant Habitat and areas within Buffer Habitat) shall be sampled with a 3-foot radius circle.

Additional sample plots may be added if deemed necessary by the Sponsor or by the IRT. All monitoring plot locations will be shown on maps in the monitoring reports.



- NOTES:**
1. Survey prepared by Ducks Unlimited.
  2. Grading plan prepared by Ducks Unlimited and Ecological Land Services.
  3. Planting Plan prepared by Ecological Land Services.
  4. Monitoring Illustrations provided by Habitat Banc NW.



**LEGEND**

	PALUSTRINE FORESTED WETLAND (27.80 AC) ELEV. 655.5+/656.5+ (10.09 AC IN BANK BUFFER)
	PALUSTRINE SCRUB-SHRUB WETLAND (17.86 AC) ELEV. 654.8-655.5/656.5 (2.70 AC IN BANK BUFFER) (ADDITIONAL 0.24 AC. IN SOUTH DITCH)
	PALUSTRINE SCRUB-SHRUB/EMERGENT WETLAND TRANSITION AREA (22.55 AC) (1.89 AC IN BANK BUFFER)
	PALUSTRINE EMERGENT WETLAND VARIANT (3.09 AC) ELEV. 655.5-656.5 (1.57 AC IN BANK BUFFER)
	PALUSTRINE EMERGENT WETLAND REESTABLISHMENT (36.90 AC) ELEV. 653.0-654.8 (0.81 AC IN BANK BUFFER)
	PALUSTRINE EMERGENT WETLAND ENHANCEMENT (0.29 AC) ELEV. 653.0
	FORESTED UPLAND (3.63 AC) (3.63 AC IN BANK BUFFER)

- SITE BOUNDARY (113.26 AC)
- LOT BOUNDARY
- BUFFER (21.61 AC)
- EXISTING CULVERTS
- DESIGN WATER SURFACE ELEVATION = 654.8
- MAJOR CONTOURS
- MINOR CONTOURS
- FLOW ARROWS
- SWALE

**Table F-1 Sample Plots by Proposed Habitat Type**

Habitat Type	Proposed Acreage	Minimum Sample Plots Required (1% of area of habitat type for PFO and PSS, UPL, 3 plots/acre PEM)	Proposed # of Sample Plots
PFO	17.71	3	5
PSS	15.16	3	4
PEM (including emergent variant)	37.61	116	116
PSS/PEM Transition Area	20.66	see note*	see note*
Bank Site Buffer (not including forested upland area)	17.32	PFO: 2 PSS: 1 PEM: 7	PFO: 2 PSS: 2 PEM: 7
Bank Site Buffer (Existing Forested Upland)	3.63	1	2
<b>TOTAL PLOTS</b>	-	<b>&gt; 133</b>	<b>&gt; 138</b>

\* Shrub-Scrub and Emergent Habitat Communities will be mapped in the transition area prior to Year 3 monitoring. The acreage of PSS and PEM habitats within the transition area will be included into the total acreage of each respective habitat class prior to calculating the total required sampling plots for each habitat area at the Bank. For PSS, greater than 1% of total habitat area will be sampled. For PEM, 3 plots per acre of habitat will be sampled.

- Stratified Random Sampling Approach**
1. Vegetation strata defined (PFO, PSS, PEM/Variant, Buffer).
  2. Grid pattern lines for each stratum established through AutoCAD.
  3. All grid pattern line intersections assigned numbers within a vegetation stratum, those falling outside stratum discarded.
  4. An adequate number of monitoring points chosen by random number generator for each stratum.
  5. Coordinates for each monitoring plot determined using AutoCAD Civil 3D.
  6. Coordinates uploaded to GPS and located in the field.

**FIGURE F-1**  
Stratified Random Sampling Approach  
East Fork Lewis Wetland Mitigation Bank

**Table F-1 Sample Plots by Proposed Habitat Type**

Habitat Type	Proposed Acreage	Minimum Sample Plots Required (1% of area of habitat type for PFO and PSS, UPL, 3 plots/acre PEM)	Proposed # of Sample Plots
PFO	17.71	3	5
PSS	15.16	3	4
PEM (including emergent variant)	37.61	116	116
PSS/PEM Transition Area	20.66	see note*	see note*
Bank Site Buffer (not including forested upland area)	17.32	PFO: 2 PSS: 1 PEM: 7	PFO: 2 PSS: 2 PEM: 7
Bank Site Buffer (Existing Forested Upland)	3.63	1	2
<b>TOTAL PLOTS</b>	-	<b>&gt; 133</b>	<b>&gt; 138</b>
* Shrub-Scrub and Emergent Habitat Communities will be mapped in the transition area prior to Year 3 monitoring. The acreage of PSS and PEM habitats within the transition area will be included into the total acreage of each respective habitat class prior to calculating the total required sampling plots for each habitat area at the Bank. For PSS, greater than 1% of total habitat area will be sampled. For PEM, 3 plots per acre of habitat will be sampled.			

