



**APPENDICES TO
THE MITIGATION
BANKING
INSTRUMENT**

SKAGIT ENVIRONMENTAL BANK

Skagit County, Washington

April 2011

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- Exhibit 1: Legal Description of Bank Site Area
- Exhibit 1-A: Legal Description of Non-creditable Utility Easement Areas
- Exhibit 2: Construction Documents

APPENDIX A: GENERAL BANK INFORMATION

APPENDIX A.1: Phase 1

A.1.1. Business Purpose and Ecological Goals of Phase 1

The purpose of the Skagit Environmental Bank (hereinafter, 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 goal of Phase 1 of the Bank is to restore hydrologic processes on the site to initiate re-establishment of floodplain emergent, scrub-shrub, and forested wetlands. These habitats will provide valuable forage for ungulates and other mammals. These wetlands will also provide cover for nesting, resting, and foraging waterfowl and upland birds, habitat for small mammals and reptiles, reproductive habitat for amphibians, and rearing and wintering habitat for fish.

Goal: Improve Floodplain Hydrologic and Hydraulic Conditions

Restore in-channel stream morphology and alter the ground water hydrology on at least 30 percent of the site by adding three engineered log jams in the Nookachamps and East Fork Nookachamps at certain intervals in order to affect change in geomorphic process (e.g., riffle and pool formation, channel bank undercutting, point bar formation, and duration of wetland inundation). In addition, all farming activities will cease and drainage ditches, constructed to drain the land for crop production, will be filled.

Goal: Improve Fish and Wildlife Habitat, and Water Quality Conditions

Stabilize the hydric and non-hydric soils and provide wildlife habitat by removing all farming activities, filling drainage ditches, and constructing the engineered log jams and by planting a cover crop of herbaceous plants.

A.1.2. Phase 1 Location and Legal Description

The Bank is located at 14000 McLaughlin Extension Road, Mount Vernon, WA, 98273 in Skagit County, Washington, 1.5 miles northeast of the Mount Vernon urban center, but just outside the city limits of Mount Vernon and immediately adjacent to a large wetland area known as Barney Lake. See Figure A-1 Bank Site Location Map.

At 48.407196 latitude and -122.321767 longitude, the property lies within Sections 10, 11, 15, and 14, Township 34 North, Range 4 East on the Mount Vernon 7.5 minute USGS quadrangle map, Skagit County. From a watershed view, the Bank is home in the Washington State Water Resource Inventory 3 - Lower Skagit-Samish Watershed.

The Bank totals 396 acres, of which 85.1 acres form buffer surrounding the Bank Site (defined below), and of which 9.1 acres lie within two separate power line easements and one water line easement extending across the Bank Site (see Figure A-2, Existing Conditions), each legally

described on Exhibit 1-A. The area associated with these easements will be constructed and planted to provide habitat connectivity throughout the Bank Site. The Bank Sponsor will manage and maintain the easement areas in order to attain performance standards listed in Appendix C. Because the utility easement area is subject to restrictions under an existing easement which are not fully compatible with the entire range of Bank establishment standards, by application of IRT policy, establishment and management activities in these areas are not directly creditable. Buffer area on the Bank Site totals 85.1 acres. The buffer areas will be constructed and planted to provide habitat connectivity throughout the Bank Site. The Bank Sponsor will manage and maintain the buffers in order to attain performance standards listed in Appendix C. By application of IRT policy, establishment and management activities in the buffer areas are not directly creditable.

The Sponsor owns or has been granted use of all of the real property to be included within the Bank, legally described in Exhibit 1 attached to this Instrument (hereinafter, the Bank Site).

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Figure A-1. Site location.

All portions of the Bank Site have been pledged for use in the Bank in a manner consistent with this Instrument. The overall Bank property size is approximately 396 acres. Neither the (i) inclusion of the aforementioned property in the Bank, (ii) granting of a Conservation Easement (as defined in Appendix G.1.1) restricting future land uses for the benefit of the Bank, nor (iii) reserving an exclusive use easement restricting future land uses for the benefit of the Bank pursuant to the Assignment (as defined in Appendix G.1.1), shall 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 Easement and the Assignment, each 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 Site Conditions

A.1.3.1 Site Description:

The Bank Site is in the Lower Skagit Watershed Resource Inventory Area (WRIA 03) watershed, and the Nookachamps sub-watershed. The entire western edge of the Bank Site is bounded by the Nookachamps Creek. The East Fork Nookachamps Creek bisects the property. Mud Creek enters the northeastern edge of the Bank Site. The Bank Site is bisected by a number of drainage ditches that intercept surface and groundwater flow and maintain drier soil conditions on most of the Bank Site throughout the year. The topographic slopes on the entire Bank Site range from 0.4 to 1.5 percent. Elevations range from approximately 22 feet to 48 feet above sea level (NAVD88).

Almost the entire Bank Site is plowed and planted annually with cattle feed crops, primarily corn. The hydrology of these uplands is maintained to support the upland row crops. There are small areas along the creek edges and within the ditches that are not plowed and support monocultures of reed canary grass. In addition, small patches of remnant shrub and forested riparian areas are found along the northwest portion of Nookachamps Creek. In the early spring surface water runoff maintains saturated soil conditions in some areas. Once the winter rains have subsided, these areas dry out enough to be plowed and planted along with the remainder of the Bank Site.

The Figure A-2, Existing Conditions shows the physical condition of the Bank Site as described above and the baseline site conditions that follow.

A.1.3.2 Existing Conditions:

The baseline conditions of the Bank Site are what attracted the sponsors to select this site. Located in Section A of the Resource Folder, the Rationale for Site Selection presents additional information for selecting this site.

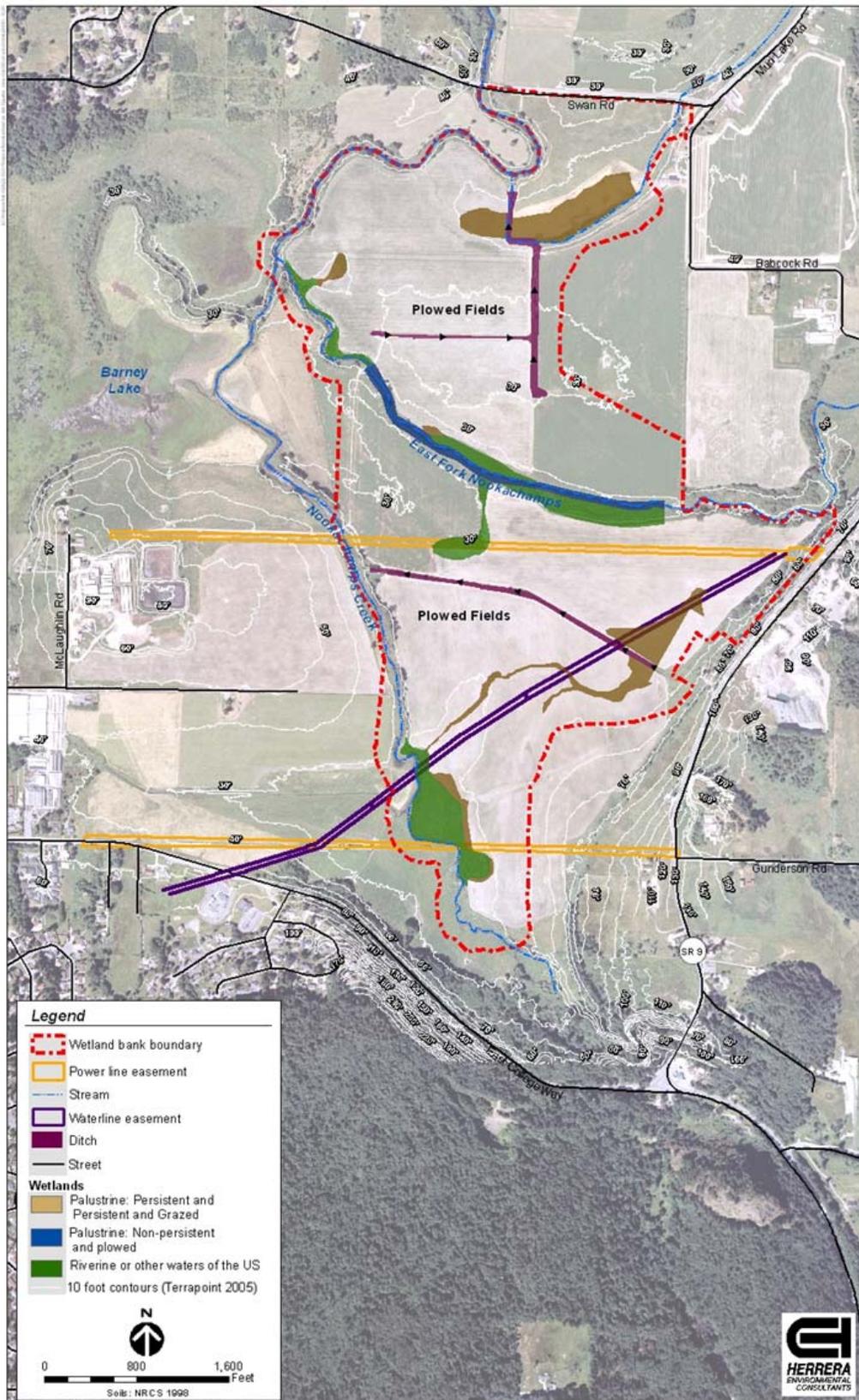


Figure A-2. Existing conditions.

Existing Soils

According to the Soil Survey of Skagit County Area, Washington (Soil Conservation Service compiled in 1980) there are five mapped silt-loam soil series on the Bank: Bellingham silt-loam, Nookachamps silt-loam, Skipopa silt-loam, Sumas silt-loam, Field silt-loam as of 2006 the Natural Resource Conservation Service has defined all soil series that are present on the Bank Site as hydric.

Field samples from plowed areas suggest that the soils have been modified by tilling, grading, and drainage ditching. Variations in these soil conditions were field verified. Despite the affects of plowing, some soils still contain hydric characteristics. Those areas were mapped as wetlands (palustrine, non-persistent and plowed). Most of the soils sampled during the delineation process, and delineated as palustrine persistent and persistent and grazed wetlands, where plowing does not regularly occur exhibited hydric characteristics typical of the soil series descriptions. More detail on the soil conditions is located in the Wetland Delineation Report in Section A of the Resource Folder.

The Bank Site is located in an area that is frequently flooded by the Skagit River and Nookachamps Creek system and is within one of the few remaining areas of the lower Skagit River that has not been protected by dikes. While agricultural drainage ditches have been installed over the years, the soils remain saturated on the Bank Site for long periods of time. Given the frequent flooding and soil saturation, this property has not been used as an area for growing high value crops.

The Bank is in compliance with the provisions of WAC 173-700-303(2). While the Bank Site is located within an area designated by Skagit County as agricultural lands of long-term commercial significance, Skagit County granted all necessary county permits for this use, finding it to be in compliance with applicable County zoning and shoreline management regulations. Because of the frequency of flooding and persistent soil saturation, the Bank Site is not located on prime farmland soils as defined in WAC 173-700-104. Moreover, as discussed in more detail below, the hydrologic monitoring and modeling of the site and surrounding properties has demonstrated that the Bank will not adversely affect hydrologic conditions on any nearby agricultural operations. Conditions have been imposed by Skagit County, and are reiterated in Appendix G.1.2, for hydrologic monitoring and implementation of future mitigation measures, if necessary. Finally, vegetative plantings that are proposed will not cause any shading impacts on adjacent farms.

Existing Hydrology

The Bank Site contains a series of ditches that serve as conduits that drain surface water runoff and ground water. They are hydrologic boundaries to the ground water aquifer which are deep enough to intercept ground water levels during the growing season. As the creeks recede, the ground water is drawn into the ditches and flows out into the creek channels. The ditches are functioning for the farmer by intercepting the ground water and diverting it to the creeks. More detail on the hydrologic conditions is located in the Hydrologic and Hydraulic Basis of Design Report (Section B of the Resource Folder) the Wetland Delineation Report (Section A of the Resource Folder).

Today, two hydrologic sources are at work on the Bank Site: 1) Precipitation or ponding from above-ground sources such as rainfall and river bank overtopping, and 2) Shallow ground-water fluctuation. Both of them affect the soil hydrologic conditions on the Bank during the growing season. Groundwater conditions within the floodplain of the Nookachamps Creek are influenced by recharge from upland areas, flooding from the Skagit River, and flow in the main-stem and East Fork Nookachamps Creek. Deforestation and drainage improvements for agriculture at the Bank Site are the two most significant landscape modifications to have impacted local groundwater conditions. Both of these modifications likely contributed to the lowering of the groundwater table throughout the Bank.

Evidence of Historic Wetlands

Prior to Euro-American settlement, the lower floodplain of the Nookachamps Creek (the entire Bank Site) was covered with a mature wetland forest. Archival records indicate the Skagit River valley in the vicinity of the Bank Site exhibited a multiple-thread channel network with forested islands and frequent woody debris jams. Barney Lake, across the northwest edge of the Bank Site, and the floodplain at the southern portion south of the Bank Site are all that remain of a once extensive wetland forest. Early operators of the farm property apparently graded the floodplain to fill low areas and constructed ditches to drain the land for agriculture. Both the main-stem and East Fork Nookachamps Creek have been impacted to some extent by straightening and confinement. Two historic maps, 1872 Skagit Valley Survey Map and 1944 Aerial Photograph of Skagit Environmental Bank, show the historic conditions on the Bank Site (see Figures A-3 and A-4).

Existing Wetlands and Aquatic Resources

The U.S. Army Corps of Engineers has determined (in their letter reference: 200600098) that the waters of the U.S., including wetlands, as described in the Skagit Environmental Bank Wetland Delineation Report (see Section A of the Resource Folder) prepared by Sustainable Environments LLC and dated Revised February 2006 accurately identifies waters of the U.S. in the Bank Site.

There are 53 acres of existing wetlands that are comprised of palustrine or riverine wetlands in the Bank. They exhibit all of the definitional wetland characteristics, and therefore have been delineated as existing wetlands. The remaining area of the Bank are plowed areas that have modified hydrologic conditions; they were likely wetlands prior to being ditched or graded to drain for row cropping (sometime after 1941), but no longer meet the definition of wetlands.

We used evidence in the soils, evidence of surface ponding, 2003 and 2004 spring and fall precipitation data, the farmers' observations, and well data to identify evidence of hydric and non-hydric conditions, and to determine the timing and duration of inundation. The evidence suggests that the palustrine non-persistent and plowed wetland areas are inundated or saturated to the surface for a consecutive number of days for between 12 days, or 5 percent of the growing season, and 30 days, or 12.5 percent of the growing season, in most years.

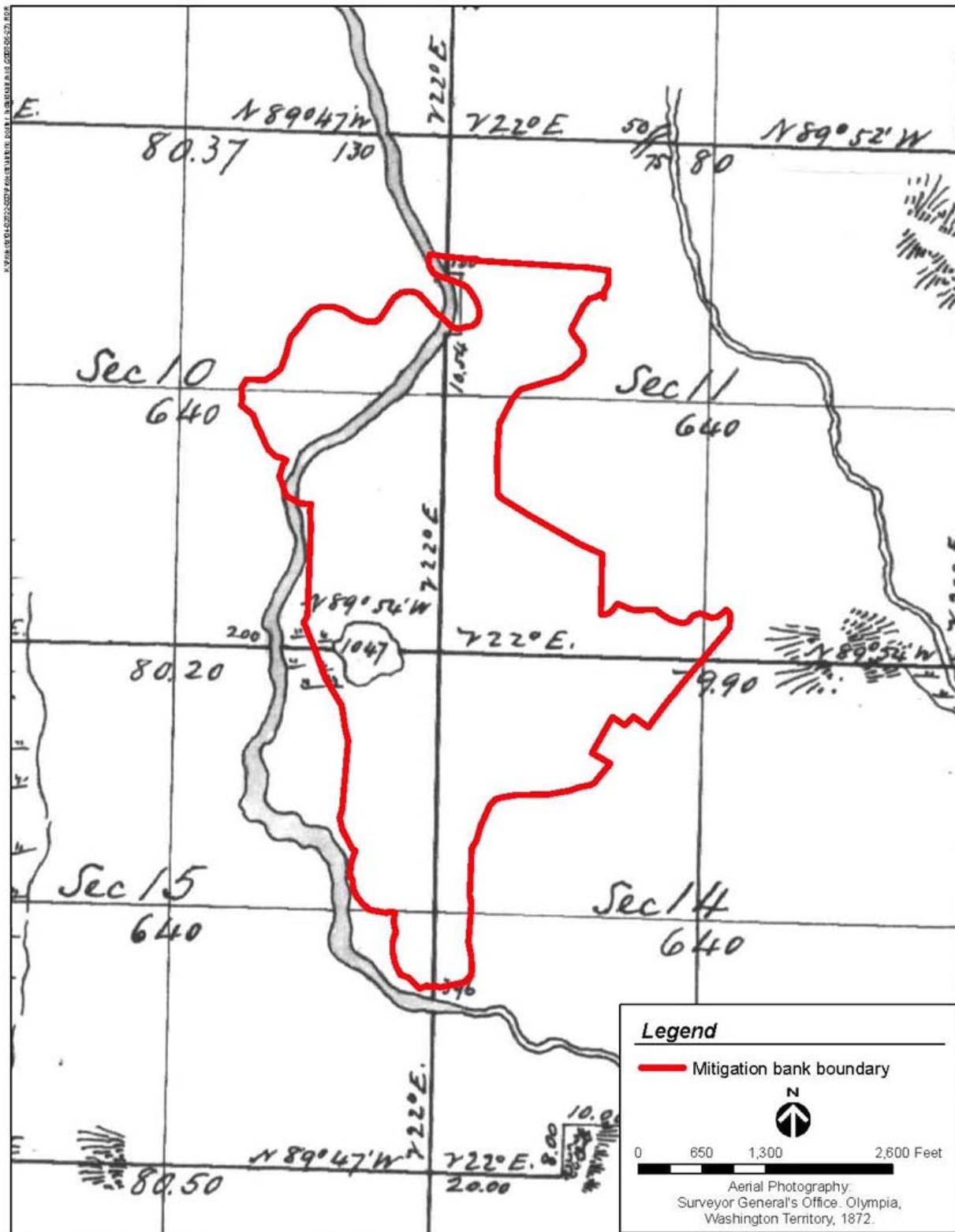


Figure A-3. Skagit Environmental Bank, 1872.

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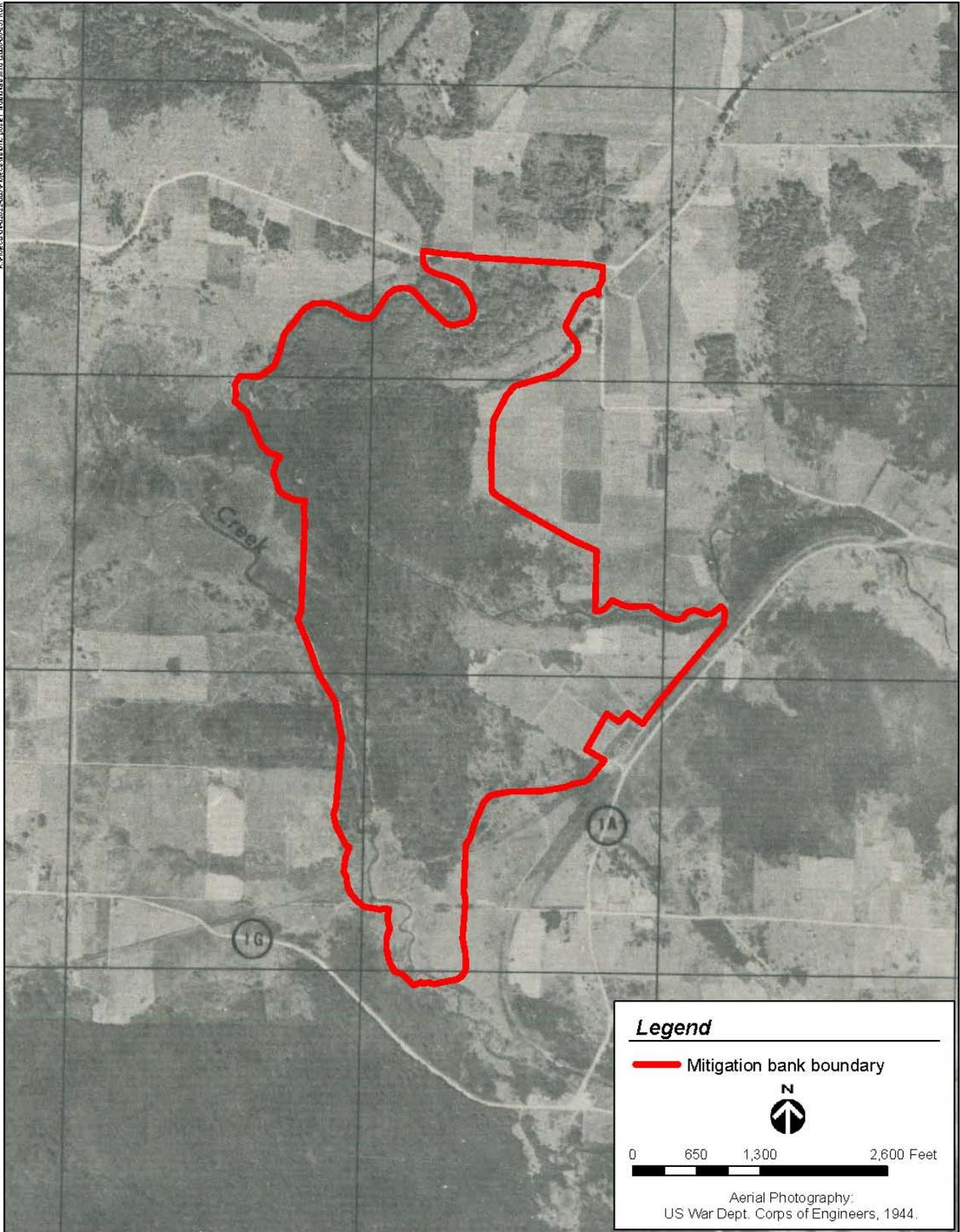


Figure A-4. Skagit Environmental Bank, 1944.

Survey of Skagit County Area, Washington (Soil Conservation Service issued in 1989), the growing season is 242 days from March 14 through November 11. The Palustrine Wetland areas (that is, those areas that are vegetated with emergents, but not plowed) have all three indicators of wetland condition throughout most of the growing season and are comprised primarily of reed canary grass (*Phalaris arundinacea*) (facw); creeping buttercup (*Ranunculus repens*) (facw); and meadow foxtail (*Alopecurus pratensis*) (facw).

The adjacent vegetated uplands are covered primarily with white clover (*Trifolium repens*) (facu); orchard grass (*Dactylis glomerata*) (facu); and tall fescue (*Festuca arundinacea*) (facu). There are individual, or patches of, woody plant species scattered throughout the vegetated wetland areas and found along the upland edges of the bermed areas including black cottonwood (*Populus balsamifera*) (fac) and red alder (*Alnus rubra*) (facw). The few plants that were found in the riverine system that could out-compete the reed canarygrass (*Phalaris arundinacea*) (facw), include yellow iris (*Iris pseudacorus*) (obl) and yellow pond lily (*Nuphar luteum*) (obl).

Most of the plants (other than corn) common in the 262 acres of plowed fields (palustrine, non-persistent and plowed) are grasses planted by the farmer as over-winter crops (primarily orchard grass (*Dactylis glomerata*) (facu); and white clover (*Trifolium repens*) (facu). Upland and wetland pioneer plants are established in between the planted species. Plant dominance was one factor we used in determining the wetland boundaries in the plowed areas. Additional vegetation in the plowed wetlands or uplands (depending on dominance) includes creeping buttercup and broadleaf plantain (*Plantago major*) (facu).

According to the Washington Department of Natural Resources (2003) Washington Natural Heritage Program information on rare plants and high quality ecosystems, there are no rare plants or high quality ecosystems on the Bank Site. The bearded sedge (*Carex comosa*) is listed as a species of concern that is reported as existing near the Bank Site (NWMC et al. 1995). It was not identified in the proposed Bank Site areas and, if it exists, it would likely be in the protected off-site areas of Barney Lake. According to the Natural Heritage Program's historical account, the bearded sedge was last observed within a 4-mile area (that includes the Bank Site) in 1933 and has not been verified. It is listed by the State as Sensitive and ranked as Imperiled.

Additional Site Assessments

In addition to the traditional ways of defining a site, the sponsors had additional reports prepared, please see Section A of the Resource Folder for the following:

Biological Assessment. Skagit Environmental Bank Habitat Restoration Project. Skagit County, Washington. October 2005.

Cultural Resources Assessment for the Skagit Environmental Bank Skagit County, Washington. October 2005.

Laboratory Testing Report & Soil Bearing Capacity Estimates Nookachamps Project. June 2007.

Shoreline Compliance Narrative. Skagit Environmental Bank. July 2007.

APPENDIX A.2: Phase 2

A.2.1. Business Purpose and Ecological Goals of Phase 2

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

As for Phase 2, its goals build on the restoration goals of Phase 1. They are:

Goal: Re-establish emergent, scrub-shrub, and forested wetland conditions on at least 65 percent of the site which will include planting herbaceous plants, shrubs, and trees in all areas of the Bank Site that have wetland hydrologic conditions.

Goal: Restore high-flow back channel rearing, refuge, and migration habitat for salmonids, resident fish, amphibians, reptiles, and other aquatic dependent species.

A.2.2. Phase 2 Location and Legal Description

Phase 2 encompasses the same spatial area as Phase 1, and therefore the “Location and the Legal Description” is the same as Phase 1 above.

A.2.3. Site Description and Baseline Site Conditions

Phase 2 encompasses the same spatial area as Phase 1, and therefore the “Site Description” is the same as Phase 1 above.

APPENDIX A.3: Phase 3

The original purpose of providing a diversity of mitigation credits for aquatic , streams and critical areas identified in Phase 1 applies to Phase 3 as well.

Primary goals of Phase 3 build on the restoration goals of Phase 1 and Phase 2. They are:

Goal: Increase the diversity and area of wetland habitats within the Bank by restoring palustrine forested, scrub-shrub, and emergent habitat that will extend well beyond the edges of the creek channel and effect change in numerous hydrologic and hydraulic floodplain and wetland functions. It is anticipated that a minimum of 81% of the Bank Site will meet wetland hydrologic conditions.

Goal: Diversify wildlife habitat nesting, rearing, and feeding opportunities by creating a mosaic of upland islands within the forested wetlands (forest mosaic wetlands).

A.3.2. Phase 3 Location and Legal Description

Phase 3 encompasses the same spatial area as Phases 1 & 2, and therefore the “Site Description” is the same as Phase 1 above.

A.3.3. Site Description and Baseline Site Conditions

Phase 3 encompasses the same spatial area as Phase 1 & 2, and therefore the “Site Description” is the same as Phase 1 & 2 above; with the exception of the hydrological changes that were undertaken in Phase 1, and the excavation, grading and plantings of Phase 2.

APPENDIX B: BANK DEVELOPMENT PLAN AND DESIGN

Overview of Bank Development

Skagit Environmental Bank began with the intent to create the highest ecologically functional wetland. Building on that strong ecological intent we propose a unique, three-phased approach to restoring the Bank Site, called “Functional Phasing”.

Functional phasing will be the introduction of changes, done in a logical sequence, to modify specific functions on the entire Bank Site. This approach is based on incrementally restoring functions on the entire Bank Site, rather than the traditional approach of making construction modifications to change all the functions on three separate portions of the Bank Site. Functional Phasing involves waiting to see how these changes affect the Bank, and then moving forward with the next functional modifications based on this real data. The design will then be refined to the actual site response conditions.

Currently we plan on constructing the Bank in these three general phases:

- Phase 1: Make the modifications to restore the hydrology to the entire Bank Site by improving the geomorphology of the two stream systems within the Bank Site with engineered log jams, restoring the natural drainage of the by filing in ditches, and planting a wetland or upland seed cover crop as appropriate and monitor the change in site hydrology over an appropriate period of time.
- Phase 2: Grade elevations to create wetland conditions (where appropriate) and the high-flow back channels. The grading elevations will be determined using well data collected after the construction of Phase 1.
- Phase 3: Excavate the remaining “high” areas (or those areas that do not meet the wetland conditions), and plant these excavated areas.

Additional detail about the approach for Phase 1 is presented in Appendix B and in Section B of the Resource Folder. Additional details for Phase 2 and 3 will be updated once Phase 1 has been constructed.

As an obligation independent of this instrument, Skagit County requires that activities on the Bank Site comply with its applicable regulations.

APPENDIX B.1: Phase 1

B.1.1. Phase 1 Development Plan

The first functional phase will restore the wetland and floodplain hydrology to the majority of the Bank by removing all farming activities, filling all of the ditches, and constructing three Engineered Log Jams (ELJs) in Nookachamps Creek and the East Fork Nookachamps Creek. See Figure B-1. We will plant a cover crop of herbaceous plants to stabilize the soils on the remaining Bank area. The species seed composition will be competitive with reed canary grass and we expect natural recruitment of other native herbaceous and woody plant species. We feel that these three actions will significantly change the hydrology and improve the fish and wildlife habitat. We know from the well data that we have collected so far that the ditches are functioning to drain or lower the ground water levels in certain areas of the Bank. We also know, from experience on other projects, that placement of the engineered log jams (ELJs) will raise the average river surface elevations and the surrounding ground water elevations. Please refer to the hydrology modeling reports in Section B of the Resource Folder.

We will assess the changes in hydrology, as affected by the installation of the ELJs and the ditch filling during the early growing season of the 2 years following the Phase 1 construction. This will give us an estimate of the additional area that will have to be hydrologically restored in Phase 2.

B.1.2 Phase 1 Design

As an obligation independent of this instrument, Skagit County requires that the Phase 1 design be consistent with applicable County codes and requirements.

B.1.2.1 Hydrologic Basis for Phase 1 Design

Hydraulic and hydrologic conditions on and adjacent to the Bank Site were evaluated in 2006 and updated HEC-RAS hydraulic modeling was conducted in 2007 and 2009. The results of the model have been reviewed by the Skagit County Surface Water Group and the State Department of Ecology and they both concur with the findings of this analysis.

Three reports were prepared for this assessment; the design report focuses on the Bank Site, the other two reports address and disperse any concerns on the hydrologic impact to the neighboring properties. All three reports, Hydrologic and Hydraulic Basis of Design Report, the Updated HEC-RAS hydraulic model (2007), and the Updated HEC-RAS Model (2009) can be found in Section B of the Resource Folder.

The construction of three ELJs will raise the stream elevation (also referred to as “backwater”) upstream of the structure. This higher stream elevation will reconnect the stream to the Nookachamps floodplain helping to restore natural floodplain processes and ground water elevations. This in turn will support the restoration of riverine and palustrine wetlands and increase the amount of critical habitat for fish and wildlife.

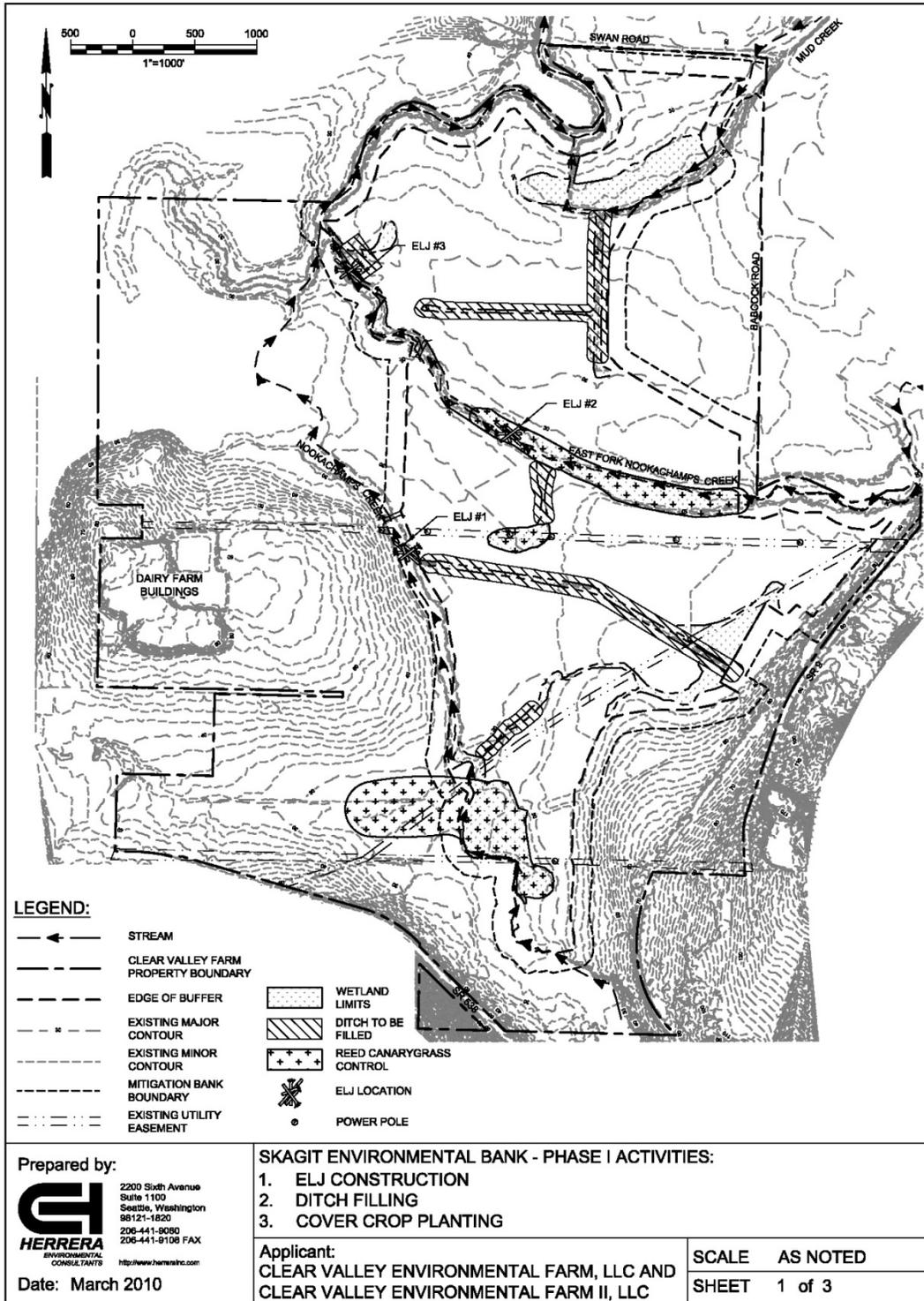


Figure B-1.

The main purpose of this analysis was to (1) predict elevations of stream and groundwater based on their size and location and (2) ensure that this project will not result in any adverse flooding effects to adjacent properties outside of the Bank Site.

Based on the analysis, ELJ 1 will not affect surface or groundwater hydrology on sections of Nookachamps Creek upstream of the Bank Site. The backwater influence of ELJ 2 will result in a 1.1-foot increase in the water surface elevation on East Fork Nookachamps Creek in the vicinity of the east boundary of the Clear Valley Farm property. The result shows that the increased water surface elevations extend no farther than 3,372 feet upstream of the Bank Site boundary under any flow conditions. The magnitude of this increase at its furthest point is no more than 0.2 feet. That being said, this rise in water elevation at the boundary of the Bank Site is not sufficient to cause groundwater recharge or flooding. In turn, there will be no adverse affect on the agricultural production of the adjacent upstream property. Modeling results also have shown that the proposed Bank ELJs do not result in an increased occurrence of flooding during high-magnitude events and when the Bank Site is influenced by backwater in the Skagit River.

Groundwater monitoring will be performed at eight wells for the purpose of monitoring the proximal groundwater table to further ensure that no adverse impacts will come to adjacent landowners. Five wells are located either on the boundary of the Bank Site or in very close proximity to the Bank Site: two of these wells are located on the northern boundary of the Bank Site , one well is located on the eastern boundary of the Bank Site , and two wells are located just to the east of the eastern Bank Site boundary (hereinafter referred to collectively as the Offsite Wells). The other three wells will be installed in locations that will monitor groundwater further away from the Bank Site (hereinafter referred to collectively as the Far Offsite Wells). The Offsite Wells and the Far Offsite Wells are all shown on Figure F-1. Data will be collected once per month during the growing season. These data will be summarized in an annual report delivered to the Skagit County Planning Department at the end of the calendar year (this information will also be presented in the annual monitoring report submitted annually in February to each member of the IRT). The details of the monitoring procedure and well locations are provided in Appendix F.

B.1.2.2 Wetland Design

Planting will immediately follow the hydraulic and hydrologic modifications. Disturbed and unplanted areas that will not be graded in Phase 2 will be seeded with an herbaceous seed mix designed to germinate in a variety of hydrologic conditions. Areas that will be graded in Phase 2 will be stabilized at this time by seeding with an herbaceous seed mix designed to germinate in a variety of hydrologic conditions to provide cover and prevent invasive species. Trees and shrubs will not be planted in these areas at this time. Management plans for reed canary grass, Himalayan blackberry, and knotweed are part of the construction procedures for Phase 1. See Construction Documents sheets G-2, G-3, C-2, C-3 and C-16 included in Exhibit 2.

B.1.2.3 Riverine Design

Three ELJ grade control structures will be placed in the two streams on Bank Site. Two ELJs will be constructed on Nookachamps Creek. One ELJ will be constructed on the East Fork

Nookachamps. These three structures will raise surface water elevations and the local ground water table closer to the ground surface, hence increasing the duration and extent of surface water flooding of the surrounding land. This in turn will provide adequate hydrology to create wetlands and improve the geomorphology of the stream. Construction will occur during the identified fish window. In an effort to avoid the import of fill material the ditches will be filled first, with material from adjacent berms and second with material from the anticipated locations of Phase 2 high-flow back channels. Every effort will be made to extract the fill in a manner that blends with the adjacent landscape. Disturbed stream banks resulting from the installation of the ELJs will be planted with riverine tree, shrub, and emergent species in Phase 1. See Construction Documents sheets C-6 to C-15 and C-21.

B.1.2.4 Upland Design

Uplands will be those areas that do not gain wetland conditions after installation of the ELJs and the filling of the ditches. Disturbed and unplanted areas that will not be graded in Phase 2 will be seeded with a mixture of native grasses. Areas that will be graded in Phase 2 will be seeded with a sterile ryegrass. Please see the Construction Documents sheets C-2 and C-3.

B.1.2.5 Erosion and Sediment Control Plan

Typical temporary erosion and sedimentation control (TESC) measures will be employed during construction activities. All TESC measures will be installed before Bank activities begin. Refer to sheets ESC-1 and ESC-2 in the Construction Documents. TESC measures may include but are not limited to the following:

- **Placement of silt fences around all work areas.** Approved filter fabrics are Celanese fiber, polyvinyl chloride woven cloth, reinforced chlorosulfonated polyethylene cloth, and chlorinated polyethylene woven cloth (e.g., Mirafi 100 X, Typar 3401, Stablenka 100, or an approved equivalent).
- **Stabilization of disturbed areas.** Soils exposed by construction activities will not be left exposed for more than 2 days from October 1 to April 30, and 7 days from May 1 to September 30. Soils will be stabilized with covering control measures (e.g., mulching, seeding, plastic covering, surface roughening, sod, or jute matting).
- **Delineation of clearing limits and boundaries of sensitive areas.** Boundaries of sensitive areas will be identified, staked, and isolated by orange plastic construction fence and silt fence as determined necessary by the project engineer.

APPENDIX B.2: Phase 2

B.2.1. Phase 2 Development Plan

In preparing for Phase 2 construction, we will measure the exact area of hydrologic change (using well data and river level data) resulting from Phase 1 activities (ELJ construction, farm activity removal, and ditch filling). Refer to Figure B-2. We will then construct the high-flow back channels based on the measured changes to river elevations and ground water hydrology. A preliminary grading plan has been developed based on data collected and presented in the Resource Folder. See Construction Documents sheet C-17 included in Exhibit 2. The final grading plan will be updated based on the new hydrologic data.

Extensive grading will occur throughout the Bank Site to create a series of high-flow back channels and other wetland areas. It is anticipated that between 200,000 cubic yards and 1.24 million cubic yards of material will be placed outside of the 100-year floodplain and outside of any waters of the State or United States and stockpiled outside of the Bank Site, but within the boundary of the Clear Valley Farm. This will increase the flood storage capacity of the Bank Site by 16 acre-feet. In other words, the greater storage capacity as a result of this project will accommodate an additional 16 acre-feet of water that is currently displaced elsewhere. All areas within the Bank Site will positively drain to Nookachamps Creek system. Areas of Mud Creek within the Bank Site will be re-graded to also facilitate flow to Nookachamps Creek resulting in no adverse impacts on groundwater or flooding on adjacent properties upstream of the Bank Site.

As soon as we have completed grading, we will plant all disturbed areas. The choice of herbaceous and woody plants on all phases will depend on the plant species and hydrologic requirements that we measure at our reference areas.

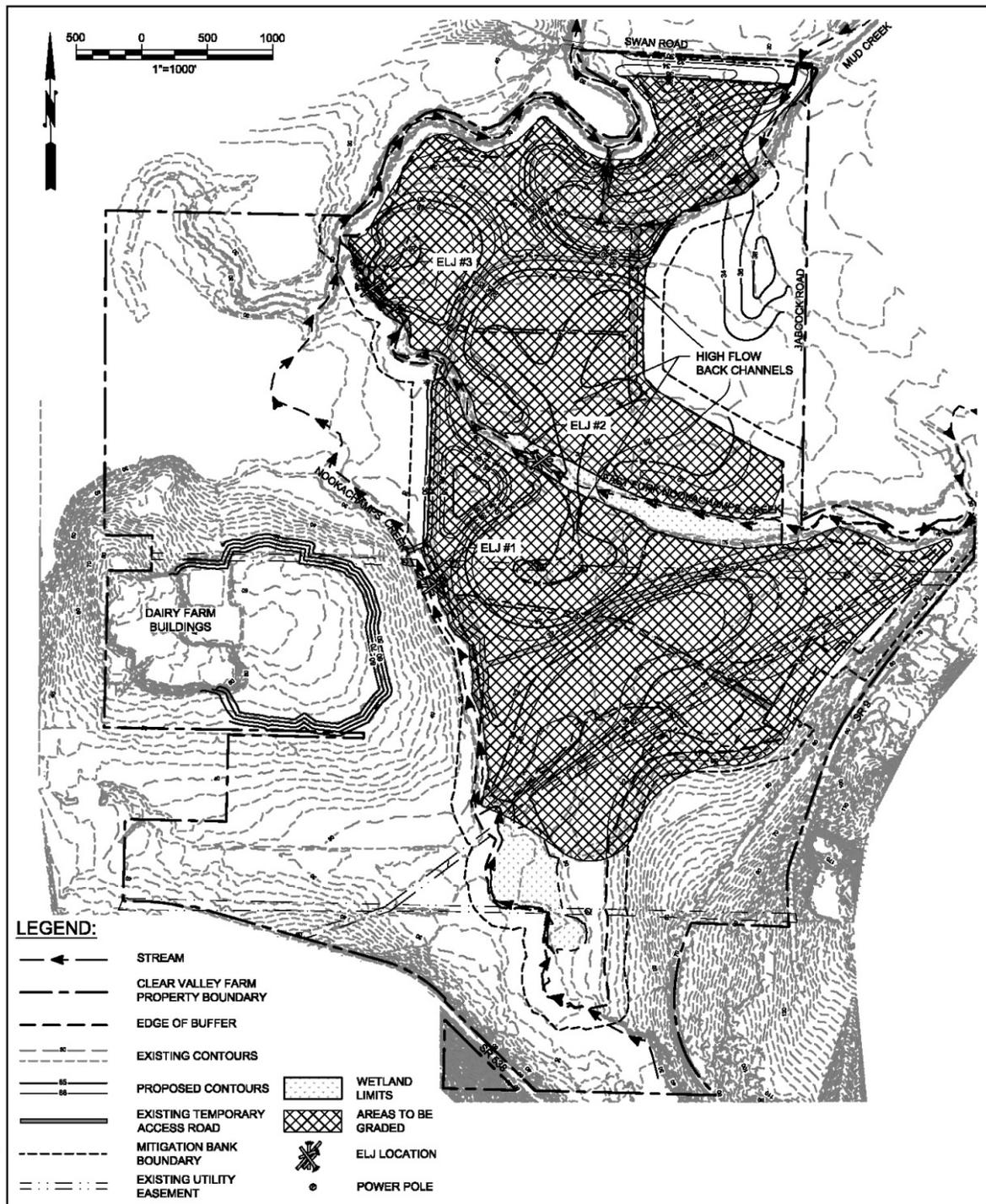
All buffers will be planted during Phase 2 with the exception of the buffer area near Babcock Road, see construction drawings sheets C-20 to C24. The zones of planting in the buffer corresponds to the zones delineated within the Bank (see sheet C-19), emergent wetland, scrub-shrub wetland, forest mosaic wetland, as well as the upland zone within the buffer. As with the planting proposed for the Bank proper, the hydrology will be assessed in the buffers and the planting plan revised accordingly. Plant species that define these zones are listed in the plant schedule on sheet C-24. In areas where there is existing vegetation, appropriate plants will be selected and located to blend the newly planted communities to the existing community. The mixture and placement of the plants, within each zone, will be random.

B.2.2. Phase 2 Design

As an obligation independent of this instrument, Skagit County requires that the Phase 2 design be consistent with applicable County codes and requirements.

B.2.2.1 Wetland Design

Most of the grading and planting on the Bank Site will occur during Phase 2. This will result in a diverse wetland environment of emergent and scrub-shrub forested and forest mosaic



LEGEND:

- ← STREAM
- CLEAR VALLEY FARM PROPERTY BOUNDARY
- - - EDGE OF BUFFER
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING TEMPORARY ACCESS ROAD
- MITIGATION BANK BOUNDARY
- - - EXISTING UTILITY EASEMENT
- [Cross-hatched box] WETLAND LIMITS
- [Diagonal-hatched box] AREAS TO BE GRADED
- [Star symbol] ELJ LOCATION
- [Circle symbol] POWER POLE

Path: C:\env\104-02622-005\Cad\Drawings\Utilities\Figures\Figure 2.dwg
 Plot Date: 3/10/2011 11:37 AM Cad User: murtumidge

Prepared by:

HERRERA
 ENVIRONMENTAL CONSULTANTS
 2200 Sixth Avenue
 Suite 1100
 Seattle, Washington
 98121-1820
 206-441-8080
 206-441-9108 FAX
 http://www.herrerainc.com
Date: March 2010

SKAGIT ENVIRONMENTAL BANK - PHASE II ACTIVITIES:
 1. INITIAL SITE GRADING
 2. HIGH-FLOW BACK CHANNEL CONSTRUCTION
 3. PLANTING

Applicant:
 CLEAR VALLEY ENVIRONMENTAL FARM, LLC AND
 CLEAR VALLEY ENVIRONMENTAL FARM II, LLC

SCALE	AS NOTED
SHEET	2 of 3

Figure B-2.

wetlands. In addition, four high-flow back channels will be created and planted to form additional emergent and scrub-shrub wetlands.

The major wetland communities of Phase 2, were designed based on water level data collected from wells during the second quarter of 2005/2006/2007 (April/May/June). These ground water wells were located in anticipated representative wetland communities. See Construction Documents sheets R-1 to R-7 for the well locations, data collected, and ground water elevations and contours projected. The final location of the wetlands will be re-established by excavating to elevations that will be based on the hydrologic monitoring data collected after Phase 1 installation. Wetland areas outside of the high-flow back channels will also be re-established by excavating to elevations that will be based on the hydrologic monitoring data collected after Phase 1 installation. Site grading will be based on effected ground water elevations and river levels that will support the planting distribution. See Construction Documents sheet C-17, included in Exhibit 2, for the preliminary grading plan based on data collected from 2005 through 2007 and sheet C-19, included in Exhibit 2, for the preliminary wetland communities.

The four high-flow back channels are located off the Nookachamps Creek and the East Fork Nookachamps Creek. They will be graded and planted to provide emergent wetland interspersed with scrub-shrub wetland on hummocks. These high-flow back channels will also serve as rearing habitat for juvenile salmonids. The high-flow back channels will be excavated to an elevation defined by the ground water elevations and the creek fluctuation data and will be connected to the ground water table. During most of the dry season, they will have a low flow elevation that will provide seasonally inundated or saturated surface conditions within the creek channel. During the non-growing rainy season, the channels will be permanently flooded and provide fish and waterfowl habitat. We will grade the ground surface to positively drain towards the main channels, which will prevent any ponding of water or stranding of fish. The positive draining characteristics also allow them to drain efficiently to prevent solar insolation impacts, which lead to increases in water temperatures. In addition, the water temperatures within the high-flow back channels will be moderated by the shading provided by re-established mature forested wetland and riparian vegetation. This effect will be augmented by decreasing sediment delivery to the streams currently caused by runoff from adjacent farm fields; sedimentation (and subsequent turbidity) will be reduced by stabilizing these soils through revegetation.

All areas of the Bank Site will be planted, with two exceptions, with a diverse plant palette of emergent, scrub-shrub, and forested wetlands surrounded by a forest wetland/upland buffer. The two exception areas are the access roads and the buffer near Babcock Road. See the Construction Documents sheet C-24 for the list of plant materials.

B.2.2.2 Upland Design

Upland planting will expand the herbaceous cover of Phase 1 to include deciduous and evergreen trees and shrubs. See the Construction Documents sheet C-19, C-20 and C-24 for the locations and plant materials.

B.2.2.3 Erosion and Sediment Control Plan

Typical temporary erosion and sedimentation control (TESC) measures will be employed during construction activities. All TESC measures will be installed before Bank activities begin. Refer to sheets ESC-1 and ESC-2 in the Construction Documents. TESC measures may include but are not limited to the following:

- **Placement of silt fences around all work areas.** Approved filter fabrics are Celanese fiber, polyvinyl chloride woven cloth, reinforced chlorosulfonated polyethylene cloth, and chlorinated polyethylene woven cloth (e.g., Mirafi 100 X, Typar 3401, Stablenka 100, or an approved equivalent).
- **Stabilization of disturbed areas.** Soils exposed by construction activities will not be left exposed for more than 2 days from October 1 to April 30, and 7 days from May 1 to September 30. Soils will be stabilized with covering control measures (e.g., mulching, seeding, plastic covering, surface roughening, sod, or jute matting).
- **Delineation of clearing limits and boundaries of sensitive areas.** Boundaries of sensitive areas will be identified, staked, and isolated by orange plastic construction fence and silt fence as determined necessary by the project engineer.

APPENDIX B.3: Phase 3

B.3.1. Phase 3 Development Plan

The third functional phase will be to excavate (down to the appropriate hydrologic conditions) the remaining upland areas of the Bank including the construction staging areas and the access roads. See Figure B-3. Uplands planted during Phase 2 will remain undisturbed during and after Phase 3 construction. We believe that the areas that are non-hydric after Phase 1 and 2 modifications will be the graded soils or bermed areas close to the creeks as well as the temporary access road. The final site grading is designed to create islands of upland habitat within the wetland areas. We refer to these as forest mosaic wetlands. The location and size of the upland islands will increase the habitat and wildlife use opportunities significantly. Finally, these areas will be planted along with the buffer along Babcock Road. See the Construction Documents sheet C-29.

B.3.2. Phase 3 Design

As an obligation independent of this instrument, Skagit County requires that the Phase 3 design be consistent with applicable County codes and requirements.

B.3.2.1 Wetland Design

Most of the remaining non-hydric soils will be excavated down to elevations that will support hydrophytic species. Some non-hydric areas will be graded into an upland/wetland mosaic which is a mix of small upland islands within some of the wetland areas. We refer to these areas as forested mosaic wetlands. Final elevations will be based on a review of the hydrologic and hydraulic data collected after Phase 1 and Phase 2 are installed. These forested mosaic wetlands are anticipated to be planted per the Construction Documents sheet C-29. Sheet C-29 will be updated based on data collected after Phase 1 and Phase 2 are installed. Construction Documents are included in Exhibit 2.

B.3.2.2 Upland Design

Portions of the temporary access road will be graded to create a forest mosaic wetland pattern. The remaining buffer areas that were not planted during Phase 2 will be planted at this time. These forested mosaic wetlands will be planted per the Construction Documents sheet C-29. Sheet C-29 will be updated based on data collected after Phase 1 and Phase 2 are installed. Construction Documents are included in Exhibit 2.