For all habitat types, non-native invasive species presence and percent cover will be documented in monitoring reports as recorded at each sampling plot for Years 1, 3, 5, 7, and 10. The cover of reed canarygrass, Himalayan blackberry, scotch broom, tansy ragwort, Canada thistle, and bull thistle shall be documented separately for each habitat type, and reported in monitoring reports for Years 3, 5, 7, and 10. There shall be zero tolerance for Japanese knotweed (and hybrids), Purple loosestrife, and English Ivy on site. Presence and eradication of these species must be noted in monitoring reports for Years 1, 3, 5, 7, and 10. Annual surveys for these species shall occur.

Monitoring for vegetation will be conducted when plants are in bloom and at height of growth in order to survey at the optimum flowering period for the majority of the plants expected to occur at the Bank and to assess each vegetative stratum. Plants must have been in the ground for a minimum of five months prior to monitoring.

Vegetation communities planned on the site are based on existing and proposed surface elevations at the site and the expected hydrologic regime. Palustrine Emergent Wetland is anticipated to be at elevations below 654.8' and between 655.5'-656.5' for the emergent variant. Palustrine Scrub-Shrub Wetland is anticipated to be at elevations from 654.8'-656.5'. Palustrine Forested Wetland is anticipated to be at elevations above 655.5' in West and Southeast part of the site and above 656.5' in the North part of the site. A transition zone between the Palustrine Scrub-Shrub Wetland and the Palustrine Emergent Wetland is mapped on **Figure B-2** between



these vegetation communities to account for the dynamic nature of hydrology on the site and the gradual elevation changes across the site. Therefore the exact locations of each vegetation community and change between the Scrub-Shrub Wetland and Emergent Wetland communities will be mapped by a qualified wetland biologist before formal vegetation monitoring begins in year 3. Where sample plots differ from those anticipated in monitoring plot configurations, the monitoring report for that Year will note the change based on the expression of vegetation dominance (tree, shrub, emergent) within each plot. Each monitoring report shall document sample plot layout.

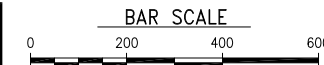
#### **F.1.2.4 Hydrology:**

Following construction and grading of the site, eight permanent hydrologic monitoring devices (Levelloggers) will be installed at locations approved by the IRT. Each Levellogger will be identified on as-built drawings and will record groundwater and/or surface water levels as well as water temperature, one time every 24 hours (totaling 365 readings per year), throughout each year of the Bank's 10 Year monitoring period. A map showing approximate locations of the Levelloggers at the Bank site is shown on **Figure F-2**. Levelloggers will be placed within perforated tubing at a depth approximately 40 inches below the soil surface. Readings will be compensated for barometric pressure at the site and distance below the ground surface at each monitoring location. Continuous hydrologic data collection at relevant locations and elevations across the site will be used to measure the attainment of performance standards relating to the reestablishment of wetland hydrology on the site. Levellogger data collected during the fall and winter after grading and construction and prior to planting will assist in determining the planting boundaries between various habitat communities across the site.

Hydrologic data collected from Levelloggers in Years 0, 1, 2 and 3 will be used in the wetland determination in Year 3 to measure the attainment of performance standard 2B, "*a minimum of 93 acres of the site will have wetland hydrology present at 3 Years*". In addition to data collected from the Levelloggers, shallow soil pits will be located across the site during the Year 3 wetland determination to provide additional documentation of wetland hydrology and hydric soil development above and beyond Levellogger data.

Shallow soil pits (20 inches in depth) are intended to document the presence of shallow groundwater, saturated soils, and hydric soil development that would support wetland conditions, which may not be captured by Levelloggers. Wetland hydrology for the project site is defined as Levellogger readings, soil saturation to the surface, or free water in the soil pits, at 12 inches or less below the soil surface for at least ten percent of the growing season, where the growing season is defined as March 1 through October 31. Each shallow soil pit should have documentation of hydric soil development, which shall include observation of chroma color, any redoximorphic feature developments/mottles, oxidized rhizospheres and depth. If performance standards are not met, further data collection will be conducted, as necessary.

Hydrologic data collected from the Levelloggers will also provide relevant information for wetland delineations conducted in Years 5 and 10 at the site (Performance Standard 2C). In addition to Levellogger data, hydrologic data will be collected from shallow groundwater