B.3.2.3 Erosion and Sediment Control Plan

Typical temporary erosion and sedimentation control (TESC) measures will be employed during construction activities. All TESC measures will be installed before Bank activities begin. Refer to the Construction Document sheets ESC-1 and ESC-2. TESC measures may include but are not limited to the following:

- **Placement of silt fences around all work areas.** Approved filter fabrics are Celanese fiber, polyvinyl chloride woven cloth, reinforced chlorosulfonated

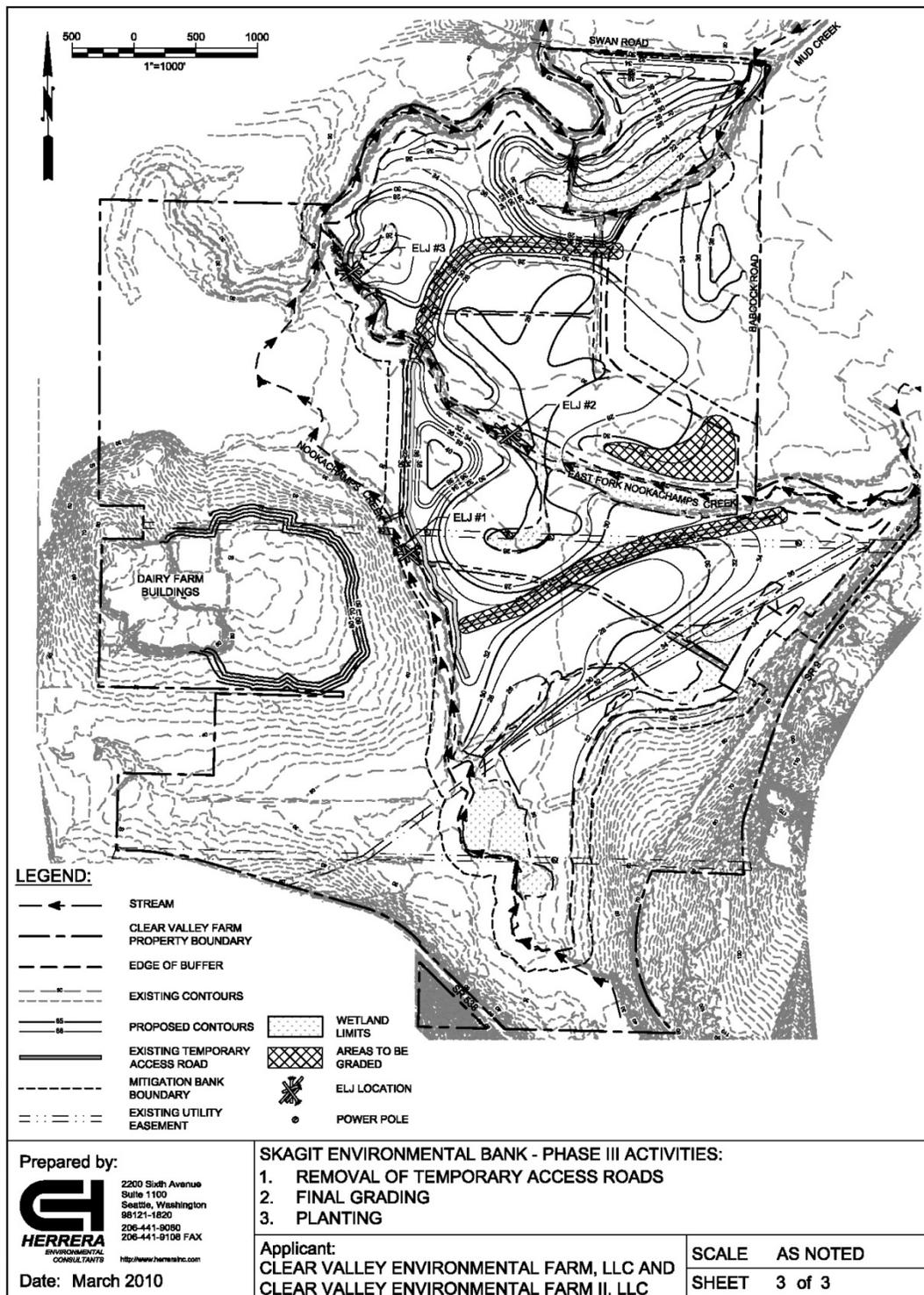


Figure B-3.

polyethylene cloth, and chlorinated polyethylene woven cloth (e.g., Mirafi 100 X, Typar 3401, Stablenka 100, or an approved equivalent).

- **Stabilization of disturbed areas.** Soils exposed by construction activities will not be left exposed for more than 2 days from October 1 to April 30, and 7 days from May 1 to September 30. Soils will be stabilized with covering control measures (e.g., mulching, seeding, plastic covering, surface roughening, sod, or jute matting).
- **Delineation of clearing limits and boundaries of sensitive areas.** Boundaries of sensitive areas will be identified, staked, and isolated by orange plastic construction fence and silt fence as determined necessary by the project engineer.

APPENDIX C: BANK OBJECTIVES AND PERFORMANCE STANDARDS

APPENDIX C.1: All Phases

C.1.1. Bank Objectives and Performance Standards for All Phases

- A. Implementation of the Skagit Environmental 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, seed harvesting, and scientific activities that do not conflict with the use limitations or other provisions of the Conservation Easement and the Assignment, 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. As an obligation independent of this Instrument, Skagit County requires that activities on the Bank Site comply with applicable Skagit County Code.

APPENDIX C.2: Phase 1

C.2.1. Bank Objectives and Performance Standards for Phase 1

Objective 1. Permanently protect aquatic ecosystem functions at the Bank by instituting the Instrument and implementing a Conservation Easement and Assignment 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 and 2 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.

Performance Standard	Documentation
IA. 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.
IB. Protect ecosystem function by placing an IRT-approved Conservation Easement and Assignment on the Bank Site property.	Provide the IRT a copy of the signed, IRT-approved Conservation Easement and Assignment, with evidence that they have been recorded with Skagit County and placed on the property titles.
IC. Establish a Long-Term Management and Maintenance Endowment Fund escrow account 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 have been initiated through establishment of a compliant and acceptable escrow account.

The overall objective for Phase 1 is to restore in-channel stream morphology and alter the ground water hydrology at least 30 percent of the Bank Site by filling existing ditches on site and adding three engineered log jams in the Nookachamps and East Fork Nookachamps. The objective of Phase 1 is to effect change in geomorphic process (e.g., riffle and pool formation, channel bank undercutting, point bar formation, and duration of wetland inundation) of the stream reaches associated with the ELJs, and raise the ground water hydrology after filling the drainage ditches. In the event that Phase 2 is not constructed within four years of completing Phase 1 installation, the IRT will at that time evaluate the need for revising Phase 1 performance standards.

Objective 2. Protect aquatic ecosystem functions at the Bank by instituting financial assurance for Phase 1. The performance standard 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 for this Phase 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 and 2 performance standards have been accomplished. The initial award of credits in recognition of accomplishment of this performance standard will serve as the IRT’s notification that construction and implementation activities are authorized to commence.

Performance Standard	Documentation
2A. Provide financial assurance for Phase 1 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 Phase 1.

Objective 3. Increase wetland hydrology observed on site through installation of Engineered Log Jams (ELJs), filling of ditches on site, and installing a cover planting to stabilize site soils.

Performance Standard	Documentation
3A. ELJs constructed and ditches filled according to IRT approved plans.	As-built drawings showing completed engineered log jams, monitoring wells, stream gauges, and filled drainage ditches are approved by IRT.
3B. A minimum of three ELJs will be present seven years following installation.	Monitoring report approved by the IRT documenting ELJ presence, location, and approximate composition.
3C. Establish Wetland Hydrology over a minimum of 30% of the Bank Site excluding buffers by 2 years following IRT approval of Phase 1 as-built drawings. Wetland hydrology is defined as saturation to the soil surface or free water in soil pits at 12 inches or less below the soil surface for at least 10% of the growing season.	Monitoring report approved by the IRT. Monitoring will involve a wetland determination and will occur early in the growing season. Monitoring and reporting for this performance standard will occur prior to beginning construction of Phase 2.

Objective 4: Control invasive species vegetation on site.

Performance Standard	Documentation
4A. Cover planting installed on site according to IRT approved plan for Phase 1.	As-planted drawings showing completed plantings are approved by the IRT.
4B. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass will not exceed 40% of the mitigation Bank Site areas (including buffers) by 2 years following ELJ installation and filling of the ditches.	Conduct annual inventory approximately from June or July. Monitoring report documenting identification and eradication approved by the IRT.

APPENDIX C.3: Phase 2

C.3.1. Bank Objectives and Performance Standards for Phase 2

The overall objective for Phase 2 of the Bank is to create wetland conditions on 65% of the Bank Site, resulting in the final distribution of wetland types as defined in the design plan. Phase 2 will restore off-channel rearing, refuge, and migration habitat for salmonids, resident fish, amphibians, reptiles, and other aquatic dependent species. The work associated with Phase 2 will also involve planting herbaceous plants, shrubs, and trees in all areas of the Bank Site that have wetland hydrologic conditions. Uplands that will not be disturbed during phase 3 actions will be planted according to the Phase 2 Planting Plan.

Objective 5: Protect aquatic ecosystem functions at the Bank by instituting financial assurance for Phase 2. The performance standards associated with this objective must be met before any Phase 2 Bank credits may be awarded, and before any construction or other implementation activities may be initiated for this Phase pursuant to this Instrument. The award of credits in recognition of accomplishment of this performance standard will serve as the IRT’s notification that construction and implementation activities are authorized to commence for Phase 2.

Performance Standard	Documentation
5A. Provide financial assurance for Phase 2 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 Phase 2.
5B. Complete an amendment or modification of the Appendices with an approved grading and planting plan for Phase 2.	Submit a fully executed amendment or modification of the Appendices with IRT approved updates for text and figures.

Objective 6: Increase wetland area and side-channel rearing habitat by grading site to create high-flow back channels and microtopography near high-flow back channels.

Performance Standard	Documentation
6A. High-flow back channels and microtopography on site constructed according to IRT approved plans.	As-built drawings showing completed grading are approved by IRT.
6B. Wetland hydrology will be present over a minimum of 65% of the Bank Site 2 years following completion of Phase 2 grading and initial planting. Wetland hydrology is defined as saturation to the soil surface or free water in soil pits at 12 inches or less below the soil surface for at least 10% of the growing season.	Monitoring report approved by the IRT. Monitoring will involve a wetland determination and will occur early in the growing season.
6C. No more than 3% of the Bank Site outside of the existing stream channels will be permanently inundated and un-vegetated 2 years after completion of Phase 2 grading and initial planting.	Monitoring report approved by the IRT. Surface hydrology monitoring will occur between August 1 and September 30

Objective 7: Increase habitat diversity and establish wetland areas by planting emergent, shrub, and tree vegetation on site.

Note that vegetation density and cover standards under Objective 7 do not apply to areas that will be planted in Phase 3. See Objective 13 for similar standards that apply to Phase 3 areas.

Performance Standard	Documentation
7A. Vegetation installed according to IRT approved planting plans for Phase 2.	Phase 2 as-planted drawings showing completed plantings are approved by the IRT.
7B. Wetland will be present on a minimum of 65% of the Bank Site 4 years following completion of Phase 2 initial planting.	Full site delineation conducted and report is approved by the IRT. Delineation will be conducted and documented according to the 1987 Corps of Engineers Delineation Manual and appropriate supplements, as well as the current Washington State Wetlands Identification and Delineation Manual.
7C. Areal cover by native hydrophytic herbaceous plant species in areas targeted as emergent wetland will be at least 40% by 1 year following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7D. Areal cover by native hydrophytic herbaceous plant species in areas targeted as emergent wetland will be at least 50% by 3 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7E. Areal cover by native hydrophytic herbaceous plant species in areas targeted as emergent wetland will be at least 70% by 5 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7F. At least 3 native hydrophytic herbaceous species will have at least 8% areal coverage each in areas targeted as emergent wetland 3 years following Phase 2 initial planting. .	Monitoring report documenting species diversity during the growing season is approved by the IRT.
7G. At least 3 native hydrophytic herbaceous species will have at least 10% areal coverage each in areas targeted as emergent wetland 5 years following Phase 2 initial planting.	Monitoring report documenting species diversity during the growing season is approved by the IRT.
7H. Native hydrophytic shrub species will have a density of at least 90% of the original planting density in areas targeted as scrub-shrub wetland 1 year following Phase 2 initial planting.	Monitoring report documenting species density during the growing season is approved by the IRT.
7I. Native hydrophytic shrub species will have at least 35% areal cover in areas targeted as scrub-shrub wetland by 3 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7J. Native hydrophytic shrub species will have at least 50% areal cover in areas targeted as scrub-shrub wetland by 5 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7K. Native hydrophytic shrub species will have at least 70% areal cover in areas targeted as scrub-shrub wetland by 8 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7L. At least 3 native hydrophytic shrub species will have at least 6% areal cover each in areas targeted as scrub-shrub wetland 3 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.

Performance Standard	Documentation
7M. At least 3 native hydrophytic shrub species will have at least 8% areal cover each in areas targeted as scrub-shrub wetland by 5 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7N. At least 3 native hydrophytic shrub species will have at least 10% areal cover each in areas targeted as scrub-shrub wetland by 8 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7O. Native hydrophytic woody species will have a density of at least 90% of the original planting density in areas targeted as forested wetland by 1 year following Phase 2 initial planting. (Woody species refers to non-herbaceous trees and shrubs.)	Monitoring report documenting species density during the growing season is approved by the IRT.
7P. Native hydrophytic woody species will have at least 35% areal cover in areas targeted as forested wetland by 3 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7Q. Native hydrophytic woody species will have at least 50% areal cover in areas targeted as forested wetland by 5 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7R. Native hydrophytic woody species will have at least 65% areal cover in areas targeted as forested wetland by 8 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
7S. At least 3 native hydrophytic woody species will have at least 6% areal cover each in areas targeted as forested wetland by 3 years following Phase 2 initial planting.	Monitoring report documenting species areal coverage during the growing season is approved by the IRT.
7T. At least 3 native hydrophytic woody species will have at least 8% areal cover each in areas targeted as forested wetland by 5 years following Phase 2 initial planting.	Monitoring report documenting species areal coverage during the growing season is approved by the IRT.
7U. At least 3 native hydrophytic woody species will have at least 10% areal cover each in areas targeted as forested wetland by 8 years following Phase 2 initial planting.	Monitoring report documenting species areal coverage during the growing season is approved by the IRT.

Objective 8: Increase habitat diversity by planting trees and shrubs in upland areas.

Note that vegetation density and cover standards under Objective 8 do not apply to areas that will be planted in Phase 3. See Objective 15 for similar standards that apply to Phase 3 areas.

Performance Standard	Documentation
8A. Native woody species will have a density of at least 90% of the original planting density in areas targeted as upland 1 year following Phase 2 initial planting. (Woody species refers to non-herbaceous trees and shrubs.)	Monitoring report documenting species density during the growing season is approved by the IRT.
8B. Native woody species will have at least 20% areal cover in areas targeted as upland by 3 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
8C. Native woody species will have at least 35% areal cover in areas targeted as upland by 5 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
8D. Native woody species will have at least 50% areal cover in areas targeted as upland by 8 years following Phase 2 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
8E. At least 3 native woody species will have at least 4% areal cover each in areas targeted as upland by 3 years following Phase 2 initial planting.	Monitoring report documenting species areal coverage during the growing season is approved by the IRT.
8F. At least 3 native woody species will have at least 6% areal cover each in areas targeted as upland by 5 years following Phase 2 initial planting.	Monitoring report documenting species areal coverage during the growing season is approved by the IRT.
8G. At least 3 native woody species will have at least 10% areal cover each in areas targeted as upland by 8 years following Phase 2 initial planting.	Monitoring report documenting species areal coverage during the growing season is approved by the IRT.

Objective 9: Increase habitat diversity by controlling invasive vegetation.

Performance Standard	Documentation
9A. Areal Cover of Himalayan blackberry, Canadian thistle, and reed canary grass species total cover will not exceed 30% of the total area of the Bank Site outside the 19 acres of existing reed canary grass by 3 years following Phase 2 initial planting.	Monitoring report documenting invasive species cover is approved by the IRT.
9B. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass will not exceed 25% of the mitigation Bank Site areas (including buffers) by 5 years following Phase 2 initial planting.	Monitoring report documenting invasive species cover is approved by the IRT.
9C. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass will not exceed 20% of the mitigation Bank Site areas (including buffers) by 8 years following Phase 2 initial planting.	Monitoring report documenting invasive species cover is approved by the IRT.
9D. Maintain zero tolerance of Japanese knotweed , purple loosestrife, and English ivy colonization. Map any specimens and eradicate during growing season of same year.	Inventory annually and report documenting identification and eradication approved by the IRT

Objective 10: Increase wildlife habitat by installing perch poles and cavity trees.

Performance Standard	Documentation
10A. Habitat structures constructed and installed according to IRT approved plans.	As-built drawings showing completed structures are approved by IRT.

APPENDIX C.4: Phase 3

C.4.1. Bank Objectives and Performance Standards for Phase 3

The overall objective for Phase 3 of the Bank is to create wetland conditions of most of the upland that may remain after Phases 1 and 2 are complete. It is anticipated that at least 65 percent of the Bank Site will have wetland conditions after completion of Phase 2. About 27 acres of the Bank Site will be excavated in Phase 3 to create forest wetland mosaics. This will involve converting the temporary access roads into wetland habitat as shown in the phase 3 Planting Plan.

Objective 11: Protect aquatic ecosystem functions at the Bank by instituting financial assurance for Phase 3. The performance standards associated with this objective must be met before any Phase 3 Bank credits may be awarded, and before any construction or other implementation activities may be initiated for this Phase pursuant to this Instrument. The award of credits in recognition of accomplishment of this performance standard will serve as the IRT’s notification that construction and implementation activities are authorized to commence for Phase 3.

Performance Standard	Documentation
11A. Provide financial assurance for Phase 3 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 Phase 3.
11B. Complete an amendment or modification of the Appendices with an approved grading and planting plan for Phase 3.	Submit a fully executed amendment or modification of the Appendices with IRT approved updates for text and figures.

Objective 12: Increase wetland area by grading upland/wetland mosaic.

Performance Standard	Documentation
12A. Upland/wetland mosaic constructed according to IRT approved plans.	As-built drawings showing completed grading are approved by IRT.
12B. Wetland hydrology will be present over a minimum of 81% of the Bank Site 2 years following completion of Phase 3 grading and planting. Wetland hydrology is defined as saturation to the soil surface or free water in soil pits at 12 inches or less below the soil surface for at least 10% of the growing season.	Monitoring report approved by the IRT. Monitoring will involve a wetland determination and will occur early in the growing season.
12C. Wetland will be present on a minimum of 81% of the Bank Site 8 years following completion of Phase 3 grading.	Full site delineation conducted and report is approved by the IRT. Delineation will be conducted and documented according to the 1987 Corps of Engineers Delineation Manual and appropriate supplements as well as the current Washington State wetland delineation manual.
12D. No more than 3% of the Bank Site outside of the existing stream channels will be permanently inundated and un-vegetated 2 years after completion of Phase 3 grading and initial planting.	Monitoring report approved by the IRT. Surface hydrology monitoring will occur between August 1 and September 30

Objective 13: Increase habitat diversity and establish wetland areas by planting trees and shrubs in wetland mosaic area.

Performance Standard	Documentation
13A. Vegetation installed according to IRT approved planting plans for Phase 3.	Phase 3 as-planted drawings showing completed plantings are approved by the IRT.
13B. Native woody species will have a density of at least 90% of the original planting density in areas targeted as forested wetland by 1 year following Phase 3 initial planting activities. (Woody species refers to non-herbaceous trees and shrubs.)	Monitoring report documenting species density during the growing season is approved by the IRT.
13C. Native woody species will have at least 35% areal cover in areas targeted as forested wetland by 3 years following completion of Phase 3 initial planting.	Monitoring report documenting species areal coverage during the growing season is approved by the IRT.
13D. Native woody species will have at least 50% areal cover in areas targeted as forested wetland by 5 years following completion of Phase 3 initial planting.	Monitoring report documenting species areal coverage during the growing season is approved by the IRT.
13E. Native woody species will have at least 65% areal cover in areas targeted as forested wetland by 8 years following completion of Phase 3 initial planting.	Monitoring report documenting species areal coverage during the growing season is approved by the IRT.
13F. At least 3 native woody species will have at least 6% areal cover each in areas targeted as forested wetland by 3 years following Phase 3 initial planting.	Monitoring report documenting species diversity and areal coverage during the growing season is approved by the IRT.
13G. At least 3 native woody species will have at least 8% areal cover each in areas targeted as forested wetland by 5 years following Phase 3 initial planting.	Monitoring report documenting species diversity and areal coverage during the growing season is approved by the IRT.
13H. At least 3 native woody species will have at least 10% areal cover each in areas targeted as forested wetland by 8 years following Phase 3 initial planting.	Monitoring report documenting species diversity and areal coverage during the growing season is approved by the IRT.

Objective 14: Increase habitat diversity by controlling invasive vegetation.

Performance Standard	Documentation
14A. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass will not exceed 20% of the mitigation Bank Site areas (including buffers) by 5 and 8 years following Phase 3 planting.	Monitoring report documenting invasive species cover is approved by the IRT.
14B. Maintain zero tolerance of Japanese knotweed, purple loosestrife, and English ivy colonization. Map any specimens and eradicate during growing season of same year.	Inventory annually and report documenting identification and eradication approved by the IRT

Objective 15: Increase habitat diversity by planting upland areas.

Performance Standard	Documentation
15A. Native woody species will have a density of at least 90% of the original planting density in areas targeted as upland 1 year following Phase 3 initial planting.	Monitoring report documenting species density during the growing season is approved by the IRT.
15B. Native woody species will have at least 20% areal cover in areas targeted as upland by 3 years following Phase 3 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
15C. Native woody species will have at least 35% areal cover in areas targeted as upland by 5 years following Phase 3 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
15D. Native woody species will have at least 50% areal cover in areas targeted as upland by 8 years following Phase 3 initial planting.	Monitoring report documenting areal coverage of vegetation during the growing season is approved by the IRT.
15E. At least 3 native woody species will have at least 4% areal cover each in areas targeted as upland by 3 years following Phase 3 initial planting.	Monitoring report documenting species diversity and areal coverage during the growing season is approved by the IRT.
15F. At least 3 native woody species will have at least 6% areal cover each in areas targeted as upland by 5 years following Phase 3 initial planting.	Monitoring report documenting species diversity and areal coverage during the growing season is approved by the IRT.
15G. At least 3 native woody species will have at least 10% areal cover each in areas targeted as upland by 8 years following Phase 3 initial planting.	Monitoring report documenting species diversity and areal coverage during the growing season is approved by the IRT.

Objective 16: Increase wildlife habitat by installing perch poles and cavity trees throughout the entire site.

Performance Standard	Documentation
16A. Perch-pole habitat structures constructed and installed according to IRT approved plans.	As-built drawings showing completed structures are approved by IRT.
16B. A minimum of 50 perch poles or snags will occur on the Bank Site 8 years following Phase 3 installation of 62 poles.	Monitoring report documenting locations of habitat structures. Naturally recruiting structures can be counted toward this total.

APPENDIX D: CREDIT GENERATION AND AWARD SCHEDULE

APPENDIX D.1: All Phases

The Justification for Credits is located in the Section D of the Resource Folder.

D.1.1. Generation of Credits for all Phases

- A. Credits will be established and awarded to the Bank upon the Sponsor's demonstration that the performance standards reflected in Table C-1 of Appendix C 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, riparian and upland systems on the Bank Site. This increase in function results from the re-establishment and rehabilitation of wetlands; re-establishment and rehabilitation of riparian systems; and enhancement of uplands 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 the following:

- Hydrogeomorphic Classification
 - Depressional
 - Riverine
- Cowardin System (Cowardin et al. 1979)
 - Palustrine
 - Riverine

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 Bank is constructed and the success of restoration and enhancement activities is assessed by the Corps and Ecology, in consultation with the IRT. The final number of credits will be determined by the Corps and Ecology, in consultation with the IRT and will be based on achievement of the performance standards.
- 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

Bank Activity	Affected Area (acres)	Utility Easement Acres (Not counted towards credits)	Credit Ratio (Activity area: universal credit)	Anticipated Number of Credits
Re-established Wetland	199	4.9	1 to 1	199.0
Rehabilitated Wetland, Plowed Field	14.9	0.1	1.5 to 1	9.9
Rehabilitated Wetland, Reed Canary	31.2	1	1.5 to 1	20.8
Riparian Upland	4.6	0.2	3 to 1	1.5
Upland	52.3	2.9	5 to 1	10.5
Buffer	84.9		0	0
Utility Easements (Power and Water)	9.1		0	0
TOTAL	396		N/A	241.7

D.1.2. Credit Award Schedule for all Phases

- 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, (2) no credits may be awarded for Phase 2 prior to meeting all of the performance standards associated with Objective 5, (3) no credits may be awarded for Phase 3 prior to meeting all of the performance standards associated with Objective 11, and (4) no credits associated with the final year of performance standards for a particular phase may be awarded until at least 60% of all possible credits for a particular phase have been awarded. Refer to the Resource Folder “Additional Information on Credit Release Percentages” and Tables D-2 through D-4 for Credit Release Schedules.

- B. For each phase of the Bank, the Corps and Ecology, in consultation with the IRT will typically approve the award of credits according to the schedules in Table D-2.1 through D-4.1. Credits may not be awarded sooner than specified in these tables, 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 these tables, the Sponsor may submit documentation of successful satisfaction of that performance standard during a subsequent year, and the Corps and Ecology, in consultation with the IRT will give full consideration to the award of appropriate credits for sale, use, or transfer without reduction or other penalty. The credit award schedule for each phase is independent from the others. The years shown in each table refer to time following approval of as-builts for that particular phase.

- 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 Bank 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.1.1.4 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, in consultation with the IRT and the Sponsor, will determine what remedial actions are necessary to correct the situation, pursuant to Article IV.H. and Section F.1.1.4, and direct their performance prior to the award of any additional mitigation credits.

APPENDIX D.2: Phase 1

D.2.1. Generation of Credits for Phase 1

The number of credits expected to be generated by Phase 1 of the Bank is 30% of the Bank total or 72.49 credits.

TABLE D.2.1. Generation of Credits for Phase 1

Phase 1 Performance Standard		Actual Credit Release per Year								
Phase 1 Timeline [Represents 30% of Total Credits]	Pre-Construct	0	1	2	3	4	5	6	7	Total
1A Signed MBI	8.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.05
1B Placement of Conservation Easement and Assignment	8.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.05
1C Formation of Long-term Management and Maintenance Fund	8.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.05
2A. Financial Assurance for Phase 1	4.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.83
3A. As-builts for ELJs & Ditches	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.50
3B. Minimum of 3 ELJs Present Year 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.04	6.04
3C. Minimum Wetland Hydrology (Determination)	0.00	0.00	0.00	12.09	0.00	0.00	0.00	0.00	0.00	12.09
4A. Cover Planting Installed	0.00	3.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63
4B. Invasive Cover Control to 40%	0.00	0.00	0.00	3.63	0.00	0.00	0.00	0.00	3.63	7.25
ANNUAL TOTALS	28.98	18.13	0.00	15.71	0.00	0.00	0.00	0.00	9.67	72.49
Potential Annual Release %	12.0%	7.5%	0.0%	6.5%	0.0%	0.0%	0.0%	0.0%	4.0%	30.0%
CUMULATIVE TOTALS	28.98	47.11	47.11	62.82	62.82	62.82	62.82	62.82	72.49	0.00

Year 0 is the year as-built drawings are approved.

APPENDIX D.3: Phase 2

D.3.1. Generation of Credits for Phase 2

The number of credits expected to be generated by Phase 2 of the Bank is 55.25% of the total Bank credits or 133.54 credits.

TABLE D.3.1. Generation of Credits for Phase 2

Phase 2 Performance Standard	Credit Release Per Year											
	Phase 2 Timeline [Represents 55% of Total Credits]	Pre-Construct	0	1	2	3	4	5	6	7	8	Total
5A. Phase 2 Financial Assurances		1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21
5B. Phase 2 Grading and Planting Plans		1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21
6A. As-builts for Grading		0.00	16.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.92
6B. Establish WL Hydrology (determination)		0.00	0.00	0.00	0.00	12.09	0.00	0.00	0.00	0.00	0.00	12.09
6C. Limit Un-vegetated, Permanently Inundated Area		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
7A. Vegetation As-planted Report		0.00	4.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.83
7B. Minimum Wetland Area (Delineation)		0.00	0.00	0.00	0.00	0.00	0.00	12.09	0.00	0.00	0.00	12.09
7C. Emergent Cover 40%		0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42
7D. Emergent Cover 50%		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
7E. Emergent Cover 70%		0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	2.42
7F. Emergent Diversity 8% for 3 Species		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
7G. Emergent Diversity 10% for 3 Species		0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	2.42
7H. Shrub Density		0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42
7I. Total Scrub Cover 35%		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
7J. Total Scrub Cover 50%		0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	2.42
7K. Total Scrub Cover 70%		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	2.42
7L. Shrub Cover 6% for three species each		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
7M. Shrub Cover 8% for three species each		0.00	0.00	0.00	0.00	0.00	0.00	3.63	0.00	0.00	0.00	3.63
7N. Shrub Cover 10% for three species each		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63	3.63
7O. Forest Density		0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42
7P. Total Forest Cover 35%		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
7Q. Total Forest Cover 50%		0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	2.42
7R. Total Forest Cover 65%		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	2.42
7S. Forest Cover 6% for three species each		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
7T. Forest Cover 8% for three species each		0.00	0.00	0.00	0.00	0.00	0.00	3.63	0.00	0.00	0.00	3.63
7U. Forest Cover 10% for three species each		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63	3.63
8A. Upland Forest Density		0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42
8B. Upland Species Cover 20%		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
8C. Upland Species Cover 35%		0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	2.42
8D. Upland Species Cover 50%		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	2.42
8E. Upland Forest Cover 4% for three species each		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
8F. Upland Forest Cover 6% for three species each		0.00	0.00	0.00	0.00	0.00	0.00	3.63	0.00	0.00	0.00	3.63
8G. Upland Forest Cover 10% for three species each		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63	3.63
9A. Invasive Cover Control to 30%		0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42
9B. Invasive Cover Control to 25%		0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	2.42
9C. Invasive Cover Control to 20%		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.02	3.02
9D. Zero Tolerance Invasives		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	2.42
10A. Habitat Structure As-Builts		0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42
ANNUAL TOTALS		2.42	24.17	9.67	0.00	36.26	0.00	37.46	0.00	0.00	23.57	133.54
Potential Annual Release %		1.0%	10.0%	4.0%	0.0%	15.0%	0.0%	15.5%	0.0%	0.0%	9.8%	55.25%
CUMULATIVE TOTALS		2.42	26.59	36.26	36.26	72.51	72.51	109.97	109.97	109.97	133.54	0.00

Year 0 is the year as-built drawings are approved.

APPENDIX D.4: Phase 3

D.4.1. Generation of Credits for Phase 3

The number of credits expected to be generated by Phase 3 of the Bank is 14.75% of the total Bank credits or 35.65 credits.

TABLE D.4.1. Generation of Credits for Phase 3

Phase 3 Performance Standard	Credits Release per Year											Total
	Pre-construct	0	1	2	3	4	5	6	7	8		
Phase 3 Timeline [Represents 15% of Total Credits]												
11A. Financial Assurances	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21
11B. Phase 3 Grading and Planting Plans	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21
12A. As-builts for Grading	0.00	7.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.25
12B. Establish Minimum WL Hydrology (Determination)	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42
12C. Establish Minimum WL Area (Delineation)	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.00	0.00	0.00	2.42	2.42
12D. Limit Un-vegetated, Permanently Inundated Area (3%)	0.00	0.00	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
13A. Vegetation As-planted Report	0.00	3.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63
13B. Forest Density (90%)	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
13C. Forest Diversity 35% for Forest Species	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
13D. Forest Diversity 50% for Forest Species	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.60
13E. Forest Diversity 65% for Forest Species	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60
13F. Forest Cover 6%	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
13G. Forest Cover 8%	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	1.21
13H. Forest Cover 10%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60
14A. Invasive Cover Control to 20%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81	1.81
14B. Zero Tolerance Invasives	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60
15A. Upland Forest Density	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
15B. Upland Forest Diversity 20% for Upland Species	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
15C. Upland Forest Diversity 35% for Upland Species	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.60
15D. Upland Forest Diversity 50% for Upland Species	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60
15E. Upland Forest Cover 4%	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
15F. Upland Forest Cover 6%	0.00	0.00	0.00	0.00	0.00	0.00	1.21	0.00	0.00	0.00	0.00	1.21
15G. Upland Forest Cover 10%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60
16A. Habitat Structures As-Built	0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42
16B. Minimum Perch Poles/Snags	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	2.42
ANNUAL TOTALS	2.42	13.29	1.21	3.02	2.42	0.00	3.63	0.00	0.00	0.00	9.67	35.65
Potential Annual Release %	1.0%	5.5%	0.5%	1.3%	1.0%	0.0%	1.5%	0.0%	0.0%	0.0%	4.0%	14.75%
CUMULATIVE TOTALS	2.42	15.71	16.92	19.94	22.36	22.36	25.98	25.98	25.98	35.65	0.00	0.00

Year 0 is the year as-built drawings are approved.

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

APPENDIX E.1: All Phases

E.1.1. Service Area

The service area for the Bank extends to within the Skagit County portion of the Water Resources Inventory Area 03 (WRIA 03), located in the Lower Skagit River Basin. The service area includes all fresh water wetland habitats of the Lower Skagit/Samish Watershed east of the easternmost boundaries of Swinomish Slough, Skagit Bay, Padilla Bay, and Samish Bay, excluding all islands and all brackish marshes, halotrophic wetlands or wetlands influenced by saline conditions of >0.5 parts per thousand salt at any time during the year.

- A. The Service Area Map shows the delineation of the service area (Figure E-1). The Service Area Rationale is located in the Section E of the Resource Folder.
- B. The Bank may be used to compensate for permitted impacts outside of the approved service area if specifically approved by the appropriate agencies requiring mitigation and 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 from the regulatory agencies with jurisdiction over the impact projects 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.
- B. 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 transferee's compensatory mitigation requirements associated with the impacting project, upon completion of the credit transaction.
- C. 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 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 Category I wetlands, compensation for impacts to these resources by Bank credits will be determined by the regulatory agencies on a case-by-case basis.

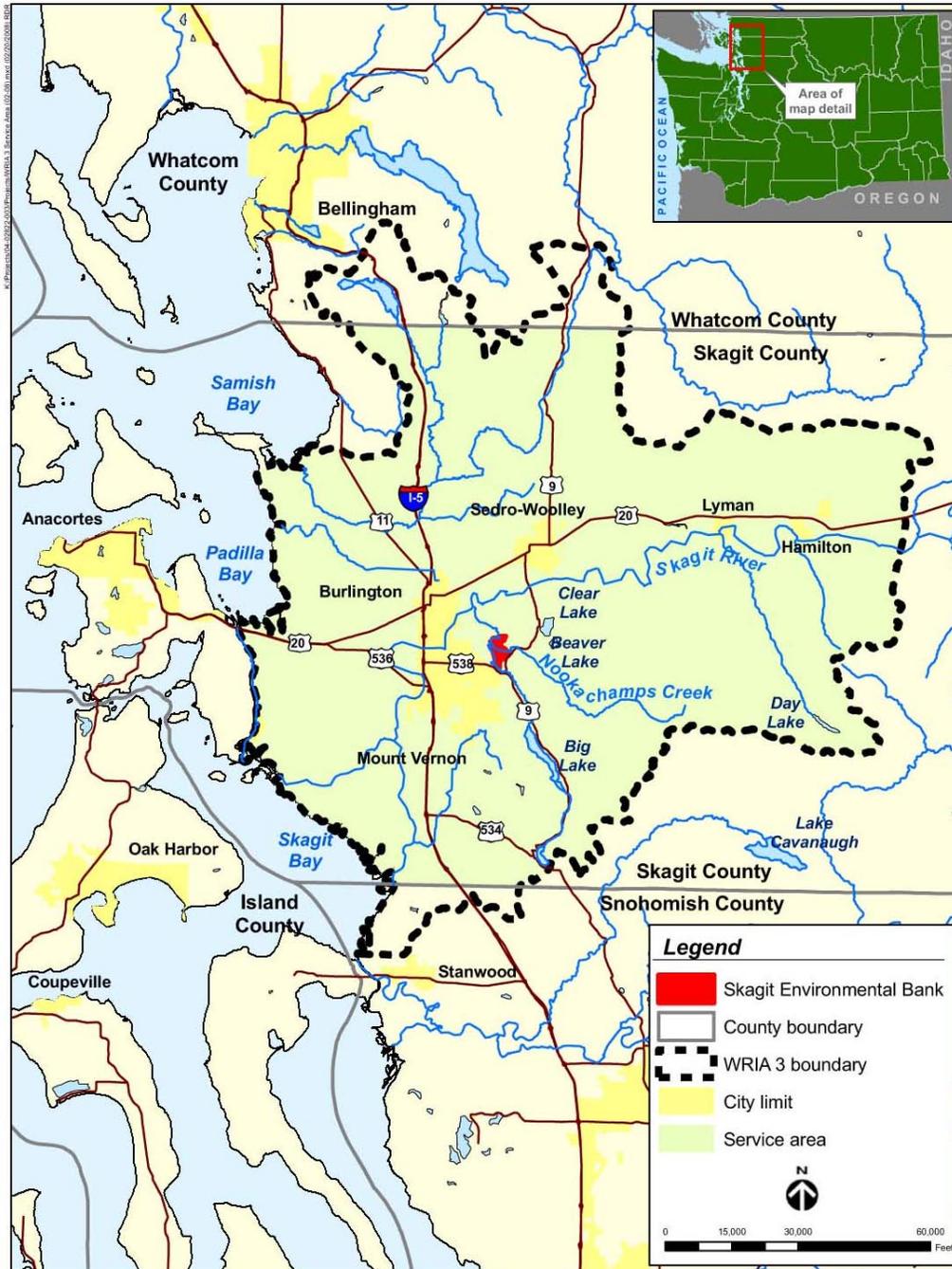


Figure E-1. Service area.

TABLE E-1: Credit-Debit Ratios

Resource Impact	Bank Credits: Impact Acreage
Wetland, Category I	Case-by-Case
Wetland, Category II	1.2:1
Wetland, Category III	1:1
Wetland, Category IV	0.85:1

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, Skagit County, 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.

- 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 in the best interest of the environment. 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;
 - (2) All appropriate and practicable measures to minimize adverse impacts to the aquatic ecosystem have been considered and included in the project; and
 - (3) All appropriate and practical on-site compensatory mitigation for unavoidable adverse impacts is 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 appropriate and environmentally preferable to other mitigation alternatives.

- C. 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” purchases), 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 Corps and Ecology, in consultation with the IRT. The Sponsor must obtain approval from the Corps and Ecology, following consultation with the IRT, prior to establishing currencies for any portion of the Bank other than the wetland mitigation credits that are established by Appendix D of this Instrument. 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 credits 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 Skagit County Auditor, and submit a copy of the recorded transaction to each member of the IRT within 30 days from stamped registration date.
- B. The ledger must follow the current ledger template approved by the Corps and Ecology. The following information, at a minimum, 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 purchaser/user/transferee; and include all of the following information that applies: permit number(s), permit issuance date, and name of the regulatory agency(ies) issuing 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 credit balance after the award or transaction.

- C. The Sponsor will provide an updated Bank ledger to each member of 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 through December 31. 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.

APPENDIX F: ESTABLISHMENT PERIOD MONITORING, REPORTING, MAINTENANCE, AND REMEDIAL ACTION

APPENDIX F.1: All Phases

F.1.1. 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/or 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. In addition to the reporting requirements detailed below, the IRT may require regular construction update reports be submitted to document progression of the construction and any approved changes to project design.

F.1.1.1 As-Built Reports:

As-built reports will be submitted to each member of the IRT for construction, upon the completion of grading and planting activities to verify topography, hydrology, construction and planting. As-built reports will be submitted to each member of the IRT within 90 days of completing construction of each phase 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. The as-built reports will also establish baseline conditions for future monitoring.

At a minimum, the following list of components should be included in 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 Bank 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 detail drawings and plan sheets showing ELJ installation details

- 11x17 maps of the Bank Site showing:
 - Topography with one-foot contours, 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”.

F.1.1.2 Monitoring Plan:

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. This plan describes the performance standards as certified in this mitigation bank instrument, the field methods and procedures that will track attainment of the performance standards, and the procedures for attaining quality assurance and quality control. The monitoring plan is designed to be as simple and quantitative as possible. The monitoring efforts will evaluate and document the success of the performance standards the performance standards dictate the data collection and analysis procedures defined in this plan. All monitoring will be conducted by qualified personnel.

Additional monitoring will be conducted as part of the (1) seed and live stake harvesting, (2) off-site groundwater monitoring, and (3) sediment monitoring. The details of these monitoring efforts are discussed in Sections F.2, F.3, and F.4 of this document, respectively.

Monitoring Methods

Some populations to be monitored are small enough to sample in their entirety. In other words, statistically valid sampling techniques are useful where the population is too large to assess in its entirety. Therefore, the monitoring techniques will vary according to the size of the population being monitored and the particular variable being monitored. Table F-1 shows the monitoring events according to the Phase and year they will be completed.

TABLE F-1. Performance Standard Monitoring Schedule

Phase and Year	Method	Phase	Year(s)	Time of Year
PHASE 1				
Year 0 Performance Standard:				
Establish photo monitoring stations. As-built grading plan. Note the elevations of the lowest gradients and the highest gradients.	Field Visit Total Assessment. Establish permanent photo monitoring stations immediately after phase 1 construction and take first photo's.	1	0	Immediately after phase one construction
Year 2 Performance Standard:				
3C. Establish wetland hydrology over a minimum of 30% of the Bank Site excluding buffers by 2 years following completion of installation of ELJs and ditch filling. Wetland hydrology is defined as saturation to the soil surface or free water in soil pits at 12 inches or less below the soil surface for at least 10% of the growing season.	Field Visit Total Assessment. Well data will be collected over the first three months of the growing season and a hydrologic map of the ground water levels, at their highest point for at least 10% of the growing season, will be created. Total area of wetland hydrology will be calculated off of the map.	1	2	First three months in the growing season
4B. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass will not exceed 40% of the mitigation Bank Site areas (including buffers) by 2 years following ELJ installation and filling of the ditches.	Field Visit Total Assessment. The Bank Site will be assessed for stands of Himalayan blackberry, Canadian thistle, and reed canary grass. Each zone area will be delineated by area to determine total coverage of all three species.	1	2	June or July
Year 7 Performance Standard:				
3B. A minimum of three ELJs will be present 7 years following installation.	Field Visit Total Assessment. A field visit will be made to identify the status of the ELJs.	1	7	Early spring
PHASE 2				
Year 1 Performance Standard:				
7C. Areal cover by native hydrophytic herbaceous plant species in areas targeted as emergent wetland will be at least 40% by 1 year following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	1	June or July
7H. Native hydrophytic shrub species will have a density of at least 90% of the original planting density in areas targeted as scrub-shrub wetland 1 year following Phase 2 initial planting.	Field Visit Total Assessment. Each scrub-shrub planting zone will be evaluated to assess stem density of plantings.	2	1	June or July
7O. Native hydrophytic woody species will have a density of at least 90% of the original planting density in areas targeted as forested wetland by 1 year following Phase 2 initial planting. (Woody species refers to non-herbaceous trees and shrubs.)	Field Visit Total Assessment. Each tree planting zone will be evaluated to assess stem density of plantings.	2	1	June or July
8A. Native woody species will have a density of at least 90% of the original planting density in areas targeted as upland 1 year following Phase 2 initial planting.	Field Visit Total Assessment. Each upland zone planted as scrub-shrub or forested will be evaluated to assess stem density of plantings.	2	1	June or July
9D. Maintain zero tolerance of Japanese knotweed, purple loosestrife, and English ivy colonization Map any specimens and eradicate during growing season of same year.	Monitor annually	2	1	June or July

Phase and Year	Method	Phase	Year(s)	Time of Year
PHASE 2 (continued)				
Year 2 Performance Standard				
6B. Wetland hydrology will be present over a minimum of 65% of the Bank Site 2 years following completion of Phase 2 grading and initial planting. Wetland hydrology is defined as saturation to the soil surface or free water in soil pits at 12 inches or less below the soil surface for at least 10% of the growing season.	Field Visit Total Assessment. Well data will be collected over the first three months of the growing season and a hydrologic map of the ground water levels, at their highest point for at least 10% of the growing season, will be created. Total area of wetland hydrology will be calculated off of the map.	2	2	First three months in growing season
6C. No more than 3% of the Bank Site outside of the existing stream channels will be permanently inundated and un-vegetated 2 years after completion of Phase 2 grading and initial planting.	Field Visit Total Assessment. Field visit will be made to assess the presence of permanent inundation. The total area will be calculated.	2	2	August or September
Year 3 Performance Standard				
7D. Areal cover by native hydrophytic herbaceous plant species in areas targeted as emergent wetland will be at least 50% by 3 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	3	June or July
7F. At least 3 native hydrophytic herbaceous species will have at least 8% areal coverage each in areas targeted as emergent wetland 3 years following Phase 2 initial planting. .	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	3	June or July
7I. Native hydrophytic shrub species will have at least 35% areal cover in areas targeted as scrub-shrub wetland by 3 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	3	June or July
7L. At least 3 native hydrophytic shrub species will have at least 6% areal cover each in areas targeted as scrub-shrub wetland 3 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	3	June or July
7P. Native hydrophytic woody species will have at least 35% areal cover in areas targeted as forested wetland by 3 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	3	June or July
7S. At least 3 native hydrophytic woody species will have at least 6% areal cover each in areas targeted as forested wetland by 3 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	3	June or July
8B. Native woody species will have at least 20% areal cover in areas targeted as upland by 3 years following Phase 2 initial planting.	Field Visit Total Assessment. All upland islands will be assessed in field.	2	3	June or July
8E. At least 3 native woody species will have at least 4% areal cover each in areas targeted as upland by 3 years following Phase 2 initial planting.	Field Visit Total Assessment. All upland islands will be assessed in field.	2	3	June or July
9A. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass species total cover will not exceed 30% of the total area of the Bank Site outside the 19 acres of existing reed canary grass by 3 years following Phase 2 initial planting.	Field Visit Total Assessment. The Bank Site will be assessed for stands of Himalayan blackberry, Canadian thistle, and reed canary grass. Each zone area will be delineated by area to determine total coverage of all three species.	2	3	June or July

Phase and Year	Method	Phase	Year(s)	Time of Year
PHASE 2 (continued)				
Year 4 Performance Standard				
7B. Wetland will be present on a minimum of 65% of the Bank Site 4 years following completion of Phase 2 initial planting.	Field Visit Total Assessment. Full site delineation. Delineation will be conducted and documented according to the 1987 Corps of Engineers Delineation Manual and appropriate supplements, as well as the current Washington State Wetlands Identification and Delineation Manual.	2	4	June or July
Year 5 Performance Standard				
7E. Areal cover by native hydrophytic herbaceous plant species in areas targeted as emergent wetland will be at least 70% by 5 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	5	June or July
7G. At least 3 native hydrophytic herbaceous species will have at least 10% areal coverage each in areas targeted as emergent wetland 5 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	5	June or July
7J. Native hydrophytic shrub species will have at least 50% areal cover in areas targeted as scrub-shrub wetland by 5 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the herbaceous planting zones.	2	5	June or July
7M. At least 3 native hydrophytic shrub species will have at least 8% areal cover each in areas targeted as scrub-shrub wetland by 5 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	5	June or July
7Q. Native hydrophytic woody species will have at least 50% areal cover in areas targeted as forested wetland by 5 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	5	June or July
7T. At least 3 native hydrophytic woody species will have at least 8% areal cover each in areas targeted as forested wetland by 5 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	5	June or July
8C. Native woody species will have at least 35% areal cover in areas targeted as upland by 5 years following Phase 2 initial planting.	Field Visit Total Assessment. All upland islands will be assessed in field.	2	5	June or July
8F. At least 3 native woody species will have at least 6% areal cover each in areas targeted as upland by 5 years following Phase 2 initial planting.	Field Visit Total Assessment. All upland islands will be assessed in field.	2	5	June or July
9B. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass will not exceed 25% of the mitigation Bank Site areas (including buffers) by 5 years following Phase 2 initial planting.	Field Visit Total Assessment. The Bank Site will be assessed for stands of Himalayan blackberry, Canadian thistle, and reed canary grass. Each zone area will be delineated by area to determine total coverage of all three species.	2	5	June or July

Phase and Year	Method	Phase	Year(s)	Time of Year
PHASE 2 (continued)				
Year 8 Performance Standard				
7K. Native hydrophytic shrub species will have at least 70% areal cover in areas targeted as scrub-shrub wetland by 8 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	8	June or July
7N. At least 3 native hydrophytic shrub species will have at least 10% areal cover each in areas targeted as scrub-shrub wetland by 8 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	8	June or July
7R. Native hydrophytic woody species will have at least 65% areal cover in areas targeted as forested wetland by 8 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	8	June or July
7U. At least 3 native hydrophytic woody species will have at least 10% areal cover each in areas targeted as forested wetland by 8 years following Phase 2 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	2	8	June or July
8D. Native woody species will have at least 50% areal cover in areas targeted as upland by 8 years following Phase 2 initial planting.	Field Visit Total Assessment. All upland islands will be assessed in field.	2	8	June or July
8G. At least 3 native woody species will have at least 10% areal cover each in areas targeted as upland by 8 years following Phase 2 initial planting.	Field Visit Total Assessment. All upland islands will be assessed in field.	2	8	June or July
9C. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass will not exceed 20% of the mitigation Bank Site areas (including buffers) by 8 years following Phase 2 initial planting.	Field Visit Total Assessment. The Bank Site will be assessed for stands of Himalayan blackberry, Canadian thistle, and reed canary grass. Each zone area will be delineated by area to determine total coverage of all three species.	2	8	June or July
PHASE 3				
Year 1 Performance Standard				
13B. Native woody species will have a density of at least 90% of the original planting density in areas targeted as forested wetland by 1 year following Phase 3 initial planting activities.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated to assess stem density of plantings.	3	1	June or July
14B. Maintain zero tolerance of Japanese knotweed, purple loosestrife, and English ivy colonization. Map any specimens and eradicate during growing season of same year.	Monitor annually	3	1	June or July
15A. Native woody species will have a density of at least 90% of the original planting density in areas targeted as upland 1 year following Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated to assess stem density of plantings.	3	1	June or July
Year 2 Performance Standard				
12B. Wetland hydrology will be present over a minimum of 81% of the Bank Site 2 years following completion of Phase 3 grading and planting. Wetland hydrology is defined as saturation to the soil surface or free water in soil pits at 12 inches or less below the soil surface for at least 10% of the growing season.	Field Visit Total Assessment. Well data will be collected over the first three months of the growing season and a hydrologic map of the ground water levels, at their highest point for at least 10% of the growing season, will be created. Total area of wetland hydrology will be calculated off of the map.	3	2	Early in growing season

Phase and Year	Method	Phase	Year(s)	Time of Year
PHASE 3 (continued)				
12D. No more than 3% of the Bank Site outside of the existing stream channels will be permanently inundated and un-vegetated 2 years after completion of Phase 3 grading and initial planting.	Field Visit Total Assessment. Field visit will be made to assess the presence of permanent inundation. The total area will be calculated.	3	2	August of September
Year 3 Performance Standard				
13C. Native woody species will have at least 35% areal cover in areas targeted as forested wetland by 3 years following completion of Phase 3 initial planting.	Field Visit Total Assessment. Each tree planting zone will be evaluated in the field.	3	3	June or July
13F. At least 3 native woody species will have at least 6% areal cover each in areas targeted as forested wetland by 3 years following Phase 3 initial planting.	Transect Intercept Sampling. Areal cover will be determined using random sampling along transects through the planting zones.	3	3	June or July
15B. Native woody species will have at least 20% areal cover in areas targeted as upland by 3 years following Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	3	June or July
15E. At least 3 native woody species will have at least 4% areal cover each in areas targeted as upland by 3 years following Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	3	June or July
Year 5 Performance Standard				
13D. Native woody species will have at least 50% areal cover in areas targeted as forested wetland by 5 years following completion of Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	5	June or July
13G. At least 3 native woody species will have at least 8% areal cover each in areas targeted as forested wetland by 5 years following Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	5	June or July
14A. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass will not exceed 20% of the mitigation Bank Site areas (including buffers) by 5 and 8 years following Phase 3 planting.	Field Visit Total Assessment. The Bank Site will be assessed for stands of Himalayan blackberry, Canadian thistle, and reed canary grass. Each zone area will be delineated by area to determine total coverage of all three species.	3	5	June or July
15C. Native woody species will have at least 35% areal cover in areas targeted as upland by 5 years following Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	5	June or July
15F. At least 3 native woody species will have at least 6% areal cover each in areas targeted as upland by 5 years following Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	5	June or July
Year 8 Performance Standard				
12C. Wetland will be present on a minimum of 81% of the Bank Site 8 years following completion of Phase 3 grading.	Field Visit Total Assessment. Full site delineation. Delineation will be conducted and documented according to the 1987 Corps of Engineers Delineation Manual and appropriate supplements, as well as the current Washington State Wetlands Identification and Delineation Manual.	3	8	June or July
13E. Native woody species will have at least 65% areal cover in areas targeted as forested wetland by 8 years following completion of Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	8	June or July

Phase and Year	Method	Phase	Year(s)	Time of Year
PHASE 3 (continued)				
13H. At least 3 native woody species will have at least 10% areal cover each in areas targeted as forested wetland by 8 years following Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	8	June or July
14A. Areal cover of Himalayan blackberry, Canadian thistle, and reed canary grass will not exceed 20% of the mitigation Bank Site areas (including buffers) by 5 and 8 years following Phase 3 planting.	Field Visit Total Assessment. The Bank Site will be assessed for stands of Himalayan blackberry, Canadian thistle, and reed canary grass. Each zone area will be delineated by area to determine total coverage of all three species.	3	8	June or July
15D. Native woody species will have at least 50% areal cover in areas targeted as upland by 8 years following Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	8	June or July
15G. At least 3 native woody species will have at least 10% areal cover each in areas targeted as upland by 8 years following Phase 3 initial planting.	Field Visit Total Assessment. Each scrub-shrub or tree planting zone will be evaluated in the field.	3	8	June or July
16B. A minimum of 50 perch poles or snags will occur on the Bank Site 8 years following Phase 3 installation.	Field Visit Total Assessment. Site visit to document locations of habitat structures. Naturally recruiting structures can be counted toward this total.	3	8	June or July

There will be at least 10 monitoring events spread over at least 13 years, depending on when each phase of the Bank is implemented. Permanent photo points will be established after Phase 1 construction to support the monitoring effort. There will be 2 field sampling methods employed over the entire monitoring period: Field Visit Total Assessment and Transect Intercept Sampling. Table F-1 lists the performance standards per event and the type of field sampling method that will be employed to assess data to determine the status of each performance standard.

Field Visit Total Assessment

The first type of method we call Field Visit Total Assessment. This procedure will be used where the entire population we are monitoring can be done without sampling. Specifically, we will employ the Field Visit Total Assessment for the following:

- To collect well data to allow us to map the near surface saturation elevations during the early growing season. Five continuous collection well data receivers will be placed among the entire network of wells, and data will be collected every week for the first three months of the growing season. The continuous data collection wells will allow us to extrapolate across the entire set of wells to determine how long an area remains hydric (ground water within 12 inches of the surface). A hydrologic map of the ground water levels, at their highest point for at least 10 percent of the growing season, will be created. Total area of wetland hydrology will be calculated off of the map.
- To satisfy the Skagit County Planning Department' request to assess the amount of soil redistribution on the Bank Site over time via the Sediment Monitoring Plan (as described in Section F.4). During the monitoring period we will survey the elevations at several of the lowest points on the Bank Site, the highest points on the Bank Site, and some reference points on adjacent property. This will allow us to evaluate the soil movement on the Bank Site.
- To assess the entire Bank Site for stands of Himalayan blackberry, Canadian thistle, and reed canarygrass. Each stand of the non-native will be delineated by area using GPS to determine total coverage of all three species.
- To document the status of the ELJs.
- To determine the stem density of trees and shrubs in scrub-shrub and forested wetlands, and in upland areas, during the year 1 monitoring event after each of the three phases. The field staff will use transects to assess the stem density of the planted woody species.
- To determine the areal cover and species composition of trees and shrubs in scrub-shrub and forested wetlands and uplands during the 3, 5, and 8-years-after-Phase 3 monitoring events. The field staff will use transects to assess the areal cover of the planted woody species.

- To assess permanent inundation. Any areas of total inundation will be mapped using GPS and the total area will be calculated.
- To determine the percent cover of trees and shrubs on upland islands. Because the upland planting zone polygons will be mapped and relatively small in area, the field staff will make a visual assessment of the survival on randomly selected islands totaling 20 percent of the total island area, and the changes in areal cover in subsequent years, of the planted woody species.
- To complete full site delineations. Delineations will be conducted and documented according to the 1987 Corps of Engineers Delineation Manual and appropriate supplements, as well as the current Washington State Wetlands Identification and Delineation Manual.
- To identify the presence of Japanese knotweed, purple loosestrife, and English ivy. Any plants found will be pulled or otherwise eradicated.
- To document locations of perch-pole habitat structures. Naturally recruiting structures can be counted toward this total. The field crew will visit the location of each perch pole as GPS'd during the as-build survey.

Transect Intercept Sampling

The size of some of the large vegetation areas will not allow anyone to assess their entire populations representative samples must be taken. This will require that species composition and cover be sampled using a standard field method called Transect Intercept Sampling. This method will be employed in both upland and wetland plant communities.

We will employ the Transect Intercept Sampling Method for the following:

- To assess a representative sample of the cover and species composition in herbaceous plant communities.
- To assess a representative sample of the woody species cover and species composition. Once the survival of woody species is determined in the first year following the planting in each phase using the Field Visit Total Assessment method, the polygon areas will have to be sampled using the Transect Intercept Sampling Method to determine species composition and cover.

Permanent line transects will be located through the various polygons that are defined as either herbaceous, scrub-shrub, forested wetlands, or uplands. The direction and length of the transects will be chosen in order to acquire samples across the hydrologic gradient within each polygon. The number of transects will depend on the configuration of the vegetation polygons and the topographic gradient. They will typically be placed approximately 1,000 feet apart. A sample area will be evaluated initially to determine the actual species composition and cover for comparison with the composition and area determined for the same area sampled with transects.

According to Bonham (1989, *Measurements for Terrestrial Vegetation*, John Wiley and Sons publishers) measuring randomly placed sample plots along transects is the most common method of determining cover and species composition. The size of the plot unit for frequency and cover measurement is basically a function of plant size and species richness in a unit area. Sampling plot sizes will be 1-square-meter plots to measure herbaceous plants, 10-square-meter plots to measure shrubs, and 100-square-meter plots to measure trees.

The number of plots necessary to determine the species composition and cover will be determined by the addition of new species along the transect. Once two consecutive plots show no more than 2 new species, then three additional plots will be added to the total along each transect. For determining species composition and cover, there can be no less than 5 plot samples per transect.

Each plot will be photographed as a backup to the field estimation.

F.1.1.3 Reports:

The Sponsor will prepare and submit to each member of the IRT 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. These reports will also include results from seed and live stake harvest monitoring, off-site groundwater well monitoring, and sediment monitoring. Monitoring reports 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 and wildlife communities, effectiveness of the restoration and enhancement 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 transects will be established at selected locations within each phase of the Bank. Standard 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, in 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.
- F. Map showing where Field Visit Total Assessment and Transect Intercept Sampling Methods have been applied on the Bank Site.
- G. Seed and Live Stake Harvest Report with map showing where seed harvest and cutting monitoring occurred. The Harvest Plans will be submitted separately to each member of the IRT (see Section F.2.4 for details).
- H. Results of off-site well monitoring (described in Appendix F.3)
- I. Results of sediment monitoring (described in Appendix F.4)

F.1.1.4 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 wetland monitoring data and/or stream channel assessments may result in the identification of other factors, not identified in the performance standards or monitoring data, causing the Bank to fall short of its objectives. The Corps and/or Ecology, following consultation with the IRT and the Sponsor, may also direct adaptive management actions, if the Corps and/or 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 Bank objectives, either through achieving the original performance standards or through new standards subsequently developed based on evaluation of the Bank Site as it matures and it is assessed. The Sponsor shall also implement all mitigation that the Corps and/or Ecology, following consultation with the IRT, determine 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/or 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, approve 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 and 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 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, after consultation with the IRT, may terminate this Instrument and the operation of the Bank pursuant to Article IV.J.
- D. If the Corps and/or Ecology, following consultation with the IRT, direct remedial or adaptive management action pursuant to Section F.1.1.4.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.1.1.4.B., the Corps and/or Ecology may alternatively implement remedial action on their 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 in this Instrument.

F.1.1.5 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, road and trail maintenance as necessary, clean-out of culverts, monitoring of the water control structures, and clean-up of trash).

APPENDIX F.2 SEED AND LIVE STAKE HARVEST PLAN

The harvest of seed and stake cuttings are an allowed activity on the Bank Site with the contingency that it does not negatively affect bank performance standards and the overall health of the wetland and upland vegetation communities on the Bank Site. Seed collection will be strictly monitored and approved by the Corps and Ecology, in consultation with the IRT, on an annual basis and collections methods (by hand) will be minimally invasive to prevent the creation of large areas of disturbance, pathways, or other noticeable anthropogenic impacts. Seed and stake harvest will be used to supplement planting efforts within the Bank as well as sold commercially to support restoration projects within the Puget Sound lowlands.

F.2.1 Guidelines for Monitoring and Harvest

Guidelines for monitoring and harvest of seed and live stakes have been developed to ensure that plant material collection is accomplished in a sustainable manner that does not affect the success of revegetation efforts and overall ecosystem health at the Bank.

All harvesting activities will be completed by hand: no mechanical equipment of any kind will be used. Harvesting will be scheduled during periods of dry weather to prevent any damage to the structure of wetland soils and plant roots. Routes to harvesting areas will not be established and collectors will be instructed to spread out during travel to and from collection areas to prevent plant and soil damage through repeated trampling.

The following sections comprise a description of the harvesting schedule and monitoring techniques that will be employed to ensure the sustainable collection of plant material at the Bank as part of the proposed native seed and live stake harvest.

Seed crop abundance was chosen as the main metric for monitoring because (1) it serves as an representation of overall population vigor (i.e. if plant community productivity decreases, it is likely that seed crop production will also decrease), (2) it serves as a gauge of population reproductive success, and (3) it is the primary plant material being collected.

F.2.2 Seed Harvest Protocols

Target species for seed harvest will be composed of trees, shrubs, and emergents currently on-site, in addition to those that will be planted. See Section F.2.2.3 below for a species list. [Note: the Bank Site is currently characterized by low emergent diversity (although abundance of these species is relatively high) and Bank objectives include increasing species diversity in all vegetation strata.]

F.2.2.1 Emergents

- A pool of potential reference areas will be identified (both on- and off-site) that are characterized by healthy stands of the target species. These areas will be marked using GPS and their locations will be displayed on a GIS map to be submitted to the Corps and Ecology for approval, following consultation with the IRT.

- Reference areas for a given year will be randomly selected from the pool, and the sampling scheme for these areas will involve the harvesting of the entire mature/ripe seed crop within randomly selected 1m² plots.
- The seed collected from the reference areas will be weighed, reported in grams, and averaged. These results will serve as the standard level of seed production (on a 1m² basis) for the target species for that particular year. Reference site data will be collected for three years prior to any seed harvesting from planted emergents to obtain adequate baseline data. The seed collected from the reference plots will then be redistributed at their respective locations, ensuring no net loss of plant reproductive material in reference areas.
- The seed crop at a proposed collection site within the Bank boundaries will be sampled in the same manner (randomly selected 1m² plot; harvesting of entire mature/ripe seed crop in plot) to determine if seed production meets the abundance standard set by the reference sites. Only mature/ripe seeds will be collected. If the seed crop within the 1m² sample plot meets the abundance standard, the stand of emergent species represented by the sample plot may be selected for collection in that particular year. Seeds will be collected when they are considered mature/ripe for the individual species and will be no more than 30 percent of the visible seeds. Harvesting will be suspended in years of low seed production. Low seed production is defined as less than 50 percent of the average seed crop produced in previous years. Collection will be conducted by hand stripping seed from the ripe heads. There will be no cutting of vegetation involved. It will be very difficult to visually notice any disturbance from seed collection. A positive impact of harvesting of seed in this manner is that seed will be released from the plants and pressed into the soil by foot traffic. This will result in a buildup of the emergent plant seed bank in the soil and help ensure the sustainability of the plant community. [Note: In areas exhibiting particularly decadent and robust existing stands of target species, it may be beneficial to commence harvesting immediately (see discussion in Section F.2.4 below).]
- Sampling results in subsequent years will be compared to both reference site data and past Bank collection site data to detect any potential trend toward decline in seed production. If reference site averages indicate a decline in seed production, corresponding Bank collection site declines in production can likely be attributed to yearly climatic variation affecting regional seed crops. However, if seed crops in Bank collection areas display a downward trend in production that is not reflected in reference site data, it is likely that harvesting is causing a negative effect on plant community reproduction and corrective measures will be taken. If harvesting is suspected of causing a negative effect on plant community reproduction, seed harvesting will be suspended until the Corps and Ecology, in consultation with the IRT, approve further harvesting.

F.2.2.2 Shrubs and Trees

- A pool of potential reference areas will be identified (both on- and off-site) that are characterized by healthy stands of the target species. These areas will be marked using GPS and their locations will be displayed on a GIS map to be submitted to the Corps and Ecology for approval, following consultation with the IRT.
- Reference areas for a given year will be randomly selected from the pool, and the sampling scheme for these areas will involve the harvesting of the entire mature/ripe seed crop from three selected individual trees or shrubs within each reference area (they should all be the same size).
- The seed collected from each sampling individual in each reference area will be weighed, reported in grams, and averaged. These results will serve as the standard level of seed production for the target species (of corresponding size) for that particular year. The seed collected from the reference areas will then be redistributed at their respective locations, ensuring no net loss of plant reproductive material in reference areas.
- The seed crop at a proposed collection site within the Bank boundaries will be sampled in the same manner (three randomly selected individual trees or shrubs with size corresponding to the reference individuals; harvesting of entire mature/ripe seed crop on individual plants) to determine if seed production meets the abundance standard set by the reference sites. If so, this area may be selected for collection the following year. Seeds will be collected when they are considered mature/ripe for the individual species and will be no more than 30 percent of the visible seeds. There will be no repeat collection on sample sites. Harvesting will be suspended in years of low seed production. Low seed production is defined as less than 50 percent of the average seed crop produced in previous years. [Note: In areas exhibiting particularly decadent and robust existing stands of target species, it may be beneficial to commence harvesting immediately (see discussion in monitoring section below).]
- Sampling results in subsequent years will be compared to both reference site data and past Bank collection site data to detect any potential trend toward decline in seed production. If reference site averages indicate a decline in seed production, corresponding Bank collection site declines in production can likely be attributed to yearly climatic variation affecting regional seed crops. However, if seed crops in Bank collection areas display a downward trend in production that is not reflected in reference site data, it is likely that harvesting is causing a negative effect on plant community reproduction and corrective measures will be required. If harvesting is suspected of causing a negative effect on plant community reproduction, seed harvesting will be suspended until the Corps and Ecology, in consultation with the IRT, approve further harvesting.

F.2.2.3 Seed Collection Schedule

The schedule below identifies the three cluster dates for the collection of seed from various species. Some flexibility must be provided since the timing of seed maturation for the different target species varies throughout the growing season.

Late May 20th – May 30th

Populus balsamifera ssp. *Trichocarpa*/Black Cottonwood
Salix lucida/Pacific Willow
Salix sitchensis/Sitka Willow
Salix hookeriana/Hooker's Willow

July 10th – 20th

Sagittaria latifolia /Wapato
Rhamnus purshiana/Cascara
Lonicera involucre/Black Twinberry
Alopecurus aequalis/Short-awn Foxtail
Eleocharis palustris/Common Spikerush
Deschampsia cespitosa/Tufted Hairgrass
Eleocharis palustris/Common Spikerush
Carex obnupta/Slough Sedge
Juncus ensifolius/Daggerleaf Rush
Juncus effusus/Soft Rush
Juncus ensifolius/Daggerleaf Rush
Juncus balticus/Baltic Rush
Scirpus americanus/Three-square Bulrush
Scirpus microcarpus/Small-fruited Bulrush

Late August 20th –September 10th

Alnus rubra/Red Alder
Picea sitchensis/Sitka Spruce
Thuja plicata/Western Red Cedar
Malus fusca/Pacific Crabapple
Physocarpus malvaceus/Pacific Ninebark
Rosa nutkana/Nootka Rose
Rosa pisocarpa/Swamp Rose
Aster subspicatus/ Douglas aster
Cornus stolonifera/Red Osier Dogwood
Crataegus douglasii/Douglas Hawthorn

F.2.3 Cuttings

Cuttings will be collected during the winter (January-February) from the willows on the Bank Site. The first harvest will begin with the existing established willows and dogwoods that abundantly line the waterways on-site. For the first five years following Bank Certification,

cuttings will be harvested from existing willows and dogwoods by thinning up to 30% of existing plants to increase vigor and habitat value. Shrubs in areas of dense reed canarygrass and on immediate streambanks will not be harvested. This will avoid reducing shade on the stream and stimulating the growth of the reed canarygrass.

Collection of cuttings in areas to be planted in Phase 2 will occur over a 10 year period after Phase 2 as-built approval with 10% of the total area occupied by willows (measured at the time of harvest using high resolution GPS) on the Bank Site designated for harvesting each year with no areas receiving repeat harvests. The harvest of cuttings from planted willows and dogwood will be conducted only on the most vigorous and robust individuals in the population: no cuttings will be collected from individual plants less than 2 meters in height. The cutting harvest operation of planted willows will remove no more than four branches from each plant. Cuttings will be approximately 1 meter in length, 1-2.5 centimeter in diameter at the base, straight, and disease-free.

F.2.4 Harvest Monitoring and Reporting Strategy and Timeline

The harvesting of material will be focused in two specific areas; (1) abundant, robust existing vegetation and (2) well-established vegetation that develops from Phase 2 planting activities.

Harvest of seed and stakes will be an allowed activity with the contingency that it does not negatively affect bank performance standards and the overall health of the wetland and upland vegetation communities. It is anticipated that collection from planted species may not be started for up to three years following the initial planting. The Sponsor will submit a written request to each member of the IRT to begin collection of seed and/or stake material. The request will contain specific harvest plans and information to insure protection of ecological functions. The Sponsor must receive approval of the material harvesting plan by the Corps and Ecology, in consultation with the IRT, prior to commencement of activities.

Seed and stake collection will be strictly monitored and approved on an annual basis and collection methods (by hand) will be minimally invasive to prevent the creation of large areas of disturbance, pathways, or other noticeable anthropogenic impacts. Seed and stake harvest will be used to supplement planting efforts within the Bank and will be sold commercially to support restoration and other projects within and outside of the Puget Sound lowlands.

As described, there is currently abundant existing plant stock found in some areas within the Bank Site. Harvesting of plant material in these areas would provide an exceptional opportunity for revitalization of on-site vegetation communities through establishment of a surrogate for natural disturbance mechanisms that have been lost due to human modification. Browsing historically played a significant role in development of Skagit floodplain vegetation communities. With the conversion of these areas to farmland, habitat loss has greatly reduced the ability of these systems to support large herbivores, resulting in a significant shift in plant community dynamics in remnant floodplain habitat due to significantly lower browsing pressure. Selective thinning serves as a surrogate for this natural process, facilitating restoration of historic ecosystem function. Selective thinning serves the additional purpose of reintroducing an element of disturbance previously caused by a high-frequency flooding regime (i.e. branch loss and dieback due to inundation and physical perturbation). With the potential provision of these

benefits in overgrown areas within the Bank Site, it stands to reason that selective thinning of decadent, robust stands of existing vegetation (willow, dogwood, and some emergent species) would be a logical first step toward restoration of ecosystem function. For this reason, it is recommended that harvesting in these areas commence immediately, with follow-up monitoring being used to ensure adherence to Bank Performance Standards.

Additionally, the Conservation Easement and Assignment define the requirement of the land trustee to accept the responsibility of overseeing continued harvesting activities. Monitoring and reporting will continue annually until all Performance Standards are met prior to turning this activity over to the long-term manager/land trustee. A plant material monitoring and harvest plan will be submitted by early spring of the year for which harvest is intended so that the Corps and Ecology, in consultation with the IRT, can review it in time for May seed harvest. Therefore, each year's harvest plan would be based on the monitoring results from the previous year of seed production (presented to each member of the IRT in the form of an annual report). Seed production will be monitored for three years prior to the first harvest. The annual reports will be submitted in the fall of each year.

Timeline for monitoring and documentation submission to each member of the IRT:

- Summer [beginning in May] (1st, 2nd, and 3rd years) – reference site sampling and harvest plan for existing vegetation communities.
- Fall (1st and 2nd years) – annual report
- Fall (3rd year) – Summary report (will address results from three years of monitoring and implications for first harvest plan)
- March (4th and subsequent years) – Harvest plan submission to each member of the IRT (based on IRT comments on previous year's report)
- March-April (4th and subsequent years) – Harvest plan revisions (based on IRT comments)
- April (4th and subsequent years) – Harvest Plan finalized and approved by Corps and Ecology, in consultation with the IRT.
- Summer (4th and subsequent years) – Harvest and sampling
- Fall (4th and subsequent years) – Annual report submitted to IRT

The Annual Reports will:

- Present findings from reference area and collection area sampling activities.
- Present overall plant material collection results and provide comparisons to reference area data and previous years' data

- Discuss any unsatisfactory results and provide protocol adjustments required to improve plant material reproductive success and overall ecosystem health at the Bank.

The Harvest Plans will:

- Clearly define species to be collected, location where seed will be collected (including GIS maps), and amounts of seed/cuttings to be collected based on annual report from previous year
- Clearly describe harvesting, storage, and plant material tracking methods
- Address safety considerations for harvesters

As mentioned, reference area results will be tracked over time. Any downward trend in seed production in collection areas as compared to reference area data will result in corrective measures involving reduction or suspension until production has recovered to reference standard levels. It should be reemphasized that climatic variability will lead to fluctuation in seed abundance which will affect harvest goals.

In summary, plant material collection will be accomplished in a sustainable manner conducive to the achievement of restoration performance standards and the overall goals of the Bank. The harvesting techniques, collection schedule, and monitoring protocols discussed in this Instrument represent the specific elements of the proposed plant material collection plan that ensures consistency with this objective.

APPENDIX F.3 OFF-SITE GROUNDWATER MONITORING

As mentioned in Appendix B.1.2.1, a total of eight groundwater monitoring wells will be used to monitor the proximal groundwater table.

The five Offsite Wells shall be maintained north and east of the Bank Site as shown on Figure F-1. These wells are adjacent to or on the boundary of the Bank Site. The three Far Offsite Wells shall be maintained far offsite as shown on Figure F-1. This first Far Offsite Well will be located in the Verdoes Site (the “Verdoes Well”), upstream of the Bank Site along the East Fork Nookachamps Creek (Figure F-1). The second Far Offsite Well will be at a location between the Bank Site and the Skagit River at a comparable elevation to the five Offsite Wells, but more than two miles from the Bank Site to be used as a “control” location (the “Control Well”) (Figure F-1). The third Far Offsite Well (the “Beaver Lake Road Well”) will be installed along the East Fork Nookachamps 2 miles upstream of the Bank boundary (Figure F-1). Each of the wells shall be monitored each year for groundwater once per month during the months of April through October (the “Growing Season”) (Table F-2). Groundwater monitoring data shall be reported annually to the Skagit County Department of Planning and Development Services before the end of the calendar year. The annual groundwater monitoring report shall include a same month comparison (i.e., comparing monitoring levels for each April in each monitoring year) and a year-to-year comparison (i.e., comparing the mean groundwater levels in each monitoring year’s Growing Season). The annual groundwater monitoring report shall note any monitoring data taken within 72 hours after a significant rainfall event (cumulative rainfall totaling more than one inch in the period) or taken within 72 hours of the Skagit River being at flood stage at Mount Vernon (“Excluded Monitoring Data”). The information in the annual groundwater monitoring report will also be submitted to each member of the IRT, as a section of the overall Bank monitoring report submitted annually each February.

TABLE F-2. Offsite Well and Sediment Monitoring Schedule

	Method	Time of the Year	Duration
Offsite Groundwater Hydrology	Well data will be collected over the growing season and compared annually to onsite groundwater wells,	April – October	30 years
Sedimentation Rates	Elevations measurements of four fixed points at three Sediment Accumulation Areas (SAA)s within the Bank Site and survey of two cross sections along the East Fork Nookachamps Creek.	August or September	Ending 10 years as of date of as-built drawings

In the event that the monitoring data shows a statistically significant increase in groundwater levels for any of the Offsite Wells over any two consecutive years (in the same month comparison or the year-to-year comparison), not considering Excluded Monitoring Data, the annual report shall include an assessment of the likely causes of this increase, taking into account changes in groundwater level at the Control Well and, if the increase is likely caused by the Bank, a list of proposed mitigation measures. After receiving the annual report, the County shall make a determination whether the increase is caused by the Bank and, if it is, require all necessary mitigation measures be implemented to restore groundwater levels.

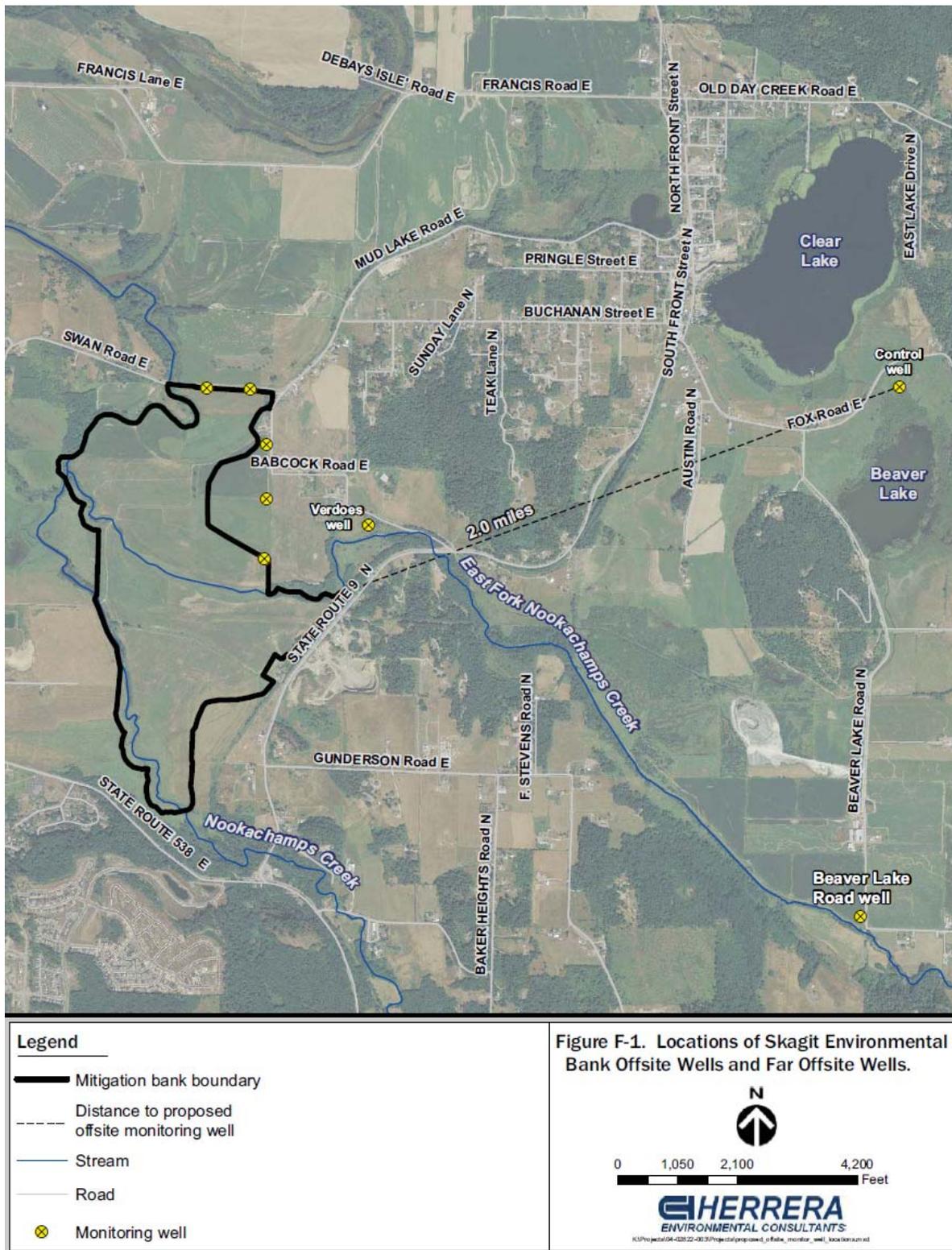


Figure F-1. Locations of Offsite Wells and Far Offsite Wells.

Groundwater monitoring of the Offsite Wells began in 2006 to establish baseline conditions. Monitoring shall continue in perpetuity unless, 30 years after installation of the Engineered Log Jams on the Bank Site, no statistically significant increase in groundwater levels is found.

APPENDIX F.4 SEDIMENT MONITORING

The monitoring of sedimentation rates on the Bank Site and in the East Fork Nookachamps Creek will be conducted to detect whether grade control structures, grading, and vegetation planting will accelerate the rate of onsite sedimentation (Table F-2). Results of this monitoring will be incorporate into the annual monitoring report due each February to each member of the to the IRT and Skagit County.

- A. Onsite sediment aggradation monitoring will detect local long-term aggradation rates at the Skagit Environmental Bank resulting specifically from Skagit River flood deposition and review these rates within the context of regional wetland floodplain aggradation. If sampling shows an accretion of more than 1 foot of soil and plant communities transition from wetland to upland composition (as defined in the wetland plant section of the 1987 *Wetland Delineation Manual*, US Army Corps of Engineers) after the start of the monitoring and within the 10-year monitoring period, and if the data does not show that the soil accretion and plant community changes are a regional trend, then the Sponsor will submit a list of proposed mitigation measures. Further details on sediment monitoring are provided in the Sediment Monitoring Plan provided in Section B of the Resource Folder.
- B. Sediment monitoring on the East Fork of Nookachamps Creek at two locations – one at the eastern Bank Site boundary and one at the SR 9 Bridge (the “Stream Sediment Monitoring Locations”). Sediment monitoring shall consist of surveying the cross section of the creek bed at the same locations and comparing these results with baseline conditions. In order to account for natural longitudinal bed form movement, monitoring at the eastern Bank Site boundary shall consist of cross section surveys at three consistent locations within 100 feet of the Bank Site boundary and one average cross section shall be established from these three surveys. Because longitudinal bed form movement is less likely to occur at the SR 9 Bridge location, only one cross section is needed there.

In the event that sediment monitoring shows, at either Stream Sediment Monitoring Location, a six inch (6”) or greater average sediment increase along the cross section, as compared with baseline conditions, Clear Valley shall assess the causes of this increase and, if the increase is caused by the Bank, provide a list of proposed mitigation measures. The County shall make a determination whether the sediment increase is caused by the Bank and, if it is, shall require all necessary mitigation measures be implemented, such as lowering the elevations of the engineered log jams.

APPENDIX G: LONG-TERM PROTECTION AND MANAGEMENT

APPENDIX G.1: All Phases

Justification or supporting data under the title Protective Covenant, and Long Term management and maintenance are in the Section G of the Resource Folder.

G.1.1 Conservation Easement; Deed and Assignment of Easement Rights:

- A. A portion of the Bank Site (hereinafter, the TIC Property) is presently owned by the Sponsor and Clear Valley Environmental Farm II, Inc. (hereinafter, CVEF Inc.), as tenants in common. Pursuant to a Tenancy in Common Agreement between the Sponsor and CVEF Inc., the Sponsor holds all decision making authority with respect to the management, operation and control of the TIC Property. This authority includes the ability to burden the title to the TIC Property. The remainder of the Bank Site (hereinafter, the Easement Property) is encumbered by a reserved easement held by the Sponsor and CVEF Inc., benefitting the TIC Property, in which the Sponsor and CVEF Inc. (and their successors and assigns) hold an exclusive right to use the Easement Property for the creation of the Bank (hereinafter, the Reserved Easement). The TIC Property and the Easement Property comprise the entire Bank Site, and is legally described in Exhibit 1 of the Appendices. The Sponsor will ensure, pursuant to Article III.D (Real Estate Provisions) of the Instrument, that (i) an appropriate conservation easement (hereinafter, the Conservation Easement) is granted in perpetuity and recorded against the TIC Property, and (ii) a Deed and Assignment of Easement Rights (hereinafter, the Assignment) of the Reserved Easement is conveyed to the conservation easement holder, and is recorded against the Easement Property. Both the Conservation Easement and the Assignment must be approved by the Corps and Ecology, in consultation with the IRT, and shall be recorded with Skagit County. A copy of the recorded Conservation Easement and Assignment shall be provided to all members of the IRT. The Conservation Easement and the Assignment shall each reflect that it may not be removed, modified, or transferred without written approval of the Corps and Ecology, in consultation with the IRT. The Corps and/or Ecology may consider any alteration or rescission of any Conservation Easement, or the rights granted under the Assignment, a default of the Sponsor's obligations under this Instrument and may institute appropriate action pursuant to Article IV.J. The Sponsor shall provide no less than 60 days' written notice to the IRT of any transfer of (i) fee title or any portion of the ownership interest in the TIC Property or the Easement Property to another party, or (ii) any transfer of all or partial rights in the Reserved Easement to another party. Conveyance of any interest in the TIC Property shall be subject to this Conservation Easement, and transfer of any rights in the Reserved Easement shall be subject to the terms and conditions as set forth in the Assignment. Use prohibitions reflected in the Conservation Easement and the Assignment will preclude the Bank 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, in consultation with the IRT, and not adversely affecting the ecological viability of the Bank. Any portion of the

Bank Site not encumbered by either the Conservation Easement or the Assignment will not be credited for use in the Bank.

- B. Each of the Conservation Easement and the Assignment 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 Bank Site but are necessary to the Bank management and maintenance activities, shall be maintained by the Sponsor 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 Bank 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. As an obligation independent of this Instrument, Skagit County must also approve the Long-Term Management and Maintenance Plan. 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 guideline or 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 Bank 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 and Assignment. 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 and Assignment.

(3) Off-site Groundwater Well Monitoring (see Section F.3 for details on methods for monitoring)

In the event that the monitoring data shows a statistically significant increase in groundwater levels for any of the Offsite Wells over any two consecutive years (in the same month comparison or the year-to-year comparison), not considering Excluded Monitoring Data, the annual report shall include an assessment of the likely causes of this increase, taking into account changes in groundwater level at the Control Well and, if the increase is likely caused by the Bank, a list of proposed mitigation measures. After receiving the annual report, the County shall make a determination whether the increase is caused by the Bank and, if it is, require all necessary mitigation measures be implemented to restore groundwater levels.

(4) Sediment Monitoring (see Section F.4 for details on methods for monitoring)

In the event that the sediment monitoring shows, at either Stream Sediment Monitoring Location, a six inch or greater average sediment increase along the cross section, as compared with baseline conditions, the Sponsor shall assess the causes of this increase and, if the increase is caused by the Bank, provide a list of proposed mitigation measures. The County shall make a determination whether the sediment increase is caused by the Bank and, if it is, shall require all necessary mitigation measures be implemented, such as lowering the elevations of the engineered log jams.

(5) Inspect the Bank Site at least twice annually to locate any noxious weeds, knotweed, purple loosestrife, and English ivy. Any plant of these species discovered on the Bank Site must be eradicated. 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, determine that the watershed within which the Bank is located becomes infested with these species in the future, so that their 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 Plan.

- 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 long-term management and maintenance assignee has assumed (1) the obligation, owed to the IRT, of accomplishing the Long-Term Management and Maintenance Plan; as well as (2) the legal responsibility for accomplishment and maintenance of the compensatory mitigation requirements associated with all impacting projects that satisfied their mitigation requirements through the application of Bank credits. The Corps and Ecology will also execute this long-term management and maintenance assignment agreement. In exchange for the long-term management and maintenance 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: All Phases

The Sponsor will institute and maintain financial assurances in accordance with the subsections immediately below. The Sponsor will provide a Letter of Credit for each phase of the Bank to provide financial assurance underlying the establishment and initial functionality of the Bank. Background on financial assurances is found in Section H of the Resource Folder.

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 specifically authorized in this Instrument. The Phase 1 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 9 years from the date of issuance. The Phase 2 and Phase 3 Letters of Credit may not be withdrawn or canceled by the issuing financial institution prior to the designated expiration date, which in each case may be no earlier than 10 years from the date of issuance. In lieu of a Letter of Credit with an effective period of 9 or 10 years, as applicable, 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. Such a Letter of Credit shall further 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 9 years for Phase 1 or 10 years for each of Phase 2 and 3 commencing with the date of first issuance is completed. 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. The Letter of Credit must further specify that the financial institution expressly waives the right to legally challenge, or require any justification for, such a demand for payment.
- 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, certification, or justification other than a reproduction of the 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. 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. 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 applicable to a designated phase 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. 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 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 or transfer of credits, or use of credits by the Sponsor as compensatory mitigation for its own activities causing adverse impacts to the aquatic environment. 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 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 Corps and Ecology, in consultation with the IRT, have approved the Sponsor's written request to permanently cease all banking activities.

- 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.

EXHIBIT 1 TO APPENDIX A.1.2

LEGAL DESCRIPTION OF BANK SITE AREA

Tract "A" (TIC PROPERTY):

That portion of Sections 10, 11, 14 and 15 Township 34 North, Range 4 East, WM, described as follows: Commencing at the Southwest corner of said Section 11, Thence South 88° 32' 07" East, along the South line of said Section 11 a distance of 1168.41 feet; Thence North 1° 06' 44" East 1024.71 feet to the TRUE POINT OF BEGINNING, said true point of beginning is the same true point of beginning as described in that certain document recorded under Auditors File No. 200710110106, records of Skagit County Washington titled parcel "B" after adjustment; Thence the following courses along said Parcel "B" boundary, North 65° 38' 15" West 89.27 feet; Thence North 60° 12' 24" West 578.82 feet; Thence North 58° 52' 21" West 337.35 feet; Thence North 43° 09' 09" West 68.08 feet; Thence North 0° 43' 05" West 371.65 feet; Thence North 3° 01' 13" East 349.79 feet; Thence North 28° 03' 28" East 282.53 feet; Thence North 39° 46' 02" East 128.04 feet; Thence North 73° 15' 44" East 458.76 feet; Thence North 49° 28' 04" East 210.47 feet; Thence along a curve to the left having a radius of 148.75 feet through a central angle of 87° 56' 43" an arc distance of 228.33 feet; Thence North 38° 28' 39" West 106.10 feet; Thence North 29° 08' 06" West 48.98 feet; Thence North 5° 45' 31" West 28.47 feet; Thence North 27° 57' 37" East 255.36 feet; Thence North 38° 57' 10" East 102.81 feet; Thence North 76° 29' 57" East 62.91 feet; Thence North 60° 00' 00" East 58.53 feet; Thence South 44° 26' 23" East 49.42 feet, more or less to the Westerly margin of Babcock Road; Thence leaving said boundary of Parcel "B" Northerly along the West margin of Babcock Road, North 3° 26' 55" East 41.07 feet; Thence continuing along said West margin the following courses, North 11° 45' 40" East 40.64 feet; Thence North 27° 27' 02" East 32.32 feet; Thence North 32° 48' 39" East 35.96 feet, more or less to the East line of the Southwest Quarter of the Northwest Quarter of said Section 11; Thence North 1° 36' 43" East, along said East line, 139.16 feet to the Southerly margin of Swan Road; Thence the following courses along said Southerly margin, Northwesterly along a non-tangent curve concave to the Southwest whose radius point bears South 10° 04' 23" West a distance of 2834.79 feet through a central angle of 6° 32' 59" an arc distance of 324.06 feet; Thence North 86° 28' 36" West 1027.43 feet, more or less to the West line of said Section 11; Thence North 1° 29' 48" East, along said West line, 15.22 feet; Thence continuing along said right of way North 86° 40' 21" West 59.18 feet; Thence North 86° 44' 13" West 105.52 feet; Thence North 85° 17' 44" West 96.36 feet; Thence North 82° 50' 22" West 76.89 feet; Thence North 81° 18' 27" West 146.29 feet to the centerline of Nookachamps creek; Thence the following meandered courses along the centerline of said Nookachamps creek, South 14° 59' 44" West 44.48 feet; Thence South 1° 39' 17" East 70.61 feet; Thence South 28° 20' 12" East 86.67 feet; Thence South 63° 39' 24" East 100.51 feet; Thence South 75° 45' 56" East 110.95 feet; Thence South 66° 37' 29" East 133.10 feet; Thence South 50° 39' 38" East 53.86 feet; Thence South 36° 57' 59" East 46.09 feet; Thence South 31° 38' 29" East 105.02 feet; Thence South 19° 37' 45" East 78.67 feet; Thence South 6° 28' 20" East 36.00 feet; Thence South 1° 15' 55" East 48.25 feet; Thence South 21° 57' 10" West 65.40 feet; Thence South 52° 42' 41" West 71.75 feet; Thence South 87° 55' 04" West 50.91 feet; Thence South 70° 43' 30" West 73.77 feet; Thence North 83° 33' 13" West

37.27 feet; Thence North 67° 12' 20" West 51.36 feet; Thence North 46° 14' 06" West 152.66 feet; Thence North 55° 38' 38" West 50.63 feet; Thence North 41° 51' 17" West 255.39 feet; Thence North 62° 11' 43" West 53.08 feet; Thence North 79° 35' 00" West 58.48 feet; Thence South 82° 24' 56" West 86.84 feet; Thence South 54° 57' 47" West 88.04 feet; Thence South 36° 22' 07" West 58.88 feet; Thence South 33° 34' 34" West 198.18 feet; Thence South 55° 01' 33" West 58.93 feet; Thence North 89° 28' 26" West 79.74 feet; Thence North 80° 41' 38" West 63.98 feet; Thence North 65° 20' 23" West 91.10 feet; Thence North 56° 36' 34" West 115.20 feet; Thence North 70° 29' 45" West 114.29 feet; Thence South 89° 35' 10" West 129.32 feet; Thence South 64° 49' 30" West 116.57 feet; Thence South 42° 00' 02" West 51.82 feet; Thence South 31° 47' 58" West 50.90 feet; Thence South 36° 03' 58" West 97.32 feet; Thence South 40° 28' 29" West 111.76 feet; Thence South 27° 08' 00" West 48.46 feet; Thence South 13° 48' 27" West 146.66 feet; Thence South 20° 24' 58" West 163.42 feet; Thence South 50° 47' 36" West 107.26 feet; Thence South 57° 39' 24" West 85.65 feet, more or less to the North line of the Northwest Quarter of the Southeast Quarter of said Section 10; Thence leaving said creek centerline North 88° 44' 43" West, along said North line, 196.82 feet; Thence leaving said North line South 31° 56' 05" West 31.48 feet; Thence South 22° 29' 52" West 15.99 feet; Thence South 34° 40' 55" West 51.25 feet; Thence South 5° 54' 54" East 100.00 feet; Thence South 7° 21' 13" West 80.73 feet; Thence South 49° 27' 34" East 158.12 feet; Thence South 33° 46' 25" East 6.19 feet; Thence South 23° 32' 55" East 28.75 feet; Thence South 14° 56' 18" East 62.19 feet; Thence South 31° 17' 40" East 62.18 feet;

Thence South 21° 43' 52" East 44.19 feet; Thence South 26° 20' 27" East 50.67 feet; Thence South 21° 18' 30" East 50.11 feet; Thence South 26° 08' 06" East 87.41 feet; Thence South 49° 19' 42" East 101.36 feet; Thence South 74° 28' 53" East 68.57 feet; Thence South 61° 47' 09" East 24.61 feet; Thence South 60° 00' 49" East 21.17 feet; Thence South 35° 59' 34" West 60.63 feet; Thence South 16° 40' 14" West 121.02 feet; Thence South 19° 08' 12" East 132.43 feet; Thence South 12° 29' 58" East 52.68 feet; Thence South 46° 52' 30" East 48.87 feet; Thence South 60° 03' 05" East 103.02 feet; Thence South 69° 30' 09" East 48.21 feet; Thence South 85° 54' 15" East 100.84 feet; Thence South 13° 32' 45" West 57.27 feet; Thence South 2° 03' 06" East 172.92 feet; Thence South 2° 06' 02" West 912.30 feet; Thence South 27° 26' 09" West 80.39 feet; Thence South 25° 10' 53" East 33.79 feet; Thence South 22° 11' 09" East 134.93 feet; Thence South 22° 14' 46" East 135.27 feet; Thence South 19° 27' 00" East 152.21 feet; Thence South 19° 27' 02" East 154.76 feet; Thence South 30° 22' 07" East 160.09 feet; Thence South 31° 44' 17" East 165.70 feet; Thence South 8° 25' 19" East 88.89 feet; Thence South 9° 23' 50" East 153.52 feet; Thence South 13° 53' 40" East 127.17 feet; Thence South 5° 13' 09" West 703.31 feet; Thence South 16° 31' 19" West 90.60 feet; Thence South 13° 16' 59" East 93.08 feet; Thence South 15° 26' 09" East 27.73 feet; Thence South 26° 42' 33" East 216.31 feet; Thence South 53° 03' 24" East 45.81 feet; Thence South 21° 00' 54" West 115.42 feet; Thence South 7° 01' 24" West 143.10 feet; Thence South 29° 48' 00" East 59.82 feet; Thence South 1° 34' 02" East 49.36 feet; Thence South 13° 38' 32" East 64.62 feet; Thence South 23° 58' 35" East 65.67 feet; Thence South 40° 38' 15" East 90.57 feet; Thence South 50° 23' 19" East 102.63 feet; Thence South 79° 51' 55" East 166.09 feet; Thence North 70° 45' 13" East 43.22 feet; Thence South 79° 25' 18" East 20.49 feet; Thence South 81° 40' 02" East 29.44 feet; Thence South 11° 49' 18" West 92.65 feet; Thence South 12° 29' 54" East 123.98 feet; Thence South 28° 39' 56" West 29.14 feet; Thence South 14° 37' 34" West 75.63 feet; Thence South 0° 20' 45" East 111.73 feet; Thence South 48° 25' 28" East 11.36 feet; Thence South 5° 04' 40" East 65.41 feet; Thence South 19° 53' 20" East 63.44 feet; Thence South 28° 19' 19" East 94.72 feet; Thence

South 70° 31' 51" East 89.84 feet; Thence South 43° 33' 29" East 155.07 feet; Thence North 70° 24' 51" East 83.00 feet; Thence South 54° 50' 52" East 21.37 feet; Thence North 79° 28' 23" East 71.92 feet; Thence South 62° 24' 17" East 18.77 feet; Thence South 72° 29' 08" East 30.68 feet; Thence North 78° 29' 56" East 189.47 feet; Thence North 76° 52' 30" East 48.87 feet; Thence North 60° 00' 00" East 39.16 feet; Thence North 45° 00' 00" East 39.16 feet; Thence North 30° 00' 00" East 39.16 feet; Thence North 15° 00' 00" East 39.16 feet; Thence North 2° 40' 41" East 25.22 feet; Thence North 2° 26' 49" West 123.92 feet; Thence North 11° 11' 06" West 151.99 feet; Thence North 4° 52' 22" East 217.56 feet; Thence North 3° 26' 51" East 166.51 feet; Thence North 3° 54' 05" West 38.37 feet; Thence North 16° 28' 47" West 55.73 feet; Thence North 2° 38' 24" East 488.36 feet; Thence North 33° 46' 25" East 91.41 feet; Thence North 15° 15' 23" East 159.46 feet; Thence North 23° 57' 12" East 230.05 feet; Thence North 42° 19' 28" East 83.47 feet; Thence North 76° 34' 08" East 85.59 feet; Thence North 81° 15' 14" East 140.92 feet; Thence North 89° 24' 51" East 314.01 feet; Thence North 79° 23' 17" East 227.38 feet; Thence North 70° 05' 05" East 99.42 feet; Thence North 79° 18' 54" East 95.41 feet; Thence North 73° 24' 27" East 30.88 feet; Thence North 62° 30' 16" East 39.83 feet;

Thence North 39° 52' 39" East 258.14 feet more or less to the Southwesterly line of that certain parcel described as Parcel "A" after BLA, recorded under Auditors File No. 200708090007, records of Skagit County Washington; Thence North 60° 07' 16" West along said Southwesterly line of said Parcel "A" a distance of 218.28 feet; Thence North 29° 52' 18" East 422.07 feet to a point on the Northeasterly line of said Parcel "A"; Thence the following courses along the boundary of said Parcel "A" South 56° 41' 17" East 148.65 feet; Thence North 46° 15' 53" East 126.54 feet; Thence South 53° 55' 39" East 185.22 feet to the Northeasterly corner of said Parcel "A", being on the centerline of that certain 100 foot wide right of way to Seattle Lake Shore and Eastern Railway Company right of way as conveyed by Deed dated April 4, 1890 and recorded July 13, 1890 in Volume 10 of Deeds, page 651, records of Skagit County Washington;

Thence along the centerline of said right of way, North 36° 04' 21" East 104.06 feet; Thence along a curve to the right having a radius of 5613.62 feet through a central angle of 4° 10' 36" and arc distance of 409.21 feet; Thence North 40° 14' 58" East 804.87 feet to a point on the East line of the Southwest Quarter of Section 11; Thence North 1° 43' 48" East along said line, 140.29 feet to the Northeast corner of that certain parcel described as Parcel "D" described in that certain document recorded under Auditors File No. 200805080061, records of Skagit County Washington; Thence North 45° 00' 00" West along the Easterly line of said Parcel "D" a distance of 58.96 feet to the Southerly bank of the East Fork of Nookachamps Creek; Thence along the Southerly bank of the East Fork of Nookachamps Creek the following courses South 33° 37' 57" West 6.52 feet; Thence South 51° 31' 50" West 116.03 feet; Thence South 85° 47' 33" West 62.12 feet; Thence North 64° 43' 28" West 53.38 feet; Thence North 71° 22' 26" West 66.45 feet; Thence South 77° 07' 20" West 47.84 feet; Thence South 60° 57' 09" West 28.25 feet; Thence South 47° 36' 06" West 26.30 feet; Thence South 37° 13' 16" West 30.25 feet; Thence South 50° 03' 57" West 29.00 feet; Thence South 71° 14' 40" West 40.28 feet; Thence North 83° 04' 06" West 51.29 feet; Thence North 69° 25' 17" West 94.54 feet; Thence North 58° 31' 50" West 104.07 feet; Thence North 50° 26' 04" West 48.54 feet; Thence North 59° 32' 38" West 24.74 feet; Thence South 89° 03' 02" West 213.66 feet; Thence North 74° 35' 08" West 54.54 feet; Thence North 68° 35' 12" West 132.92 feet; Thence South 37° 17' 52" West 92.81 feet; Thence South 52° 15' 52" West 29.33 feet; Thence South 72° 35' 27" West 56.67 feet; Thence North 85° 25' 43" West 33.79 feet to the East line of the Southwest Quarter of the Southwest

Quarter of said Section 11; Thence North 1° 06' 44" East along the East line thereof, 614.85 feet more or less to a point which lies South 65° 38' 15" East from the true point of beginning; Thence North 65° 38' 15" West 163.26 feet to the TRUE POINT OF BEGINNING.

EXCEPT the fee ownership underlying those Easement rights AND EXCEPT those Easement rights reserved by Clear Valley Environmental Farm, LLC, a Washington limited liability company, et al, on that certain Statutory Warranty Deed recorded November 20, 2007 as Auditor's File No. 200711200139; being a portion of the North 1/2 of the Northwest 1/4 of Section 14, Township 34 North, Range 4 East, W.M..

Tract "B" (EASEMENT PROPERTY):

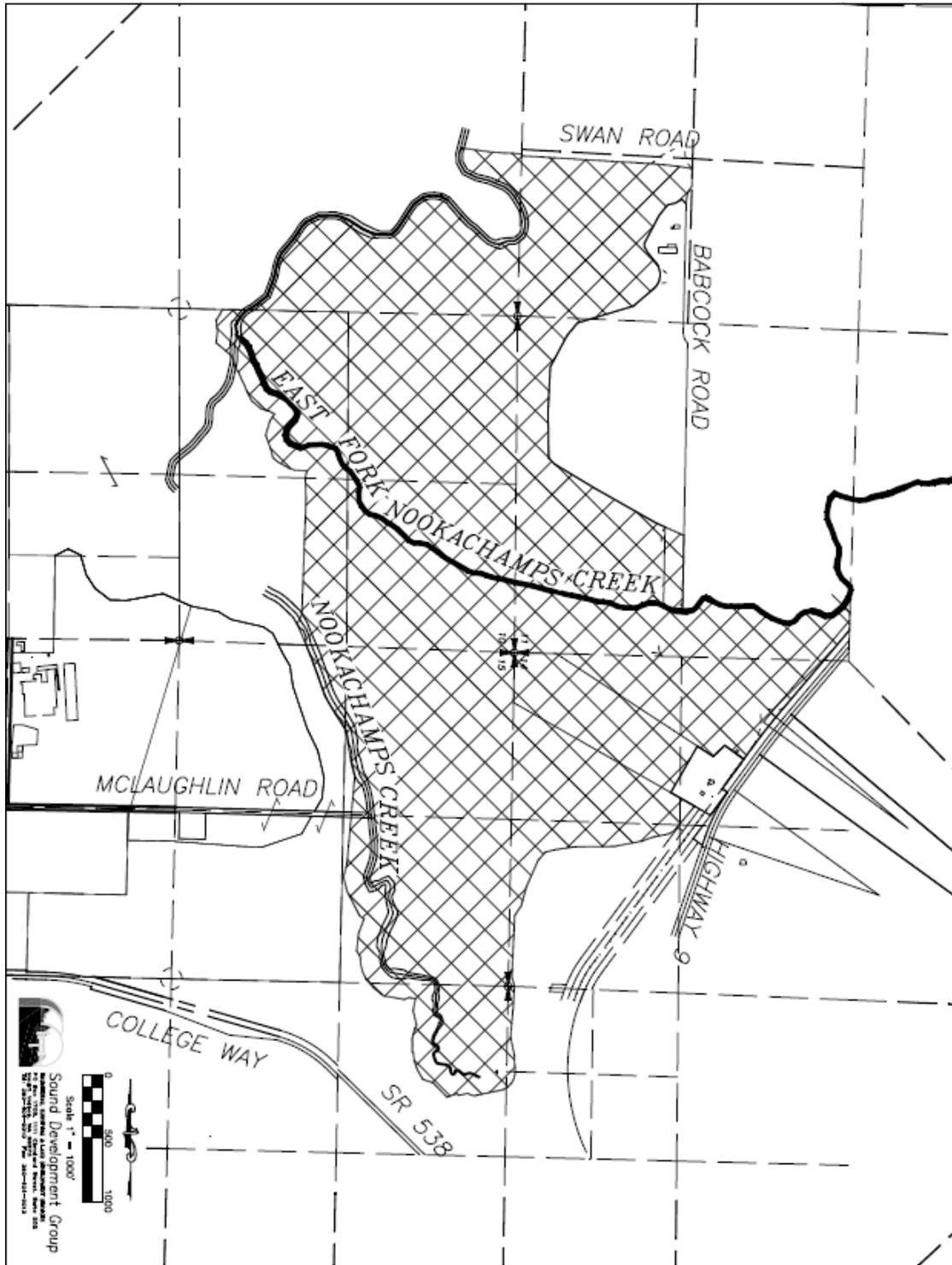
Those Easement rights reserved by Clear Valley Environmental Farm, LLC, a Washington limited liability company, et al, on that certain Statutory Warranty Deed recorded November 20, 2007 as Auditor's File No. 200711200139; being a portion of the North 1/2 of the Northwest 1/4 of Section 14, Township 34 North, Range 4 East, W.M., EXCEPT the following described property:

That portion of the below described Parcel "A" being a portion of the Northwest 1/4 of Section 14, Township 34 North, Range 4 East, WM described as follows, being a portion of Parcel "A", after Boundary Line Adjustment, as recorded under Auditors File No. 200708090007:

Beginning at the most Southerly corner of the below described Parcel "A"; Thence North 60° 07' 16" West along the Southwesterly line thereof, 30.00 feet; Thence North 29° 52' 44" East 423.87 feet to a point on the Northeasterly line of the below Parcel A"; Thence South 56° 41' 17" East along said line, 30.00 feet; Thence South 29° 52' 18" West 422.07 feet to the point of beginning.

Parcel "A":

Commencing at the North Quarter corner of Section 14, Township 34 North, Range 4 East, W.M.; thence West, along the North line of said Section 14, a distance of 275.88 feet to an intersection with the Westerly right of way line of the Northern Pacific Railway Company; thence Southwesterly, along said right of way line, 1086.24 feet to a point hereinafter referred to as Point "A"; thence continue Southwesterly along said right of way, 408.00 feet; thence North 60° 07' 16" West in a straight line, 1691.33 feet, more or less, to a point 396.00 feet South of the Northwest corner of said Section 14 and on the West line of said Section 14 to the TRUE POINT OF BEGINNING; thence North, along the West line thereof a distance of 396.00 feet; thence East, along the North line of said Section 14, a distance of 329.30 feet; thence South 56° 41' 17" East, along a line that would connect to the aforementioned Point "A", a distance of 1363.83 feet; thence South 29° 52' 18" West 422.07 feet, to a point which lies South 60° 07' 16" East from the true point of beginning; thence North 60° 07' 16" West 1460.34 feet to the TRUE POINT OF BEGINNING



TOGETHER WITH:

(a) That portion of the NW $\frac{1}{4}$ of Sec. 14, T 34 N, R 4 E, W. M., described as follows:

Beginning at the northwest corner of said section; thence east 329.3 ft.; thence southeasterly 1645 ft. to a point on the west boundary of the Northern Pacific Railway right of way 886.8 ft. south and 933.3 ft. west of the quarter section corner on the north boundary of said section 14; thence southwesterly along the west boundary of said right of way 408 ft.; thence northwesterly 1700 ft. to a point 396 ft. south of the northwest corner of said section 14; thence north 396 ft. to point of beginning, EXCEPT roads and rights of way therefor.