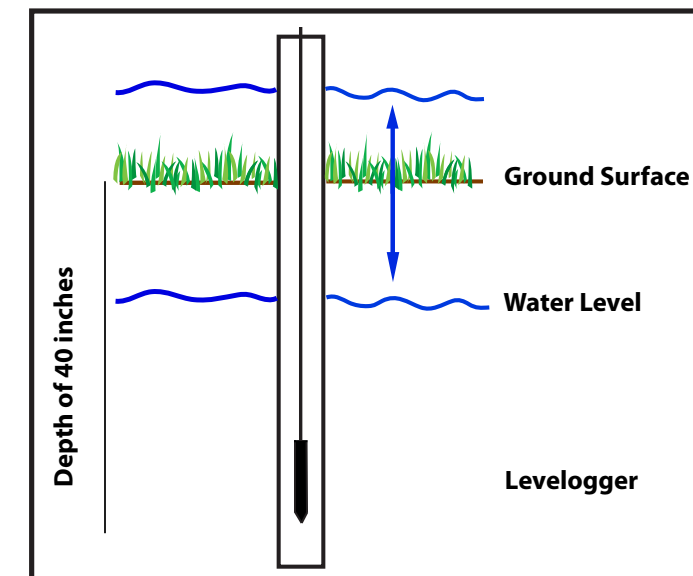


SECTIONS: 23  
 TOWNSHIP: T5N  
 RANGE: R2E  
 LAT = 45° 54' 4.62"N  
 LONG = 122° 31' 9.61"W

**LEGEND**

- SITE BOUNDARY (113.26 AC)
- BUFFER (20.95 AC)
- EXISTING TOPOGRAPHIC CONTOURS

Levellogger Locations



**FIGURE F-2**  
 Levellogger Locations

monitoring wells (24 inches in depth) during the growing seasons of Years 5 and 10 to inform the wetland delineations at those times.

Photo points will be established at each permanent hydrologic monitoring point. Data and photo points for hydrology shall include those locations with permanent Leveloggers as well as two to three additional locations that will allow for representative shallow soil pit sampling in each area intended to be wetland as approved by the IRT. At a minimum, data collected from permanent data/photo points shall be reported during Years 1, 3, 5, 7, and 10. Wetland determinations will be conducted in areas intended to be wetland during Year 3. Full wetland delineations will be conducted throughout the entire Bank area in Years 5 and 10. All hydrology monitoring results shall be reported in applicable monitoring reports.

The extent of wetlands (wetland hydrology) will be documented in Years 5 and 10 by conducting a wetland delineation on the entire Bank site using the *1987 Corps of Engineers Wetland Delineation Manual* (U.S. Army Corps of Engineers 1987) and appropriate supplements as well as the Washington State wetland delineation manual in effect at the time of delineation. The results, including a wetland boundary map with data points and acreages, will be included in the Year 5 and 10 monitoring reports.

#### **F.1.2.5 Wildlife Monitoring**

The location of features intended for wildlife use on the site will be recorded on the final as-built. Wildlife features include brush piles, downed logs, root wads and nesting boxes for locally significant bird species as developed by WDFW. Although there are no performance standards for wildlife use, monitoring reports will include observations of wildlife use of the site. Anecdotal observation of wildlife use, including types of wildlife and/or their sign, will be recorded while staff is on site for other monitoring purposes.

#### **F.1.3 Reports**

The Sponsor will prepare and submit to the IRT annual monitoring reports that will inform the IRT of the status of Bank establishment and operation. These reports will document Bank conditions and provide the supporting information required to document the attainment of goals, objectives, and performance standards, as a basis for a decision whether to award credits. Monitoring reports for each calendar year will be submitted by February 1 of the following year, with a copy for each member of the IRT. Each monitoring report will contain the following information:

A. An overview of the current ecological condition of the Bank, including a survey of the vegetative communities, effectiveness of the restoration and reestablishment activities accomplished to date, and progress of the Bank in achieving the specific performance standards of the Bank. To provide data for evaluating progress towards achievement of performance standards, vegetation plots, hydrologic monitoring points and photo points will be established at selected locations within the Bank to evaluate relevant performance standards. Vegetation data in forested, scrub-shrub, and emergent areas will include, species presence, cover by species, and density as appropriate. IRT approved vegetation measures and techniques will be used to

demonstrate whether performance standards are being met. Experience in the field may indicate that other performance monitoring methods would provide more useful information; the Corps and Ecology, following consultation with the IRT must approve in advance any changes in the means of gathering or reporting performance data. All monitoring will be conducted by qualified personnel.

B. A detailed discussion about the likely cause and impact of any setback or failure that occurred and recommendations for future actions and strategies that might resolve those problems.

C. Pertinent additional information on such aspects of the Bank as hydrology, soils, vegetation, fish and wildlife use of the area, recreational and scientific use of the Bank, and natural events such as disease, wildfire, and flooding that occurred.

D. Explanations of the need for any contingency or remedial measures, and detailed proposals for their implementation.

E. Photographs of the Bank taken from permanent locations that are accurately identified on the as-built drawings. The photographs are intended to document the progress of each component of the Bank, as well as the Bank in general, toward achieving the objectives and performance standards of the Bank. Such photo-monitoring will include general vantage points around the margin of the Bank, vantage points within the Bank, and at specific monitoring locations such as transects and/or sampling points.