(b) That portion of the NW $\frac{1}{4}$ of Sec. 14, T 34 N, R 4 E, W. M., described as follows:

Beginning at the north quarter corner of said section 14; thence west on the north line of said section 4 chains 18 links to the west boundary of the Northern Pacific Railway Company's right of way; thence southwesterly along the westerly line of said railway right of way 22 chains 64 links; thence northwesterly in a straight line to a point on the west line of said section 14 that is 6 chains south of the northwest corner thereof; thence north 6 chains to the northwest corner of said section 14; thence east along the north line of said section 14 to the point of beginning, EXCEPT roads and rights of way therefor and EXCEPT that portion thereof described as follows: Beginning at the northwest corner of said section; thence east 329.3 ft.; thence southeasterly 1645 ft. to a point on the west boundary of the Northern Pacific Railway right of way 886.8 ft. south and 933.3 ft. west of the quarter section corner on the north boundary of said section 14; thence southwesterly along the west boundary of said right of way 408 ft.; thence northwesterly 1700 ft. to a point 396 ft. south of the northwest corner of said section 14; thence north 396 ft. to point of beginning, EXCEPT roads and rights of way therefor.

TOGETHER WITH:

A portion of land beginning at a point on

the north and south center line of Sec. 11, Twp 34 N, R 4 E, W. M., 60 ft. north of where the north line of the right-of-way of the Seattle and International Railway crosses said line; thence north 45° west to the south bank of the North Fork of Nookachamps Creek; thence westerly along the south bank of said creek to the west boundary line of said Sec. 11, thence south to the southwest corner of said sec. 11; thence east to a point 1 $\frac{1}{2}$ rods east of the southwest corner of the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of said sec. 11, thence north to the right of way of the Seattle and International Railway; thence in a southwesterly direction along the southerly line of said railway to the intersection of the west line of said SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of said Sec. 11, thence north to beginning, EXCEPTING therefrom the said railway right-of-way, EXCEPT right-of-way of Puget Sound and Baker River Railroad and right-of-way of Northern Pacific Railroad and also EXCEPT tract beginning at a point 185.8 ft. east and 156 ft. north of the quarter corner on the south boundary of Sec. 11 in Twp. 34 N, R 4 E, W. M., thence west 60 ft; thence north 45° west 50 ft. more or less to the east boundary of the county road; thence north 38°37' east along the east boundary of above described road 154.5 ft. thence South 158 ft. more or less to the point of Beginning. For wires and crossarms along the south line of above tracts.

SKAGIT COUNTY PUD EASEMENT

Land located in Skagit County, Washington, being more particularly described as follows:

A strip of land 50 feet in width lying 25 feet on each side of the following described centerline: Beginning at a point on the west line of the SE ¼ of the NE ¼ of Section 15, Township 34 North, Range 4 East, W.M. from which the southwest corner of said SE ¼ of the NE ¼ bears S 0°15'10" W., a distance of 371.48 feet; thence N. 52°10' E., a distance of 996.00 feet to a point; thence N. 56°02' E., a distance of 656.78 feet to a point on the east line of the NE ¼ of the NE ¼ of said Section 15, from which the southeast corner of said NE ¼ of the NE ¼ bears S. 0°10' W., a distance of 34.3 feet. Containing 1.807 acres more or less.

TOGETHER WITH:

A strip of land 50 feet in width lying 25 feet on each side of the following described centerline: Beginning at a point on the west line of the NW ¼ of the NW ¼ of Section 14, Township 34 North, Range 4 East, W.M., from which the southwest corner of said NW ¼ of the NW ¼ bears S. 0°10' W., a distance of 34.3 feet; thence N. 56°02' E., a distance of 31.64 feet to a point; thence N. 59°49' E., a distance of 878.27 to a point on the east property line, which point lies N. 61°02'20" W., a distance of 896.29 and N. 0°10' E., a distance of 396.0 feet to the northwest corner of said NW ¼ of the NW ¼. Containing 1.044 acres more or less.

TOGETHER WITH:

A strip of land 50 feet in width lying 25 feet on each side of the following described centerline: Beginning at the northwest corner of the NW ¼ of the NW ¼ of Section 14, Township 34 North, Range 4 East, W.M.; thence S. 0°10'W, along the west line of said Section 14, a distance of 396.0 feet; thence S. 61°02'20" E., a distance of 896.29 feet to the true point of beginning.

Thence from the true point of beginning N. 59°49' E., a distance of 1,613.38 feet to a point on the north line of the NE ¼ of the NW ¼ of said Section 14; which point lies N. 89°30'15" W., a distance of 458.96 feet from the northeast corner of said NE ¼ of the NW ¼. Containing 1.852 acres more or less.

PUGET SOUND ENERGY EASEMENT

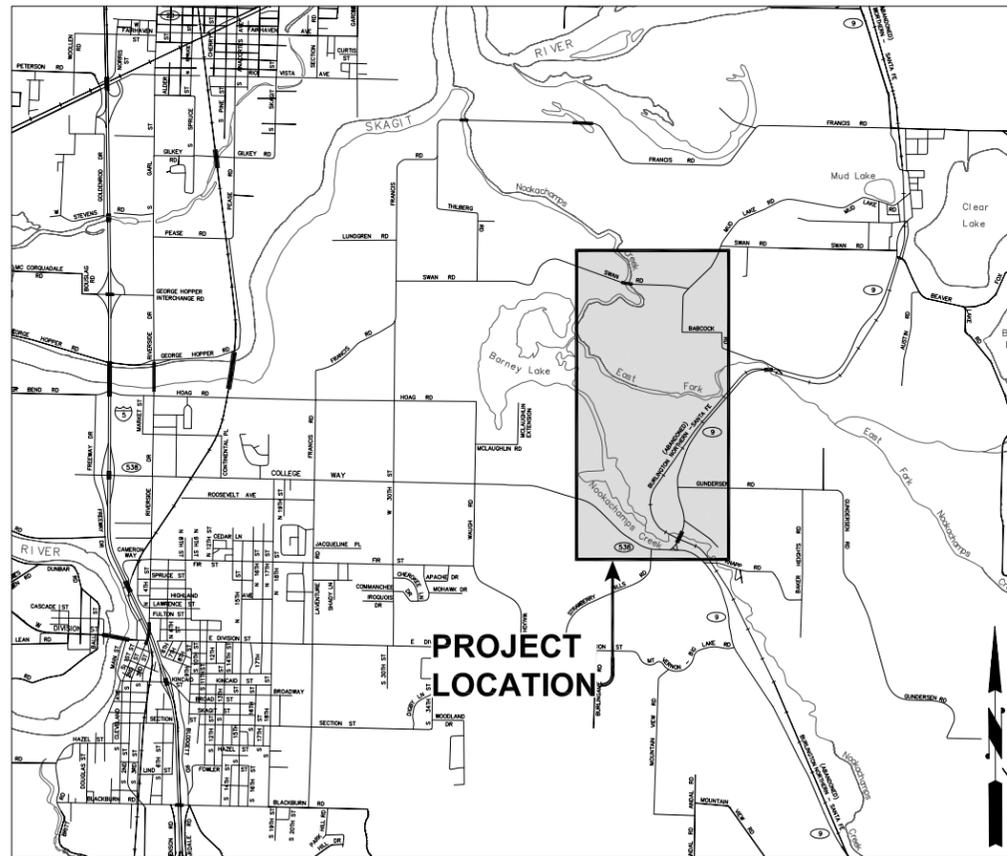
Land located in Skagit County, Washington, being more particularly described as follows:

A strip of land 15 feet in width located in the North 30 feet of the Northeast Quarter of the Southeast Quarter of Section 15, Township Thirty-four North Range Four East of the Willamette Meridian and proceeding East from said Section Fifteen into the North 30 feet of the Northwest Quarter of the Southwest Quarter of Section 14, Township 34, North Range 4, East of the Willamette Meridian, terminating Easterly approximately 105 feet West of the West line of the right of way of the Northern Pacific Railway running through Section 14, Township 34, North, Range 4, East of the Willamette Meridian, the same being a portion of a former county road vacated by order of the County Commissioners, it being the intention of the Grantors herein to grant an Easement being seven and one-half feet on each side of the center line of the pipe line to be laid in the aforesaid property and that when said pipe line has been laid the total width of the Easement granted herein shall be 15 feet running easterly and westerly from the East to the West line of said Northeast quarter of the Southeast quarter.

SKAGIT ENVIRONMENTAL BANK HYDROLOGIC CONDITIONS RESTORATION SUSTAINABLE ENVIRONMENTS, LLC PHASE 1, 2, & 3 MOUNT VERNON, WASHINGTON



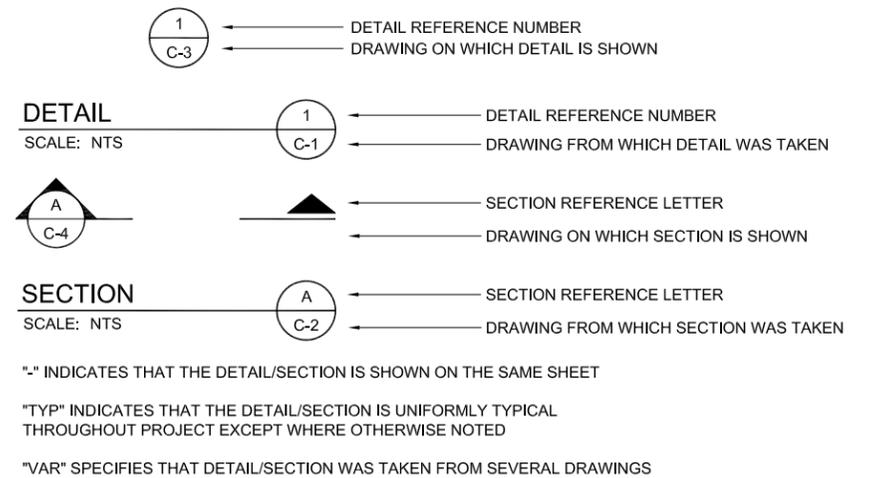
LOCATION MAP
SCALE: N.T.S.



VICINITY MAP
SCALE: N.T.S.

SHT NO.	DWG NO.	SHEET TITLE
1	G-1	TITLE SHEET, INDEX, AND VICINITY MAP
2	G-2	PROJECT NOTES
3	G-3	CONSTRUCTION NOTES
4	G-4	CONSTRUCTION NOTES
5	C-1	EXISTING CONDITIONS AND PROPOSED STRUCTURES
6	C-2	PHASE 1 SITE PLAN AND PROPOSED WORK
7	C-3	PHASE 1 SITE PLAN AND PROPOSED WORK
8	C-4	PHASE 1 GRADING CROSS-SECTIONS
9	C-5	PHASE 1 GRADING CROSS-SECTIONS
10	C-6	ELJ 1 - GRADE CONTROL STRUCTURE PLAN
11	C-7	ELJ 1 - PROFILE AND DETAILS
12	C-8	ELJ 1 - LAYERING PLAN
13	C-9	ELJ 2 - GRADE CONTROL STRUCTURE PLAN
14	C-10	ELJ 2 - PROFILE AND DETAILS
15	C-11	ELJ 2 - LAYERING PLAN
16	C-12	ELJ 3 - GRADE CONTROL STRUCTURE PLAN
17	C-13	ELJ 3 - PROFILE AND DETAILS
18	C-14	ELJ 3 - LAYERING PLAN
19	C-15	PHASE 1 BANK STABILIZATION
20	C-16	PHASE 1 REED CANARYGRASS AND SEEDING PLAN
21	C-17	PHASE 2 PROPOSED GRADING PLAN
22	C-18	PHASE 2 STOCKPILE AREA
23	C-19	PHASE 2 PROPOSED PLANTING PLAN
24	C-20	BUFFER PLANTING PLAN
25	C-21	STREAM BANK RE-VEGETATION PLAN
26	C-22	WETLAND PLANTING DETAILS
27	C-23	PHASE 2 HABITAT STRUCTURES
28	C-24	PLANTING LIST
29	C-25	PHASE 2 GRADING PROFILES
30	C-26	PHASE 2 GRADING PROFILES
31	C-27	PHASE 2 GRADING PROFILES
32	C-28	PHASE 2 GRADING PROFILES
33	C-29	PHASE 3 PROPOSED PLANTING PLAN
34	C-30	CREDIT GENERATION PLAN
35	ESC-1	EROSION AND SEDIMENT CONTROL PLAN
36	ESC-2	EROSION AND SEDIMENT CONTROL DETAILS

SHT NO.	DWG NO.	SHEET TITLE
37	R-1	WELL LOCATIONS AND STAFF GAUGE LOCATIONS
38	R-2A	WELL DEPTH TO GROUNDWATER 2005
39	R-2B	WELL DEPTH TO GROUNDWATER 2006
40	R-2C	WELL DEPTH TO GROUNDWATER 2007
41	R-3	GROUNDWATER CONTOURS 2ND QUARTER
42	R-4	DIFFERENCE BETWEEN GROUND SURFACE AND GROUNDWATER ELEVATIONS (2ND QT. 2005/2006/2007)
43	R-5	UPDATED HEC-RAS CROSS SECTION LOCATIONS
44	R-6	WETLAND 1 DRAINAGE DIAGRAM
45	R-7	WETLAND 4 DRAINAGE DIAGRAM
46	R-8	PURCHASED, SOLD, AND INTENDED FUTURE USES OF THE SKAGIT ENVIRONMENTAL BANK AND SURROUNDING PROPERTIES
47	R-9	PERMANENT UTILITY EASEMENT ACCESS POINTS

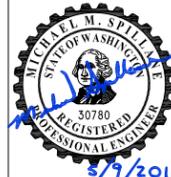


NOTE AND DETAIL/SECTION REFERENCING

No.	REVISION	BY	APP'D	DATE
7	REVISION NO. 7	MRM	MS	6/10
6	REVISION NO. 6	MRM	MS	2/08
5	REVISION NO. 5	MRM	MS	12/07
4	REVISION NO. 4	MRM	MS	9/07
3	REVISION NO. 3	MRM	MS	8/07
2	REVISION NO. 2	MRM	MS	6/06
1	REVISION NO. 1	MRM	MS	5/06



2200 Sixth Avenue
Suite 1100
Seattle, Washington
98121-1820
206-441-9080
206-441-9108 FAX
<http://www.herrerainc.com>



DESIGNED: M. MERKELBACH	DRAWN: L. TURNIDGE
DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK PHASE 1, 2, & 3

TITLE SHEET, INDEX AND VICINITY MAP

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: G-1
SHEET NO: 1 OF 47

OVERALL PROJECT:

1. THE BANKING PROJECT IS PLANNED TO BE CONSTRUCTED IN THREE PHASES TO EFFECT HYDROLOGIC AND HYDRAULIC MODIFICATIONS AND REFINE DESIGN TO ACTUAL SITE RESPONSE CONDITIONS.
PHASE 1 – ELJ CONSTRUCTION, DITCH FILL, AND COVER CROP PLANTING
PHASE 2 – INITIAL SITE GRADING, HIGH-FLOW BACK CHANNEL CONSTRUCTION, PLANTING
PHASE 3 – REMOVAL OF TEMPORARY ACCESS ROADS, FINAL GRADING, AND PLANTING
2. THE WORK IN EACH PHASE WILL INTRODUCE CHANGES AND BE PERFORMED IN A LOGICAL SEQUENCE TO MODIFY SPECIFIC FUNCTIONS OF THE ENTIRE SITE.
3. PHASE 1 IS PLANNED TO BE CONSTRUCTED DURING THE IDENTIFIED FISH WINDOW.
4. PHASE 2 AND 3 WILL FOLLOW PHASE 1. AS HYDROLOGIC AND HYDRAULIC DATA ARE REVIEWED, THE GRADING PLAN WILL BE REFINED TO ENSURE PERFORMANCE STANDARDS ARE ACHIEVED.

PROJECT AREA:

1. THE PROJECT SITE IS 396 ACRES INCLUDING THE BANKING PROJECT BUFFER AREA. TOTAL INCLUDES WATER LINE AND POWER LINE EASEMENTS WHICH ARE 9.1 ACRES TOTAL.
2. THE BUFFER BOUNDARY IS SHOWN AS 150 FEET ALONG THE ENTIRE PROJECT SITE.
3. THE SITE IS ACCESSED FROM THE EAST BY STATE ROUTE 9.
4. THE SITE IS ACCESSED FROM THE WEST BY MCLAUGHLIN EXTENSION ROAD.
5. THE NOOKACHAMPS, EAST FORK NOOKACHAMPS, AND MUD CREEK ARE THE THREE STREAMS THAT PASS THROUGH THE SITE.

GROUND WATER WELLS:

1. GROUND WATER WELLS HAVE BEEN INSTALLED THROUGHOUT THE BANK SITE. SEE DRAWING R-1 FOR WELL LOCATIONS.
2. THIRTY-SEVEN (37) WELLS HAVE BEEN INSTALLED AND MONITORED MONTHLY BEGINNING 2005. THIS NUMBER ALSO INCLUDES SIX ADDITIONAL WELLS (35, 36, 37, 38, 39, AND 40) THAT WERE INSTALLED IN SUMMER 2006.
3. AVERAGED 2ND QUARTER (APRIL/MAY/JUNE) AND 3RD QUARTER (JULY/AUGUST/SEPTEMBER) DEPTH TO GROUNDWATER FROM EXISTING GRADE ELEVATION DATA FROM 2005, 2006, AND 2007 ARE SHOWN ON DRAWINGS R-2A, R-2B, AND R-2C.
4. DRAWING R-3 IS A 2ND QUARTER GROUND WATER ELEVATION CONTOUR MAP BASED ON AVERAGED 2005/2006/2007 2ND QUARTER DATA.
5. DRAWING R-4 IS A CONTOUR MAP SHOWING THE DIFFERENCE BETWEEN GROUND SURFACE AND GROUND WATER ELEVATIONS (AVERAGED 2005/2006/2007 2ND QUARTER).

REFERENCE WETLAND VEGETATION DATA:

1. WELLS HAVE BEEN INSTALLED IN REPRESENTATIVE VEGETATION COMMUNITIES (I.E. EMERGENT, SCRUB/SHRUB, AND FORESTED WETLAND) ONSITE.
2. WATER LEVEL DATA COLLECTED DURING THE SECOND QUARTER OF 2005/2006/2007 (APRIL/MAY/JUNE) FROM THE FOLLOWING WELLS WAS USED TO DELINEATE PROPOSED WETLAND COMMUNITIES:
EMERGENT - 7 TO -2 IN (MW-2)
SCRUB/SHRUB - 1 TO 8 IN TO GROUND WATER (MW-2, 3 AND 27)
FORESTED - 9 TO 15 IN TO GROUND WATER (MW-3,5 AND 26)
NOTE: A NEGATIVE NUMBER INDICATES STANDING WATER
3. PROPOSED WETLAND COMMUNITIES ARE BASED ON AVERAGE DEPTH TO GROUND WATER FROM EXISTING GROUND ELEVATION, VEGETATION HYDROLOGIC PREFERENCES, EXISTING TOPOGRAPHY, AND SUBSTRATE CONDITIONS.

PHASE 1 PROJECT WORK ELEMENTS:

1. IMPROVE FLOODPLAIN HYDROLOGIC AND HYDRAULIC CONDITIONS BY RESTORING IN-STREAM CHANNEL MORPHOLOGY, ALTERING THE GROUND WATER HYDROLOGY BY ADDING THREE ENGINEERED LOG JAM (ELJ) GRADE CONTROL STRUCTURES IN THE NOOKACHAMPS AND EAST FORK NOOKACHAMPS AT INTERVALS TO AFFECT CHANGE IN GEOMORPHIC PROCESS, AND BY FILLING IN EXISTING DRAINAGE DITCHES.
2. PLANT A COVER CROP OF HERBACEOUS PLANTS TO STABILIZE THE HYDRIC AND NON-HYDRIC SOILS. AREAS THAT WILL BE GRADED IN PHASE 2 WILL BE COVERED WITH A STERILE ITALIAN RYEGRASS (*LOLIUM PERENNE* SPP. *MULTIFLORUM*). PORTIONS OF THE SITE THAT WILL NOT BE GRADED IN PHASE 2 WILL BE PLANTED WITH A MIXTURE OF SEVEN NATIVE GRASSES. SEE LIST OF SPECIES IN PHASE 1 SEEDING AND PRE-SEEDING TREATMENT NOTES.

PHASE 1 SEEDING AND PRE-SEEDING TREATMENT NOTES:

GOAL:

1. PROVIDE A HERBACEOUS COVER CROP TO STABILIZE SOILS AND PREVENT INVASIVE SPECIES ENCROACHMENT.
2. LIMIT AND CONTROL THE SPREAD OF REED CANARYGRASS (*PHALARIS ARUNDINACEA*) AND HIMALAYAN BLACKBERRY (*RUBUS ARMENICUS*).
3. PREVENT ANY JAPANESE KNOTWEED (*POLYGONUM CUSPIDATUM*) FROM ESTABLISHING.

NOTES:

1. DISTURBED AND UNPLANTED AREAS THAT WILL NOT BE GRADED IN PHASE 2 WILL BE SEEDED WITH A NATIVE SEED MIX CONSISTING OF THE FOLLOWING:

Species (common name)	Scientific Name	Wetland Indicator Status	Application rate (pounds per acre)
TUFTED HAIRGRASS	<i>DESCHAMPSIA CESPITOSA</i>	FAC	2.84
MEADOW BARLEY	<i>HORDEUM BRACHYANTHERUM</i>	FACW	0.85
WESTERN MANNAGRASS	<i>GLYCERIA OCCIDENTALIS</i>	FACW	8.52
CALIFORNIA BROME	<i>BROMUS CARINATUS</i>	UPL	5.68
BLUE WILDRYE	<i>ELYMUS GLAUCUS</i>	UPL	5.11
WATER FOXTAIL	<i>ALOPECURUS GENICULATUS</i>	OBL	0.57
AMERICAN SLOUGHGRASS	<i>BECKMANNIA SYZIGACHNE</i>	OBL	1.42
TOTAL			25.00

2. PLANTING WILL BE PERFORMED IMMEDIATELY FOLLOWING HYDRAULIC AND HYDROLOGIC MODIFICATIONS (INSTALLATION OF ELJ'S AND DITCH FILLING)
3. PROPORTION OF TOTAL APPLICATION AMOUNTS WILL BE BASED ON RELATIVE AVAILABILITY OF SPECIES AT THE TIME OF CONSTRUCTION. BEARDED SEDGE (*CAREX COMOSA*) WILL BE ADDED TO THE SEED MIX IF AVAILABLE.
4. SEE SHEET C-16 FOR SEEDING LOCATIONS.

VEGETATION WETLAND INDICATOR STATUS ABBREVIATIONS:

FAC - FACULTATIVE
FACW - FACULTATIVE WETLAND
UPL - UPLAND
OBL - OBLIGATE WETLAND

REED CANARYGRASS MANAGEMENT:

1. AN INTEGRATED PEST MANAGEMENT (IPM) APPROACH COMPRISING MECHANICAL, CHEMICAL, AND COMPETITIVE PLANTING METHODS WILL BE EMPLOYED FOR CONTROLLING REED CANARYGRASS PATCHES R1, R2, R3, AND R4 (SEE C-16). GLYPHOSATE (RODEO®) WILL BE APPLIED DURING LATE SEPTEMBER TO ENSURE MAXIMUM EFFECTIVENESS (TRANSLOCATION TO RHIZOMES). DISKING WILL OCCUR IN THE FALL NO EARLIER THAN TWO WEEKS FOLLOWING HERBICIDE APPLICATION (TO ALLOW FULL ABSORPTION), BUT PRIOR TO SIGNIFICANT SOIL SATURATION OR INUNDATION. THERE WILL BE NO PLOWING WITHIN 20 FEET OF ANY STREAM BANK. MOWING WILL BE THE ONLY ALLOWED ACTIVITY. ANOTHER HERBICIDE APPLICATION WILL OCCUR IN EARLY SPRING FOLLOWING EMERGENCE OF NEW REED CANARYGRASS SHOOTS. RESTORATION PLANTINGS WILL BE INSTALLED AT HIGH DENSITY THROUGHOUT MOST INFESTED AREAS, ASSISTING WITH REED CANARYGRASS CONTROL BY CREATING SHADE AND COMPETITION FOR OTHER RESOURCES.
2. PATCH R2 ALONG COLLEGE WAY CREEK IS OUTSIDE OF THE BANK BOUNDARY. HOWEVER, IT IS A SOURCE OF FUTURE REED CANARYGRASS SEED AND PROPAGULE PRESSURE TO THE SOUTHWEST BANK AREA AND WILL THEREFORE BE TREATED.
3. FOLLOWING TREATMENT, FARM FIELDS LEFT FALLOW WILL BE PLANTED WITH ITALIAN RYEGRASS TO SERVE AS A COVER CROP AND INHIBIT THE SPREAD OF REED CANARYGRASS. FALLOW AREAS THAT WILL NOT BE GRADED IN PHASE 2 ACTIVITIES (SEE C-16) WILL BE PLANTED WITH A NATIVE SEED MIX. ITALIAN RYEGRASS IS AN UPRIGHT ANNUAL THAT BEHAVES LIKE A BIENNIAL OR SHORT-LIVED PERENNIAL. IT GROWS VIGOROUSLY IN WINTER AND EARLY SPRING.
4. PATCHES R1, R3, AND R4 WILL BE HEAVILY PLANTED IN PHASE 2 TO SHADE OUT AND CONTROL REMAINING REED CANARYGRASS STANDS.

HIMALAYAN BLACKBERRY MANAGEMENT:

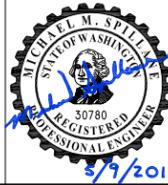
1. HIMALAYAN BLACKBERRY STANDS (TOTALING APPROXIMATELY 8 ACRES) OCCURRING IN PORTIONS OF THE RIPARIAN FRINGE OF NOOKACHAMPS CREEK IN THE NORTHERN AND SOUTHERN EXTENTS OF THE SITE WILL BE THE TARGETS FOR CONTROL MEASURES.
2. IRRADIATION MEASURES WILL COMMENCE WITH THE CUTTING OF VINES IN SPRING WHEN PLANTS BEGIN TO FLOWER (OR IN FALL PRIOR TO FLOODING) USING A BRUSH CUTTER OR BLADE-TYPE WEED-EATER. CANES SHOULD BE CUT AS CLOSE TO ROOT CROWN AS POSSIBLE.
3. MECHANICAL CONTROL EFFORTS WILL BE FOLLOWED BY IMMEDIATE APPLICATION OF GLYPHOSATE (RODEO®) TO FRESHLY-CUT CANE STUMPS USING A BACKPACK SPRAYER OR BRUSH.
4. FOLLOW-UP APPLICATIONS OF HERBICIDE AND/OR MECHANICAL REMOVAL OR CUTTING WILL PROVIDE LONG-TERM ADAPTIVE MANAGEMENT STRATEGIES FOR COMBATING NEW HIMALAYAN BLACKBERRY GROWTH.

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2200 Sixth Avenue
Suite 1100
Seattle, Washington
98121-1820
206-441-9080
206-441-9108 FAX
<http://www.herrerainc.com>



DESIGNED: M. MERKELBACH	DRAWN: L. TURNIDGE
DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
PHASE 1**

PROJECT NOTES

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: G-2
SHEET NO: 2 OF 47

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WORK SEQUENCE NOTES:

1. THIS WORK SEQUENCE PLAN IS SHOWN FOR GENERAL UNDERSTANDING OF THE PROJECT CONSTRAINTS IN RELATION TO CONSTRUCTION OF ENGINEERED LOG JAMS AND RELATED SITE ACTIVITY. CONTRACTOR IS RESPONSIBLE FOR INCORPORATING ALL EXISTING AND NEW MATERIALS INTO STRUCTURES AS NECESSARY.
2. A DETAILED ELJ WORK SEQUENCE AND PHASING PLAN SHALL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY THE ENGINEER. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND THE CONTRACTOR'S APPROVED ELJ WORK SEQUENCE AND PHASING PLAN. COORDINATION WITH THE PERMITTING AGENCIES AND MBRT WILL BE CONDUCTED ACCORDING TO PERMITS AND APPROVED MBI.
3. IN GENERAL, THE WORK SHALL BE SEQUENCED AND PERFORMED IN A MANNER THAT MINIMIZES IMPACTS TO THE CREEK AND AREA SURROUNDING THE WORK SITE.
4. INSTALL TESC MEASURES AS SHOWN ON ESC-1 AND ESC-2.
5. CONSTRUCT TEMPORARY ACCESS ROAD TO ACCESS WORK AREA.
6. CLEAR AND PREPARE STAGING AND STORAGE AREAS AS NECESSARY (REFER TO GENERAL CONSTRUCTION NOTES).
7. INSTALL FISH BLOCKNETS. CONTRACTOR SHALL INFORM THE PROJECT BIOLOGIST THAT THE NETS HAVE BEEN INSTALLED.
8. ALLOW THE PROJECT BIOLOGIST SUFFICIENT TIME TO CLEAR REACH OF FISH. ALL FISH HANDLING ACTIVITIES TO BE DONE BY THE PROJECT BIOLOGIST.
9. BEGIN DEWATERING ACTIVITIES AS NEEDED.

SHORING AND DEWATERING NOTES:

1. GROUND WATER WILL BE ENCOUNTERED IN EXCAVATIONS. CONTRACTOR SHALL DEWATER AS NECESSARY FOR CONSTRUCTION AND INSPECTION.
2. CONTRACTOR SHALL DEWATER EXCAVATIONS AS NEEDED TO PROVIDE ADEQUATE EXCAVATION DEPTH TO ALLOW WOOD PLACEMENT. VERTICAL PILES MAY BE DRIVEN USING VIBRATORY TECHNIQUES.
3. CONTRACTOR SHALL DESIGN ALL REQUIRED SHORING AND WATER EXCLUSION STRUCTURES. HYDROSTATIC PRESSURES SHALL BE ADDED TO LATERAL PRESSURES DUE TO EARTH, SURCHARGES AND SPECIAL PRESSURES. SPECIAL PRESSURES MAY INCLUDE BUT ARE NOT LIMITED TO HYDROSTATIC PRESSURES RESULTING FROM BACKWATER CONDITIONS, TEMPORARY SHORING SEEPAGE, MACHINERY SURCHARGE AND FLUCTUATING GROUND WATER.
4. OTHER SURCHARGES SHALL BE DETERMINED BY THE CONTRACTOR ON THE BASIS OF CONSTRUCTION TRAFFIC, EQUIPMENT STORAGE, SPOILS HANDLING, WORK SEQUENCE AND OTHER FACTORS.
5. ALL TEMPORARY SHORING SYSTEMS SHALL BE DESIGNED WITH A MINIMUM FACTOR OF SAFETY OF 1.4 (FS=1.4).

DITCH FILLING NOTES:

1. DITCHES WILL BE FILLED WITH MATERIAL FROM ADJACENT BERMS.
2. WHERE ADJACENT BERM VOLUMES ARE NOT SUFFICIENT TO FILL DITCHES, ANTICIPATED LOCATIONS OF PHASE 2 HIGH FLOW BACK CHANNELS WILL BE GRADED FOR MATERIAL.
3. ALL BERMS AND AREAS GRADED FOR MATERIAL TO FILL DITCHES WILL BE STRIPPED OF VEGETATION PRIOR TO GRADING. WHERE REED CANARYGRASS IS PRESENT, THE FIRST TWO (2) FEET WILL BE STRIPPED AND COMPOSTED.
4. VEGETATIVE MATERIAL REMOVED DURING STRIPPING WILL BE COMPOSTED IN UPLAND AREAS.
5. ALL DISTURBED AREAS ASSOCIATED WITH DITCH FILLING WILL BE REPLANTED WITH TEMPORARY EROSION CONTROL VEGETATION AND LATER WITH WETLAND PLANTS. SEE PHASE 1 PROJECT WORK ELEMENTS NOTES ON G-2.
6. WHERE DITCHES TERMINATE AT STREAM BANKS, BANK STABILIZATION WILL BE INSTALLED TO PREVENT HEAD CUTS AND TO PREVENT SEDIMENT FROM ENTERING THE STREAM (SEE R-6/R-7).

WATER MANAGEMENT NOTES:

1. EXCAVATIONS THAT HAVE THE POTENTIAL TO IMPACT THE WETTED CHANNEL SHALL BE ISOLATED FROM THE ACTIVE CHANNEL. ISOLATION MEANS SHALL CONSIST OF SILT BOOMS, SHEET PILE, BULK BAGS, BLADDER DAMS OR OTHERS AS NECESSARY TO PREVENT IMPACTS TO WATER QUALITY.
2. SEE SHEETS ESC-1 AND ESC-2 FOR ADDITIONAL NOTES AND TYPICAL DRAWINGS FOR EROSION AND SEDIMENTATION CONTROL. WATER PUMPED FROM EXCAVATED WORK AREAS SHALL BE DISCHARGED TO UPLAND AREAS. THE WATER SHALL NOT BE DIRECTLY DISCHARGED TO ANY CREEK.
3. DEWATERING ACTIVITIES SHALL NOT IMPACT WATER QUALITY.
4. CONSTRUCTION DEWATERING SHALL BE MAINTAINED 24 HOURS PER DAY DURING CONSTRUCTION, PUMPS SHALL BE MAINTAINED BY THE CONTRACTOR DURING WORKING AND NON-WORKING HOURS.
5. DIVERSION CHANNELS SHALL BE LINED WITH 15 MIL PE LINER OR APPROVED EQUAL, TO PREVENT EROSION.

GENERAL CONSTRUCTION NOTES:

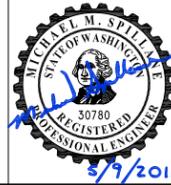
1. WORK INCLUDES CONSTRUCTION OF THREE ENGINEERED LOG JAM (ELJ) STRUCTURES AS SHOWN ON THE PLANS. STRUCTURES ARE TO BE CONSTRUCTED INSTREAM.
2. SLASH SHALL BE COMPOSED OF TREES, LIMBS, ROOTWADS, STUMPS, BRUSH AND OTHER MATERIAL GENERATED DURING LAND CLEARING. SLASH MATERIAL MAY BE OF VARIOUS SIZES < 12" DIAMETER. SLASH MATERIALS SHALL NOT CONTAIN COBBLES. AGGREGATE MATERIAL PASSING A TWO INCH SIEVE (SANDS AND GRAVELS) SHALL NOT EXCEED 5% OF THE TOTAL SLASH MATERIAL BY VOLUME AND SHALL NOT CONTAIN SILTY OR CLAYEY MATERIAL THAT WILL IN THE OPINION OF THE ENGINEER, CAUSE EXCESSIVE TURBIDITY WHEN THE WATERS OF CREEK CONTACT THE MATERIAL.
3. CONSTRUCTION MATERIAL STAGING AREAS TO BE LOCATED AS SHOWN ON THE PLANS. MATERIAL SHALL NOT BE STORED OUTSIDE OF IDENTIFIED STAGING AREAS (C-1). THE CONTRACTOR SHALL PROTECT MATERIALS FROM DAMAGE AT ALL TIMES.
4. THE CONTRACTOR SHALL LIMIT MACHINERY MOVEMENT TO CONSTRUCTION AREAS DEFINED ON PLANS OR IDENTIFIED AS ACCEPTABLE BY ENGINEER.
5. CLEARING LIMITS SHALL NOT BE EXPANDED UNLESS APPROVED BY ENGINEER.
6. CONTRACTOR SHALL DEWATER EXCAVATIONS AS NEEDED TO ENABLE PLACEMENT OF KEY LOGS AND PILES.
7. WATER PUMPED FROM EXCAVATED AREAS SHALL BE RELEASED TO UPGRADIENT AREAS (SEE SHEETS ESC-1 AND ESC-2). TURBID WATER FROM THE EXCAVATION SHALL NOT BE DIRECTLY DISCHARGED TO CREEK AT ANY TIME.
8. WATER PUMPED FROM CREEK UPSTREAM OF THE CONSTRUCTION AREA SHALL BE PUMPED TO AN ENERGY DISSIPATION STRUCTURE DOWNSTREAM OF THE CONSTRUCTION AREA (SEE SHEETS ESC-1 AND ESC-2). THE UPSTREAM INTAKE FOR THE WATER PUMPS SHALL BE ISOLATED FROM THE STREAM BY A FISH BLOCKNET. ADDITIONALLY THE PUMP INTAKE HOSE SHALL HAVE A SCREEN CONFORMING TO WDFW GUIDELINES.
9. EXCAVATIONS SHALL BE INSPECTED BY ENGINEER PRIOR TO PLACING ANY ELJ MATERIALS.
10. CONTRACTOR SHALL REMOVE ANY AND ALL EQUIPMENT, UNUSED MATERIALS, AND TEMPORARY FACILITIES FROM SITE UPON COMPLETION OF WORK.
11. ALL EXISTING FENCES ALONG STREAMS SHALL BE REMOVED.
12. STAGING AREA 1 WILL REMAIN UPLAND. STAGING AREA 2 WILL HAVE TO BE RE-GRADED AND SOILS RESTORED TO SUPPORT WETLAND CONDITIONS AFTER THE COMPLETION OF PHASE 2 ACTIVITIES.
13. EXISTING BRIDGES OVER THE NOOKACHAMPS AND EAST FORK NOOKACHAMPS WILL REMAIN IN PLACE TO SUPPORT LONG-TERM MONITORING AND MAINTENANCE. ALL CREOSOTE TREATED TIMBER WILL BE REMOVED AND REPLACED WITH NON-TREATED WOOD PRIOR TO THE COMPLETION OF PHASE 1 ACTIVITIES.

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2200 Sixth Avenue
 Suite 1100
 Seattle, Washington
 98121-1820
 206-441-9080
 206-441-9108 FAX
<http://www.herrerainc.com>



DESIGNED:	M. MERKELBACH	DRAWN:	L. TURNIDGE
DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	-
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
 PHASE 1**

CONSTRUCTION NOTES

DATE:	MARCH 2011
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PHASE 2 PROJECT WORK ELEMENTS:

1. REGRADE ENTIRE SITE BASED ON THE WATER TABLE RESPONSE FROM PHASE 1 ACTIVITIES. GRADING ACTIVITIES WILL NOT COMMENCE UNTIL APPROVED BY THE MBRT.
2. EXCAVATE FOUR HIGH-FLOW BANK CHANNELS OFF NOOKACHAMPS CREEK AND THE EAST FORK NOOKACHAMPS CREEK TO PROVIDE EMERGENT WETLANDS WITH SCRUB-SHRUB HUMMOCKS AND WINTER JUVENILE SALMONOID REARING HABITAT.
3. REGRADE MUD CREEK TO CREATE POSITIVE FLOW TO NOOKACHAMPS CREEK TO ALLEVIATE UPSTREAM FLOODING.
4. EXCAVATED SOILS WILL BE PERMANENTLY STOCKPILED WITHIN THE BOUNDARIES OF CLEAR VALLEY FARM PROPERTY. A MAJORITY OF SOIL WILL STOCKPILED OUTSIDE OF THE 100-YEAR FLOODPLAIN. THE REMAINDER WILL BE LOCATED WITHIN THE MITIGATION BANK TO CREATE FLOOD REFUGE HABITAT.
5. THE ENTIRE SITE EXCEPT THOSE AREAS INDICATED ON C-19 WILL BE PLANTED WITH NATIVE VEGETATION TO CREATE A DIVERSE MOSAIC OF EMERGENT, SCRUB-SHRUB, AND FOREST MOSAIC WETLANDS. BUFFER AREAS ALONG NOOKACHAMPS CREEK WILL BE PLANTED IN PHASE 2 AS SHOWN IN C-20. THE REMAINING BUFFER IN THE AGRICULTURAL FIELDS WILL BE PLANTED IN PHASE 3.

PHASE 2 UTILITY EASEMENT NOTES:

1. A RIGHT-OF-WAY/UTILITY PERMIT APPLICATION IS REQUIRED BY SKAGIT COUNTY PUBLIC WORKS (360-336-9400). THE PERMIT WILL EXPIRE 90 DAYS FROM THE DATE OF ISSUANCE.
2. PERMANENT UTILITY EASEMENT ACCESS POINTS (SEE DRAWINGS R-9) WILL BE ESTABLISHED AND MAINTAINED. KEYS WILL BE DISTRIBUTED TO EASEMENT OWNERS UPON INSTALLATION OF ANY GATES AT THESE ACCESS LOCATIONS. CLEAR VALLEY WILL DISTRIBUTE NEW KEYS AS NECESSARY (PRIOR TO ANY CHANGES TO GATE LOCKS).
3. PUGET SOUND ENERGY (PSE) REQUIRES THE SUBMISSION OF A "CONSENT TO USE PUGET SOUND ENERGY RIGHT-OF-WAY". POWER POLE LOCATIONS ARE SHOWN ON C-17. THE FOLLOWING ACTIONS WILL BE TAKEN BASED ON PSE GUIDANCE:
 - AREAS WITHIN THE PSE ROW WILL BE VEGETATED WITH SPECIES THAT GROW TO A MAXIMUM HEIGHT OF 15 FEET.
 - NO WATER SHALL COLLECT AT THE BASE OF STRUCTURES.
 - THE DEPTH OF EXCAVATION WITHIN 20 FEET OF PSE STRUCTURES WILL BE NO GREATER THAN 2 FEET FROM EXISTING (PRE-DEVELOPMENT) GRADES.
4. SKAGIT COUNTY PUD REQUIRES THE FOLLOWING ACTIONS WITHIN THEIR EASEMENT AREAS:
 - PIPELINE EASEMENT PLANTING:
PLANTING WITHIN THE WATER LINE EASEMENT WILL CONSIST OF NATIVE SHRUB AND HERBACEOUS SPECIES. NO TREES SHALL BE PLANTED WITHIN THE EASEMENT.
 - DESIGNATED PIPELINE CROSSING:
 - A. PRIOR TO GRADING, THE CONTRACTOR WILL REQUEST THAT SKAGIT COUNTY PUD PROVIDE PIPELINE AS-BUILTS AND STAKE THE EXISTING PIPELINE EVERY 250 FEET.
 - B. THE CONTRACTOR WILL CONFIRM THE LOCATION AND DEPTH OF THE PIPELINE BY POTHOLING.
 - C. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 36" COVER OVER THE EXISTING 24" PIPELINE.
 - D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO THE EXISTING PIPELINE RESULTING FROM CONSTRUCTION ACTIVITIES WITHIN THE PROJECT SITE.
 - E. THE CONTRACTOR SHALL CLEARLY MARK THE LOCATIONS OF DESIGNATED CONSTRUCTION PIPELINE CROSSING ZONES IN THE FIELD. VEHICULAR TRAFFIC WILL BE RESTRICTED TO THESE ZONES.
 - F. THE DESIGNATED CONSTRUCTION PIPELINE CROSSING ZONES WILL BE 20 FEET WIDE AND 50 FEET LONG. THE CROSSING WILL PROVIDE A MINIMUM COVER OF 48". ANY CHANGES TO THE CROSSING DIMENSIONS OR DEPTH MUST BE APPROVED BY THE ENGINEER.

PHASE 3 PROJECT WORK ELEMENTS:

1. FINAL SITE GRADING OF AREAS PROPOSED AS WETLAND WHICH HAVE NOT DEVELOPED HYDRIC CONDITIONS.
2. TRANSFORM PORTIONS OF THE TEMPORARY ACCESS ROAD INTO A FOREST WETLAND MOSAIC THROUGH GRADING ACTIVITIES. SEE DRAWING C-29.
3. REMAINING BUFFERS WILL BE PLANTED (C-20) AND STAGING AREAS WILL BE REMOVED AND RESTORED.

PHASE 3 PROPOSED WETLAND CLASSIFICATIONS:

1. SEE DRAWING C-29. THE PROPOSED WETLAND CLASSIFICATIONS THAT WILL RESULT FROM COMPLETION OF ALL PHASES ARE:

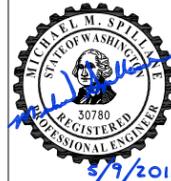
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SYSTEM: PALUSTRINE, CLASS: EMERGENT	(52)
SYSTEM: PALUSTRINE, CLASS: SCRUB-SHRUB	(80)
SYSTEM: PALUSTRINE, CLASS: FORESTED MOSAIC	(102)
UPLAND: FORESTED ISLANDS	(57)
BUFFER	(85)
UTILITY EASEMENT	(09)
RIVERINE	(11)
TOTAL=	396
2. IN DESIGNING THE LOCATIONS OF THE PROPOSED WETLAND AREA POLYGONS, ON-SITE PLANT REFERENCE SITE DATA WILL BE USED TO DETERMINE HYDROLOGY REQUIRED TO ACHIEVE THE BANK PERFORMANCE STANDARDS.
3. SEE DRAWING R-1 FOR EXISTING WETLAND AREAS.
4. SITE GRADING WILL BE BASED ON EFFECTIVE GROUND WATER ELEVATIONS THAT WILL SUPPORT THE WETLAND CLASSIFICATION DISTRIBUTION. SEE SHEET R-4 FOR SOIL EXCAVATION TO GROUND WATER FROM EXISTING SURFACE. THIS DATA IS BASED ON 2ND QUARTER GROUND 2005/2006/2007 WATER ELEVATIONS. A GRADING PLAN IN THIS PHASE MUST BE APPROVED BY THE MBRT PRIOR TO ANY GRADING ACTIVITIES.
5. SEE DRAWING C-19 FOR PHASE 2 PROPOSED PLANTING PLAN.
6. SEE DRAWING C-29 FOR PHASE 3 PROPOSED PLANTING PLAN.

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HERRERA
 ENVIRONMENTAL CONSULTANTS
 2200 Sixth Avenue
 Suite 1100
 Seattle, Washington
 98121-1820
 206-441-9080
 206-441-9108 FAX
<http://www.herrerainc.com>



DESIGNED:	M. MERKELBACH	DRAWN:	L. TURNIDGE
DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	-
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

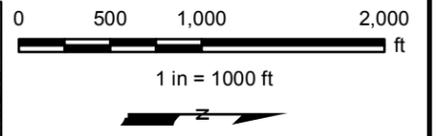
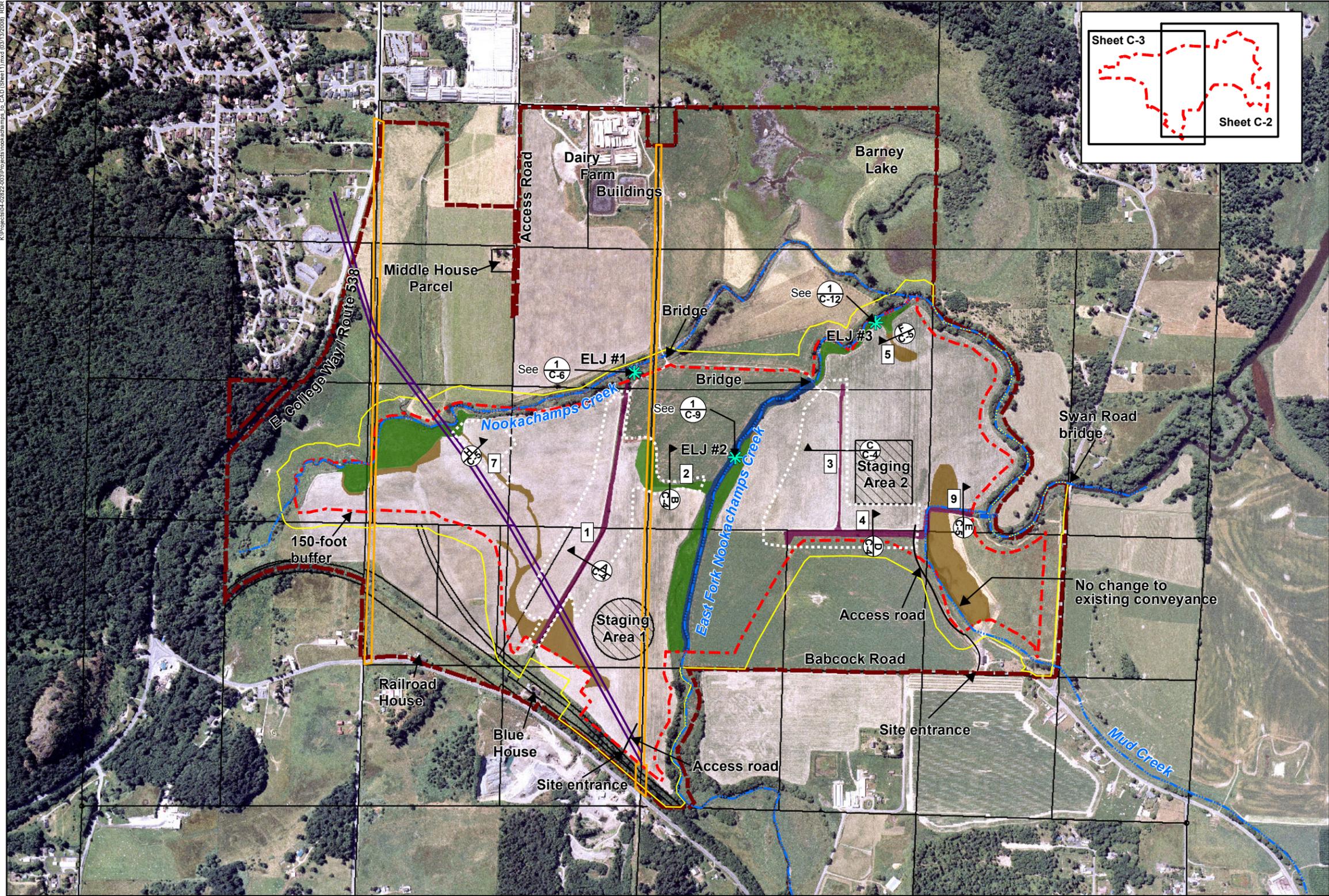
SKAGIT ENVIRONMENTAL BANK
 PHASE 1, 2, & 3

CONSTRUCTION NOTES

DATE:	MARCH 2011
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Legend :

- 1 Ditch number
- ✱ ELJ - Grade control structure
- A
C-5 Cross-section location
- Staging area
- Stream
- Waterline easement
- Powerline easement
- Mitigation bank boundary
- Clear Valley Farm property boundary
- Edge of buffer
- Parcel boundary
- Construction limit
- Existing wetlands**
- Palustrine: persistent
- Palustrine: non-persistent and plowed
- Palustrine: ditch
- Riverine

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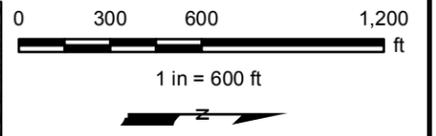
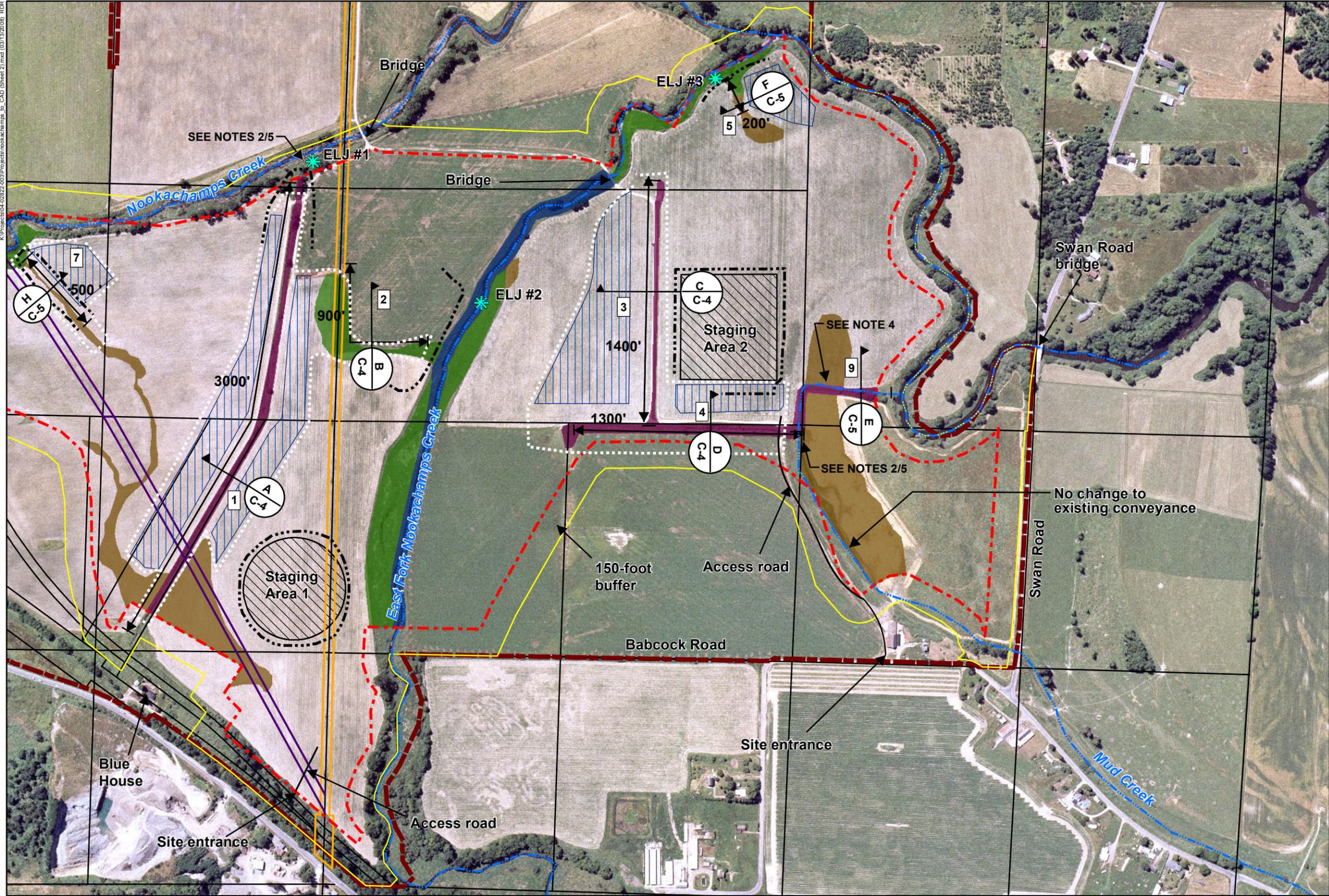
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Suite 1100
Seattle, Washington
98121-1820
206-441-9080
206-441-9108 FAX

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DESIGNED:	DRAWN:
DESIGNED:	CHECKED:
DESIGNED:	APPROVED: M. SPILLANE

**SKAGIT ENVIRONMENTAL
BANK
PHASE 1
EXISTING CONDITIONS
AND PROPOSED STRUCTURES**

DATE: MARCH 2011
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- Legend :**
- ELJ - Grade control structure
 - Cross-section location and reference sheet
 - Existing ditch length to be filled (ft)
 - Ditch number
 - Staging area
 - Stream
 - Waterline easement
 - Powerline easement
 - Mitigation bank boundary
 - Clear Valley Farm property boundary
 - Edge of buffer
 - Barrow
 - Parcel boundary
 - Silt fence
 - Construction limit
- Existing wetlands**
- Palustrine: persistent
 - Palustrine: non-persistent and plowed
 - Palustrine: ditch
 - Riverine

- Notes:**
1. Construct head cut protection at the end of all ditches when filled.
 2. Install temporary silt fence at ends of each ditch.
 3. No fill in Ditch 9.
 4. See R-6/R-7 for details photos of ditches.