**Table F-2 Summary of Annual Monitoring Tasks**

Bank Year	Report name	Performance Standard	Monitoring Task	Monitoring Area	Expected Site Visits
Year 0	Baseline	2B, 2C	Collect hydrology data over site after grading and before planting	Entire Bank site	Multiple August - March
	As-built Report	2A	Submittal of grading as-built	Entire Bank site	90 days after completion
		3A	Submittal of planting as-built	Entire Bank site	90 days after completion
		4A	New culvert installed in North Ditch	North Ditch	90 days after completion
		4B	Habitat features installed	Entire Bank Site	90 days after completion
Year 1	Year 1 Monitoring Report	2E	Monitor flows through outfall structure and spillway	Outfall Structure	Multiple, Year round
		3D	Monitor for non-native species	Entire Bank Site	June-Sept, one time in Year
		3F	Collect cover data in PEM habitat	PEM	June-Sept, one time in year
		3I	Collect stem density in PFO Habitat	PFO	June-Sept, one time in year
Year 2	--	2B	Collect hydrology data over site	Entire Bank site	Multiple March-June
Year 3	Year 3 Monitoring Report	2B	Submit Wetland Determination	Entire Bank site	March-June, one time in Year
		2D	Measure permanently ponded areas	Entire Bank site	August one time in Year
		2E	Monitor flows through outfall structure and spillway	Outfall Structure	Multiple, Year round
		3B, 3C, 3D, 3M	Monitor for non-native invasive species	Within each habitat class	June-Sept, one time in Year
		3E, 3F	Collect species presence and cover data for native species	PEM	June-Sept, one time in Year
		3G	Measure acreage of PEM Habitat	PEM	June-Sept, one time in Year
		3H	Collect cover data for native species	PSS	June-Sept, one time in Year
		3I, 3J	Collect stem density and cover for	PFO	June-Sept, one time in Year

			native trees/shrubs				
		3L	Collect stem density for native species	Upland Buffer	June-Sept, one time in Year		
		3K	Measure acreage of PFO Habitat	PFO	June-Sept, one time in Year		
<b>Year 5</b>	<b>Year 5 Monitoring Report</b>	2C	Submittal of wetland delineation	Entire Bank Site	Multiple March – June		
		2D	Measure permanently ponded areas	Entire Bank site	August one time in Year		
		2E	Monitor flows through outfall structure and spillway	Outfall Structure	Multiple, Year round		
		3B, 3C, 3D, 3M	Monitor for non-native invasive species	Within each habitat class	June-Sept, one time in Year		
		3E, 3F	Collect species presence and cover data for native species	PEM	June-Sept, one time in Year		
		3G	Measure acreage of PEM Habitat	PEM	June-Sept, one time in Year		
		3H	Collect cover data for native species	PSS	June-Sept, one time in Year		
		3I, 3J	Collect stem density and cover for native trees/shrubs	PFO	June-Sept, one time in Year		
		3L	Collect stem density for native species	Upland Buffer	June-Sept, one time in Year		
		3K	Measure acreage of PFO Habitat	PFO	June-Sept, one time in Year		
		<b>Year 7</b>	<b>Year 7 Monitoring Report</b>	2E	Monitor flows through outfall structure and spillway	Outfall Structure	Multiple, Year round
				3B, 3C, 3D, 3M	Monitor for non-native invasive species	Within each habitat class	June-Sept, one time in Year
3E, 3F	Collect species presence and cover data for native species			PEM	June-Sept, one time in Year		
3H	Collect cover data for native species			PSS	June-Sept, one time in Year		
3I, 3J	Collect stem density and cover for native trees/shrubs			PFO	June-Sept, one time in Year		
		3L	Collect stem density for native species	Upland Buffer	June-Sept, one time in Year		
<b>Year 10</b>	<b>Year 10 monitoring Report</b>	2C	Submittal of wetland delineation	Entire Bank site	Multiple March-June		
		2D	Measure permanently ponded areas	Entire Bank site	August one time in Year		
		2E	Monitor flows through outfall structure and spillway	Outfall Structure	Multiple, Year round		
		3B, 3C, 3D, 3M	Monitor for non-native invasive species	Within each habitat class	June-Sept, one time in Year		
		3E, 3F	Collect species presence and cover data for native species	PEM	June-Sept, one time in Year		
		3G	Measure acreage of PEM Habitat	PEM	June-Sept, one time in Year		
		3H	Collect cover data for native species	PSS	June-Sept, one time in Year		
		3I, 3J	Collect stem density and cover for native trees/shrubs	PFO	June-Sept, one time in Year		
		3L	Collect stem density for native species	Upland Buffer	June-Sept, one time in Year		
		3K	Measure acreage of PFO Habitat	PFO	June-Sept, one time in Year		
		4C	Document habitat features on site	Entire Bank site	June-Sept, one time in Year		

#### F.1.4 Remedial Action during the Establishment Period of the Bank:

In the event that one or more components of the Bank do not achieve performance standards or comply with any other requirement of this Instrument, the following sequence of remedial actions will be taken.

A. If the monitoring reports, or inspection by representatives of the IRT agencies, indicate persistent failure to achieve and maintain the prescribed performance standards, the Sponsor will

propose adaptive management actions to correct the shortcomings. A thorough analysis of vegetation and wetland monitoring data may result in the identification of other factors, not identified in the performance standards or monitoring data, causing the project to fall short of its objectives. The Corps and Ecology, following consultation with the IRT and the sponsor may also direct adaptive management actions if the Corps and Ecology identify a need for corrective action and no adaptive management plan acceptable to the IRT has been submitted within a reasonable period of time. The adaptive management plan shall specify the nature of further examination of areas for potential causes of failure and/or corrective action to be conducted, the schedule of completion for those activities, and a monitoring plan for assessing the effectiveness of the corrective action. The objective of the adaptive management plan shall be to attain the originally prescribed project objectives, either through achieving the original performance standards or through new standards subsequently developed based on evaluation of the site as it matures and is assessed. The Sponsor shall also implement all mitigation that the Corps and Ecology, following consultation with the IRT determines is reasonably necessary to compensate for those authorized impacts to the aquatic environment that have not been successfully redressed by the Bank pursuant to the requirements of this Instrument. If modified or replacement performance standards are proposed, the Sponsor may not initiate activities designed to achieve those replacement standards until those performance standards are approved by the IRT. During the period that a specific component of the Bank is out of compliance, the Corps and Ecology, following consultation with the IRT may direct that credits generated by that Bank component may not be sold, used, or otherwise transferred.

B. If remedial actions taken by the Sponsor under the provisions of the preceding paragraph do not bring that performance standard of the Bank into compliance with the requirements of this Instrument, including any approved changes to the Instrument, the Sponsor may request approval to discontinue efforts to achieve one or more performance standards for the Bank. If the Corps and Ecology, following consultation with the IRT approves of the proposal to discontinue efforts to achieve one or more performance standards, they need not be accomplished but no additional credits may be awarded for those performance standard(s). At the discretion of the Corps of Ecology, following consultation with the IRT, the Sponsor may also be released from future maintenance and monitoring obligations for those performance standard(s), provided that releasing the Sponsor from those obligations does not adversely affect the remainder of the Bank, or affect credits already sold, used, or transferred to date.

C. If the Corps and/or Ecology, following consultation with the IRT, determine that the failure of one or more performance standards of the Bank to comply with the requirements of this Instrument adversely affects the ability of the Bank to achieve its goals or objectives, or if the Sponsor does not make a reasonable effort to bring the Bank into compliance with this Instrument, the Corps and Ecology, following consultation with the IRT, may terminate this Instrument and the operation of the Bank pursuant to Article IV.J.

D. If the Corps and Ecology, following consultation with the IRT, direct remedial or adaptive management action pursuant to Section F.1.4.A. and compliance with the performance standards is not restored within a further reasonable period of time, and the Sponsor does not obtain approval of any request to discontinue efforts pursuant to Section F.1.4.B, the Corps and Ecology may alternatively implement remedial action on its own initiative, acting through a Third Party

Designee, by accessing the financial assurance instrument pursuant to Article III.C.1. and Section H.1.1 of Appendix H to this Instrument.

### **F.1.5 Maintenance during the Establishment Period of the Bank:**

General maintenance will be performed throughout the year to address conditions that may limit the success of the Bank and attainment of performance standards and objectives. The Sponsor is responsible for all site maintenance activities throughout the establishment period of the Bank. Maintenance activities will include, but are not limited to, vegetative maintenance (including replanting, repair of any areas subject to erosion, weed control around plantings, mowing, control of invasive species, control and discouragement of voles, beaver and deer foraging on plants) and general maintenance (including fence repair, cleaning and repair of nesting boxes, road and trail maintenance as necessary, and clean-up of trash) also per section B.1.2.4.

### **References**

1987 Corps of Engineers, Wetland Delineation Manual (U.S. Army Corps of Engineers 1987) and appropriate supplements.

Elzinga et al, Measuring and Monitoring Plant Populations, 1998. BLM/RS/ST-98/005+1730

Tiner, Wetland Indicators: A Guide to Wetland Identification, Delineation, Classification, and Mapping, 1999.

Krebs, C.J. 1999. Ecological Methodology, 2nd ed. Addison-Wesley Educational Publishers, Inc.