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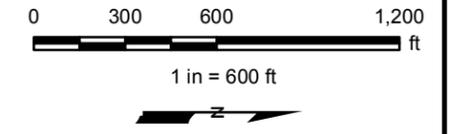
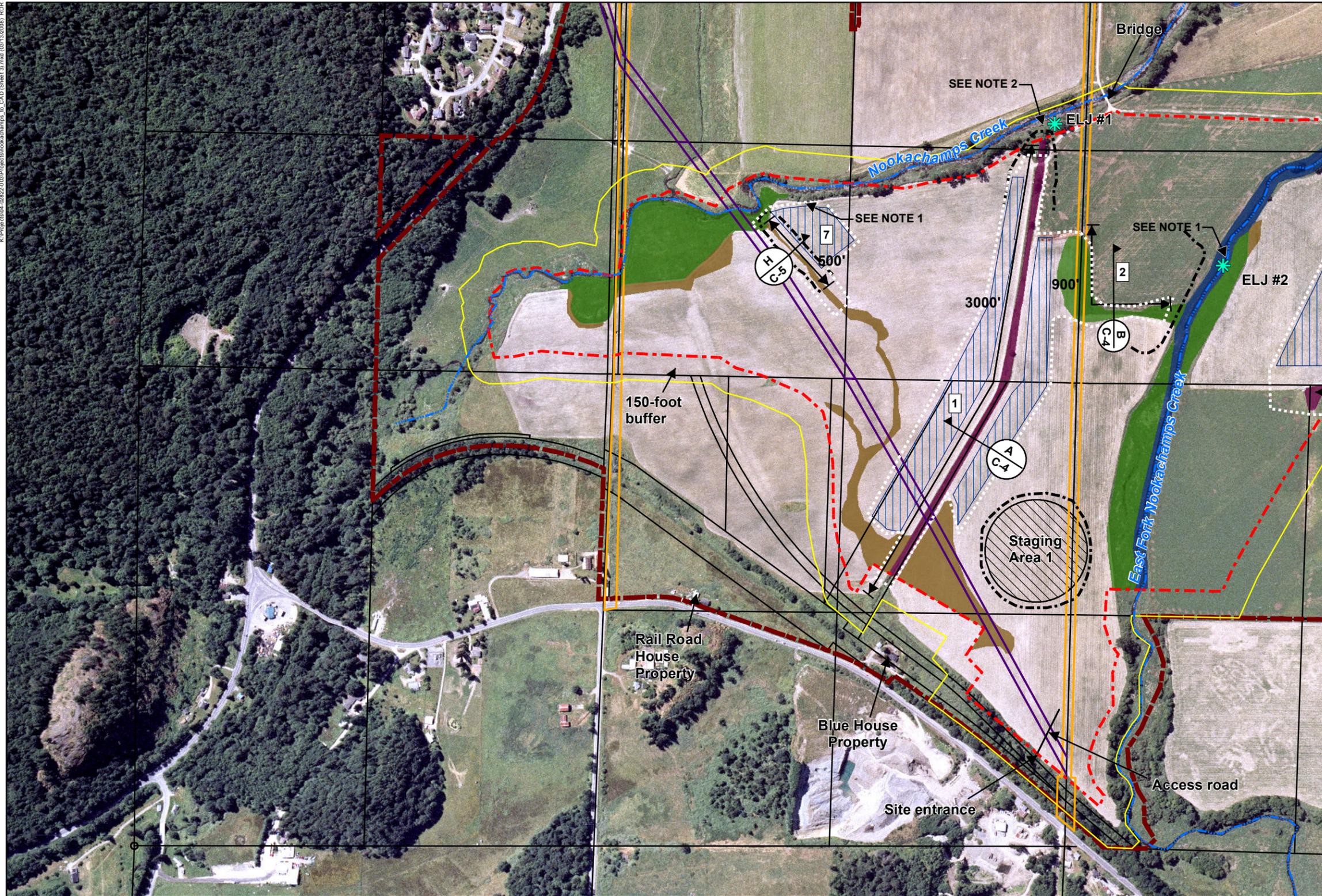
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Suite 1100
Seattle, Washington
98121-1820
206-441-9080
206-441-9108 FAX

DESIGNED: M. MERKELBACH	DRAWN: J. SCHMIDT
DESIGNED:	DRAWN:
DESIGNED:	CHECKED:
DESIGNED:	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
PHASE 1
SITE PLAN AND PROPOSED WORK

DATE: MARCH 2011
PROJECT NO: 04-02822-003
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SHEET NO: 6 of 47

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Legend :

- ELJ - Grade control structure
- Cross-section location and reference sheet
- Existing ditch length to be filled (ft)
- Ditch number
- Staging area
- Stream
- Waterline easement
- Powerline easement
- Mitigation bank boundary
- Clear Valley Farm property boundary
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- Barrow
- Parcel boundary
- Silt fence
- Construction limit
- Existing wetlands**
- Palustrine: persistent
- Palustrine: non-persistent and plowed
- Palustrine: ditch
- Riverine

- Notes:**
1. Construct head cut protection at the end of all ditches when filled.
 2. Install temporary silt fence at ends of each ditch.

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8	REVISION NO.8	MM	MS	03/11
6	REVISION NO.6	MM	MS	02/08
5	REVISION NO.5	MM	MS	12/07
4	REVISION NO.4	MM	MS	09/07
3	REVISION NO.3	MM	MS	07/07
No.	REVISION	BY	APPD	DATE

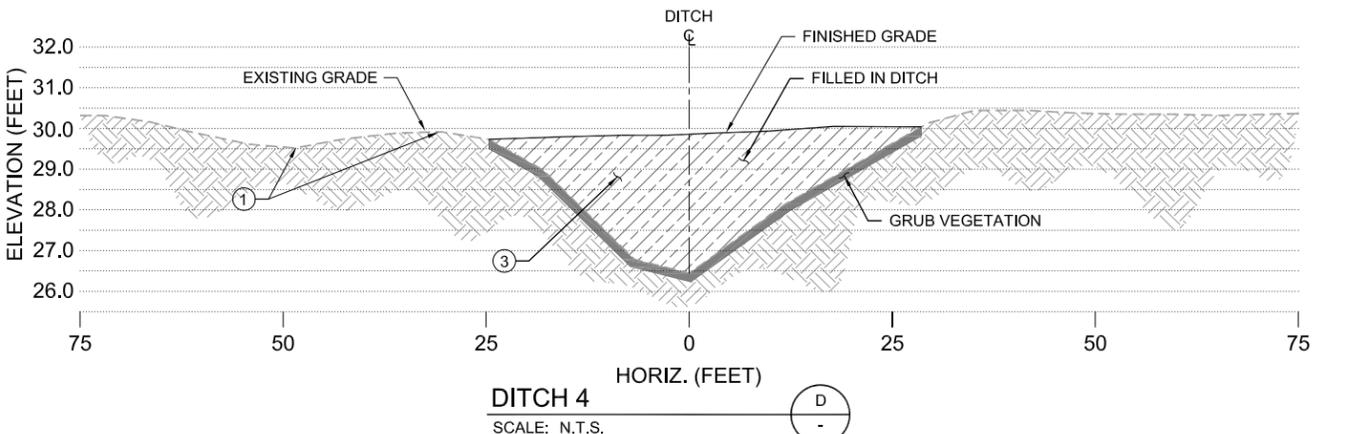
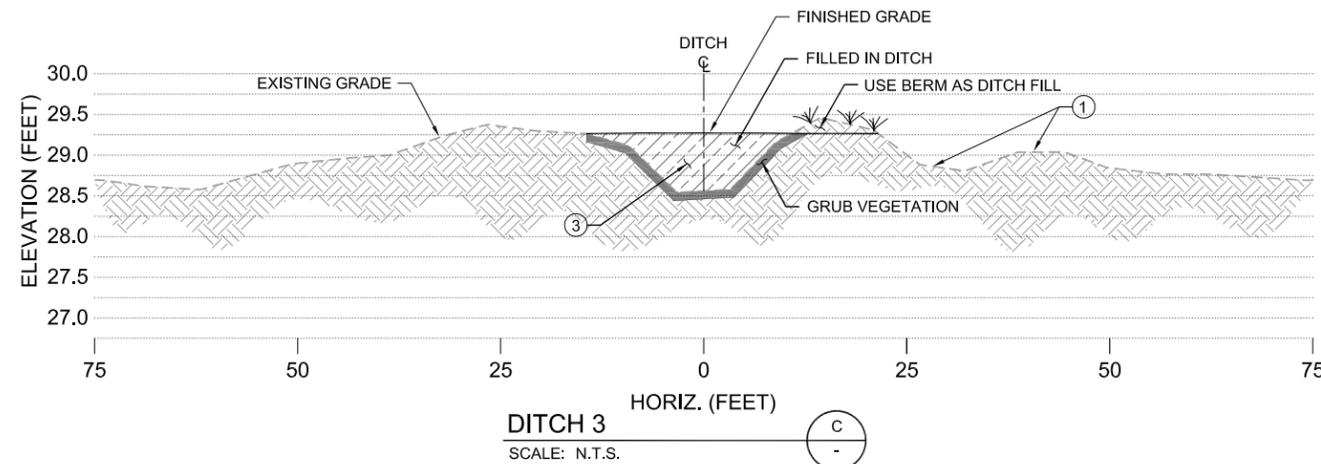
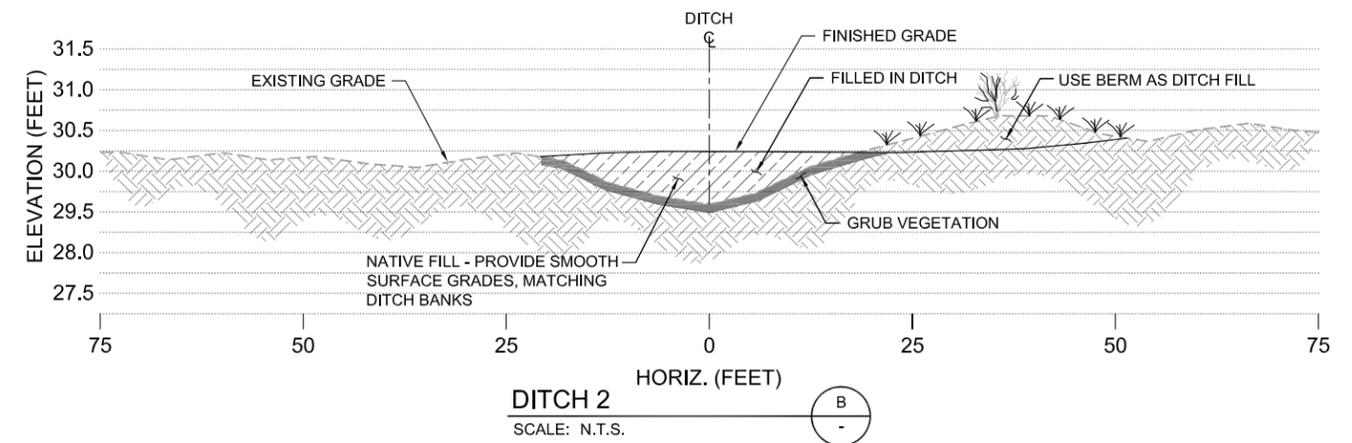
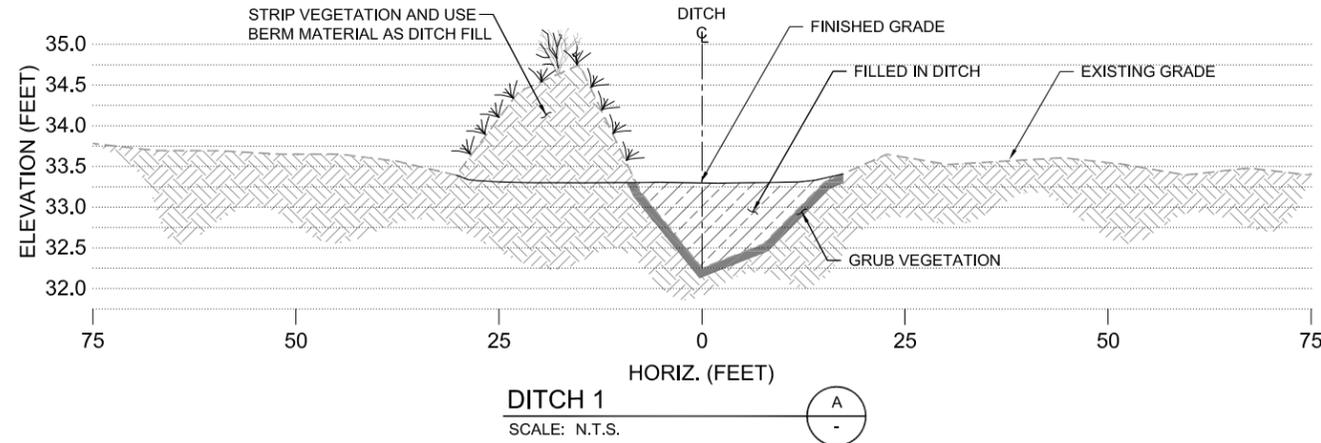


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DESIGNED: M. MERKELBACH	DRAWN: J. SCHMIDT
DESIGNED:	DRAWN:
DESIGNED:	CHECKED:
DESIGNED:	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
BANK
PHASE 1
SITE PLAN AND PROPOSED WORK

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-3
SHEET NO: 7 of 47



CROSS SECTION NOTES:

- ① FINISHED GRADE SHALL BE FREE OF DIPS, DEPRESSIONS, OR MOUNDS.
- ② CUT AND FILL LINES ARE SHOWN GRAPHICALLY ONLY AND DO NOT REFLECT GRADING LIMITS REQUIRED TO MEET VOLUMES INDICATED IN DITCH TABLE.
- ③ SEE DITCH FILLING NOTES ON DRAWING G-3.
- ④ ELEVATIONS REFERENCE DISTANCE IN FEET ABOVE MEAN SEA LEVEL, VERTICAL DATUM NAVD 88.

DITCH TABLE						
DITCH ID #	DITCH LENGTH (FT)	DITCH WIDTH (FT)	DITCH DEPTH (FT)	DITCH VOLUME (CY)	BERM VOLUME (CY)	EXCESS FILL NEEDED (CY)
1	3000	30	1	1967	1858	109
2	900	36	0.6	351	246	105
3	1400	18	0.6	272	252	20
4	1300	66	5	7262	0	7262
5	200	31.0	2	259	51	208
7	500	97.3	1.4	1261	0	1261
9	800	54.2	7.1	0	0	0
TOTALS	8100	332.5	17.7	11372	2407	8965

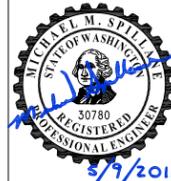
* DITCHES 6 AND 8 HAVE BEEN OMITTED SINCE THEY ARE MINOR LANDSCAPE FEATURES AND WILL BE REGRADED IN PHASE 2.

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5	REVISION NO. 5	MRM	MS	12/07
4	REVISION NO. 4	MRM	MS	9/07
3	REVISION NO. 3	MRM	MS	8/07
2	REVISION NO. 2	MRM	MS	6/06
1	REVISION NO. 1	MRM	MS	5/06



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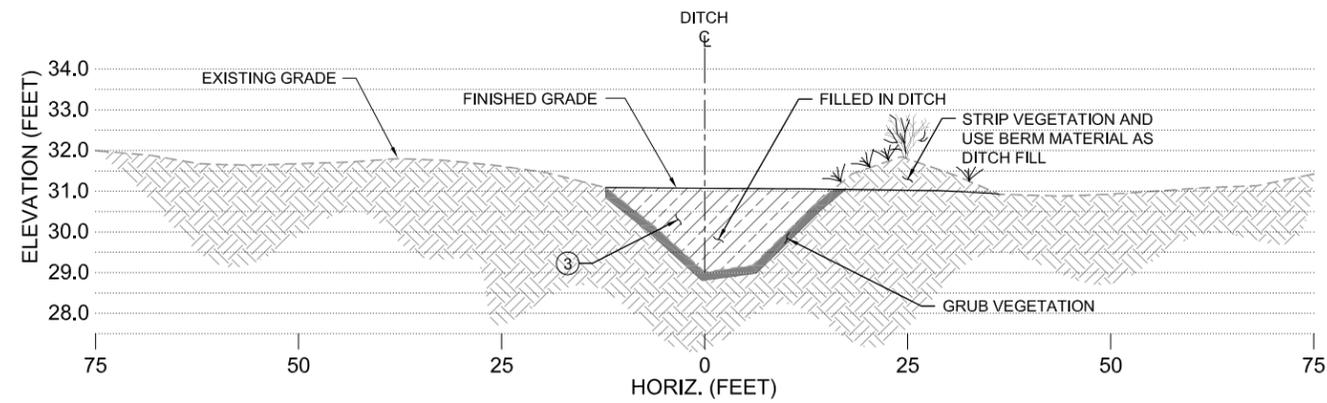
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DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
PHASE 1**

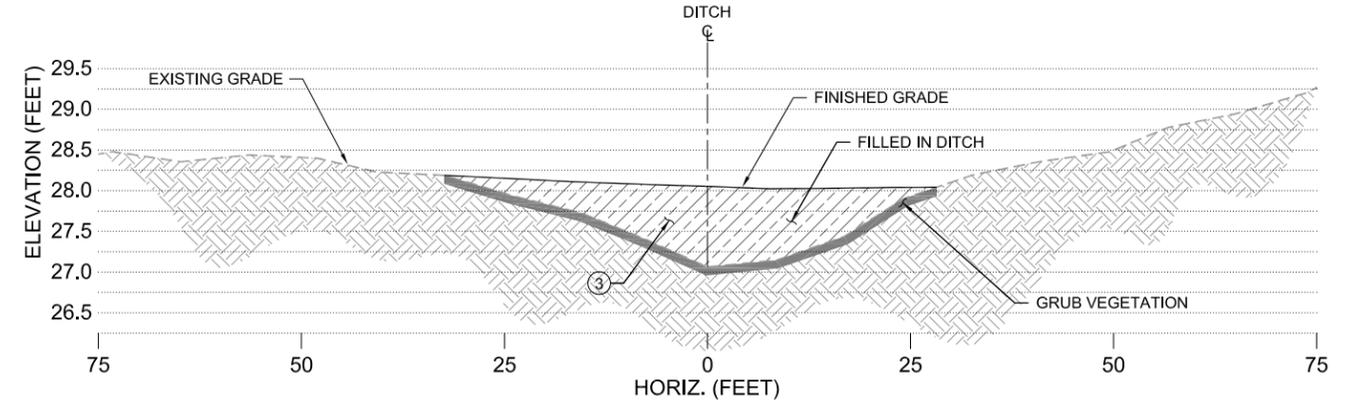
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DATE:	MARCH 2011
PROJECT NO:	04-02822-003
DRAWING NO:	C-4
SHEET NO: 8	OF 47

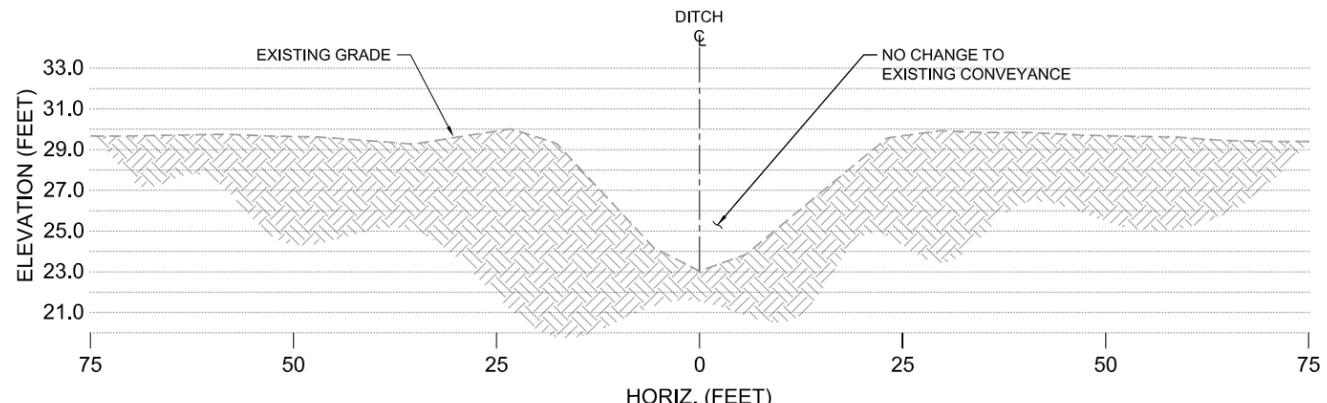
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DITCH 5
SCALE: N.T.S.



DITCH 7
SCALE: N.T.S.



DITCH 9
SCALE: N.T.S.

CROSS SECTION NOTES:

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5	200	31.0	2	259	51	208
7	500	97.3	1.4	1261	0	1261
9	800	54.2	7.1	0	0	0
TOTALS	8100	332.5	17.7	11372	2407	8965

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1	REVISION NO. 1	MRM	MS	5/06



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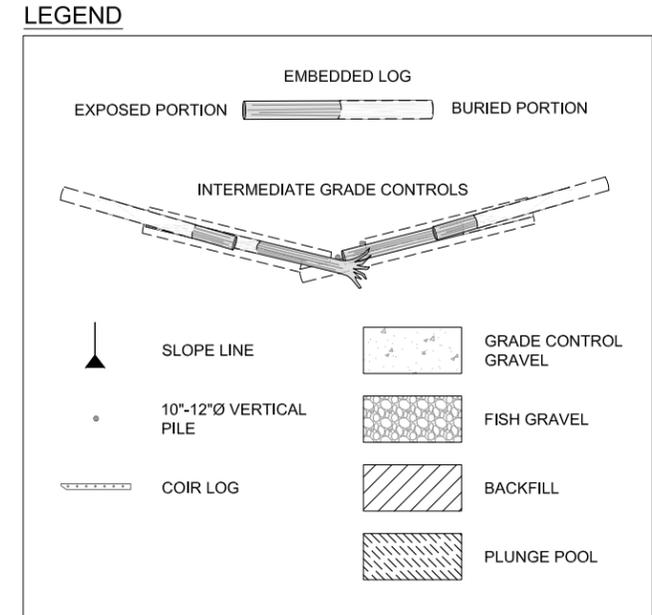
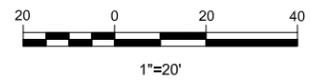
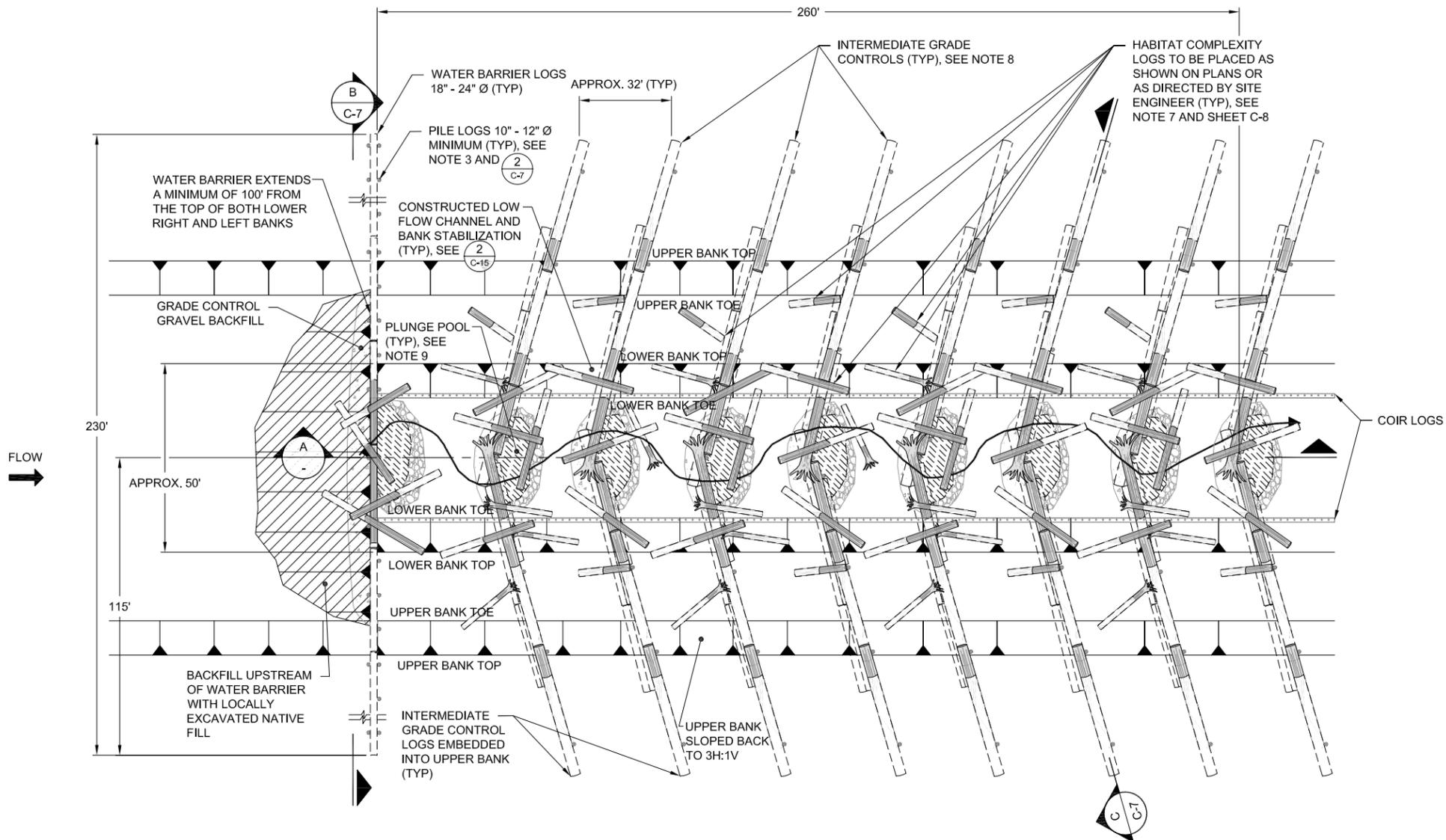
DESIGNED:	C. BARTON	DRAWN:	L. TURNIDGE
DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
PHASE 1**

GRADING CROSS-SECTIONS

DATE:	MARCH 2011
PROJECT NO:	04-02822-003
DRAWING NO:	C-5
SHEET NO: 9	OF 47

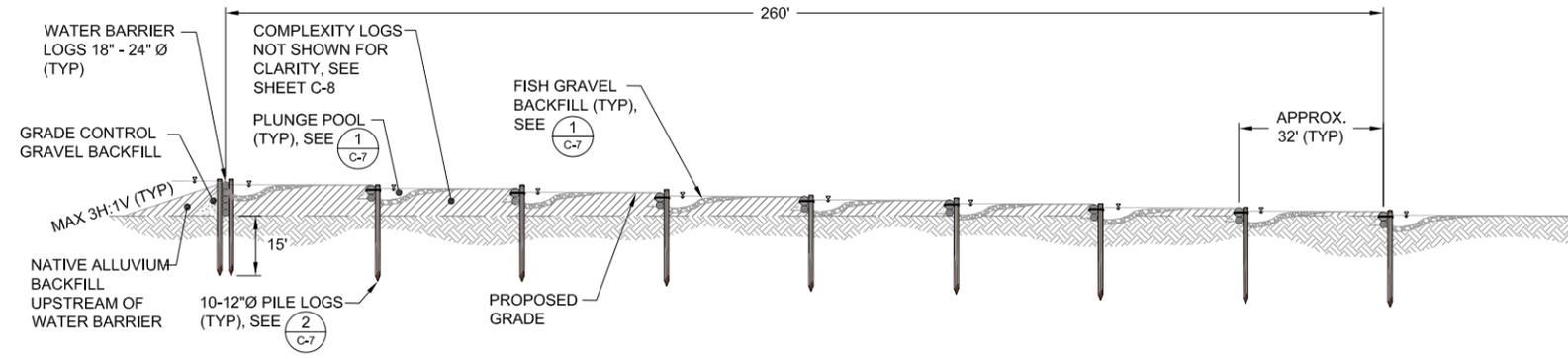
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PLAN VIEW - GRADE CONTROL STRUCTURE #1

SCALE: NOTED

1
C-1



PROFILE - GRADE CONTROL STRUCTURE #1

SCALE: NOTED

A
-

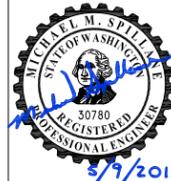
ELJ CONSTRUCTION NOTES:

1. PRIOR TO ELJ CONSTRUCTION INSTALL WATER MANAGEMENT AND TESC BMPs. SEE DRAWINGS ESC-1 AND ESC-2.
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3. PILE LOGS SHALL BE DRIVEN USING HYDRAULIC STATIC LOADING OR VIBRATORY PUSH TECHNOLOGY. NO IMPACT HAMMERS SHALL BE USED.
4. CONSTRUCT LOW FLOW CHANNEL AND FLOODPLAIN BENCH AS SHOWN ON SHEET C-15.
5. CONSTRUCT LOW FLOW CHANNEL AND GRADE CONTROL STRUCTURES SUCH THAT THERE ARE NO VERTICAL DROPS GREATER THAN 0.8 FEET.
6. ALL LOGS SHALL BE UNTREATED FIR.
7. HABITAT COMPLEXITY LOG G EMBEDMENT LENGTH MINIMUM OF 1/2 LOG LENGTH AND AN AVERAGE DEPTH OF 3 FEET. HABITAT COMPLEXITY LOGS H AND I EMBEDDED OVER 2/3 THE LOG LENGTH AND AN AVERAGE OF 2 FEET.
8. INTERMEDIATE GRADE CONTROLS MIRRORED EVERY OTHER.
9. PLUNGE POOLS SHALL BE OVER EXCAVATED AND BACKFILLED WITH FISH GRAVEL TO A MINIMUM THICKNESS OF 1', SEE SHEET C-7 FOR GRAIN SIZE DISTRIBUTION.
10. HABITAT COMPLEXITY LOGS SHALL INCLUDE ALL LOGS NOT INCLUDED IN EITHER THE INTERMEDIATE GRADE CONTROL STRUCTURES OR THE WATER BARRIER STRUCTURE. THE LOGS ARE DESIGNED TO ADD HYDRAULIC COMPLEXITY TO THE CHANNEL. FINAL LOCATIONS MAY BE ALTERED IN THE FIELD DURING CONSTRUCTION BY SITE ENGINEER.
11. ABANDON DIVERSION CHANNEL AFTER COMPLETION OF CONSTRUCTION.
12. ALL STREAM BANKS DISTURBED DURING CONSTRUCTION SHALL BE REVEGETATED WITH NATIVE RIPARIAN VEGETATION. SEE C-21.
13. ELJ CONSTRUCTION AND DISTURBANCE LIMITS SHALL BE STAKED BY CONTRACTOR A MINIMUM OF 2 WORKING DAYS PRIOR TO COMMENCEMENT OF ELJ CONSTRUCTION FOR ENGINEER APPROVAL. CLEARING LIMITS SHALL MINIMIZE DISTURBANCE OF RIPARIAN VEGETATION.

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4	REVISION NO. 4	MRM	MS	9/07
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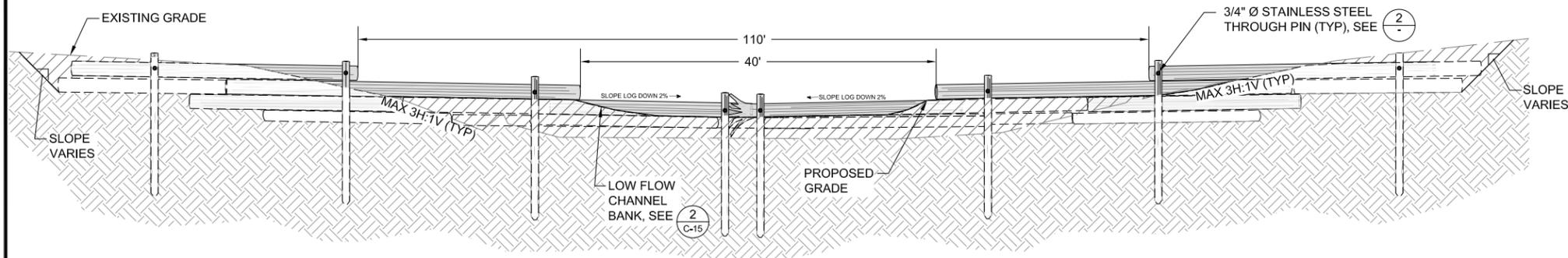
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DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: M. MERKELBACH
SCALE: AS NOTED	APPROVED: M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
 PHASE 1**

ELJ #1-GRADE CONTROL STRUCTURE #1 PLAN

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-6
SHEET NO: 10 OF 47

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TYPICAL SECTION- INTERMEDIATE GRADE CONTROL STRUCTURE

SCALE: 1:10

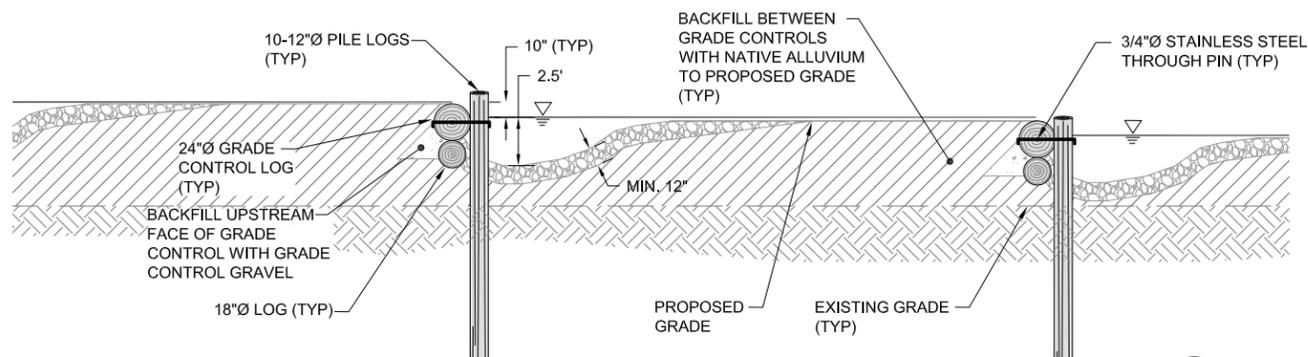
C
C-6

LEGEND

	LOG SECTION
	GRADE CONTROL GRAVEL
	FISH GRAVEL
	EXISTING GROUND
	NATIVE ALLUVIUM FILL
	EXISTING GRADE

NOTES:

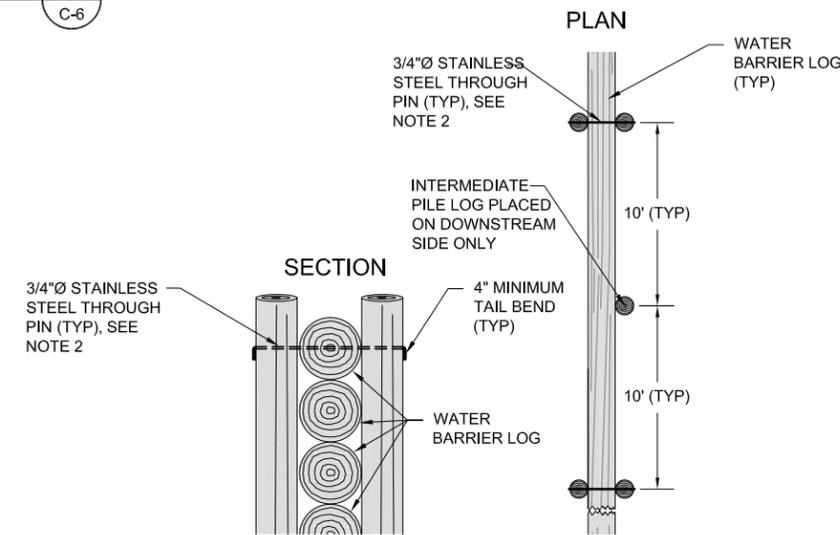
- BACKFILL UPSTREAM FACE OF INTERMEDIATE GRADE CONTOURS WITH WELL GRADED GRADE CONTROL GRAVEL.
- BOLT OR PIN EVERY PAIRED PILE LOG WITH A STAINLESS STEEL THROUGH PIN AS SHOWN THROUGH TOP LOG IN WATER BARRIER STRUCTURE.
- MATCH EXISTING GRADE ABOVE LOW FLOW CHANNEL TO A MAXIMUM SLOPE OF 3 HORIZONTAL TO 1 VERTICAL.



TYPICAL DETAIL - INTERMEDIATE GRADE CONTROL STRUCTURE

SCALE: 1:5

1
C-6



TYPICAL DETAIL - WATER BARRIER PILE PIN

SCALE: NTS

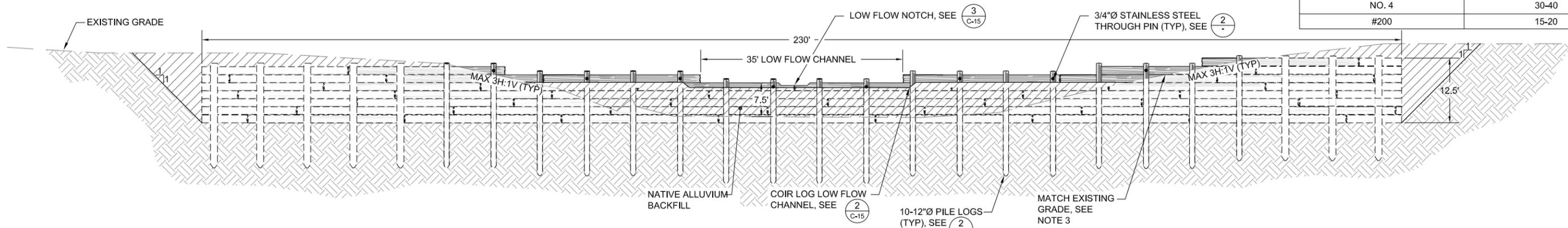
2
-

FISH GRAVEL GRAIN SIZE DISTRIBUTION

U.S. STANDARD SIEVE SIZE	PERCENT PASSING BY WEIGHT
6 TO 9 INCH	100
3 TO 6 INCH	85
1-1/2 TO 3 INCH	70
3/4 TO 1-1/2 INCH	55
3/8 TO 3/4 INCH	40
0.1 TO 3/8 INCH	25
0.01 TO 0.1 INCH	10

GRADE CONTROL GRAVEL SIZE DISTRIBUTION

SCREEN SIZE	PERCENT PASSING BY WEIGHT
5 INCH	100
4 INCH	95-100
3 INCH	90-95
1-1/2 INCH	65-80
1-1/4 INCH	45-60
NO. 4	30-40
#200	15-20



SECTION - WATER BARRIER STRUCTURE #1

SCALE: 1:10

B
C-6

No.	REVISION	BY	APP'D	DATE
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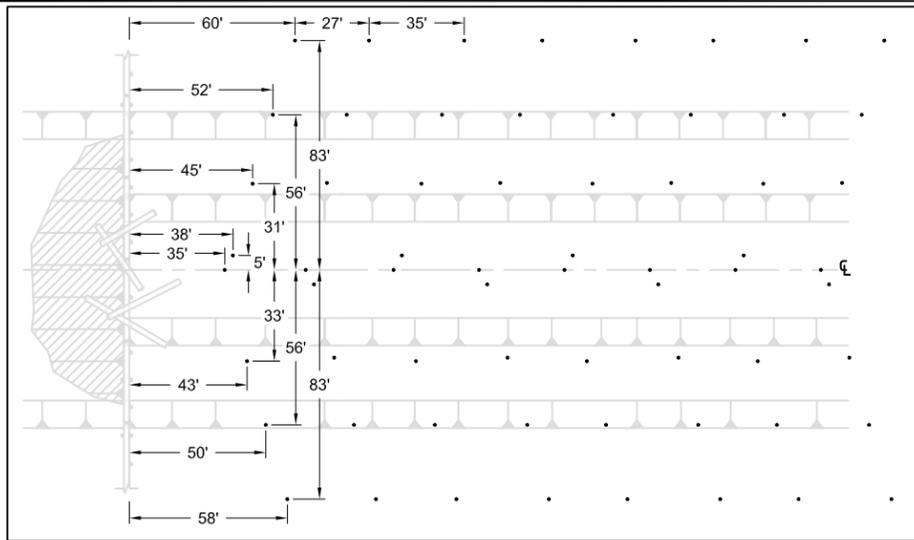


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DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: M. MERKELBACH
SCALE: AS NOTED	APPROVED: M. SPILLANE

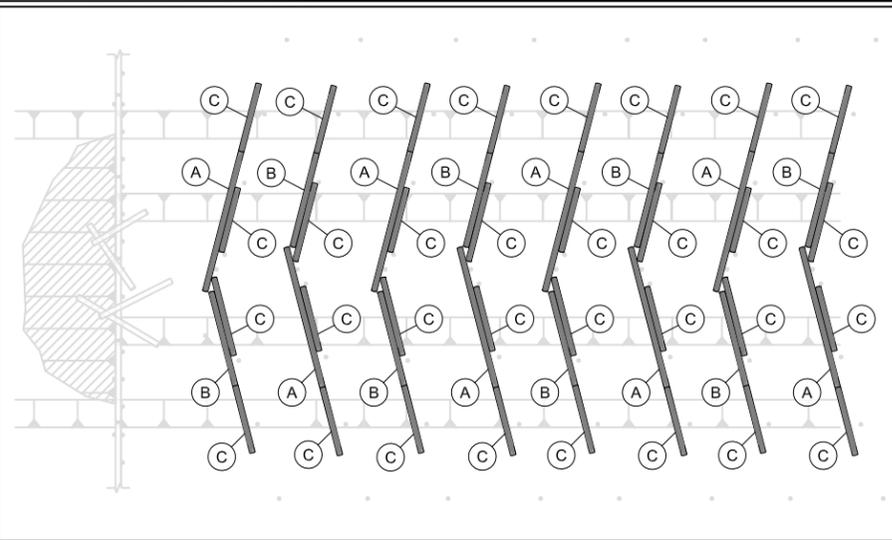
SKAGIT ENVIRONMENTAL BANK
PHASE 1

ELJ #1 - PROFILE AND DETAILS

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-7
SHEET NO: 11 OF 47



PILES



LAYER 1

LEGEND

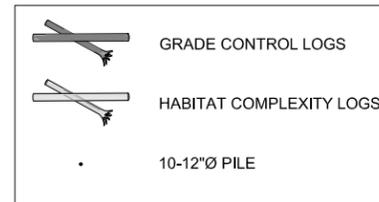
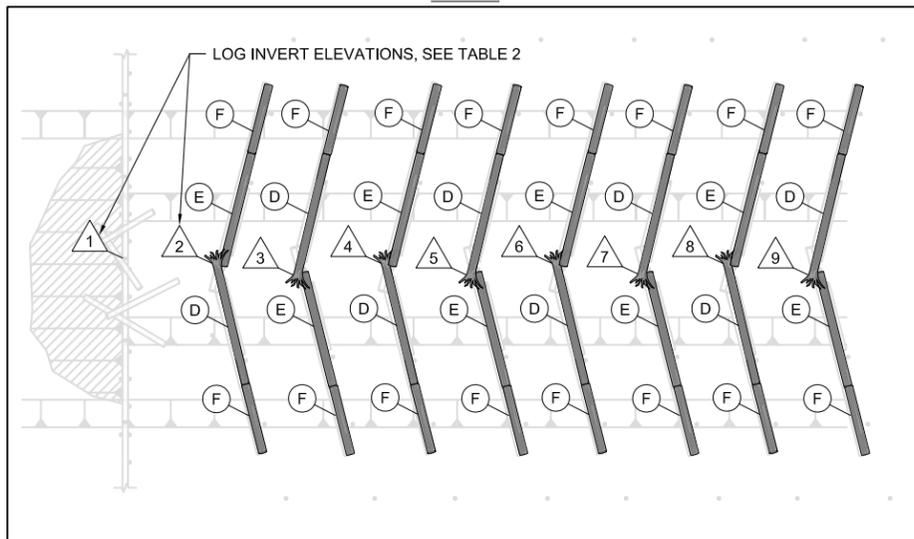
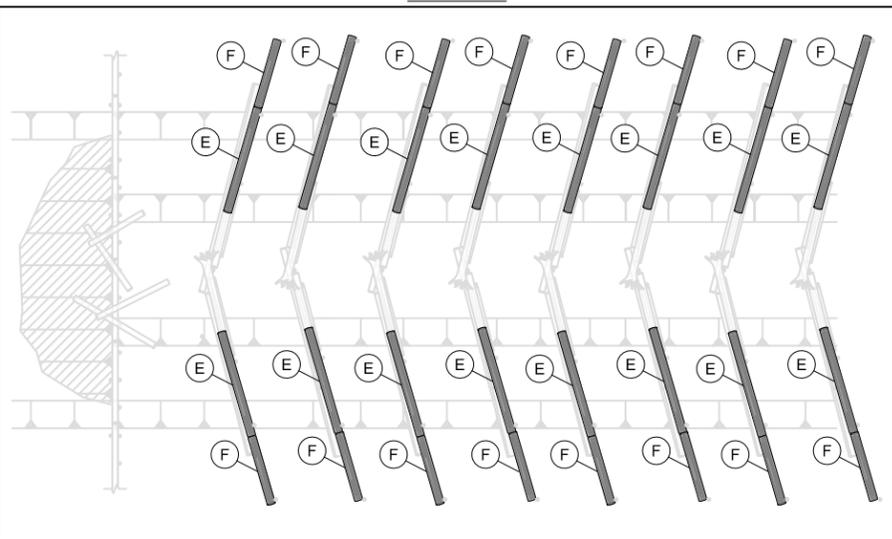


TABLE 1 - ELJ #1 LOG SCHEDULE:

LOG TYPE	DIAMETER	LENGTH	ROOTWAD	LOG COUNT
(A)	18"	50'		8
(B)	18"	35'		8
(C)	18"	25'		32
(D)	24"	50'	YES	8
(E)	24"	40'		40
(F)	24"	25'		32
(G)	12"+	25'-30'		28
(H)	12"+	15'-20'	YES	19
(I)	12"+	15'-20'		12
TOTAL:				187



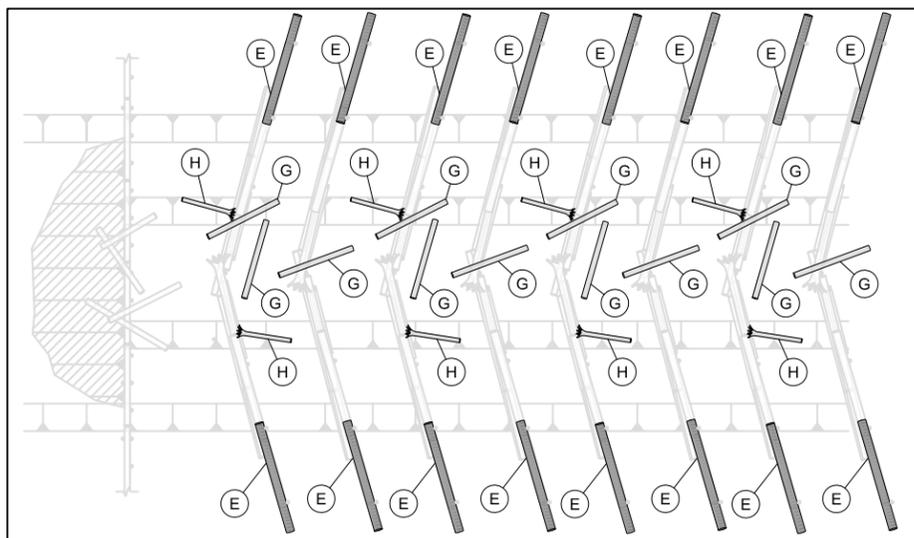
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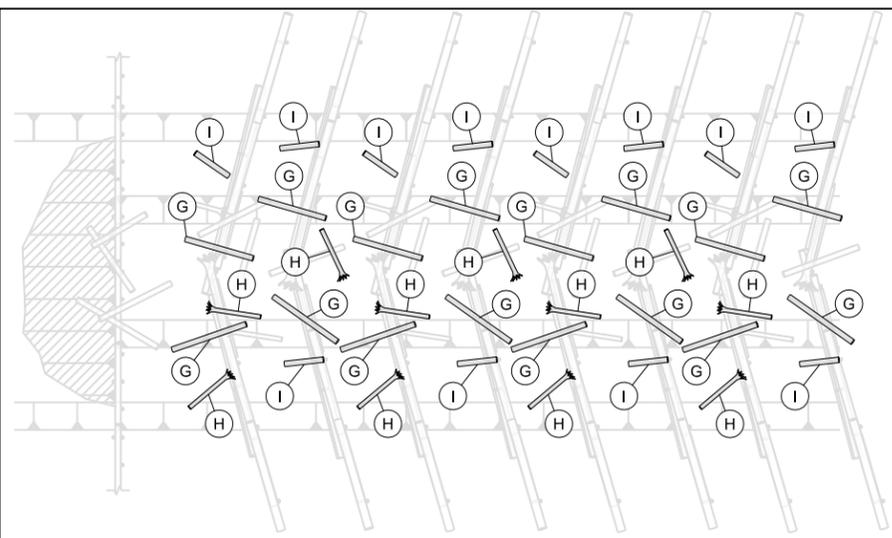
LAYER 3

TABLE 2 - ELJ #1 LOG INVERT ELEVATIONS:

LOG INVERT #	INVERT EL FT (NAVD 88)
1	27'
2	26.2'
3	25.3'
4	24.5'
5	23.7'
6	22.8'
7	22.0'
8	21.2'
9	20.3'
DOWNSTREAM CHANNEL BED	19.5'



LAYER 4



LAYER 5

GRADE CONTROL LAYER SEQUENCE:

- EXCAVATE TO GRADE FOR PLACEMENT OF LOG LAYER 1.
- PLACE LOG LAYER 1 SUCH THAT PLACEMENT OF LOG LAYER 2 WILL MEET DESIGNED INVERT HEIGHTS.
- EXCAVATE PLUNGE POOL AND BACKFILL UPSTREAM FACE OF GRADE CONTROL LOGS AND PLUNGE POOL WITH FISH GRAVEL.
- LOCALLY EXCAVATE AND PLACE HABITAT COMPLEXITY LOG LAYER 4 AND 5.
- BACKFILL STRUCTURES WITH NATIVE ALLUVIUM.