## **APPENDIX G LONG-TERM PROTECTION AND MANAGEMENT**

### **APPENDIX G.1:**

#### **G.1.1 Conservation Easements**

A. The Sponsor will ensure, pursuant to Article III.D. of this Instrument, that an appropriate conservation easement is granted from each landowner and recorded dedicating in perpetuity the property constituting the Bank, that is to be created, restored, or enhanced for credit. These conservation easements must be approved by the Corps and Ecology, following consultation with the IRT, and shall be recorded with the Clark County Auditor. A copy of the recorded easements shall be provided to all members of the IRT. The conservation easements shall reflect that they may not be removed, modified, or transferred without written approval of the Corps and Ecology, following consultation with the IRT. Conveyance of any interest in the property shall be subject to these conservation easements. The Corps and Ecology may consider any alteration or rescission of the conservation easement a default of the Sponsor's obligations under this Instrument and may institute appropriate action pursuant to Article IV.J. The Sponsor shall provide written notice to the IRT of any transfer of fee title or any portion of the ownership interest in the Bank real property to another party, within 60 days from time of transfer. Use prohibitions reflected in the easements will preclude the site from being used for activities that would be incompatible with the establishment and operation of the Bank. All restrictions shall be granted in perpetuity without encumbrances or other reservations, except those encumbrances or reservations (e.g., retention of recreation and privileges by the landowners and their guests) approved by the Corps and Ecology and not adversely affecting the ecological viability of the Bank. Any portion of the site not encumbered by the conservation easements will not be credited for use in the Bank.

B. The conservation easements shall provide that all structures, facilities, and improvements within the Bank, including roads, trails and fences, that are merely incidental to the functionality of the mitigation site but are necessary to the Bank management and maintenance activities, shall be maintained by the Sponsor or its assignee for as long as it is necessary to serve the needs of long-term management and maintenance. All structures, facilities and improvements that directly and substantially contribute to the functionality of the mitigation site will be included within the responsibilities delineated in the Long-Term Management and Maintenance Plan.

#### **G.1.2 Long-Term Management and Maintenance Plan**

A. The Sponsor is responsible for ensuring that a Long-Term Management and Maintenance Plan is developed and implemented to protect and maintain in perpetuity the aquatic functions and values of the Bank site. This plan must be approved by the Corps and Ecology, following consultation with the IRT, prior to the termination of the establishment period of the Bank. Once the establishment period of the Bank has terminated pursuant to Article IV.K. of this Instrument, the Sponsor will assume



responsibility for implementing that Plan, as provided in Article IV.M. of this Instrument, unless the Sponsor assigns this responsibility pursuant to the provisions of Article IV.M. and Section G.1.2.E. of this Appendix.

B. To gain IRT approval, the Long-Term Management and Maintenance Plan will consist of enumerated objectives. The Bank will document that it is achieving each objective by submitting status reports to the IRT on a schedule approved by the IRT. A primary goal of the Bank is to create a self-sustaining natural aquatic system that achieves the intended level of aquatic ecosystem functionality with minimal human intervention, including long-term site maintenance. As such, natural changes to the vegetative community, other than changes caused by noxious weeds, that occur after all Bank performance standards have been met are not expected to require remediation.

C. The Long-Term Management and Maintenance Plan will include those elements necessary to provide long-term protection for the aquatic ecosystem and habitat resources of the Bank site. The specific elements of the Plan must be tailored to meet the specific protection needs of the site. At minimum, the IRT will likely find the following core elements to be necessary for inclusion in the Long-Term Management and Maintenance Plan. The particular characteristics of the Bank site at the end of the establishment period may necessitate including other elements not specified below, that are needed to protect the ecosystem resources present at the Bank.

(1) Periodically patrol the Bank site for signs of trespass and vandalism. Maintenance will include reasonable actions to deter trespass and repair vandalized Bank features.

(2) Monitor the condition of structural elements and facilities of the Bank site such as signage, fencing, roads, and trails. The Long-Term Management and Maintenance Plan will include provisions to maintain and repair these improvements as necessary to achieve the objectives and functional performance goals of the Bank and comply with the provisions of the conservation easement. Improvements that are no longer needed to facilitate or protect the ecological function of the Bank site may be removed or abandoned if consistent with the terms and conditions of the conservation easement.

(3) Inspect the Bank site annually to locate and eradicate any occurrence of knotweed. The IRT anticipates that this long-term control will involve identifying and eradicating a relatively small number of recurrences each year. In the event the Corps and Ecology, in consultation with the IRT determines that the watershed within which the Bank is located becomes infested with knotweed in the future, so that its effective control on the Bank site is either no longer practicable or unreasonably expensive, the IRT will consider appropriate changes to the Long-Term Management and Maintenance Plan.

(4) Inspect the site annually to locate and control noxious weeds other than knotweed. Noxious weed control measures may include mechanical vegetation control, herbicide treatments, and temporary plantings

D. If the Sponsor elects to request the approval of the IRT to assign long-term management and maintenance to a Long-Term Steward pursuant to Article IV.M.2., the long-term management and maintenance assignment agreement will reflect that the assignee has assumed the obligation, owed to the IRT, of accomplishing the Long-Term Management and Maintenance Plan. The Corps and Ecology will also execute this assignment agreement. In exchange for the assignee's promise to achieve the Long-Term Management and Maintenance Plan, contemporaneously with the assignment of long-term management and maintenance responsibilities the Corps and Ecology will direct disbursement of the "full funding" amount specified in Article III.C.2.c. of this Instrument from the Long-Term Management and Maintenance Endowment Fund escrow account, pursuant to Article III.C.2.e. of this Instrument. In the event the responsibility for executing the Long-Term Management and Maintenance Plan is not assigned to a third-party assignee, at the termination of the establishment period of the Bank the "full funding" amount specified in Article III.C.2.c. of this Instrument will be disbursed from the Long-Term Management and Maintenance Endowment Fund escrow account to the Sponsor.