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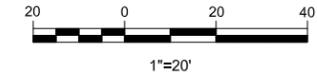
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DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: M. MERKELBACH
SCALE: AS NOTED	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
 PHASE 1

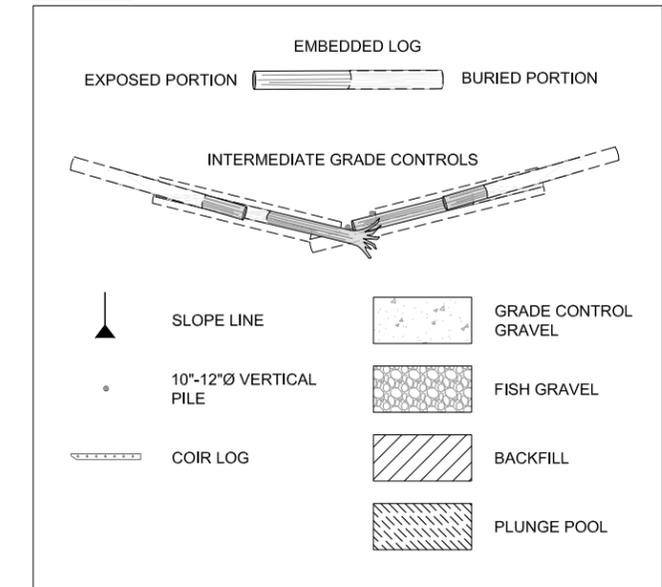
ELJ #1 - LAYERING PLAN

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-8
SHEET NO: 12 OF 47

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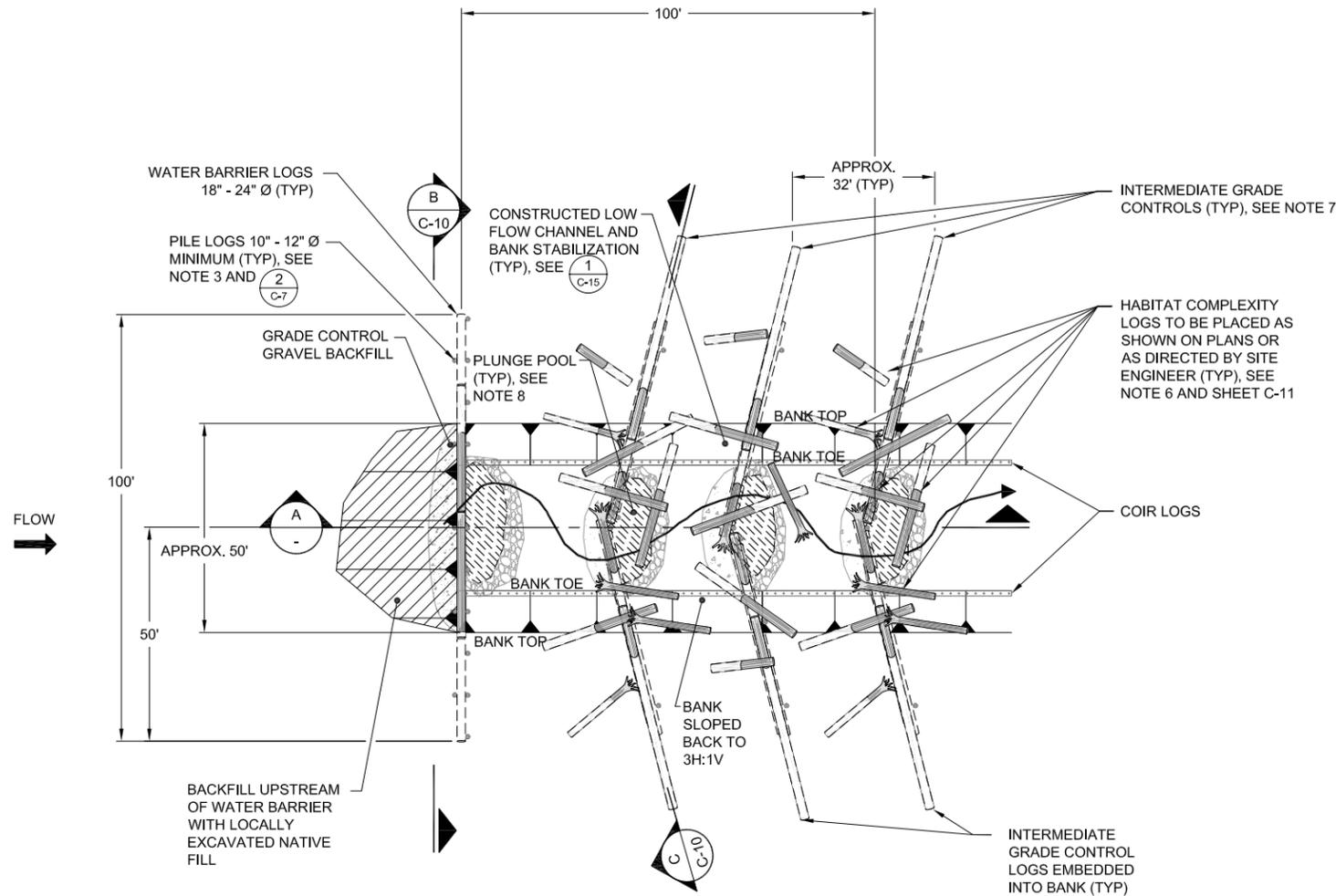


LEGEND



ELJ CONSTRUCTION NOTES:

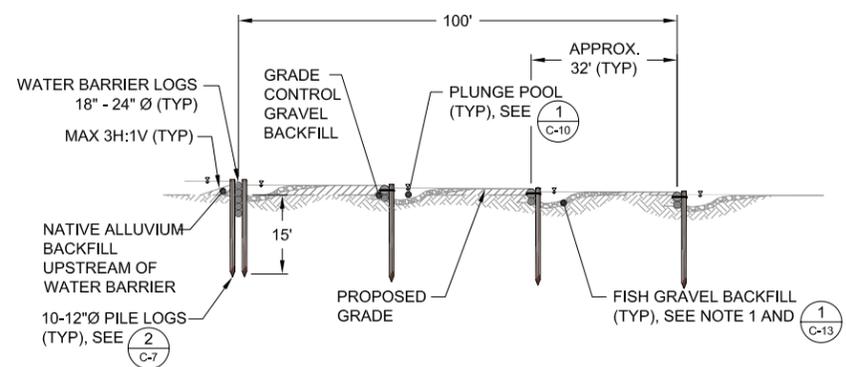
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PLAN VIEW - GRADE CONTROL STRUCTURE #2

SCALE: NOTED

1
C-1



PROFILE - GRADE CONTROL STRUCTURE #2

SCALE: NOTED

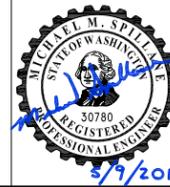
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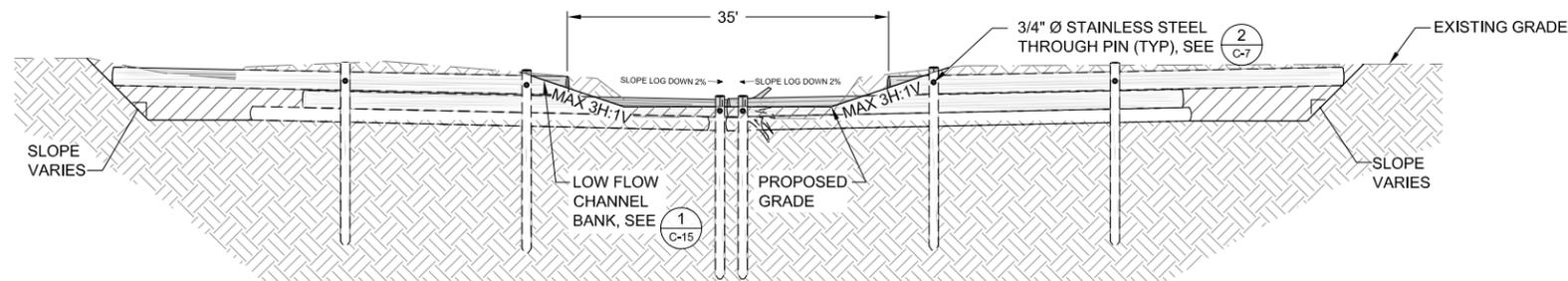


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DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
 PHASE 1
ELJ #2-GRADE CONTROL STRUCTURE #2 PLAN

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	C-9
SHEET NO. OF	13 47

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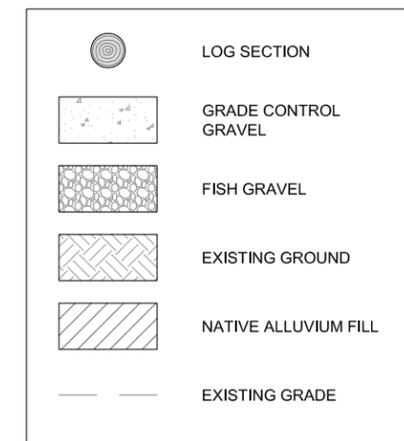


TYPICAL SECTION- INTERMEDIATE GRADE CONTROL STRUCTURE

SCALE: 1:10

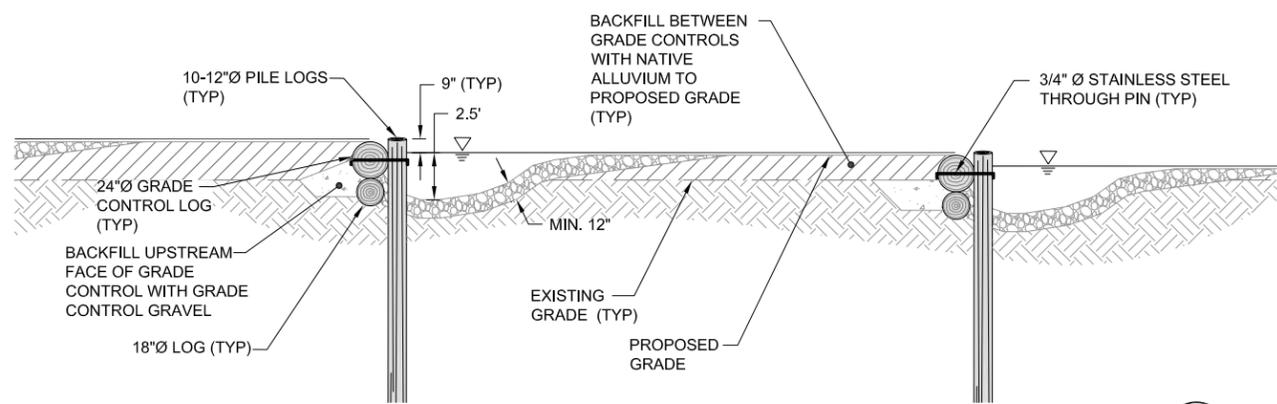
C
C-9

LEGEND



NOTES:

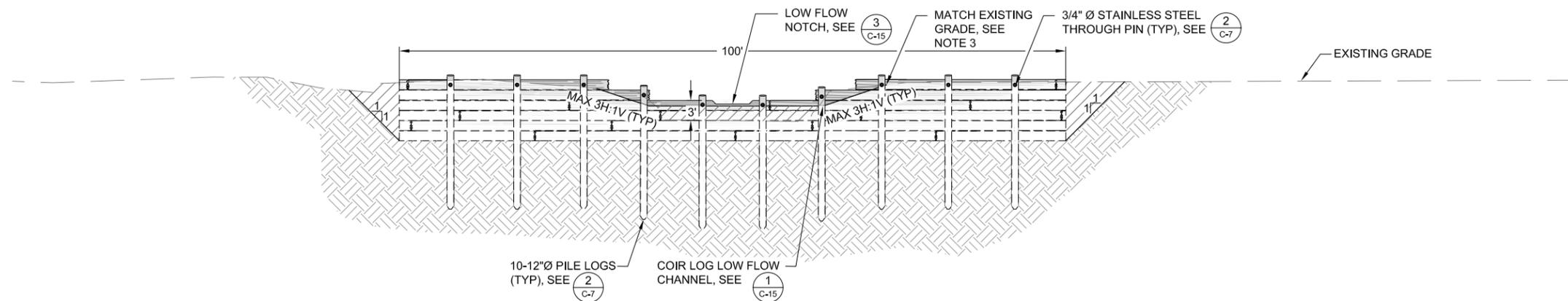
1. BACKFILL UPSTREAM FACE OF INTERMEDIATE GRADE CONTOURS WITH GRADE CONTROL GRAVEL.
2. BOLT OR PIN EVERY PAIRED PILE LOG WITH A STAINLESS STEEL THROUGH PIN AS SHOWN THROUGH TOP LOG IN WATER BARRIER STRUCTURE.
3. MATCH EXISTING GRADE ABOVE LOW FLOW CHANNEL TO A MAXIMUM SLOPE OF 3 HORIZONTAL TO 1 VERTICAL.



TYPICAL DETAIL - INTERMEDIATE GRADE CONTROL STRUCTURE

SCALE: 1:5

1
C-9



SECTION - WATER BARRIER STRUCTURE

SCALE: 1:10

B
C-9

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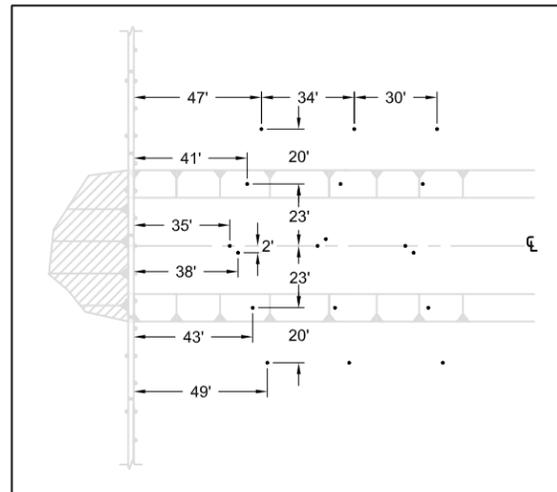


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DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

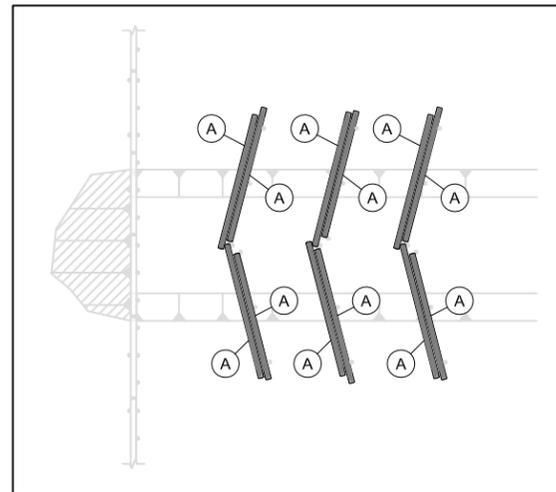
SKAGIT ENVIRONMENTAL BANK
 PHASE 1
 ELJ #2 - PROFILE AND DETAILS

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	C-10
SHEET NO.:	14 OF 47

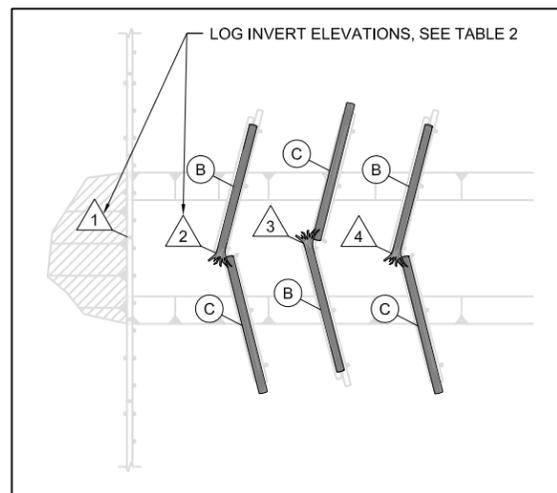
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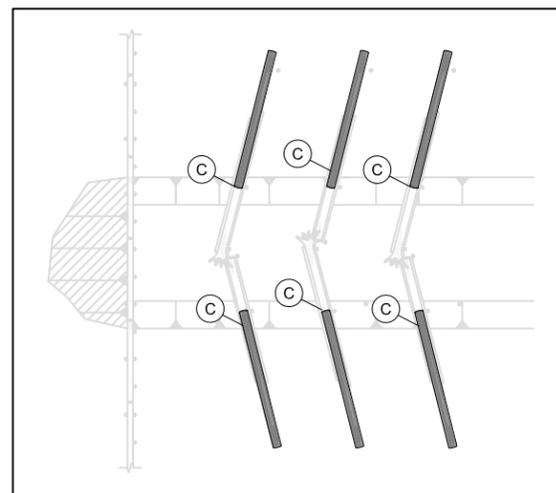
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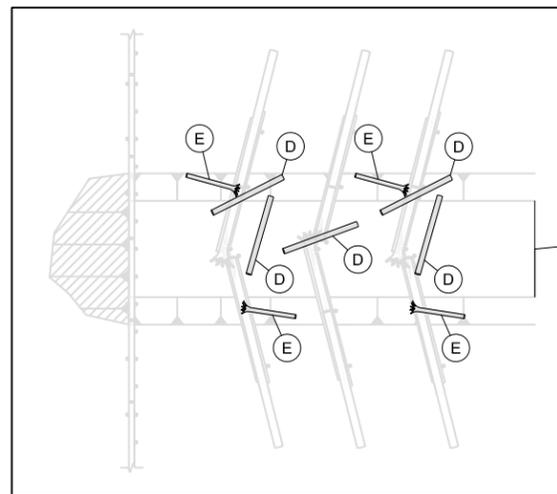
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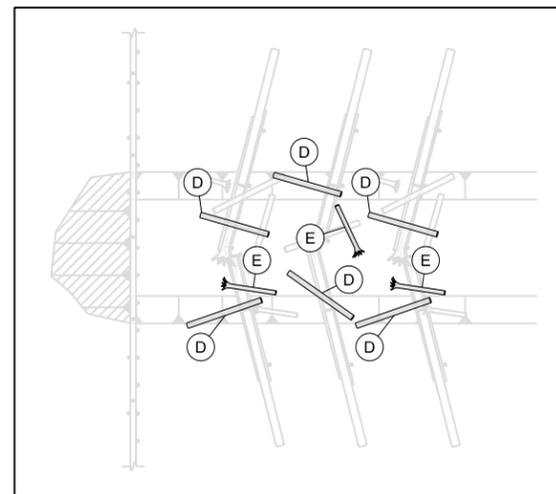
LAYER 2



LAYER 3



LAYER 4



LAYER 5

LEGEND

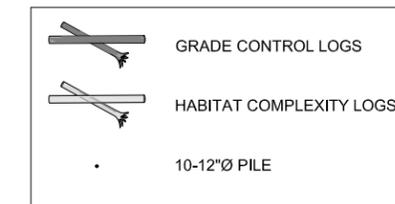


TABLE 1 - ELJ #2 LOG SCHEDULE:

LOG TYPE	DIAMETER	LENGTH	ROOTWAD	LOG COUNT
(A)	18"	50'		12
(B)	24"	50'	YES	3
(C)	24"	50'		9
(D)	12"+	25'-30'		11
(E)	12"+	15'-20'	YES	7

TOTAL: 42

TABLE 2 - ELJ #2 LOG INVERT ELEVATIONS:

LOG INVERT #	INVERT EL FT (NAVD 88)
1	25.2'
2	24.5'
3	23.7'
4	23.0'
DOWNSTREAM CHANNEL BED	22.2'

GRADE CONTROL LAYER SEQUENCE:

1. EXCAVATE TO GRADE FOR PLACEMENT OF LOG LAYER 1.
2. PLACE LOG LAYER 1 SUCH THAT PLACEMENT OF LOG LAYER 2 WILL MEET DESIGNED INVERT HEIGHTS.
3. EXCAVATE PLUNGE POOL AND BACKFILL UPSTREAM FACE OF GRADE CONTROL LOGS AND PLUNGE POOL WITH FISH GRAVEL.
4. LOCALLY EXCAVATE AND PLACE HABITAT COMPLEXITY LOG LAYER 4 AND 5.
5. BACKFILL STRUCTURES WITH NATIVE ALLUVIUM.

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DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
 PHASE 1

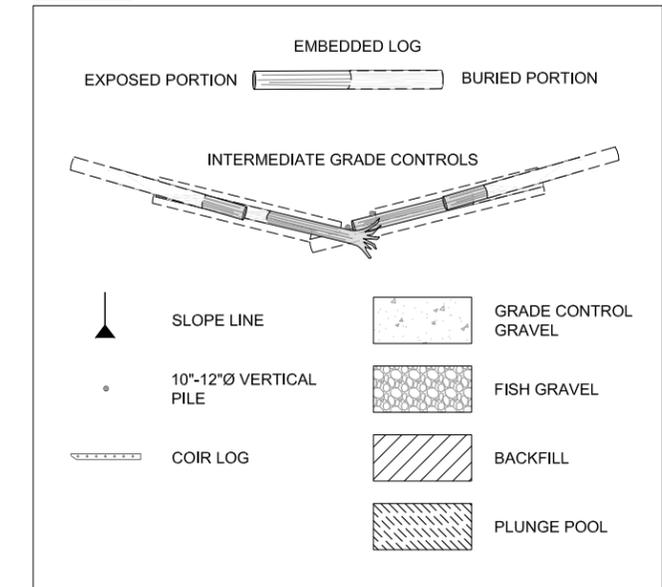
ELJ #2 - LAYERING PLAN

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	C-11
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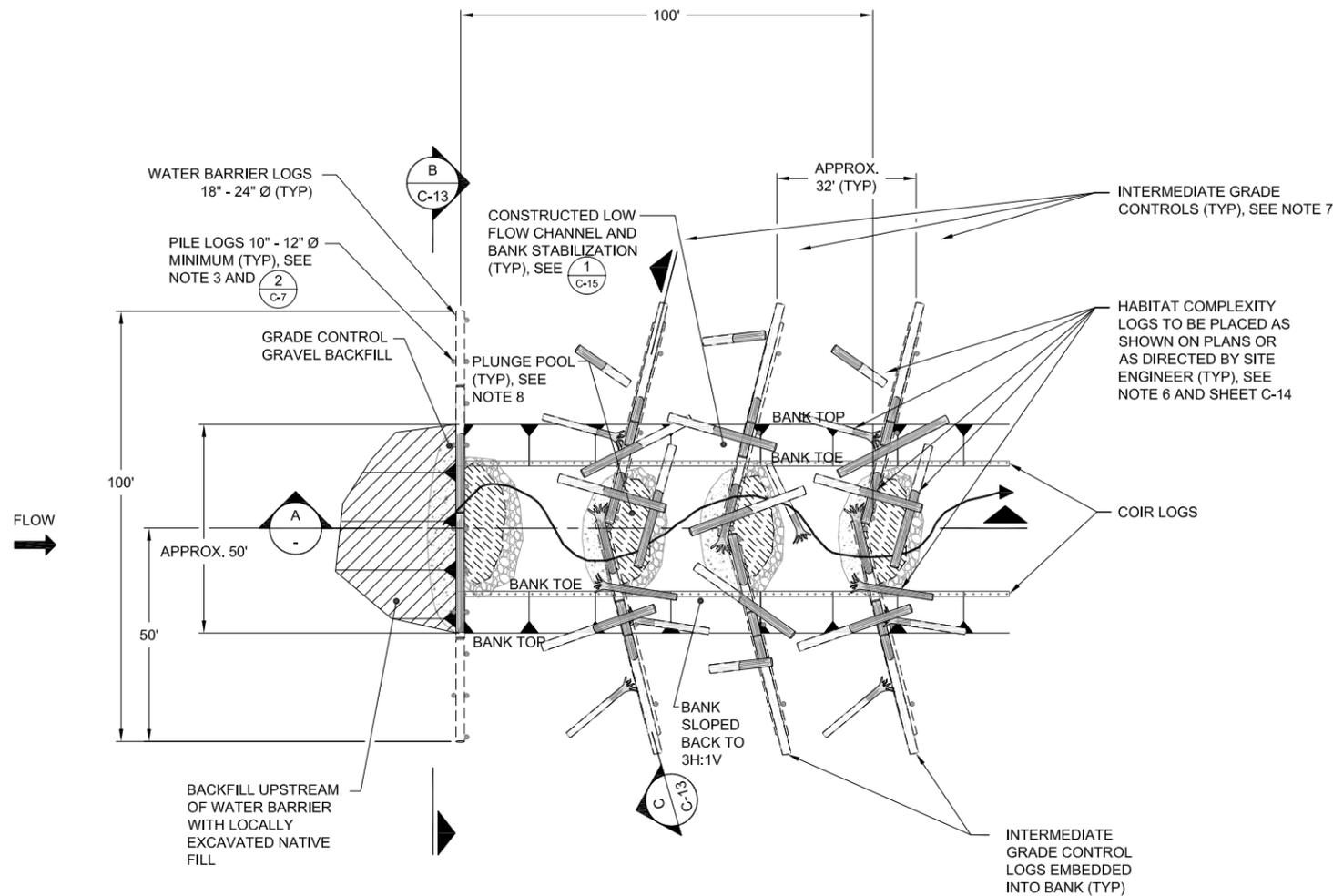


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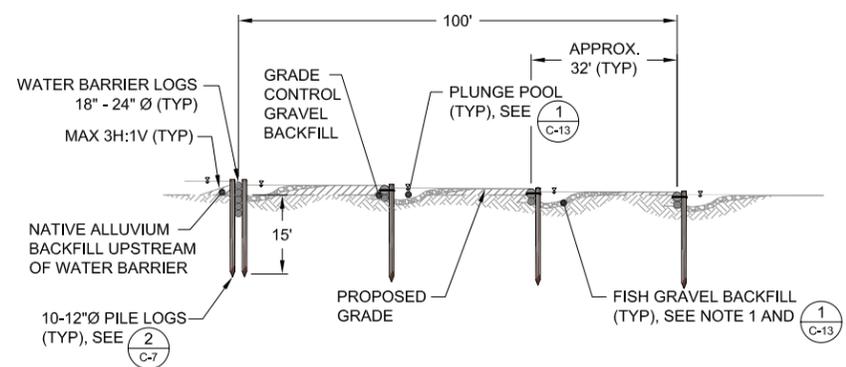
ELJ CONSTRUCTION NOTES:

1. PRIOR TO ELJ CONSTRUCTION INSTALL WATER MANAGEMENT AND TESC BMPS. SEE DRAWINGS ESC-1 AND ESC-2.
2. SHAPE CONSTRUCTED CREEK CHANNEL SLOPE TO ACHIEVE MAXIMUM 3H:1V BANK SLOPE AND INSTALL BANK STABILIZATION, AS SHOWN ON SHEET C-15.
3. PILE LOGS SHALL BE DRIVEN USING HYDRAULIC STATIC LOADING OR VIBRATORY PUSH TECHNOLOGY. NO IMPACT HAMMERS SHALL BE USED.
4. CONSTRUCT LOW FLOW CHANNEL AND GRADE CONTROL STRUCTURES SUCH THAT THERE ARE NO VERTICAL DROPS GREATER THAN 0.8 FEET.
5. ALL LOGS SHALL BE UNTREATED FIR.
6. HABITAT COMPLEXITY LOG G EMBEDMENT LENGTH MINIMUM OF 1/2 LOG LENGTH AND AN AVERAGE DEPTH OF 3 FEET. HABITAT COMPLEXITY LOGS H AND I EMBEDDED OVER 2/3 THE LOG LENGTH AND AN AVERAGE OF 2 FEET.
7. INTERMEDIATE GRADE CONTROLS MIRRORED EVERY OTHER.
8. PLUNGE POOLS SHALL BE OVER EXCAVATED AND BACKFILLED WITH FISH GRAVEL TO A MINIMUM THICKNESS OF 1', SEE SHEET C-7 FOR GRAIN SIZE DISTRIBUTION.
9. HABITAT COMPLEXITY LOGS SHALL INCLUDE ALL LOGS NOT INCLUDED IN EITHER THE INTERMEDIATE GRADE CONTROL STRUCTURES OR THE WATER BARRIER STRUCTURE. THE LOGS ARE DESIGNED TO ADD HYDRAULIC COMPLEXITY TO THE CHANNEL. FINAL LOCATIONS MAY BE ALTERED IN THE FIELD DURING CONSTRUCTION BY SITE ENGINEER.
10. ABANDON DIVERSION CHANNEL AFTER COMPLETION OF CONSTRUCTION.
11. ALL STREAM BANKS DISTURBED DURING CONSTRUCTION SHALL BE REVEGETATED WITH NATIVE RIPARIAN VEGETATION. SEE C-21.
12. ELJ CONSTRUCTION AND DISTURBANCE LIMITS SHALL BE STAKED BY CONTRACTOR A MINIMUM OF 2 WORKING DAYS PRIOR TO COMMENCEMENT OF ELJ CONSTRUCTION FOR ENGINEER APPROVAL. CLEARING LIMITS SHALL MINIMIZE DISTURBANCE OF RIPARIAN VEGETATION.



PLAN VIEW - GRADE CONTROL STRUCTURE #3

SCALE: NOTED



PROFILE - GRADE CONTROL STRUCTURE #3

SCALE: NOTED



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4	REVISION NO. 4	MRM	MS	9/07
3	REVISION NO. 3	MRM	MS	8/07
2	REVISION NO. 2	MRM	MS	6/06
1	REVISION NO. 1	MRM	MS	5/06



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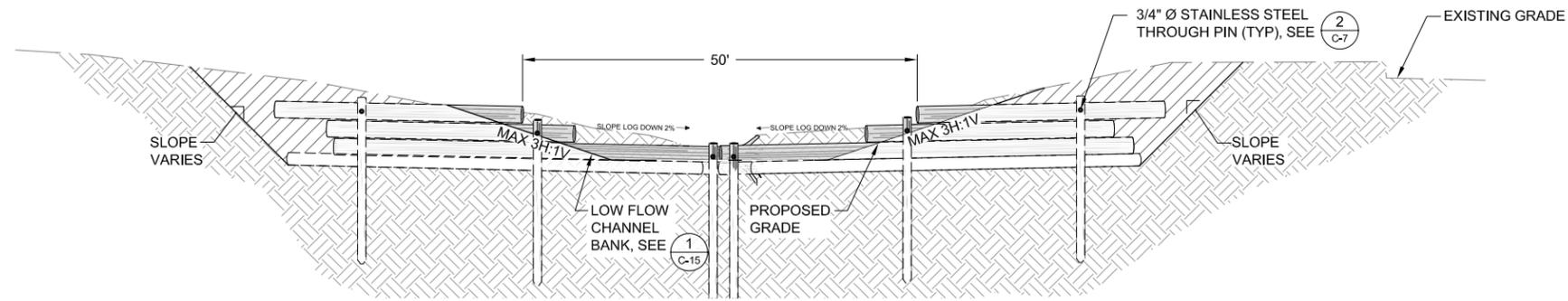


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DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
 PHASE 1
ELJ #3-GRADE CONTROL STRUCTURE #3 PLAN

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	C-12
SHEET NO. OF	16 47

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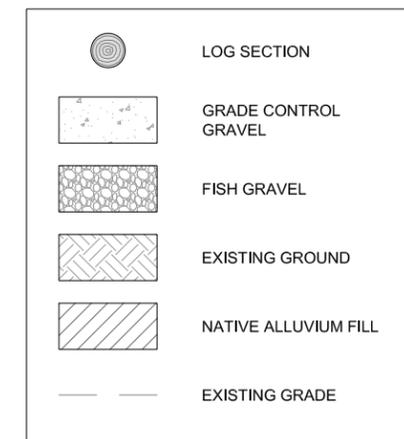


TYPICAL SECTION- INTERMEDIATE GRADE CONTROL STRUCTURE

SCALE: 1:10

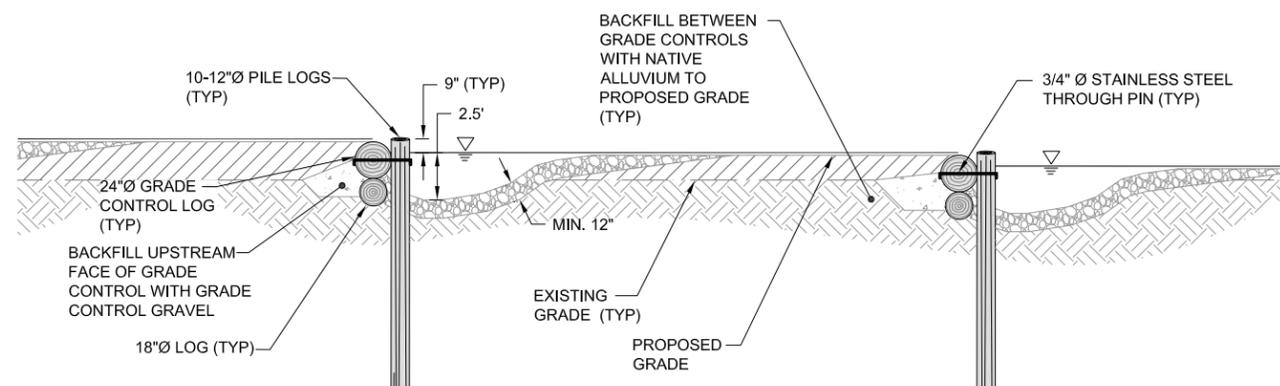
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C-12

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NOTES:

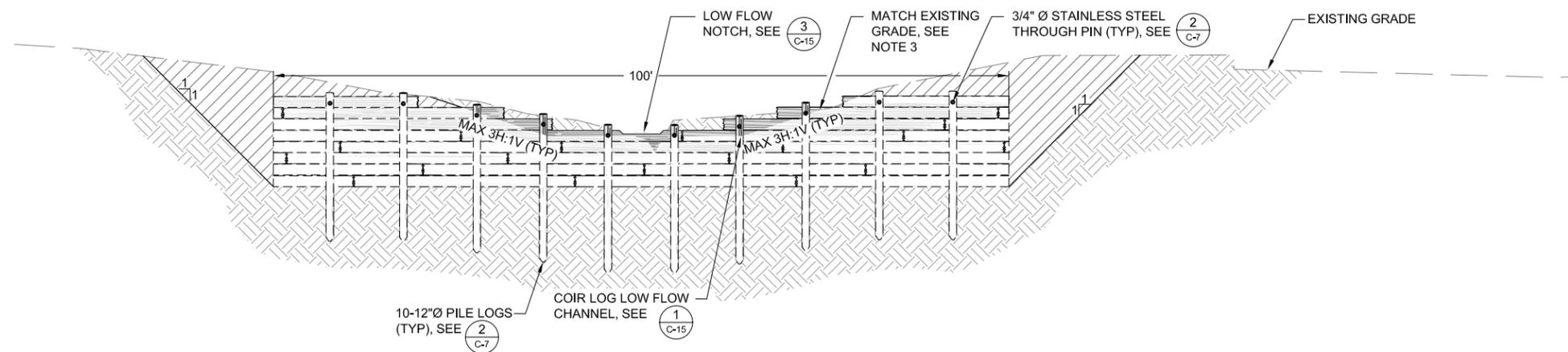
1. BACKFILL UPSTREAM FACE OF INTERMEDIATE GRADE CONTOURS WITH WELL GRADED GRADE CONTROL GRAVEL.
2. BOLT OR PIN EVERY PAIRED PILE LOG WITH A STAINLESS STEEL THROUGH PIN AS SHOWN THROUGH TOP LOG IN WATER BARRIER STRUCTURE.
3. MATCH EXISTING GRADE ABOVE LOW FLOW CHANNEL TO A MAXIMUM SLOPE OF 3 HORIZONTAL TO 1 VERTICAL.



TYPICAL DETAIL - INTERMEDIATE GRADE CONTROL STRUCTURE

SCALE: 1:5

1
C-12



SECTION - WATER BARRIER STRUCTURE

SCALE: 1:10

B
C-12

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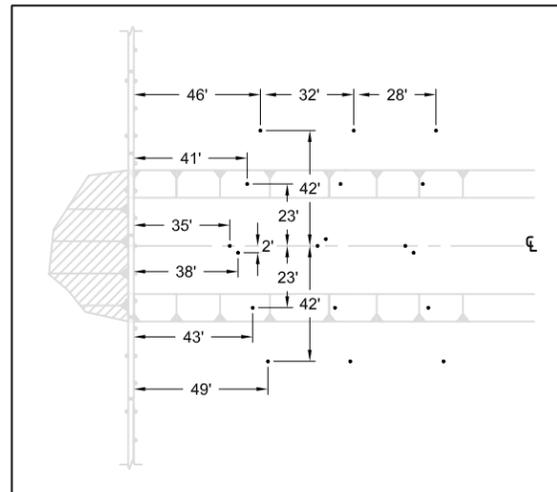
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SCALE: AS NOTED	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
 PHASE 1

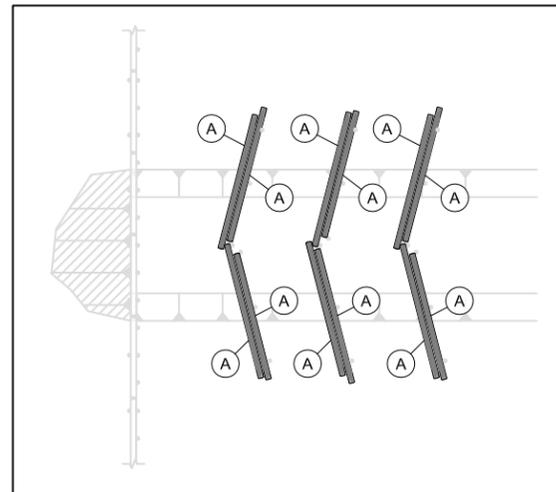
ELJ #3 - PROFILE AND DETAILS

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PROJECT NO: 04-02822-003
DRAWING NO: C-13
SHEET NO: 17 OF 47

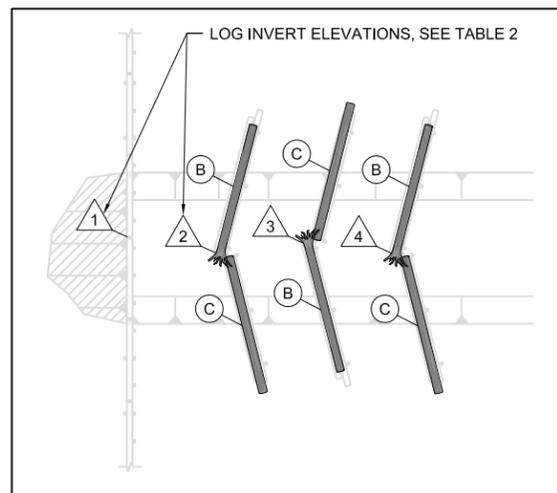
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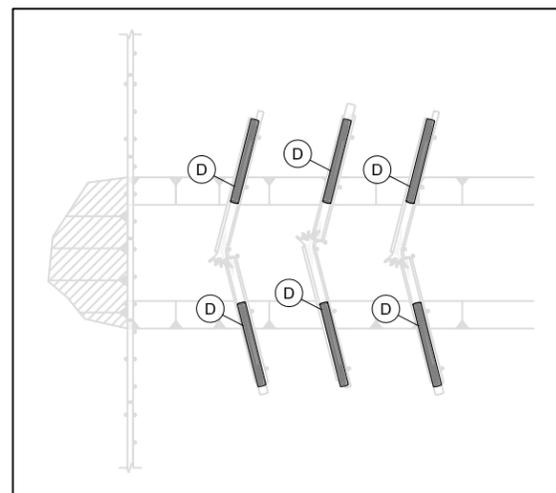
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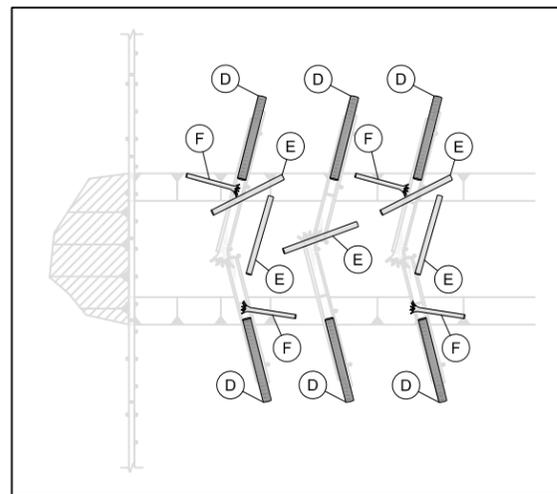
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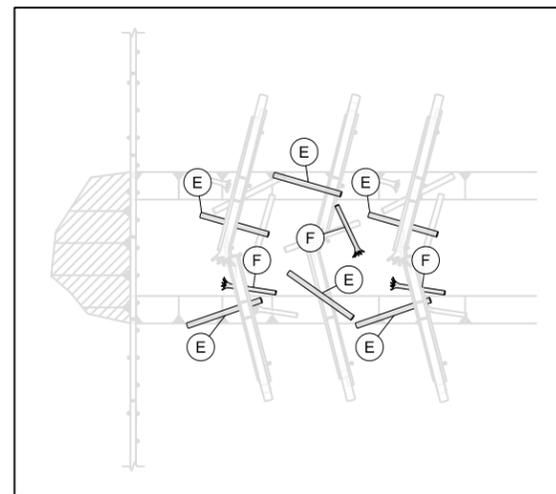
LAYER 2



LAYER 3



LAYER 4



LAYER 5

LEGEND

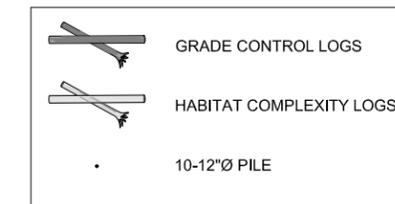


TABLE 1 - ELJ #3 LOG SCHEDULE:

LOG TYPE	DIAMETER	LENGTH	ROOTWAD	LOG COUNT
(A)	18"	50'		12
(B)	24"	50'	YES	3
(C)	24"	50'		3
(D)	24"	30'		12
(E)	12"+	25'-30'		11
(F)	12"+	15'-20'	YES	7

TOTAL: 48

TABLE 2 - ELJ #3 LOG INVERT ELEVATIONS:

LOG INVERT #	INVERT EL FT (NAVD 88)
1	24.0'
2	23.3'
3	22.5'
4	21.8'
DOWNSTREAM CHANNEL BED	21.1'

GRADE CONTROL LAYER SEQUENCE:

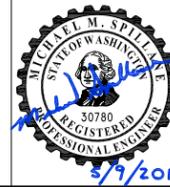
- EXCAVATE TO GRADE FOR PLACEMENT OF LOG LAYER 1.
- PLACE LOG LAYER 1 SUCH THAT PLACEMENT OF LOG LAYER 2 WILL MEET DESIGNED INVERT HEIGHTS.
- EXCAVATE PLUNGE POOL AND BACKFILL UPSTREAM FACE OF GRADE CONTROL LOGS AND PLUNGE POOL WITH FISH GRAVEL.
- LOCALLY EXCAVATE AND PLACE HABITAT COMPLEXITY LOG LAYER 4 AND 5.
- BACKFILL STRUCTURES WITH NATIVE ALLUVIUM.

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3	REVISION NO. 3	MRM	MS	8/07
2	REVISION NO. 2	MRM	MS	6/06
1	REVISION NO. 1	MRM	MS	5/06



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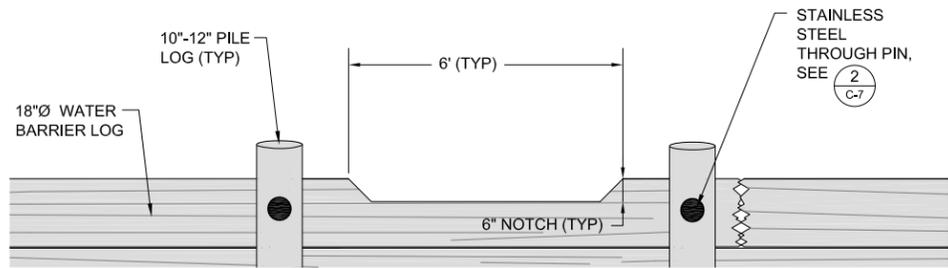
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DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: M. MERKELBACH
SCALE: AS NOTED	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
 PHASE 1

ELJ #3 - LAYERING PLAN

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-14
SHEET NO: 18 OF 47

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WATER BARRIER LOW FLOW NOTCH DETAIL (TYP)

SCALE: 1:5

3
C-15

GENERAL NOTES:

1. FILL MATERIAL AT ELJ CONSTRUCTION SITES TO CONSIST OF LOCAL BANK SEDIMENT. FILL MATERIAL AT END OF FILLED DITCHES TO CONSIST OF DITCH FILL MATERIAL.
2. WHERE BANK STABILIZATION IS INSTALLED TO PREVENT HEAD CUTS WHEN FILLED DITCHES TERMINATE AT STREAM BANKS, BOTTOM OF STABILIZATION SHALL BE THE EXISTING DITCH BOTTOM. WHERE BANK STABILIZATION IS INSTALLED AT ELJ CONSTRUCTION SITES, BOTTOM OF BANK STABILIZATION SHALL BE THE BANK TOE AT BASE OF FISH GRAVEL.
3. SEE C-21 FOR STREAM BANK RE-VEGETATION.

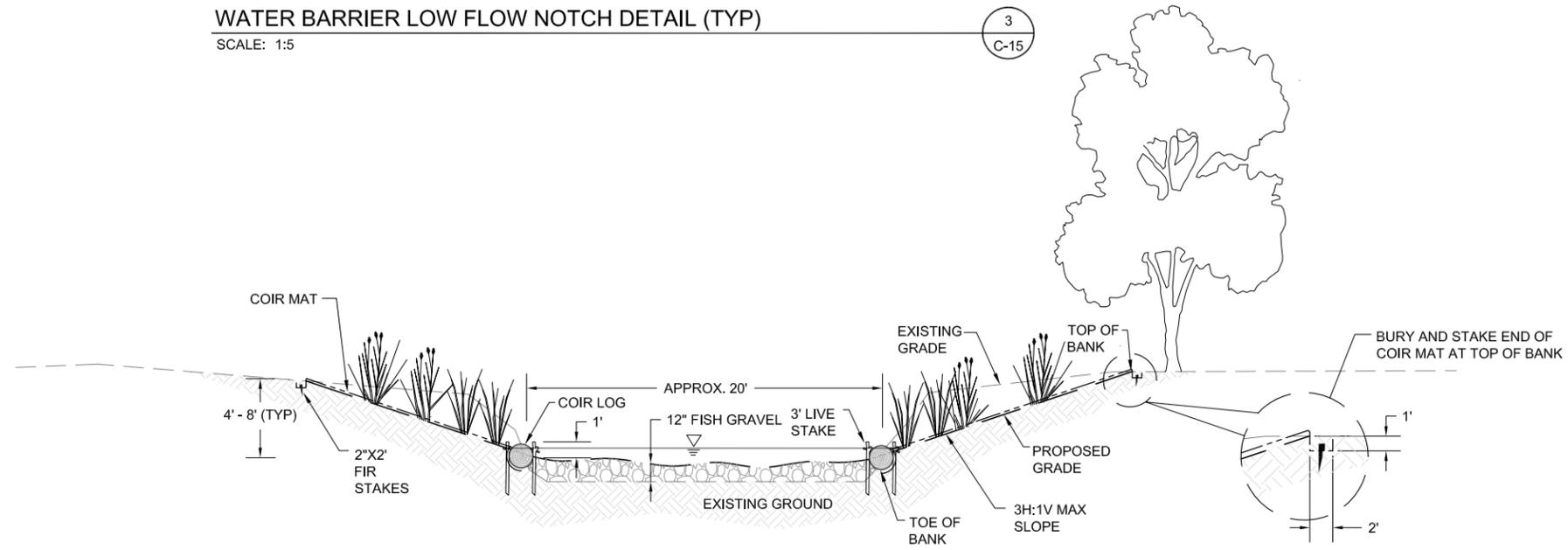
COIR MAT/COIR LOG

COIR MAT

1. COIR MAT SHALL BE 100 PERCENT WOVEN MATTING OF COIR YARN MADE FROM WHITE (RETTED) COCONUT FIBER MEETING THE FOLLOWING MINIMUM PARAMETERS: WEIGHT - 900 GRAMS/SQUARE METER (ASTM D 3776); WET TENSILE STRENGTH - 1,200 LB/FOOT (ASTM D 4595); MANUFACTURER RECOMMENDED FLOW - 16 FPS; MANUFACTURER RECOMMENDED SHEER STRENGTH 5.0 LB/SQUARE FOOT.
2. COIR MAT SHALL BE ANCHORED WITH WOODEN STAKES PER THE MANUFACTURER RECOMMENDATION FOR THIS APPLICATION
3. COIR MAT SHALL BE INSTALLED OVER ALL AREAS OF REGARDED STREAM BANKS IMMEDIATELY FOLLOWING PLACEMENT OF NATIVE FILL.
4. COIR MAT SHALL BE ANCHORED AT TOE USING COIR LOG.

COIR LOG

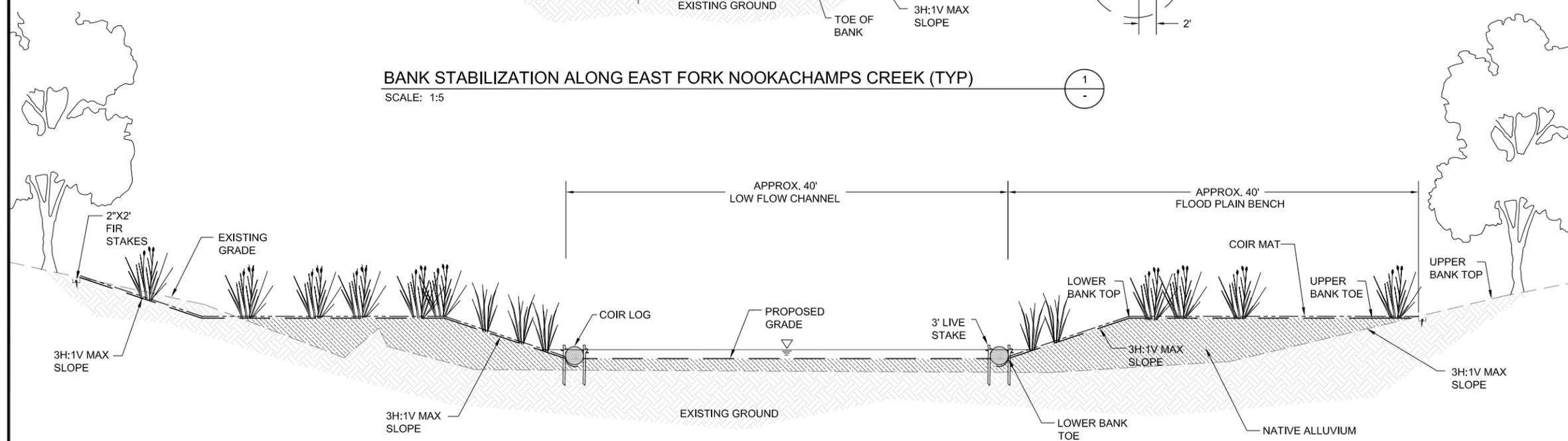
1. COIR LOG SHALL BE A 100% COCONUT FIBER ROLL, 20' LONG, APPROXIMATELY 15" DIAMETER WITH A MINIMUM DENSITY OF 9 LB/CUBIC FOOT. OUTER NETTING SHALL BE 100 PERCENT NATURAL FIBER TWINE WITH BREAKING STRENGTH OF 80 LBS, WITH 2X2" MESH AND KNOTTED JUNCTIONS.
2. COIR LOGS SHALL BE ANCHORED WITH 2X2" NOTCHED WOODEN STAKES, 24" MINIMUM LENGTH INSTALLED 1 FOOT O.C. ALTERNATING SIDES OF THE LOG. LIVE STAKES TO BE INSTALLED 1 FOOT O.C. ALTERNATING SIDES OF LOG OPPOSITE WOODEN STAKES.
3. LIVE STAKES WILL BE INSTALLED TO A DEPTH OF 2/3 OF TOTAL STAKE LENGTH. PLANT MATERIAL SHALL CONSIST OF THE FOLLOWING: SITKA WILLOW (*SALIX SITCHENSIS*), PACIFIC WILLOW (*SALIX LUCIDA*), AND RED-OSIER DOGWOOD (*CORNUS STOLONIFERA*).



BANK STABILIZATION ALONG EAST FORK NOOKACHAMPS CREEK (TYP)

SCALE: 1:5

1
-



BANK STABILIZATION ALONG NOOKACHAMPS CREEK (ELJ #1)

SCALE: 1:5

2
-

LEGEND

	FISH GRAVEL
	EXISTING GROUND
	NATIVE ALLUVIUM FILL
	LOW FLOW STREAM ELEVATION

ELJ #1 OCCURS IN A SECTION OF NOOKACHAMPS CREEK THAT IS DOMINATED BY SILTS. FISH GRAVEL IN PLUNGE POOLS IS USED PRIMARILY TO PREVENT SCOUR.

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4	REVISION NO. 4	MRM	MS	9/07
3	REVISION NO. 3	MRM	MS	8/07
2	REVISION NO. 2	MRM	MS	6/06
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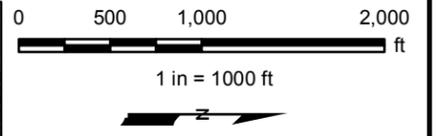
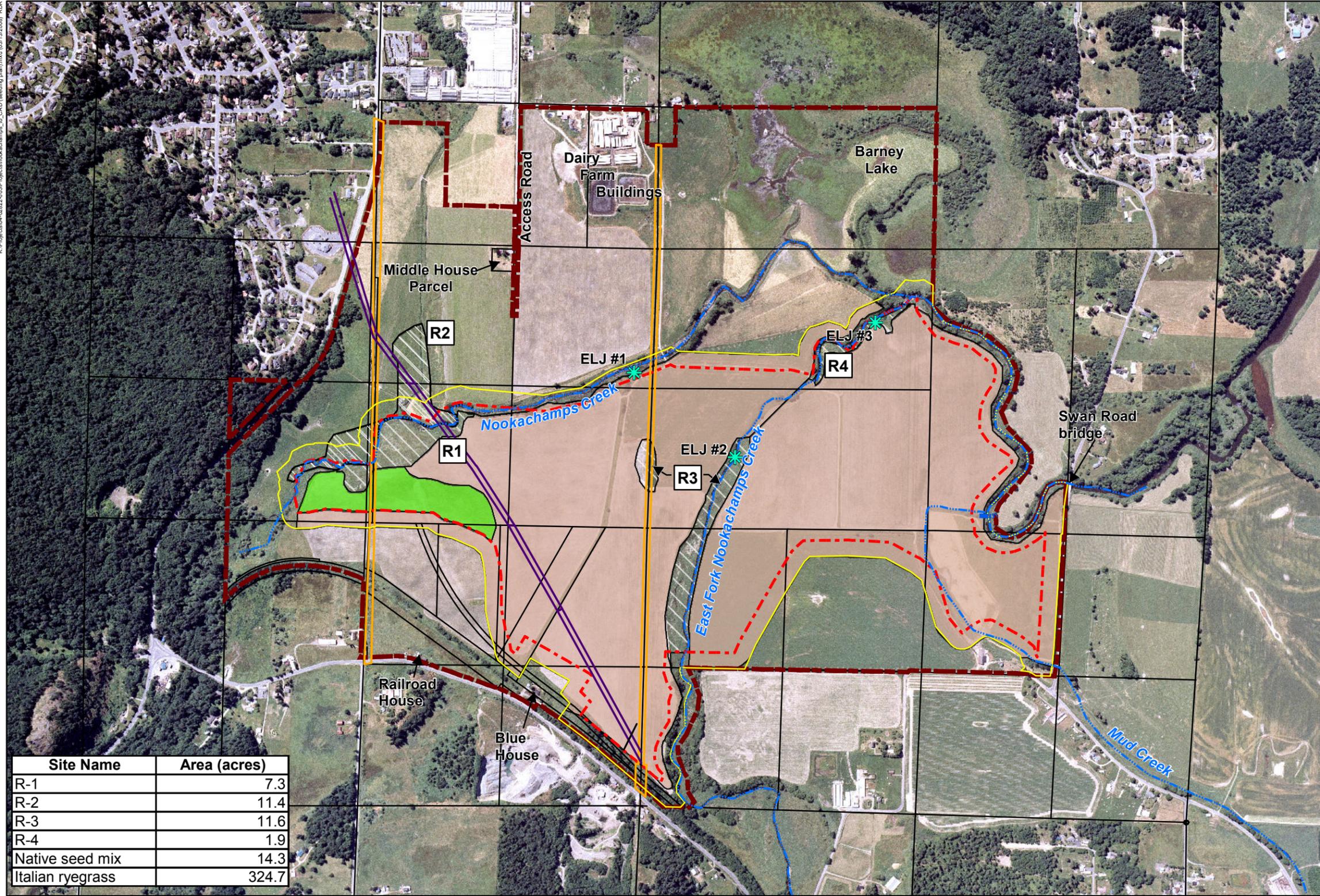
DESIGNED: M. MERKELBACH	DRAWN: L. TURNIDGE
DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: G. KAYS
SCALE: AS NOTED	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
 PHASE 1
 BANK STABILIZATION

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-15
SHEET NO: 19 OF 47

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K:\Projects\04-02822-003\project\reseed\champs_to_CAD\seeding_plan.mxd (03/17/2008) RCP



Legend :

- Seeding Plan**
- Native seed mix
 - Italian ryegrass
 - R1 Reed canarygrass
 - ✱ ELJ - Grade control structure
 - · — · — · Stream
 - Waterline easement
 - Powerline easement
 - Mitigation bank boundary
 - Clear Valley Farm property boundary
 - Edge of buffer
 - Parcel boundary

Site Name	Area (acres)
R-1	7.3
R-2	11.4
R-3	11.6
R-4	1.9
Native seed mix	14.3
Italian ryegrass	324.7

Note:
1. Italian ryegrass will be applied to fallow areas to provide a temporary herbaceous cover crop prior to Phase II grading activities.