## **APPENDIX H FINANCIAL ASSURANCES**

### **APPENDIX H.1**

The Sponsor will institute and maintain financial assurances in accordance with the subsections immediately below. The Sponsor will provide either a Letter of Credit or a Surety Bond to provide financial assurance underlying the establishment and initial functionality of the Bank.

#### **H.1.1 Letter of Credit**

A. The Irrevocable Letter of Credit prescribed in Article III.C.1. of this Instrument, underlying the establishment and functionality of the Bank, will adhere to the following form and contents.

B. Each Letter of Credit will be irrevocable and without condition other than those authorized in this Instrument. Each Letter of Credit may not be withdrawn or canceled by the issuing financial institution prior to the designated expiration date, which may be no earlier than 12 years from the date of issuance. If the Letter of Credit applicable to the Bank shall expire by its own terms prior to the termination of the establishment period of the Bank as specified in Article IV.K. of this Instrument, the Sponsor must reinitiate an acceptable Letter of Credit so that there is no interval in which there is no Letter of Credit in effect. In lieu of a Letter of Credit with an effective period of 12 years, the Sponsor may elect to submit a Letter of Credit with an initial expiration date that is a minimum period of one year from the date of issuance. The Letter of Credit shall provide that, unless the issuer provides the Beneficiaries written notice of non-renewal at least 60 days in advance of the current expiration date, the Letter of Credit is automatically extended without amendment for one year from the expiration date, or any future expiration date, until a period of 12 years commencing with the date of first issuance is completed, and the Corps and Ecology have both provided the Sponsor with a written statement waiving the right to payment. If the Sponsor does not furnish an acceptable replacement Letter of Credit, or other acceptable financial assurance, at least 30 days before a Letter of Credit's expiration, the Corps and Ecology may immediately draw on the existing Letter of Credit up to its full value without any notice to the Sponsor. If the Corps or Ecology determines that the issuing financial institution's rating has dropped below the requirements specified in Article III.C.1. of this Instrument, the Corps or Ecology may direct the Sponsor to provide an acceptable substitute Letter of Credit within 30 days. If an acceptable substitute is not provided within the prescribed period, the Corps or Ecology may immediately draw on the Letter of Credit up to its full value without any further notice to the Sponsor. No further credits will be awarded from the Bank without an effective Letter of Credit. Each Letter of Credit will provide that the issuing financial institution shall honor the credit engagement and pay to the Third Party Designee the directed sum without inquiring whether the directing Beneficiary agency or the receiving Third Party Designee has a right to make such a demand.

C. Each Letter of Credit will be issued to, and will designate, the Corps and Ecology as distinct and independent Beneficiaries. If the IRT has informed the Sponsor that one has been so designated, each Letter of Credit shall identify and designate the Third Party Designee. Upon presentation of a sight draft by either the Corps or Ecology, in writing on agency letterhead,

accompanied by no other documentation other than the original Letter of Credit, the issuing financial institution shall disburse from the credit funds account to the Third Party Designee the amount specified by the Corps or Ecology, up to a maximum cumulative amount as reflected in the Letter of Credit. The Corps or Ecology shall be authorized to direct or make partial drawings, and multiple successive drawings, upon the credit account. The Corps and Ecology shall have the exclusive authority to direct disbursement of funds from the credit funds account, and the direction of only one of these two agencies is required in order to accomplish a disbursement.

D. Each Letter of Credit shall acknowledge that, from time to time, the Beneficiary agencies may authorize a reduction in the required level of credit during the effective period of the Letter of Credit. Any such reduction must be authorized by both the Corps and Ecology, as Beneficiary agencies. Upon receipt of both authorizations, in writing on agency letterhead, the issuing financial institution will be authorized to reduce the level of maximum extended credit, and it may, as arranged between the Sponsor and the issuing financial institution, reissue or amend the applicable Letter of Credit accordingly to reflect that change.

E. Each Letter of Credit shall acknowledge that the Beneficiary agencies may authorize cancellation of the Letter of Credit prior to the scheduled expiration date reflected therein. Any such cancellation must be authorized by both the Corps and Ecology, as Beneficiary agencies. Upon receipt of both authorizations, in writing on agency letterhead, the issuing financial institution will be authorized to withdraw or rescind, as arranged between the Sponsor and the issuing financial institution, the applicable Letter of Credit.

F. If so directed by the Corps and Ecology, the Sponsor agrees to substitute the identification of the Third Party Designee with a replacement entity for each applicable Letter of Credit. The Sponsor agrees that it shall execute either an amendment or replacement of each applicable Letter of Credit in order to effect such a substitution. If substitution of the Third Party Designee is directed, all other terms and conditions of the applicable Letter of Credit shall remain unchanged, particularly including the credit amount and the expiration date.