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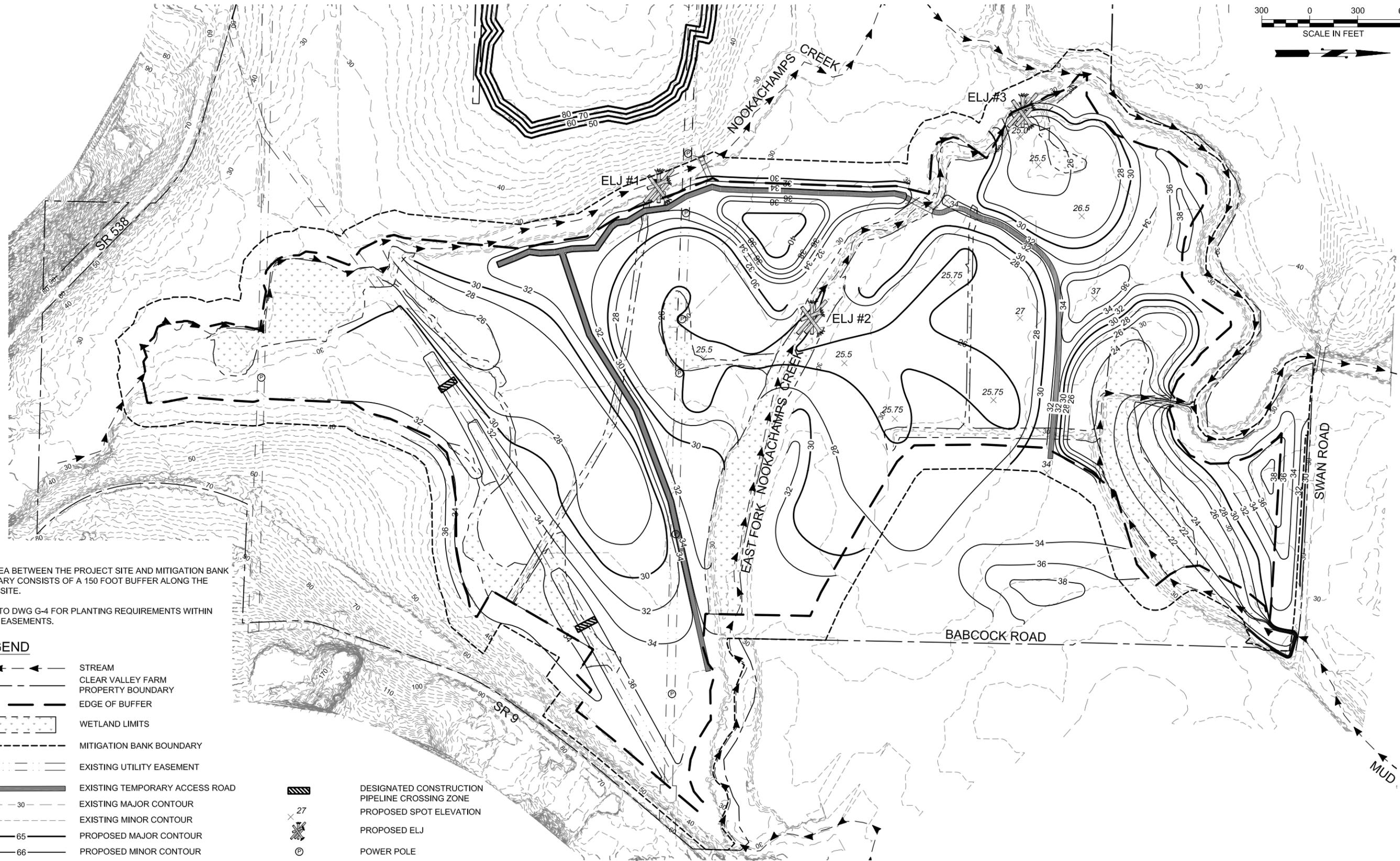
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5	REVISION NO. 5	MM	MS	12/07
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3	REVISION NO. 3	MM	MS	07/07

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Suite 1100
Seattle, Washington
98121-1820
206-441-9080
206-441-9108 FAX

DESIGNED: M. MERKELBACH	DRAWN: J. SCHMIDT
DESIGNED:	DRAWN:
DESIGNED:	CHECKED:
DESIGNED:	APPROVED: M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
PHASE 1
REED CANARYGRASS AND SEEDING PLAN**

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-16
SHEET NO: 20 of 47



NOTE:

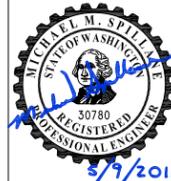
1. THE AREA BETWEEN THE PROJECT SITE AND MITIGATION BANK BOUNDARY CONSISTS OF A 150 FOOT BUFFER ALONG THE ENTIRE SITE.
2. REFER TO DWG G-4 FOR PLANTING REQUIREMENTS WITHIN UTILITY EASEMENTS.

LEGEND

- STREAM
- CLEAR VALLEY FARM PROPERTY BOUNDARY
- EDGE OF BUFFER
- WETLAND LIMITS
- MITIGATION BANK BOUNDARY
- EXISTING UTILITY EASEMENT
- EXISTING TEMPORARY ACCESS ROAD
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- DESIGNATED CONSTRUCTION PIPELINE CROSSING ZONE
- PROPOSED SPOT ELEVATION
- PROPOSED ELJ
- POWER POLE

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5	REVISION NO. 5	MRM	MS	12/07
4	REVISION NO. 4	MRM	MS	9/07
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2	REVISION NO. 2	MRM	MS	6/06

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DESIGNED:	C. BARTON	DRAWN:	L. TURNIDGE
DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
PHASE 2**

PROPOSED GRADING PLAN

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	C-17
SHEET NO. OF	21 47

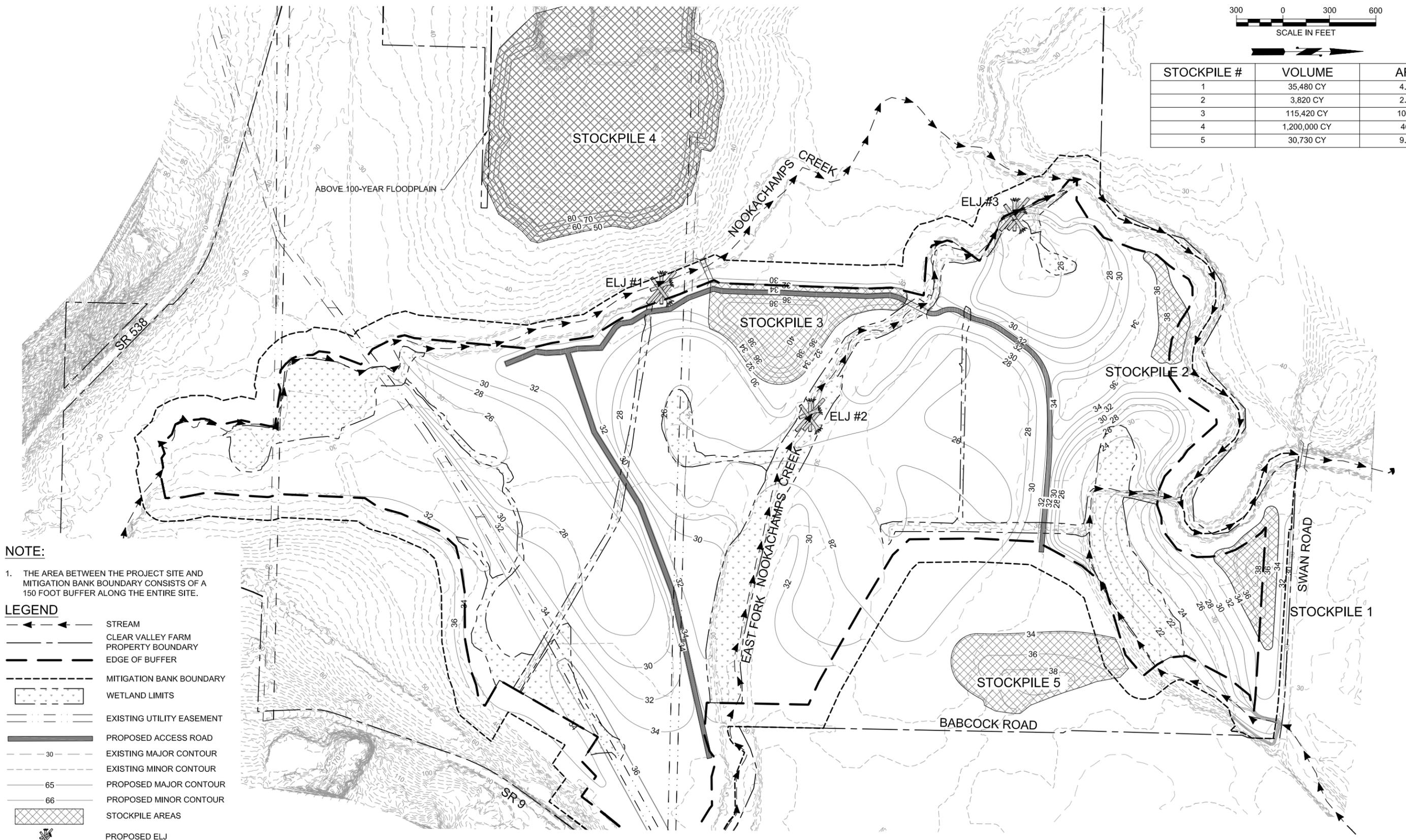
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STOCKPILE #	VOLUME	AREA
1	35,480 CY	4.6 AC
2	3,820 CY	2.5 AC
3	115,420 CY	10.9 AC
4	1,200,000 CY	46 AC
5	30,730 CY	9.9 AC



NOTE:
 1. THE AREA BETWEEN THE PROJECT SITE AND MITIGATION BANK BOUNDARY CONSISTS OF A 150 FOOT BUFFER ALONG THE ENTIRE SITE.

LEGEND

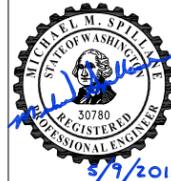
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	CLEAR VALLEY FARM PROPERTY BOUNDARY
	EDGE OF BUFFER
	MITIGATION BANK BOUNDARY
	WETLAND LIMITS
	EXISTING UTILITY EASEMENT
	PROPOSED ACCESS ROAD
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	STOCKPILE AREAS
	PROPOSED ELJ

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5	REVISION NO. 5	MRM	MS	12/07
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3	REVISION NO. 3	MRM	MS	8/07
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 206-441-9108 FAX



DESIGNED:	M. MERKELBACH	DRAWN:	L. TURNIDGE
DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	-
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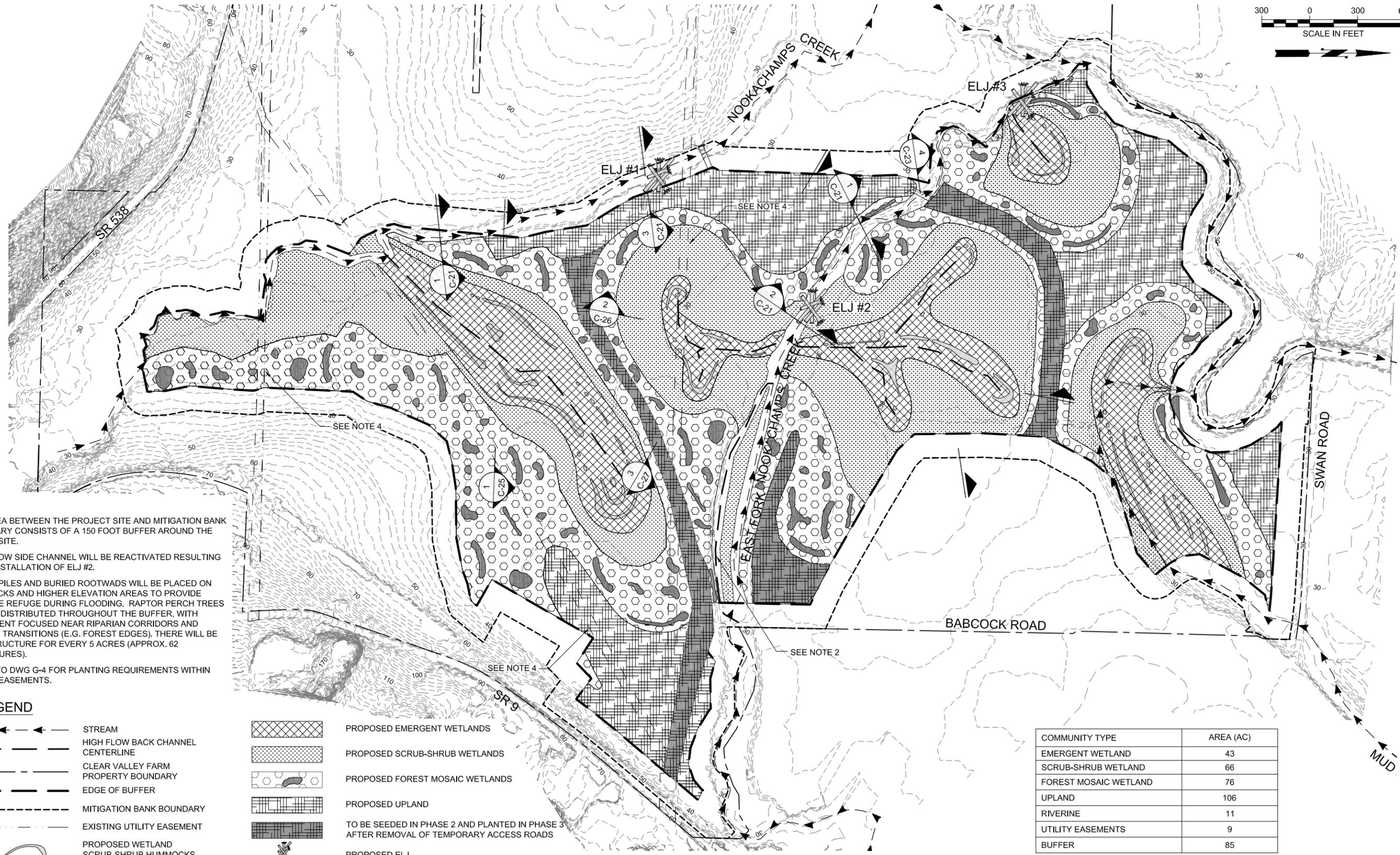
**SKAGIT ENVIRONMENTAL BANK
 PHASE 2**

STOCKPILE AREAS

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	C-18
SHEET NO.:	22 OF 47

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NOTE:

1. THE AREA BETWEEN THE PROJECT SITE AND MITIGATION BANK BOUNDARY CONSISTS OF A 150 FOOT BUFFER AROUND THE ENTIRE SITE.
2. HIGH FLOW SIDE CHANNEL WILL BE REACTIVATED RESULTING FROM INSTALLATION OF ELJ #2.
3. DEBRIS PILES AND BURIED ROOTWADS WILL BE PLACED ON HUMMOCKS AND HIGHER ELEVATION AREAS TO PROVIDE WILDLIFE REFUGE DURING FLOODING. RAPTOR PERCH TREES WILL BE DISTRIBUTED THROUGHOUT THE BUFFER, WITH PLACEMENT FOCUSED NEAR RIPARIAN CORRIDORS AND HABITAT TRANSITIONS (E.G. FOREST EDGES). THERE WILL BE ONE STRUCTURE FOR EVERY 5 ACRES (APPROX. 62 STRUCTURES).
4. REFER TO DWG G-4 FOR PLANTING REQUIREMENTS WITHIN UTILITY EASEMENTS.

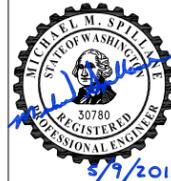
LEGEND

- | | | | |
|--|---------------------------------------|--|---|
| | STREAM | | PROPOSED EMERGENT WETLANDS |
| | HIGH FLOW BACK CHANNEL CENTERLINE | | PROPOSED SCRUB-SHRUB WETLANDS |
| | CLEAR VALLEY FARM PROPERTY BOUNDARY | | PROPOSED FOREST MOSAIC WETLANDS |
| | EDGE OF BUFFER | | PROPOSED UPLAND |
| | MITIGATION BANK BOUNDARY | | TO BE SEEDDED IN PHASE 2 AND PLANTED IN PHASE 3 AFTER REMOVAL OF TEMPORARY ACCESS ROADS |
| | EXISTING UTILITY EASEMENT | | PROPOSED ELJ |
| | PROPOSED WETLAND SCRUB-SHRUB HUMMOCKS | | |

COMMUNITY TYPE	AREA (AC)
EMERGENT WETLAND	43
SCRUB-SHRUB WETLAND	66
FOREST MOSAIC WETLAND	76
UPLAND	106
RIVERINE	11
UTILITY EASEMENTS	9
BUFFER	85
TOTAL:	396

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5	REVISION NO. 5	MRM	MS	12/07
4	REVISION NO. 4	MRM	MS	9/07
3	REVISION NO. 3	MRM	MS	8/07
2	REVISION NO. 2	MRM	MS	6/06

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DESIGNED:	K. NOON	DRAWN:	L. TURNIDGE
DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

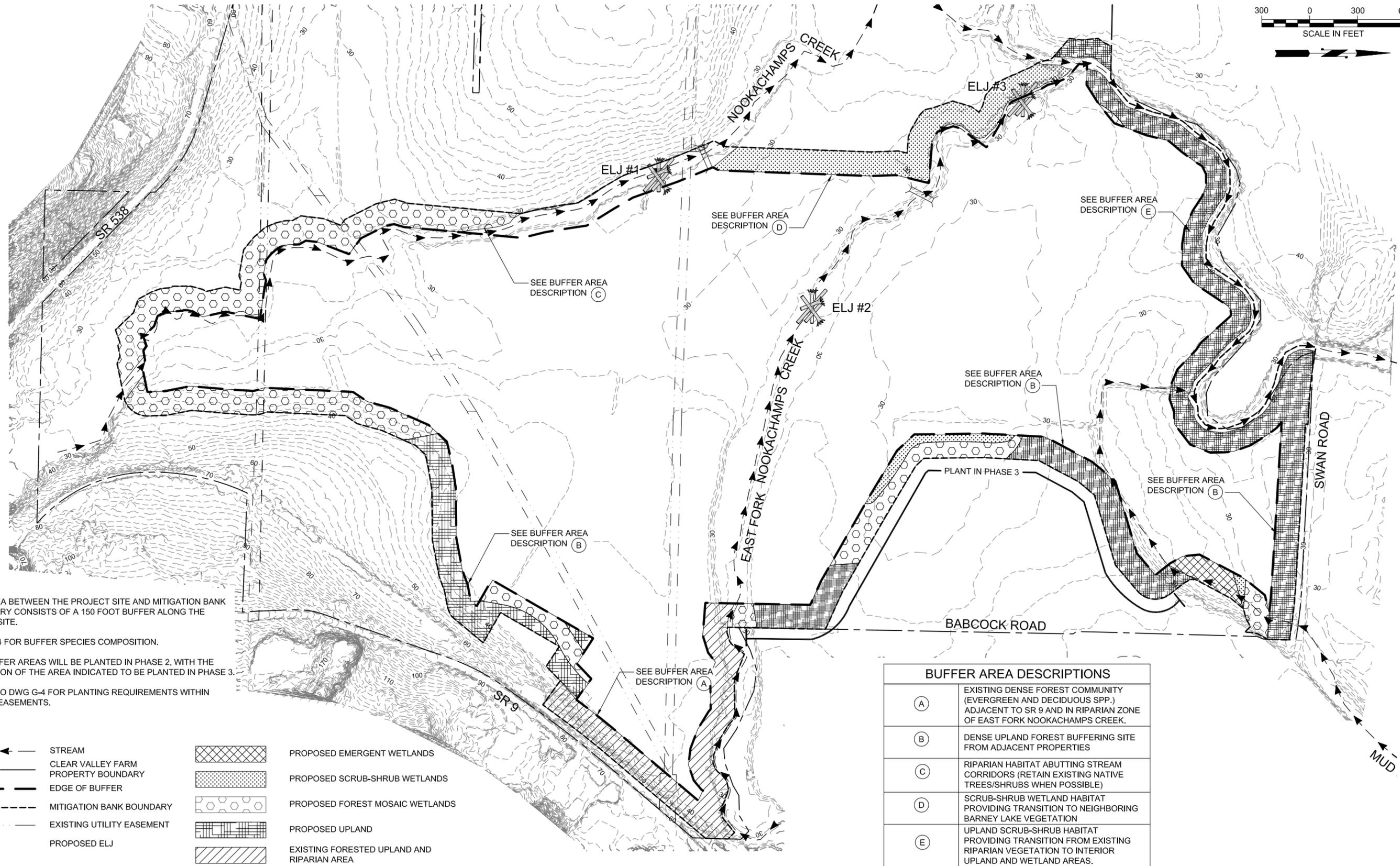
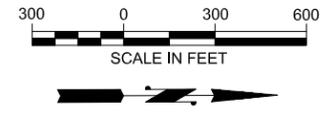
**SKAGIT ENVIRONMENTAL BANK
PHASE 2**

PROPOSED PLANTING PLAN

DATE:	MARCH 2011
PROJECT NO:	04-02822-003
DRAWING NO:	C-19
SHEET NO:	23 OF 47

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- NOTES:**
1. THE AREA BETWEEN THE PROJECT SITE AND MITIGATION BANK BOUNDARY CONSISTS OF A 150 FOOT BUFFER ALONG THE ENTIRE SITE.
 2. SEE C-24 FOR BUFFER SPECIES COMPOSITION.
 3. ALL BUFFER AREAS WILL BE PLANTED IN PHASE 2, WITH THE EXCEPTION OF THE AREA INDICATED TO BE PLANTED IN PHASE 3.
 4. REFER TO DWG G-4 FOR PLANTING REQUIREMENTS WITHIN UTILITY EASEMENTS.

LEGEND

	STREAM		PROPOSED EMERGENT WETLANDS
	CLEAR VALLEY FARM PROPERTY BOUNDARY		PROPOSED SCRUB-SHRUB WETLANDS
	EDGE OF BUFFER		PROPOSED FOREST MOSAIC WETLANDS
	MITIGATION BANK BOUNDARY		PROPOSED UPLAND
	EXISTING UTILITY EASEMENT		EXISTING FORESTED UPLAND AND RIPARIAN AREA
	PROPOSED ELJ		

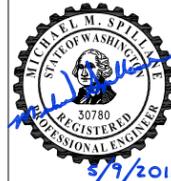
BUFFER AREA DESCRIPTIONS

(A)	EXISTING DENSE FOREST COMMUNITY (EVERGREEN AND DECIDUOUS SPP.) ADJACENT TO SR 9 AND IN RIPARIAN ZONE OF EAST FORK NOOKACHAMPS CREEK.
(B)	DENSE UPLAND FOREST BUFFERING SITE FROM ADJACENT PROPERTIES
(C)	RIPARIAN HABITAT ABUTTING STREAM CORRIDORS (RETAIN EXISTING NATIVE TREES/SHRUBS WHEN POSSIBLE)
(D)	SCRUB-SHRUB WETLAND HABITAT PROVIDING TRANSITION TO NEIGHBORING BARNEY LAKE VEGETATION
(E)	UPLAND SCRUB-SHRUB HABITAT PROVIDING TRANSITION FROM EXISTING RIPARIAN VEGETATION TO INTERIOR UPLAND AND WETLAND AREAS.

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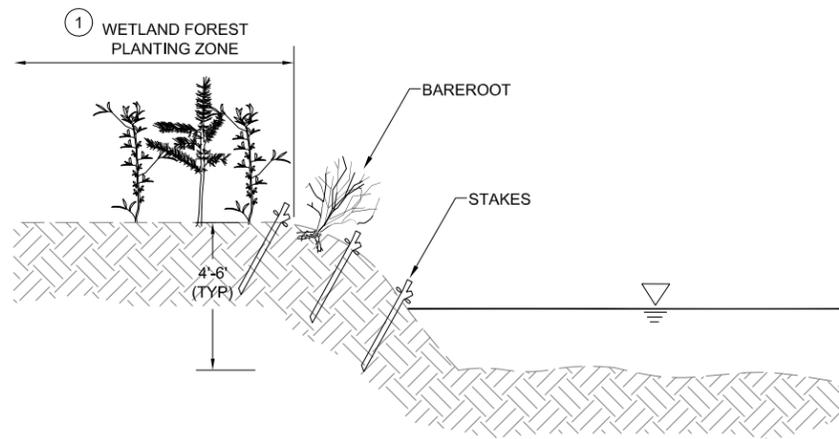


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DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

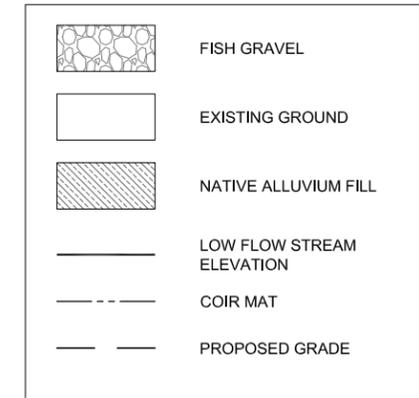
SKAGIT ENVIRONMENTAL BANK
 PHASE 2 / 3
PROPOSED BUFFER PLAN

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	C-20
SHEET NO.:	24 OF 47

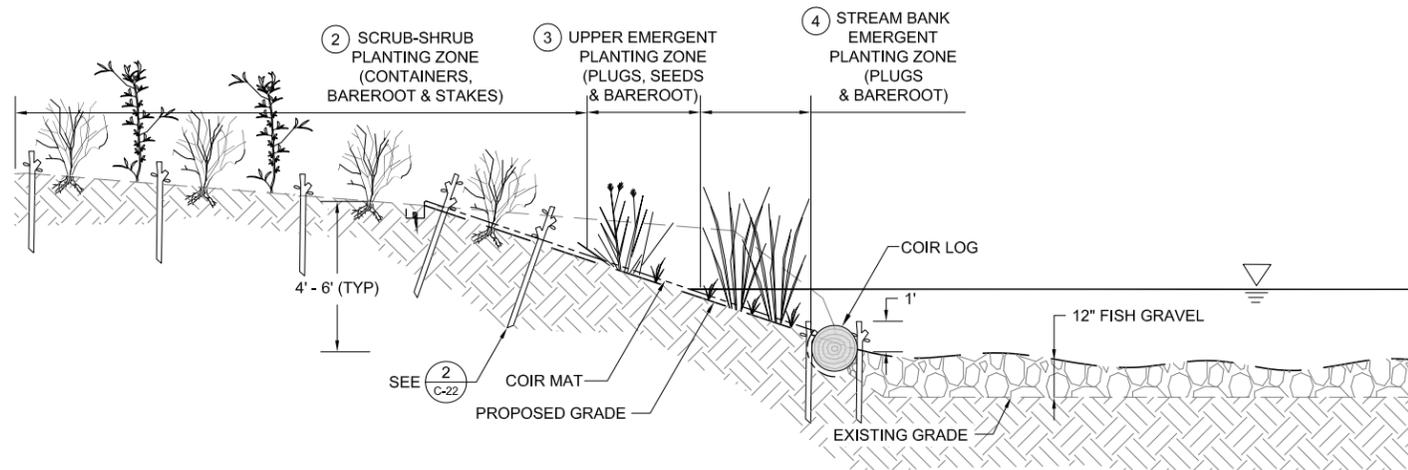
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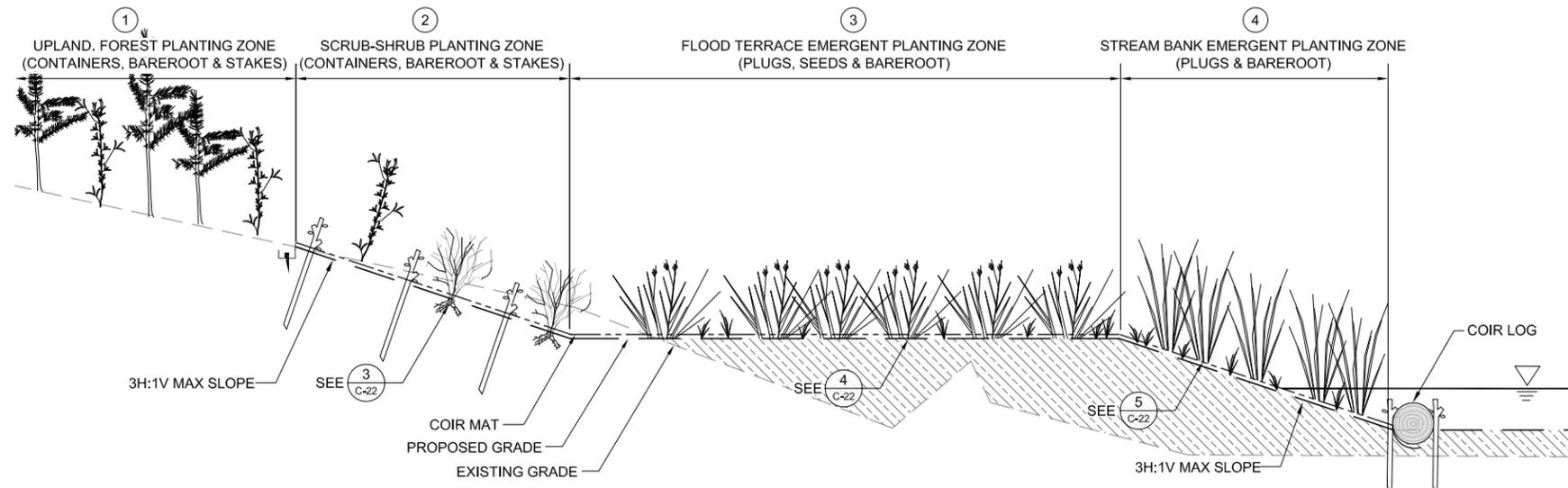
LEGEND



PHASE 2/3 STREAM BANK RE-VEGETATION ALONG NOOKACHAMPS CREEK AND EAST FORK NOOKACHAMPS CREEK (TYP) 1
SCALE: NTS



PHASE 1 STREAM BANK RE-VEGETATION ALONG EAST FORK NOOKACHAMPS CREEK (ELJ#2/#3) 2
SCALE: NTS



PHASE 1 STREAM BANK RE-VEGETATION ALONG NOOKACHAMPS CREEK (ELJ#1) 3
SCALE: NTS

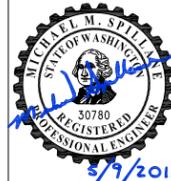
SELECT SPECIES:

- ① UPLAND FOREST AND WETLAND FOREST MOSAIC PLANTING ZONES:
 BLACK COTTONWOOD (*POPULUS BALSAMIFERA SPP. TRICHOCARPA*)
 RED ALDER (*ALNUS RUBRA*)
 PACIFIC WILLOW (*SALIX LUCIDA*)
 WESTERN RED CEDAR (*THUJA PLICATA*)
 SITKA SPRUCE (*PICEA SITCHENSIS*)
 DOUGLAS FIR (*PSEUDOTSUGA MENZIESII*)
- ② SCRUB-SHRUB PLANTING ZONE:
 SITKA WILLOW (*SALIX SITCHENSIS*)
 HOOKER'S WILLOW (*SALIX HOOKERIANA*)
 RED OSIER DOGWOOD (*CORNUS SERICEA*)
 BLACK TWINBERRY (*LONICERA INVOLUCRATA*)
- ③ UPPER EMERGENT/FLOOD TERRACE EMERGENT PLANTING ZONE:
 SMALL-FRUITED BULRUSH (*SCIRPUS MICROCARPUS*)
 TUFTED HAIRGRASS (*DESCHAMPSIA CESPITOSA*)
 DAGGERLEAF RUSH (*JUNCUS ENSIFOLIUS*)
 DOUGLAS ASTER (*ASTER SUBSPICATUS*)
- ④ STREAM BANK EMERGENT PLANTING ZONE:
 HARD-STEM BULRUSH (*SCIRPUS ACUTUS*)
 SLOUGH SEDGE (*CAREX OBNUPTA*)
 COMMON SPIKERUSH (*ELEOCHARIS PALUSTRIS*)
 THREE-SQUARE BULRUSH (*SCIRPUS AMERICANUS*)

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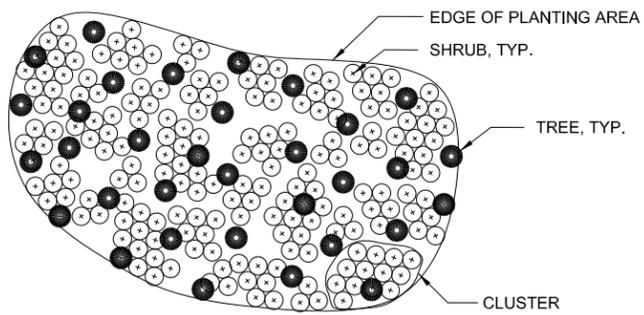
DESIGNED: J. WASNAK	DRAWN: L. TURNIDGE
DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: M. MERKELBACH
SCALE: AS NOTED	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK

STREAM BANK RE-VEGETATION

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-21
SHEET NO: 25 OF 47

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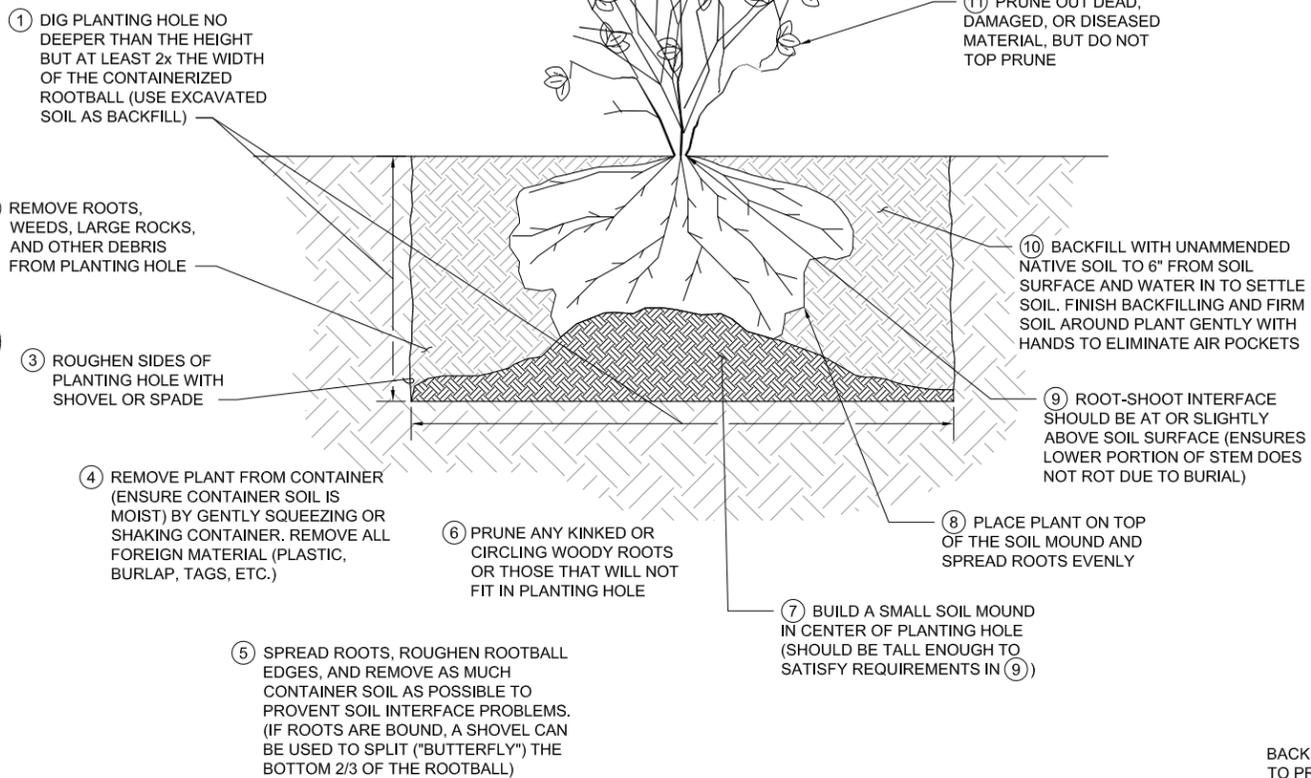


NOTES:

1. PLANT SHRUBS OF SAME SPECIES IN CLUSTERS OF THREE, FIVE, SEVEN OR THIRTEEN.
2. PLACE SHRUBS 6 FEET ON CENTER WITHIN EACH CLUSTER. PLACE TREES 10 FEET ON CENTER BETWEEN CLUSTERS. (PLANTING DENSITIES WILL BE GREATER IN AREAS WITH REED CANARYGRASS.)
3. EVENLY SPACE CLUSTERS THROUGHOUT PLANTING AREA.
4. INTENT OF SHRUB PLANTING ARRANGEMENT IS TO ENCOURAGE NATURAL, IRREGULAR PATCH FORMATION.

TREE AND SHRUB SPACING FOR FORESTED AREAS

SCALE: NTS

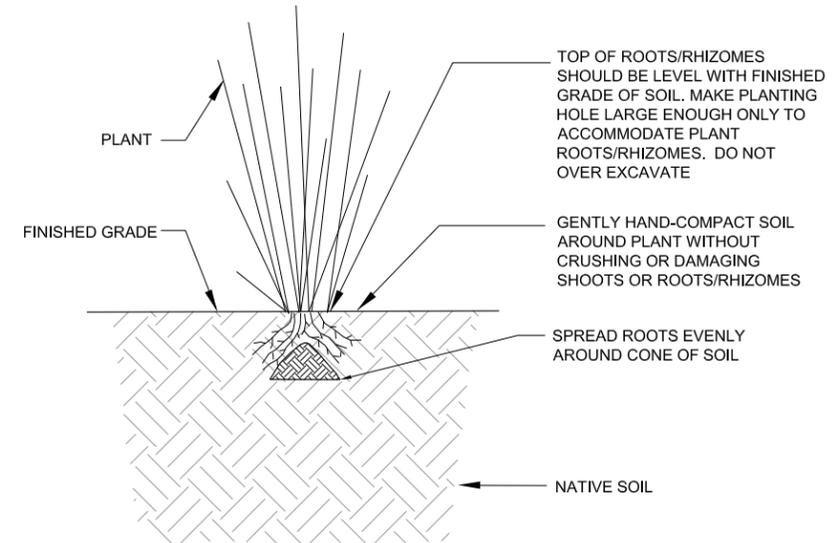


NOTES:

- INSPECT PLANT MATERIAL PRIOR TO ACCEPTANCE OF DELIVERY. PLANTS SHOULD BE FREE OF DISEASE AND INJURY AND SHOULD NOT EXHIBIT POOR PRUNING OR CIRCLING, GIRDLING, OR KINKED ROOTS.
- ALL PLANT MATERIAL SHOULD BE TRANSPORTED TO THE SITE AT LEAST ONE WEEK PRIOR TO INSTALLATION TO FACILITATE HARDENING OFF AND ADEQUATE ACCLIMATION TO SITE CONDITIONS.
- PLANTING HOLES ON SLOPES SHOULD BE 3x ROOTBALL WIDTH.
- IF DEER BROWSING OR OTHER TYPES OF HERBIVORY ARE ANTICIPATED ON SITE, TREE SHELTERS SHOULD BE USED TO MINIMIZE DAMAGE TO PLANTINGS.

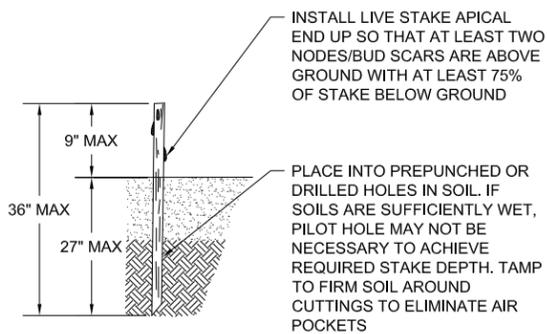
SHRUB AND TREE INSTALLATION

SCALE: NTS



BARE ROOT EMERGENT PLANTING

SCALE: NTS

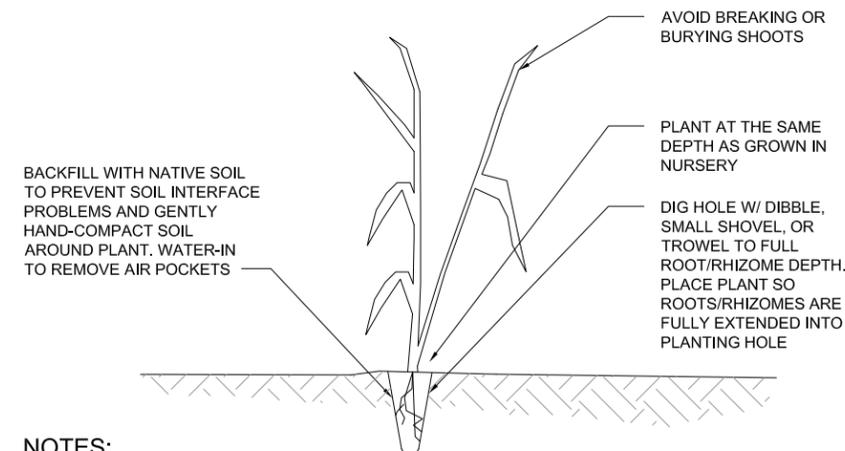


NOTES:

1. LIVE STAKES SHOULD BE 1/2-1 INCHES IN DIAMETER AND AT LEAST 36 INCHES IN LENGTH.
2. KEEP LIVE STAKES COVERED, COOL, AND MOIST AT ALL TIMES PRIOR TO PLANTING. AT NO TIME SHOULD LIVE STAKES BE EXPOSED AND ALLOWED TO DRY OUT.
3. WHEN PLANTING ON STREAM BANKS, ANGLE STAKES SLIGHTLY DOWNSTREAM.

LIVE STAKE CUTTING INSTALLATION

SCALE: NTS



NOTES:

1. EMERGENT PLANTS SHOULD BE SPACED 12 INCHES ON CENTER.
2. PLANTING AND ENHANCEMENT ACTIVITIES IN EMERGENT ZONES SHOULD BE DONE WITH CARE TO MINIMIZE IMPACTS TO SOIL STRUCTURE AND DAMAGE TO EXISTING NATIVE VEGETATION.

PLUG/DIVISION EMERGENT PLANTING

SCALE: NTS



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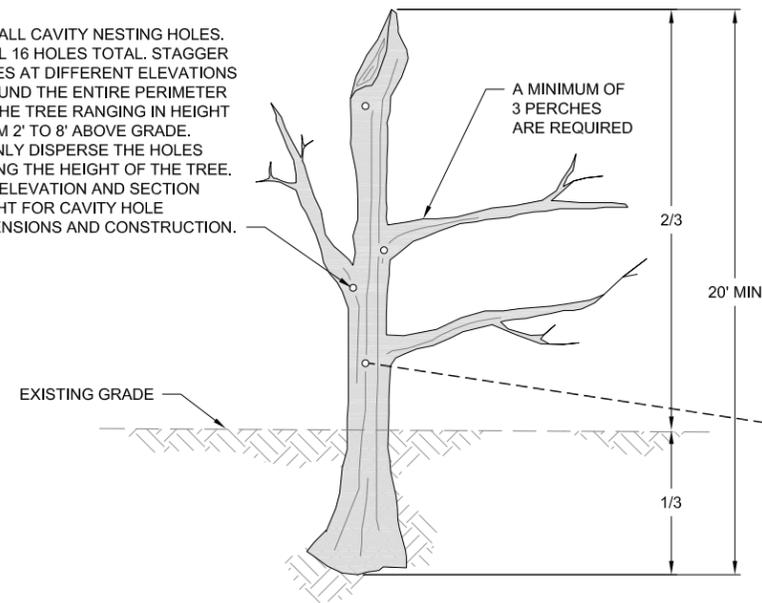
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DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
WETLAND PLANTING DETAILS

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-22
SHEET NO: 26 OF 47

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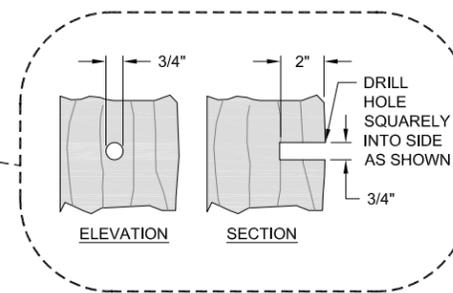
INSTALL CAVITY NESTING HOLES. DRILL 16 HOLES TOTAL. STAGGER HOLES AT DIFFERENT ELEVATIONS AROUND THE ENTIRE PERIMETER OF THE TREE RANGING IN HEIGHT FROM 2' TO 8' ABOVE GRADE. EVENLY DISPERSE THE HOLES ALONG THE HEIGHT OF THE TREE. SEE ELEVATION AND SECTION (RIGHT FOR CAVITY HOLE DIMENSIONS AND CONSTRUCTION).



NOTES:

1. INSTALL PERCH TREE IN LOCATION SHOWN ON PLANS. BURY AS SHOWN TO SECURE TREE IN AN UPRIGHT POSITION.
2. DO NOT TREAT TREE WITH ANY PRESERVATIVES, STAINS, OR CHEMICAL TREATMENTS.
3. RAPTOR PERCH TREES WILL BE DISTRIBUTED THROUGHOUT THE SITE, WITH PLACEMENT FOCUSED NEAR STREAM CORRIDORS AND HABITAT TRANSITIONS (E.G. FOREST EDGES).
4. PERCH TREES SHOULD BE MINIMUM 12 IN. DBH.

CAVITY NESTING HOLE



DETAIL - RAPTOR PERCH TREE

SCALE: NTS

1
-

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 98121-1820
 206-441-9080
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DESIGNED: M. MERKELBACH	DRAWN: L. TURNIDGE
DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
 PHASE 1**

HABITAT STRUCTURES

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-23
SHEET NO: 27 OF 47

ONE INCH
 AT FULL SIZE, IF NOT ONE
 INCH SCALE ACCORDINGLY
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PROPOSED PLANTING LIST

FORESTED WETLAND ZONES		
SPECIES COMMON NAME	SCIENTIFIC NAME	WETLAND INDICATOR STATUS
BLACK COTTONWOOD	POPULUS BALSAMIFERA SSP. TRICHOCARPA	FAC
CASCARA	RHAMNUS PURSHIANA	FAC-
PACIFIC WILLOW	SALIX LUCIDA	NI
RED ALDER	ALNUS RUBRA	FAC
SITKA SPRUCE	PICEA SITCHENSIS	FAC
WESTERN RED CEDAR	THUJA PLICATA	FAC
BLACK TWINBERRY	LONICERA INVOLUCRATA	FAC+*
NOOTKA ROSE	ROSA NUTKANA	FACW-
PACIFIC NINEBARK	PHYSOCARPUS CAPITATUS	FACW-
RED-OSIER DOGWOOD	CORNUS SERICEA	FACW
SALMONBERRY	RUBUS SPECTABILIS	FAC+
SWAMP ROSE	ROSA PISOCARPA	FAC
SCRUB-SHRUB WETLAND ZONES AND SCRUB-SHRUB HUMMOCKS		
BLACK TWINBERRY	LONICERA INVOLUCRATA	FAC+*
HOOKE'S WILLOW	SALIX HOOKERIANA	FACW-
NOOTKA ROSE	ROSA NUTKANA	FAC
PACIFIC CRABAPPLE	MALUS FUSCA	FACW
PACIFIC NINEBARK	PHYSOCARPUS CAPITATUS	FACW-
PACIFIC WILLOW	SALIX LUCIDA	FACW+
RED-OSIER DOGWOOD	CORNUS SERICEA	FACW
SALMONBERRY	RUBUS SPECTABILIS	FAC+
SITKA WILLOW	SALIX SITCHENSIS	FACW
SWAMP ROSE	ROSA PISOCARPA	FAC
EMERGENT WETLAND ZONES		
BALTIC RUSH	JUNCUS BALTICUS	FACW+
COMMON SPIKERUSH	ELEOCHARIS PALUSTRIS	OBL
DAGGERLEAF RUSH	JUNCUS ENSIFOLIUS	FACW
DOUGLAS ASTER	ASTER SUBSPICATUS	FACW
HARD-STEM BULRUSH	SCIRPUS ACUTUS	OBL
SHORT-AWN FOXTAIL	ALOPECURUS AEQUALIS	OBL
SIMPLE-STEM BUR-REED	SPARGANIUM EMERSUM	OBL
SLOUGH SEDGE	CAREX OBNUPTA	OBL
SMALL-FRUITED BULRUSH	SCIRPUS MICROCARPUS	OBL
THREE-SQUARE BULRUSH	SCIRPUS AMERICANUS	OBL
TUFTED HAIRGRASS	DESCHAMPSIA CESPITOSA	FACW
WAPATO	SAGITTARIA LATIFOLIA	OBL
UPLAND ZONES		
BEAKED HAZELNUT	CORYLUS CORNUTA	FACU
BIG LEAF MAPLE	ACER MACROPHYLLUM	FACU+ [FAC]
BITTER CHERRY	PRUNUS EMARGINATA	FACU
BLACK COTTONWOOD	POPULUS TRICHOCARPA	FAC
BLACK HAWTHORN	CRATAEGUS DOUGLASII	FAC
DOUGLAS FIR	PSEUDOTSUGA MENZIESII	FACU
RED ELDERBERRY	SAMBUCUS RACEMOSA	FACU
RED HUCKLEBERRY	VACCINIUM PARVIFOLIUM	NI [FACU]
SNOWBERRY	SYMPHORICARPOS ALBUS	FACU
WESTERN HEMLOCK	TSUGA HETEROPHYLLA	FACU-
UPLAND HUMMOCKS		
BLACK COTTONWOOD	POPULUS TRICHOCARPA	FAC
BLACK HAWTHORN	CRATAEGUS DOUGLASII	FAC
DOUGLAS FIR	PSEUDOTSUGA MENZIESII	FACU
NOOTKA ROSE	ROSA NUTKANA	FACW-
SNOWBERRY	SYMPHORICARPOS ALBUS	FACU

GENERAL NOTES:

1. THE PLANT LIST IS SUGGESTED AND MAY BE CHANGED BASED ON LOCAL AVAILABILITY.
2. ALL PLANTS, EXCEPT AS NOTED, SHALL BE NURSERY CONTAINER GROWN A MINIMUM OF ONE YEAR AND CONTAINERIZED PER ANSI STANDARDS. PLANT MATERIAL IS TO BE SUPPLIED BY COMMERCIAL NURSERIES THAT SPECIALIZE IN NATIVE PLANTS. PLANT SUBSTITUTIONS ARE SUBJECT TO APPROVAL BY THE ENGINEER.
3. PLANTS SHALL BE RANDOMLY MIXED THROUGHOUT EACH PLANTING ZONE. LAYOUT OF ALL PLANT MATERIAL AND SEEDING TO BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. USE PLAN FOR QUANTITIES -- FINAL LOCATIONS OF PLANTS SUBJECT TO CHANGE.
4. ALL SHRUB AND TREE PLANTING, INCLUDING CONIFERS, SHALL OCCUR DURING THE DORMANT SEASON (NOVEMBER THROUGH FEBRUARY).
5. CONIFER PLANTING WITHIN WETLAND, UPLAND, AND BUFFER AREAS SHALL ALL BE PLANTED IN PHASE II, EXCEPT IN AREAS IDENTIFIED ON C-18. THESE AREAS WILL BE PLANTED IN PHASE III.

BUFFER PLANTING NOTES:

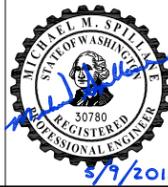
1. THE BANK BUFFER WILL BE PLANTED WITH A VARIETY OF UPLAND AND WETLAND SPECIES TO CREATE A TRANSITION TO EXISTING VEGETATION COMMUNITIES AND TO PROVIDE A NATURAL SEPARATION BETWEEN THE BANK AND SURROUNDING PROPERTIES. GROUNDWATER HYDROLOGY WILL BE REASSESSED AFTER PHASE I ACTIVITIES AND THE PLANTING PLAN WILL BE REVISED ACCORDINGLY.
2. THE BUFFER PLAN IS SHOWN ON C-20 AND HABITAT TYPES CORRESPOND TO THOSE IN THE PROPOSED PLANTING PLAN ON C-19.
3. CONIFER SPECIES WILL BE PLANTED IN YEAR TWO FOLLOWING ESTABLISHMENT OF EARLIER SUCCESSIONAL SPECIES.
4. IN AREAS EXHIBITING TRANSITIONAL ENVIRONMENTAL CONDITIONS, SPECIES WILL BE PLANTED ACCORDING TO HYDROLOGIC PREFERENCE.