G. Upon request of the Sponsor, the Corps and Ecology, in consultation with the IRT, may authorize reductions in the required credit account limits of each of the Letters of Credit when the Corps and Ecology have determined, in consultation with the other members of the IRT and the Sponsor, that the Bank objectives and performance standards reflected in Appendix C are being timely met.

H. The Sponsor is solely responsible for any costs, fees, or premiums associated with the issuance, modification, continuation in force, or termination of each Letter of Credit. Any such costs may not be deducted from the principal of the Letter of Credit.

### **H.1.2 Surety Bond**

A. Each Surety Bond will extend for an indefinite period and may not be withdrawn or canceled by the issuing financial institution prior to the termination of the period of establishment of the Bank as specified in Article IV.K., at which point it may be discharged. If

the Surety Bond applicable to the Bank shall expire by its own terms prior to the termination of the establishment period of the Bank as specified in Article IV.K. of this Instrument, the Sponsor must reinitiate an acceptable financial assurance instrument so that there is no interval in which there is no financial assurance instrument in effect. No further credits will be awarded for the Bank while the Bank lacks an effective financial assurance instrument.

B. Each Surety Bond will designate the Corps and Ecology as distinct and independent obligees. Upon the direction of either the Corps or Ecology, in writing on agency letterhead, the issuing financial institution shall pay from the penal sum the amount specified by the Corps or Ecology, up to the maximum cumulative sum of the penalty amount. Payment shall be made directly to the Third Party Designee identified by the Corps or Ecology. The Corps or Ecology shall be authorized to direct or make partial drawings, and multiple successive drawings, upon the penal sum. The Corps and Ecology shall have the exclusive authority to direct payment of the penal sum on the Surety Bond, and the direction of only one of these two agencies is required in order to accomplish a payment.

C. Upon request of the Sponsor, the Corps and Ecology may authorize reductions in the required penalty amounts of the Surety Bond for the Bank when the Corps and Ecology have determined, in consultation with the other members of the IRT and the Sponsor, that the Bank objectives and performance standards reflected in Appendix C are being timely met.

D. The Sponsor is solely responsible for any costs, fees, or premiums associated with the issuance, modification, continuation in force, or termination of each Surety Bond. Any such costs may not be deducted from the penalty amount.

### **H.1.3 Long-Term Management and Maintenance Endowment Fund**

A. In order to implement the Long-Term Management and Maintenance Endowment Fund, prescribed in Article III.C.2. of this Instrument and underlying management and maintenance actions to be taken following completion of the establishment period of the Bank, the Sponsor will establish an escrow account in an accredited and Federally-insured financial institution, as follows.

B. The Long-Term Management and Maintenance Endowment Fund escrow account will be incrementally funded until it is fully funded, as prescribed in Articles III.C.2.b. and III.C.2.c. of this Instrument. Once the Long-Term Management and Maintenance Endowment Fund is fully funded, the Sponsor will be released from any further obligation to deposit a designated sum corresponding to each sale, use, or transfer of credits. The Sponsor will be permitted to accelerate contributions to the Long-Term Management and Maintenance Endowment Fund, and by doing so, the Sponsor may defer subsequent contributions until the balance in the Endowment Fund no longer matches or exceeds the balance required by the computation in Article III.C.2.b. The Sponsor will provide to the IRT an annual account statement displaying a cumulative tabulation of all deposits into the Long-Term Management and Maintenance Endowment Fund escrow account, with each deposit referencing the associated sale/use/transfer transaction, as well as the principal balance and total account balance, as of December 31 of the previous calendar year, by February 1 of each year. This statement will be submitted until (1) the Long-

Term Management and Maintenance Endowment Fund is fully funded or (2) until the IRT has accepted the Sponsor's written certification that it has terminated all banking activity.

C. The Long-Term Management and Maintenance Endowment Fund escrow account may bear interest or other earnings. Any earnings generated by the escrow funds shall remain deposited with other escrow account funds. Earnings in excess of the full funding amount specified in Article III.C.2.c. of this Instrument will be returned to the Sponsor at the time that the full funding amount is disbursed to the Long-Term Steward. The Long-Term Management and Maintenance Fund account contents may be invested only in the following: an interest-bearing savings or passbook account, savings certificate, or certificate of deposit, held in each case by an institution that is insured by the Federal Deposit Insurance Corporation; alternatively, the Fund principal and earnings may be invested in direct obligations of the Government of the United States of America, in obligations of agencies or insurers that are guaranteed by the Government of the United States of America, or in a money market mutual fund consisting solely of such obligations.

D. The Sponsor will be responsible for all escrow agency and associated account fees, including account termination and final reconciliation costs, which may not be paid out of escrow account funds, or out of the interest or earnings generated thereon.

E. The terms of the escrow instructions will permit regular recurring deposits to the escrow principal as sales, use, or transfers of credits are made and designated sums corresponding to those sales, use, or transfers are deposited to the escrow account.