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1	REVISION NO. 1	MRM	MS	5/06



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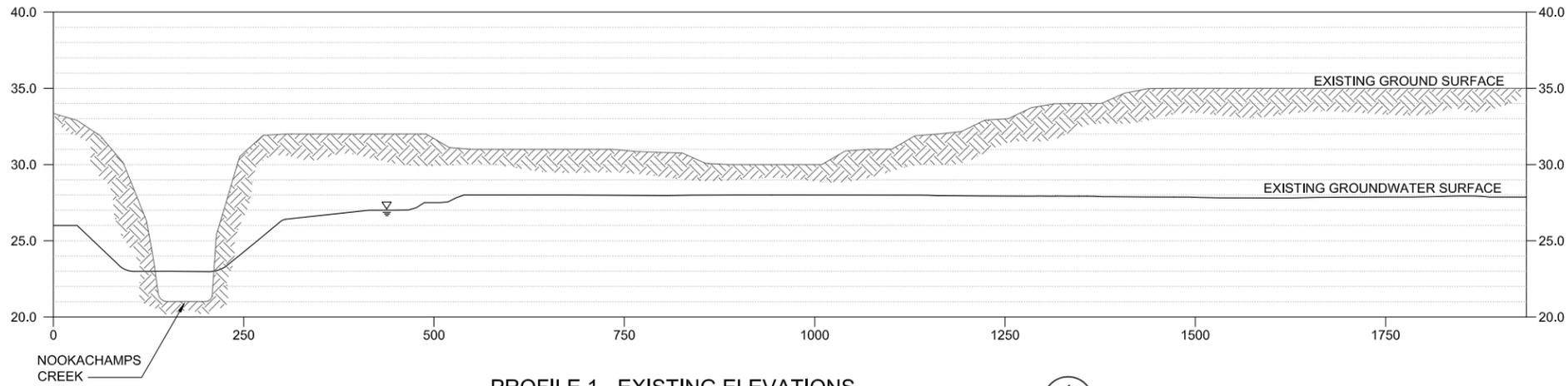
DESIGNED:	M. MERKELBACH	DRAWN:	L. TURNIDGE
DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	-
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

SKAGIT ENVIRONMENTAL BANK

PLANTING LIST

DATE:	MARCH 2011
PROJECT NO:	04-02822-003
DRAWING NO:	C-24
SHEET NO:	28 OF 47

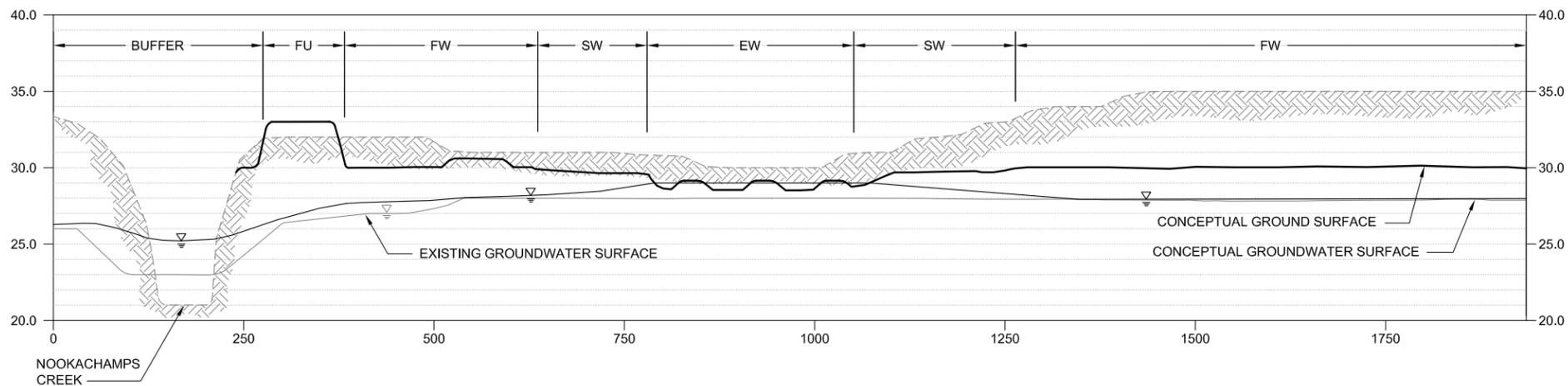
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PROFILE 1 - EXISTING ELEVATIONS

HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=5'

1
C-19



PROFILE 1 - CONCEPTUAL PHASE 2 ELEVATIONS

HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=5'

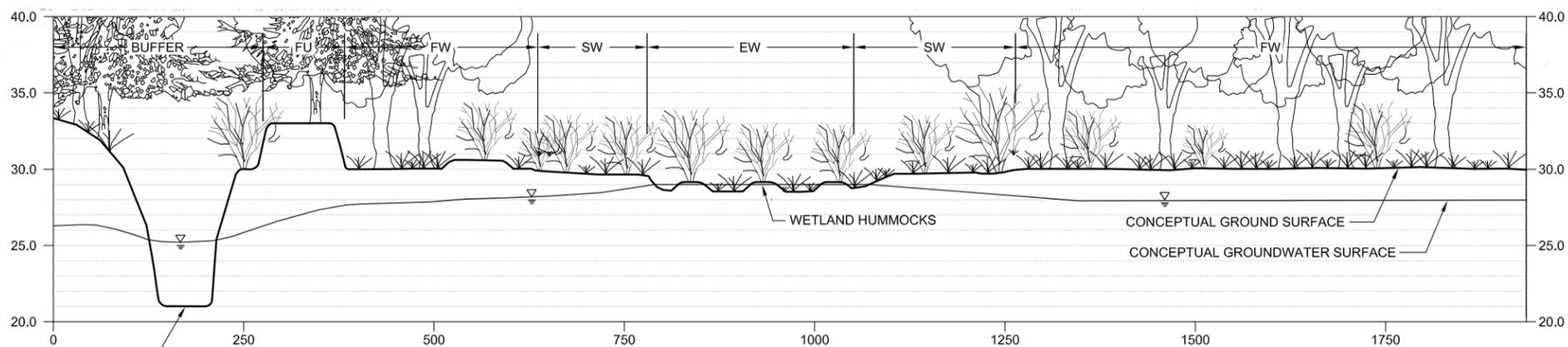
1
C-19

CONCEPTUAL VEGETATION LEGEND:

- EW = EMERGENT WETLAND
- SW = SCRUB-SHRUB WETLAND
- FW = FORESTED WETLAND
- FU = FORESTED UPLAND

NOTES:

1. GROUNDWATER SURFACE ELEVATIONS ARE BASED ON 2005/2006/2007 SECOND QUARTER GROUNDWATER ELEVATIONS (APRIL, MAY, AND JUNE).
2. ELEVATIONS REFERENCE DISTANCE IN FEET ABOVE MEAN SEA LEVEL, VERTICAL DATUM NAVD 88.
3. THE CONCEPTUAL WATER LEVELS ARE ESTIMATED BASED ON HYDRAULIC AND HYDROLOGIC MODELING; THE REVISED GRADING PLAN AFTER PHASE 1 WILL ENSURE THAT THE PROPER WETLAND HYDROLOGY IS MET FOR PROPOSED VEGETATION COMMUNITIES.



PROFILE 1 - CONCEPTUAL PHASE 2 ELEVATIONS AND VEGETATION COMMUNITIES

HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=5'
VEGETATION: = N.T.S.

1
C-19

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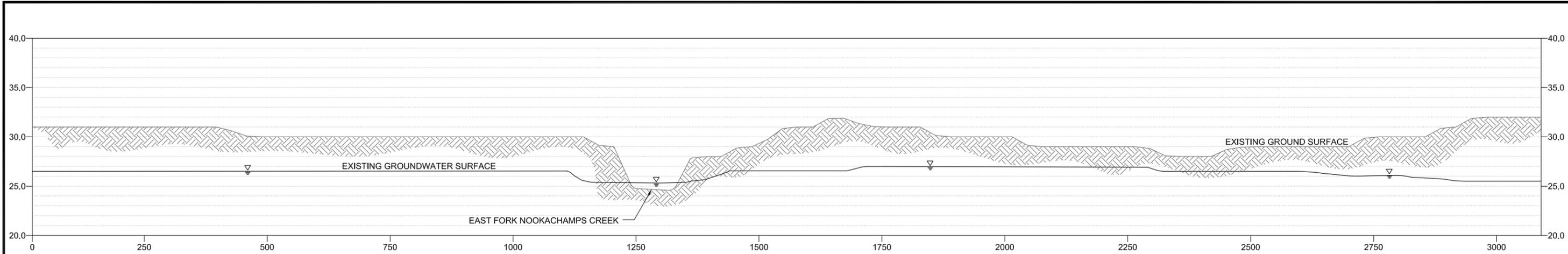
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SCALE:	AS NOTED	APPROVED:	M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
PHASE 2**

GRADING PROFILES

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	C-25
SHEET NO. OF	29 47

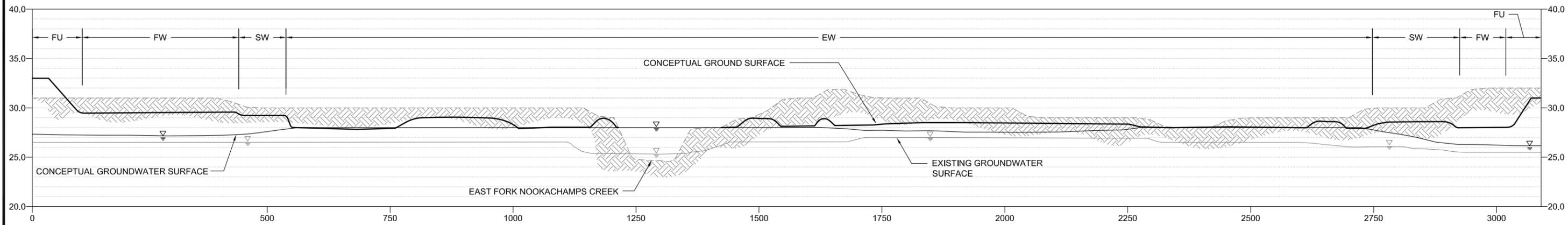
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PROFILE 2 - EXISTING ELEVATIONS

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VERT. SCALE: 1"=5'

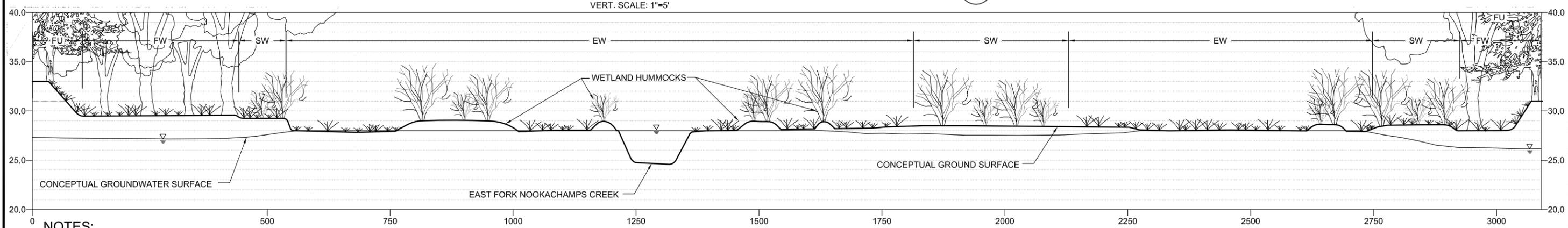
2
C-19



PROFILE 2 - CONCEPTUAL PHASE 2 ELEVATIONS

HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=5'

2
C-19



PROFILE 2 - CONCEPTUAL PHASE 2 ELEVATIONS AND VEGETATION COMMUNITIES

HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=5'

2
C-19

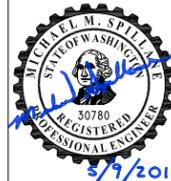
NOTES:

1. GROUNDWATER SURFACE ELEVATIONS ARE BASED ON 2005/2006/2007 SECOND QUARTER GROUNDWATER ELEVATIONS (APRIL, MAY, AND JUNE).
2. ELEVATIONS REFERENCE DISTANCE IN FEET ABOVE MEAN SEA LEVEL, VERTICAL DATUM NAVD 88.
3. THE CONCEPTUAL WATER LEVELS ARE ESTIMATED BASED ON HYDRAULIC AND HYDROLOGIC MODELING; THE REVISED GRADING PLAN AFTER PHASE 1 WILL ENSURE THAT THE PROPER WETLAND HYDROLOGY IS MET FOR PROPOSED VEGETATION COMMUNITIES.

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4	REVISION NO. 4	MRM	MS	9/07
3	REVISION NO. 3	MRM	MS	8/07
2	REVISION NO. 2	MRM	MS	6/06
1	REVISION NO. 1	MRM	MS	5/06

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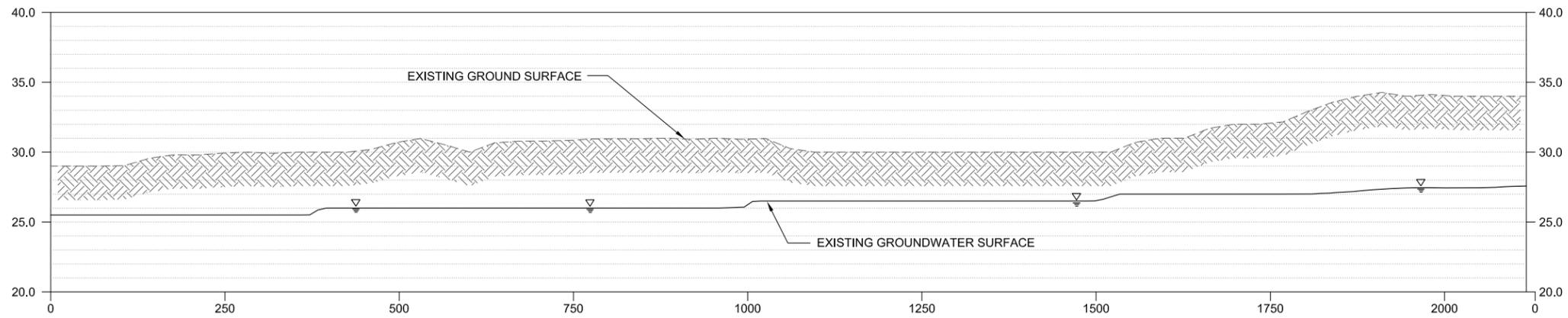
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DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
PHASE 2**

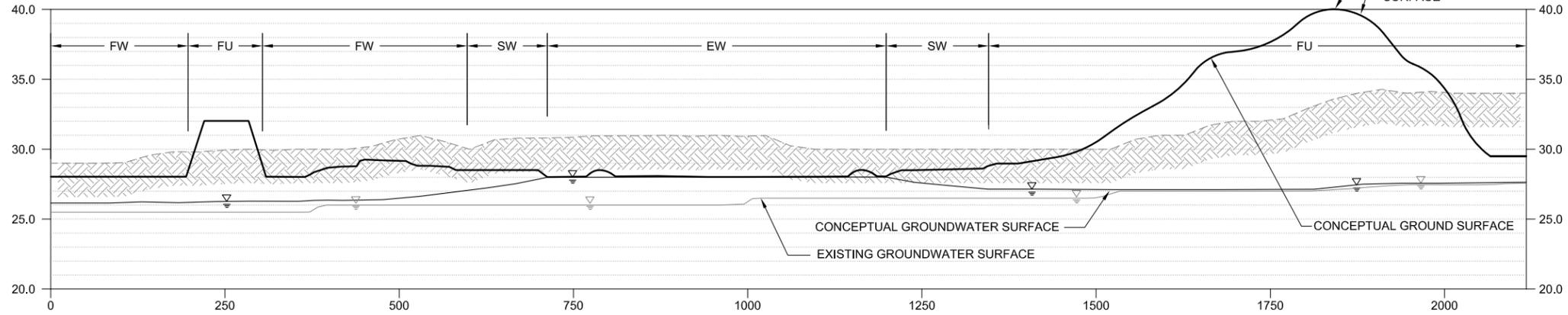
GRADING PROFILES

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-26
SHEET NO: 30 OF 47

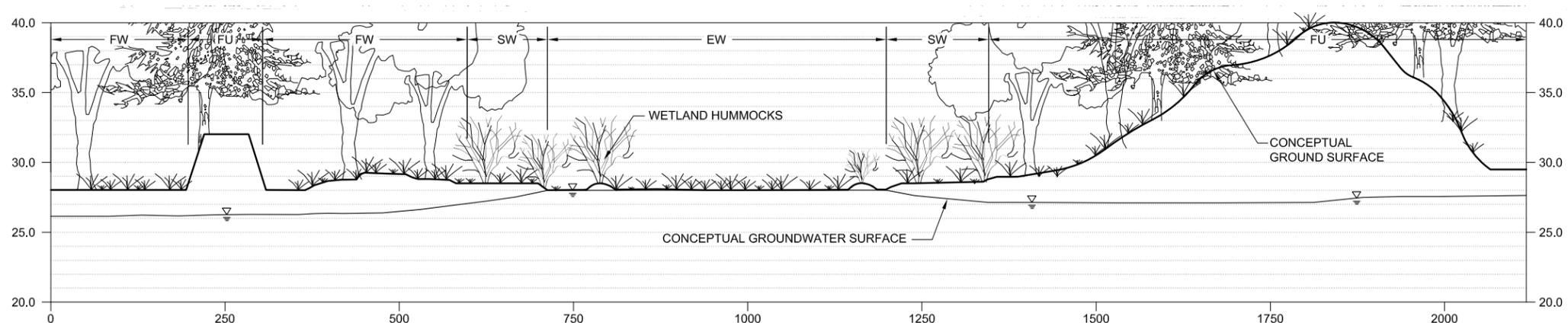
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PROFILE 3 - EXISTING ELEVATIONS
 HORIZ. SCALE: 1"=100'
 VERT. SCALE: 1"=5'



PROFILE 3 - CONCEPTUAL PHASE 2 ELEVATIONS
 HORIZ. SCALE: 1"=100'
 VERT. SCALE: 1"=5'



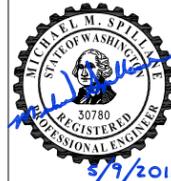
PROFILE 3 - CONCEPTUAL PHASE 2 ELEVATIONS AND VEGETATION COMMUNITIES
 HORIZ. SCALE: 1"=100'
 VERT. SCALE: 1"=5'

- NOTES:**
- GROUNDWATER SURFACE ELEVATIONS ARE BASED ON 2005/2006/2007 SECOND QUARTER GROUNDWATER ELEVATIONS (APRIL, MAY, AND JUNE).
 - ELEVATIONS REFERENCE DISTANCE IN FEET ABOVE MEAN SEA LEVEL, VERTICAL DATUM NAVD 88.
 - THE CONCEPTUAL WATER LEVELS ARE ESTIMATED BASED ON HYDRAULIC AND HYDROLOGIC MODELING; THE REVISED GRADING PLAN AFTER PHASE 1 WILL ENSURE THAT THE PROPER WETLAND HYDROLOGY IS MET FOR PROPOSED VEGETATION COMMUNITIES.

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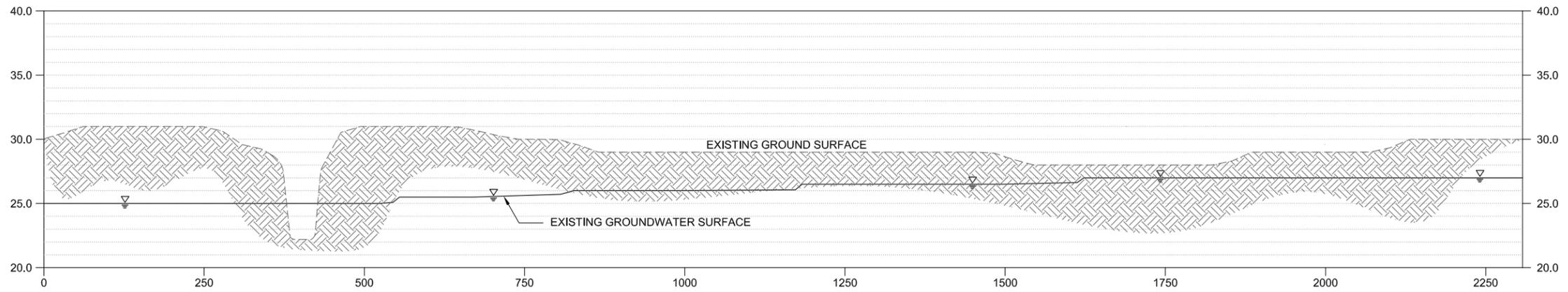


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SKAGIT ENVIRONMENTAL BANK
 PHASE 2
GRADING PROFILES

DATE:	MARCH 2011
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DRAWING NO.:	C-27
SHEET NO. OF	31 47

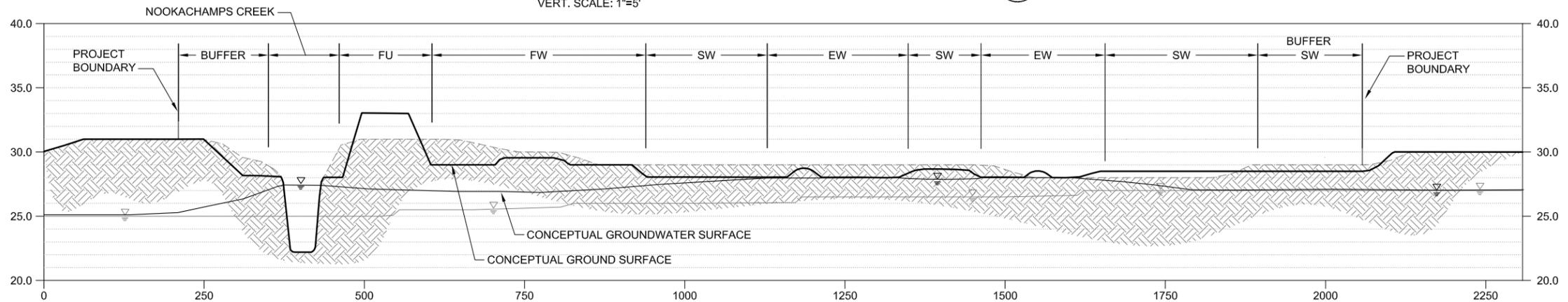
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PROFILE 4 - EXISTING ELEVATIONS

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VERT. SCALE: 1"=5'

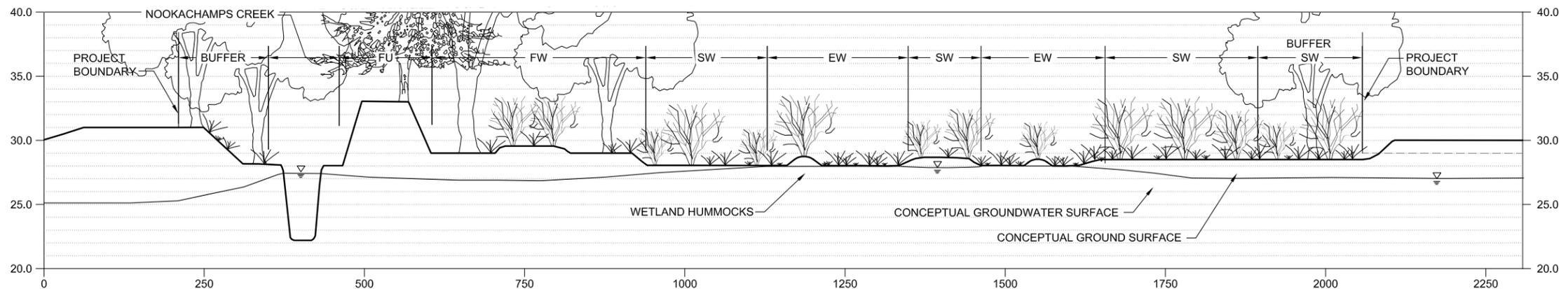
4
C-19



PROFILE 4 - CONCEPTUAL PHASE 2 ELEVATIONS

HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=5'

4
C-19



PROFILE 4 - CONCEPTUAL PHASE 2 ELEVATIONS AND VEGETATION COMMUNITIES

HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=5'

4
C-19

NOTES:

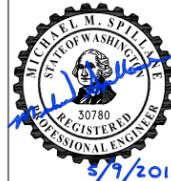
- GROUNDWATER SURFACE ELEVATIONS ARE BASED ON 2005/2006/2007 SECOND QUARTER GROUNDWATER ELEVATIONS (APRIL, MAY, AND JUNE).
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- THE CONCEPTUAL WATER LEVELS ARE ESTIMATED BASED ON HYDRAULIC AND HYDROLOGIC MODELING; THE REVISED GRADING PLAN AFTER PHASE 1 WILL ENSURE THAT THE PROPER WETLAND HYDROLOGY IS MET FOR PROPOSED VEGETATION COMMUNITIES.

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SCALE:	AS NOTED	APPROVED:	M. SPILLANE

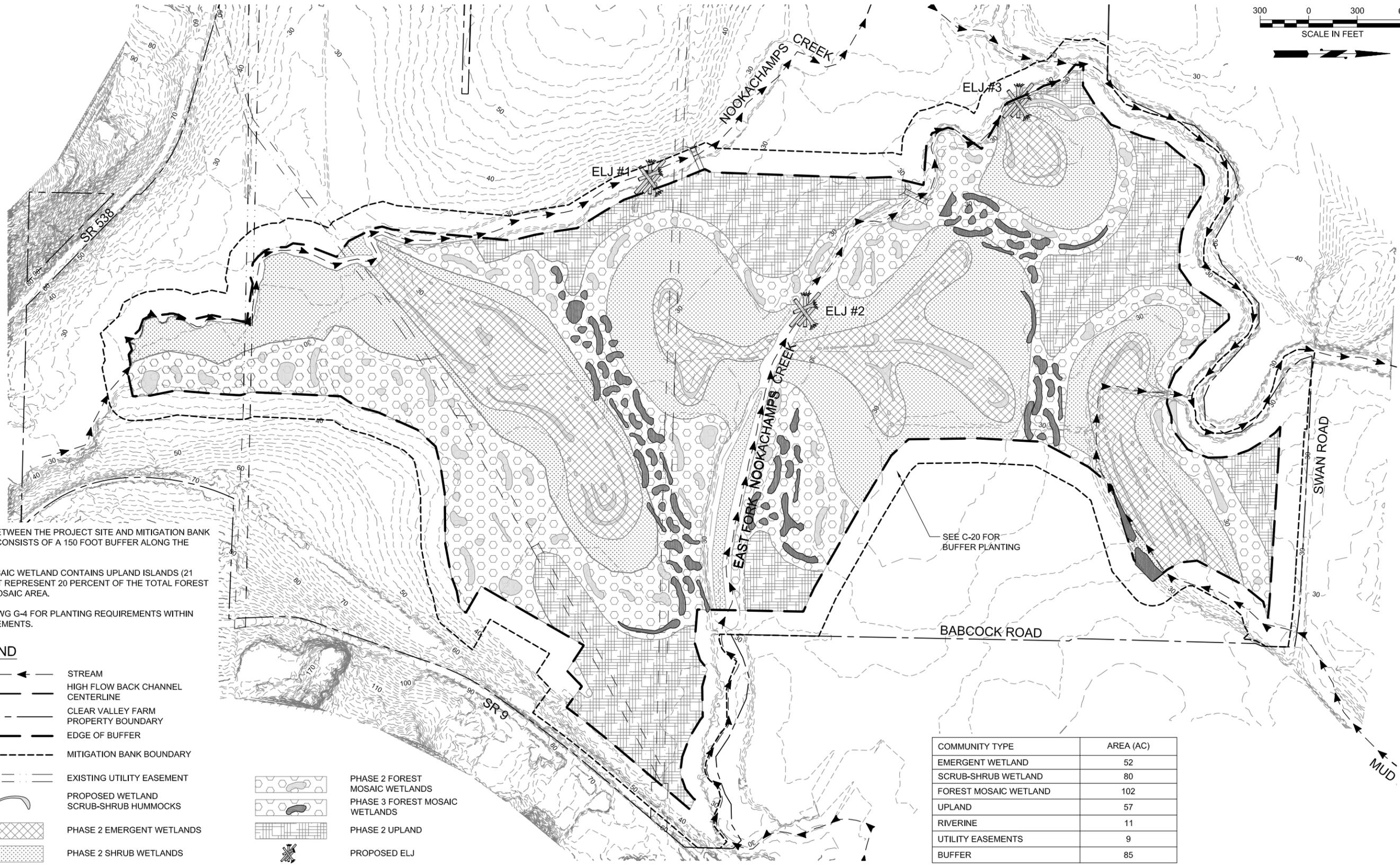
**SKAGIT ENVIRONMENTAL BANK
PHASE 2**

GRADING PROFILES

DATE:	MARCH 2011
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DRAWING NO.:	C-28
SHEET NO. OF	32 47

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NOTES:

1. THE AREA BETWEEN THE PROJECT SITE AND MITIGATION BANK BOUNDARY CONSISTS OF A 150 FOOT BUFFER ALONG THE ENTIRE SITE.
2. FOREST MOSAIC WETLAND CONTAINS UPLAND ISLANDS (21 ACRES) THAT REPRESENT 20 PERCENT OF THE TOTAL FOREST WETLAND MOSAIC AREA.
3. REFER TO DWG G-4 FOR PLANTING REQUIREMENTS WITHIN UTILITY EASEMENTS.

LEGEND

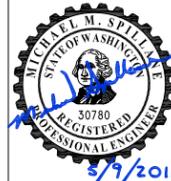
- STREAM
- HIGH FLOW BACK CHANNEL CENTERLINE
- CLEAR VALLEY FARM PROPERTY BOUNDARY
- EDGE OF BUFFER
- MITIGATION BANK BOUNDARY
- EXISTING UTILITY EASEMENT
- PROPOSED WETLAND SCRUB-SHRUB HUMMOCKS
- PHASE 2 EMERGENT WETLANDS
- PHASE 2 SHRUB WETLANDS

- PHASE 2 FOREST MOSAIC WETLANDS
- PHASE 3 FOREST MOSAIC WETLANDS
- PHASE 2 UPLAND
- PROPOSED ELJ

COMMUNITY TYPE	AREA (AC)
EMERGENT WETLAND	52
SCRUB-SHRUB WETLAND	80
FOREST MOSAIC WETLAND	102
UPLAND	57
RIVERINE	11
UTILITY EASEMENTS	9
BUFFER	85
TOTAL:	396

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2200 Sixth Avenue Suite 1100
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DESIGNED:	-	DRAWN:	-
DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

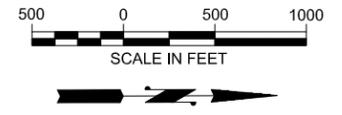
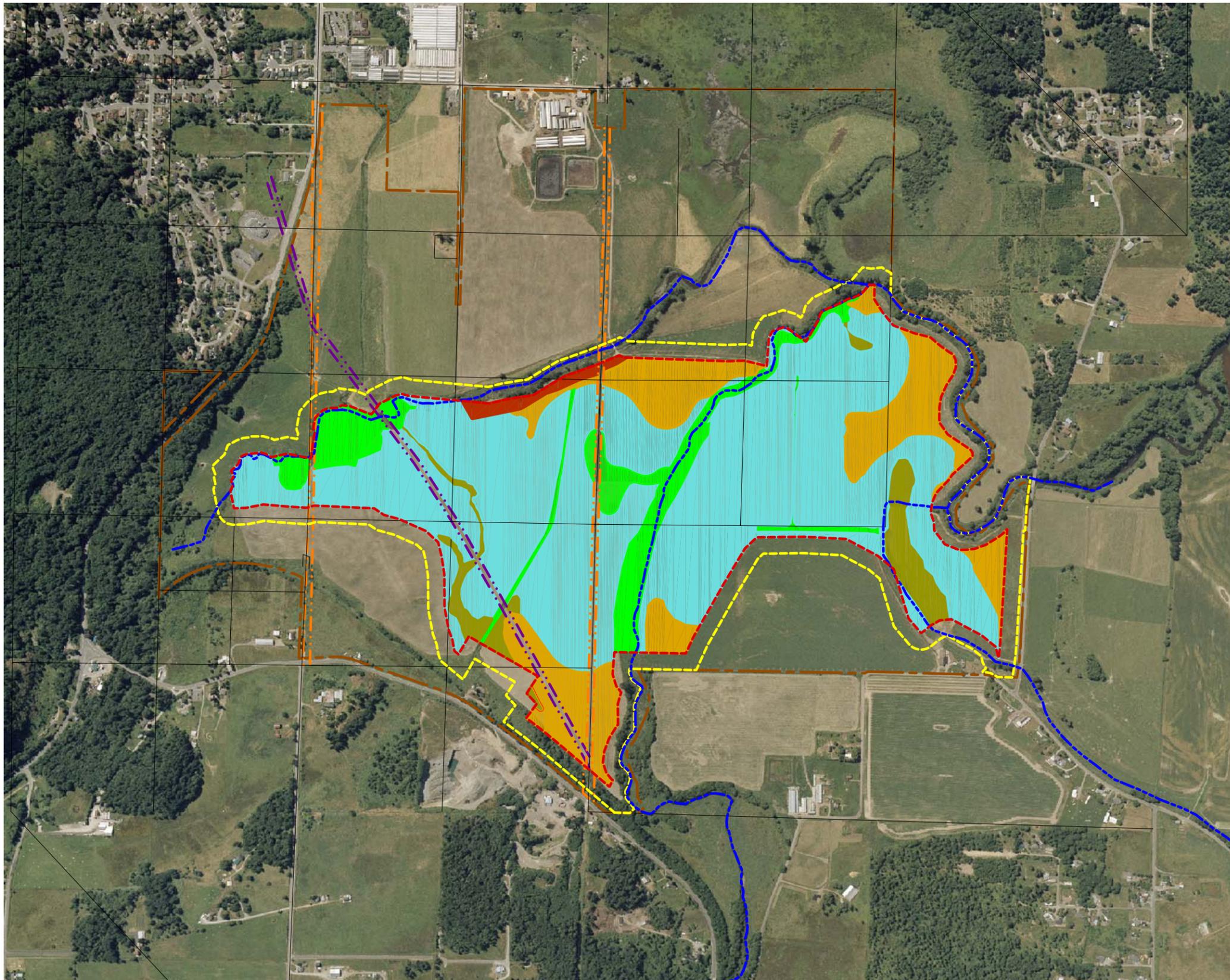
SKAGIT ENVIRONMENTAL BANK
PHASE 3
PROPOSED PLANTING PLAN

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	C-29
SHEET NO.:	33 OF 47

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LEGEND:

	STREAM
	PARCEL BOUNDARY
	WATER LINE EASEMENT
	POWER LINE EASEMENT
	ORIGINAL CLEAR VALLEY FARM PROPERTY BOUNDARY
	EDGE OF BUFFER
	MITIGATION BANK BOUNDARY
	REESTABLISHMENT
	REHABILITATION - REED CANARYGRASS
	REHABILITATION - PLOWED FIELDS
	RIPARIAN UPLAND
	UPLAND

NOTES:

1. THE FIGURE REPRESENTS THE TOTAL AMOUNT OF CREDITS GENERATED AFTER PHASE 3 ACTIVITIES.
2. CREDIT TOTALS DO NOT INCLUDE AREAS WITHIN UTILITY EASEMENTS.

	RATIO	AFFECTED ACRES	EASEMENT ACRES	CREDITS
REESTABLISHMENT	1:1	199.0	4.9	199.0
REHABILITATION				
PLOWED FIELDS	1:1.5	14.9	0.1	9.9
REED CANARYGRASS	1:1.5	31.2	1.0	20.8
RIPARIAN UPLAND	1:3	4.6	0.2	1.5
UPLAND	1:5	52.3	2.9	10.5
TOTAL:		302.0	9.1	241.7

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2	REVISION NO. 5	MRM	MS	12/07
1	REVISION NO. 4	MRM	MS	09/07



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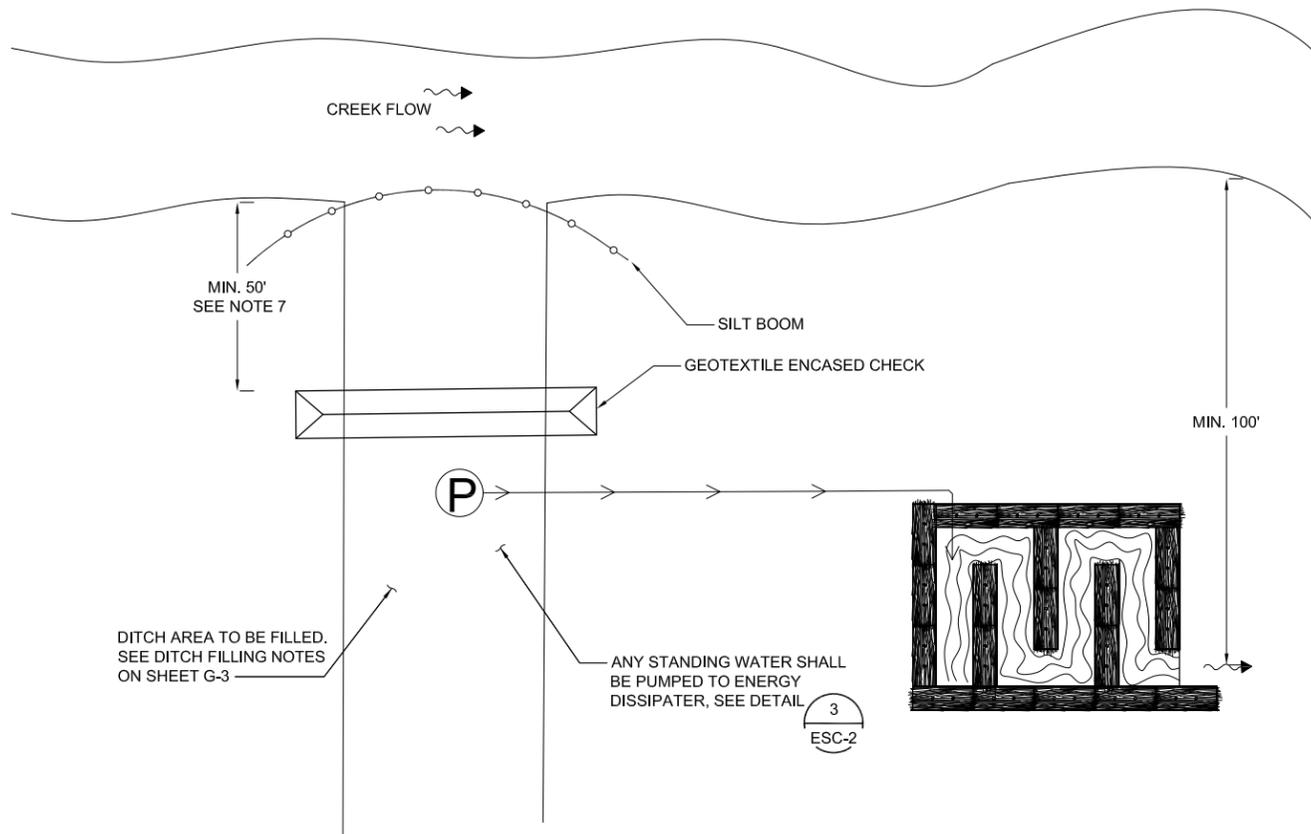
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DESIGNED: -	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK

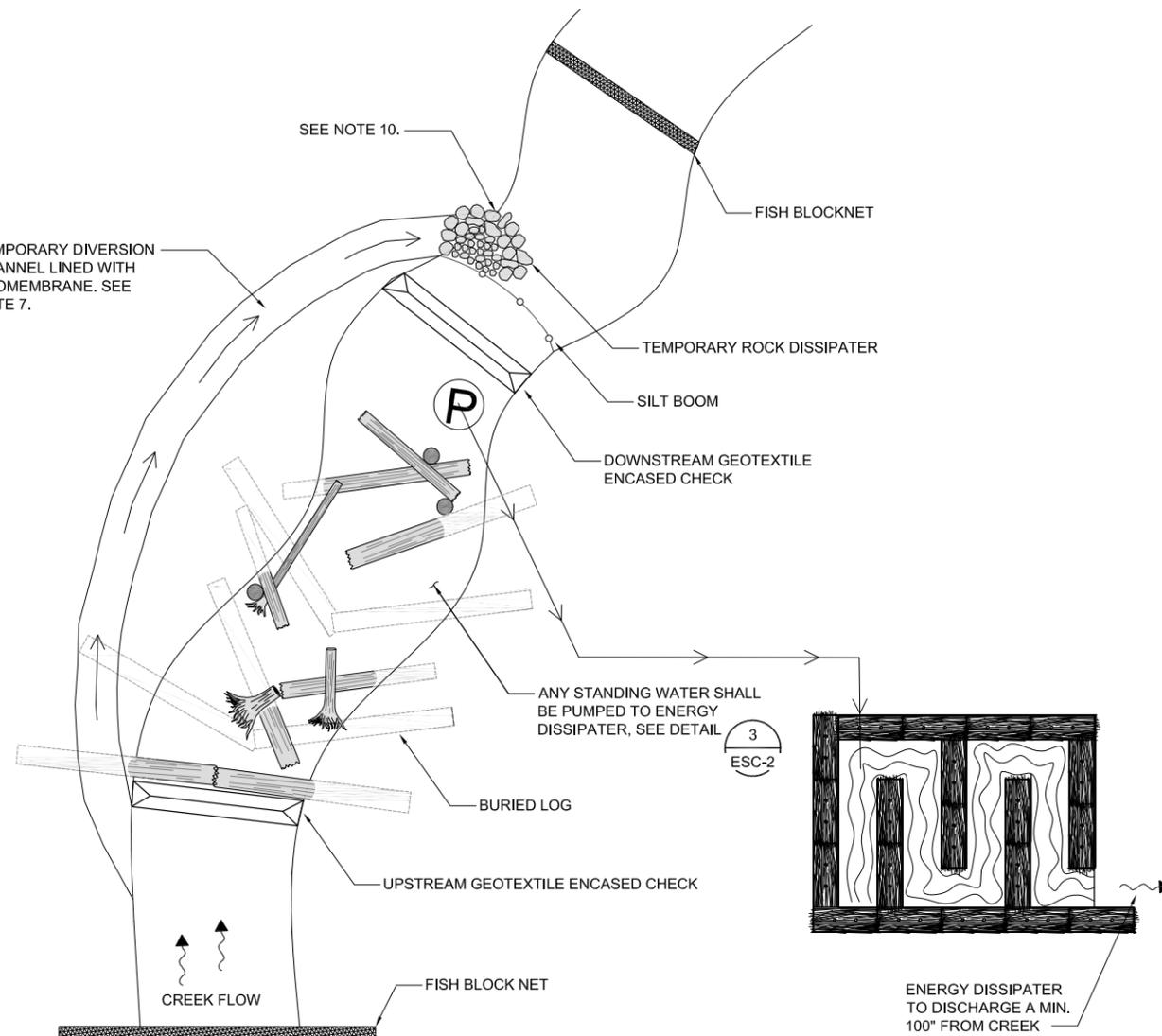
CREDIT GENERATION PLAN

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: C-30
SHEET NO: 34 OF 47

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TYPICAL DITCH FILLING WATER MANAGEMENT DETAIL
SCALE: NTS



TYPICAL ELJ CONSTRUCTION WATER MANAGEMENT DETAIL
SCALE: NTS

DITCH DETAIL NOTES:

- EXCAVATIONS THAT HAVE POTENTIAL TO IMPACT THE WETTED CHANNEL SHALL BE ISOLATED FROM THE ACTIVE CHANNEL BY THE CONTRACTOR. ISOLATION MEANS SHALL CONSIST OF SILT BOOMS, SHEET PILE, BULK BAGS, BLADDER DAMS, OR OTHERS AS NECESSARY TO PREVENT IMPACTS TO WATER QUALITY.
- DEWATERING ACTIVITIES SHALL NOT IMPACT WATER QUALITY.
- INSTALL TEMPORARY SILT BOOM TO ISOLATE DITCH OR WORK AREA AS SHOWN ON THE PLAN.
- CONDUCT FISH REMOVAL (SEINING) IN PROPOSED WORK AREA PRIOR TO ANY EXCAVATION, GRADING, OR CONSTRUCTION OF INSTREAM STRUCTURES.
- PUMP SURFACE WATER FROM DITCHES TO UPLAND AREAS FOR INFILTRATION PRIOR TO STRIPPING AND FILLING.
- CONTRACTOR SHALL DEWATER EXCAVATIONS AS NECESSARY FOR CONSTRUCTION AND INSPECTION.
- NO FILL MATERIAL WILL BE PLACED WITHIN 50 FEET OF DITCH FROM THE CONFLUENCE OF NOOKACHAMPS CREEK, AND MUD CREEK (SEE R-6 AND R-7).
- ANY CULVERT IN THE DITCHES THAT CAN NOT BE REMOVED WILL BE FILLED WITH NATIVE FILL.

STREAM DETAIL NOTES:

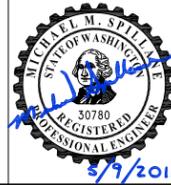
- EXCAVATIONS THAT HAVE POTENTIAL TO IMPACT THE WETTED CHANNEL SHALL BE ISOLATED FROM THE ACTIVE CHANNEL BY THE CONTRACTOR. ISOLATION MEANS SHALL CONSIST OF SILT BOOMS, SHEET PILE, BULK BAGS, BLADDER DAMS, OR OTHERS AS NECESSARY TO PREVENT IMPACTS TO WATER QUALITY.
- DEWATERING ACTIVITIES SHALL NOT IMPACT WATER QUALITY.
- INSTALL TEMPORARY SILT BOOMS TO ISOLATE WORK AREA AS SHOWN ON THE PLAN.
- CONDUCT FISH REMOVAL (SEINING) IN PROPOSED WORK AREA PRIOR TO ANY EXCAVATION, GRADING, OR CONSTRUCTION OF INSTREAM STRUCTURES.
- INSTALL BLOCKNETS TO ISOLATE WORK AREA.
- CONTRACTOR SHALL DEWATER AS NECESSARY FOR CONSTRUCTION AND INSPECTION.
- STREAM DIVERSION SHALL BE ACCOMPLISHED BY EITHER PUMPING OR BY TEMPORARY CHANNEL DIVERSION.
- CONTRACTOR SHALL SUBMIT A WATER MANAGEMENT PLAN 14 DAYS PRIOR TO ANY INSTREAM ACTIVITY FOR APPROVAL BY ENGINEER.
- TEMPORARY CHANNEL DIVERSION SHALL BE LINED WITH GEOMEMBRANE TO LIMIT EROSION. TEMPORARY CHANNEL SHALL BE BACKFILLED AND COMPACTED FOLLOWING CONSTRUCTION.
- CONSTRUCT TEMPORARY HEAD CUT EROSION PREVENTION STRUCTURE AT END OF TEMPORARY DIVERSION CHANNEL.

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Printer: Adobe PDF

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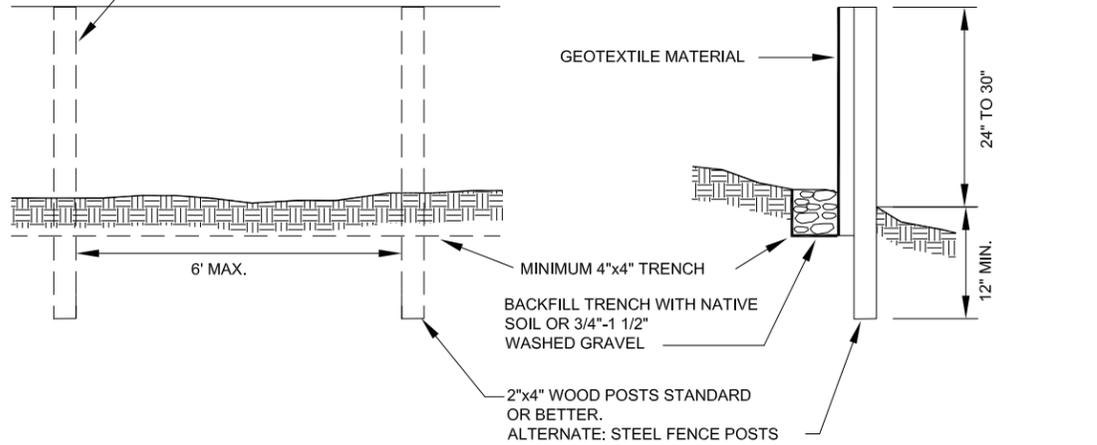
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DESIGNED:	-	CHECKED:	M. MERKELBACH
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

**SKAGIT ENVIRONMENTAL BANK
PHASE 1**
EROSION AND SEDIMENT CONTROL PLAN

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	ESC-1
SHEET NO.:	35 OF 47

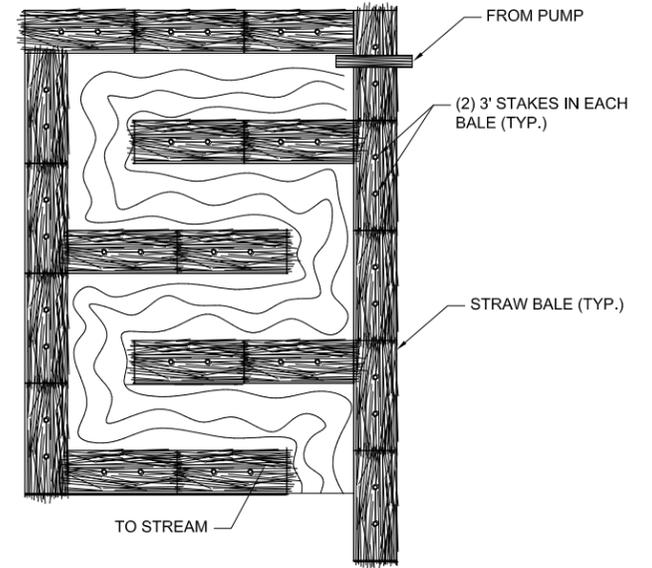
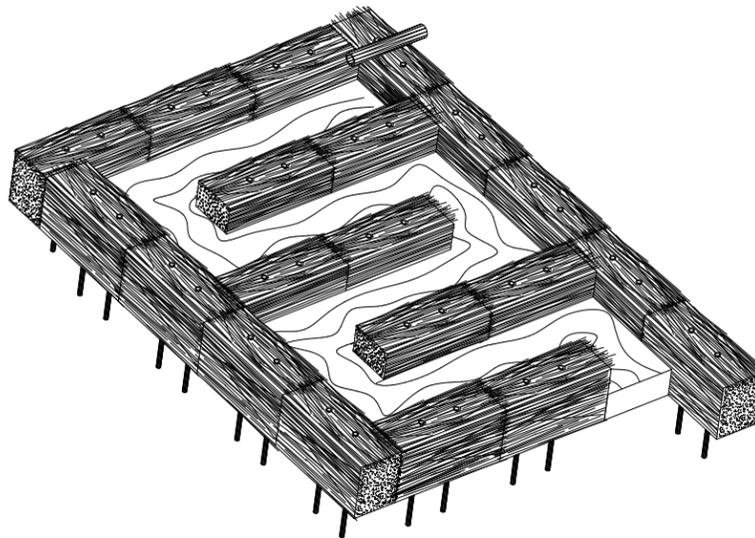
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JOINTS IN FILTER FABRIC SHALL BE SPICED AT POSTS. USE STAPLES, WIRE RINGS, OR EQUIVALENT TO ATTACH FABRIC TO POSTS.



SILT FENCE ELEVATION DETAIL 1
SCALE: NTS

SILT FENCE STAKING DETAIL 2
SCALE: NTS



ENERGY DISSIPATER DETAIL 3
SCALE: NTS

EROSION AND SEDIMENT CONTROL NOTES:

- APPROVAL OF THE CONTRACTOR'S TEMPORARY WATER AND SEDIMENT CONTROL PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
- THE IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL (ESC) PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
- THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
- THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G., ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.).
- THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR'S ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES.
- ANY AREAS OF EXPOSED SOILS, INCLUDING EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR SEVEN DAYS SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
- ANY AREA NEEDING ESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.
- THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED OR WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT.
- STABILIZED CONSTRUCTION ENTRANCES AND ROADS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- WHERE STRAW MULCH FOR TEMPORARY EROSION CONTROL IS REQUIRED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF 2 TO 3 INCHES.
- SURFACE ROUGHENING SHALL BE REQUIRED ON STOCKPILES WITH GRADES STEEPER THAN 3:1 AND TO A DEPTH OF 3 TO 4 INCHES PRIOR TO PLANTING OR SEEDING.
- STOCKPILES WILL BE SEEDDED AT THE END OF SEPTEMBER AND PLANTED IN THE WINTER WITH NATIVE SPECIES.
- A TEMPORARY IRRIGATION SYSTEM OR WATER TRUCK MAY BE REQUIRED PER ENGINEER'S APPROVAL TO ESTABLISH A VEGETATIVE COVER ALONG ALL SLOPES OF THE STOCKPILES.

NOTES:

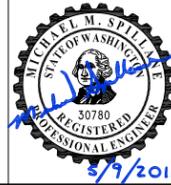
- THE FILTER FABRIC (CONSTRUCTION GEOTEXTILE FOR TEMPORARY SILT FENCE) SHALL BE PURCHASED IN A CONTINUOUS ROLL, 5FT WIDE, CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, THE FILTER FABRIC SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND SECURELY FASTENED TO THE POST.
- THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES.
- A TRENCH SHALL BE EXCAVATED A MINIMUM OF 4 INCHES WIDE BY 4 INCHES DEEP, UPSLOPE AND ADJACENT TO THE POST TO ALLOW THE FILTER FABRIC TO BE BURIED.
- THE FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE POSTS, AND 18 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 30 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO TREES.
- THE TRENCH SHALL BE BACKFILLED WITH NATIVE SOIL OR WITH 3/4"-1 1/2" WASHED GRAVEL.
- SILT FENCES SHALL BE REMOVED AT DIRECTION OF ENGINEER, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
- SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- SILT FENCE PERFORMANCE SHALL BE EVALUATED AND SILT FENCE LOCATIONS SHALL BE EVALUATED AND ADJUSTED AS DIRECTED OR APPROVED BY THE ENGINEER AND THE PERMITTING AUTHORITY.
- SILT FENCE SHALL BE INSTALLED AS SHOWN ON DRAWINGS.
- ANY DEVIATION OR CHANGE TO SILT FENCE DETAILS MUST BE APPROVED BY AN INSPECTOR FOR SKAGIT COUNTY DDES.
- THE CONTRACTOR SHALL MAINTAIN A COPY OF THE MANUFACTURER'S SPECIFICATIONS FOR FILTER FABRIC ON SITE.
- MAINTENANCE STANDARDS:
 - ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.
 - IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE SILT FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT TRAP OR POND, OR OTHERWISE DIVERTED TO A LOCATION THAT DOES NOT RESULT IN TURBID DISCHARGES TO SURFACE WATERS.
 - THE UPHILL SIDE OF THE SILT FENCE SHALL BE CHECKED FOR SIGNS OF THE SILT FENCE CLOGGING, ACTING AS A BARRIER TO FLOW, AND CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF SUCH CHANNELIZATION OCCURS, THE CONTRACTOR SHALL REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
 - SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN THE SEDIMENT IS 6 INCHES HIGH.
 - IF THE FILTER FABRIC HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

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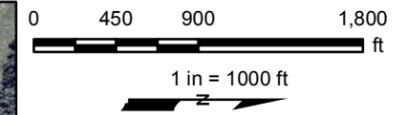
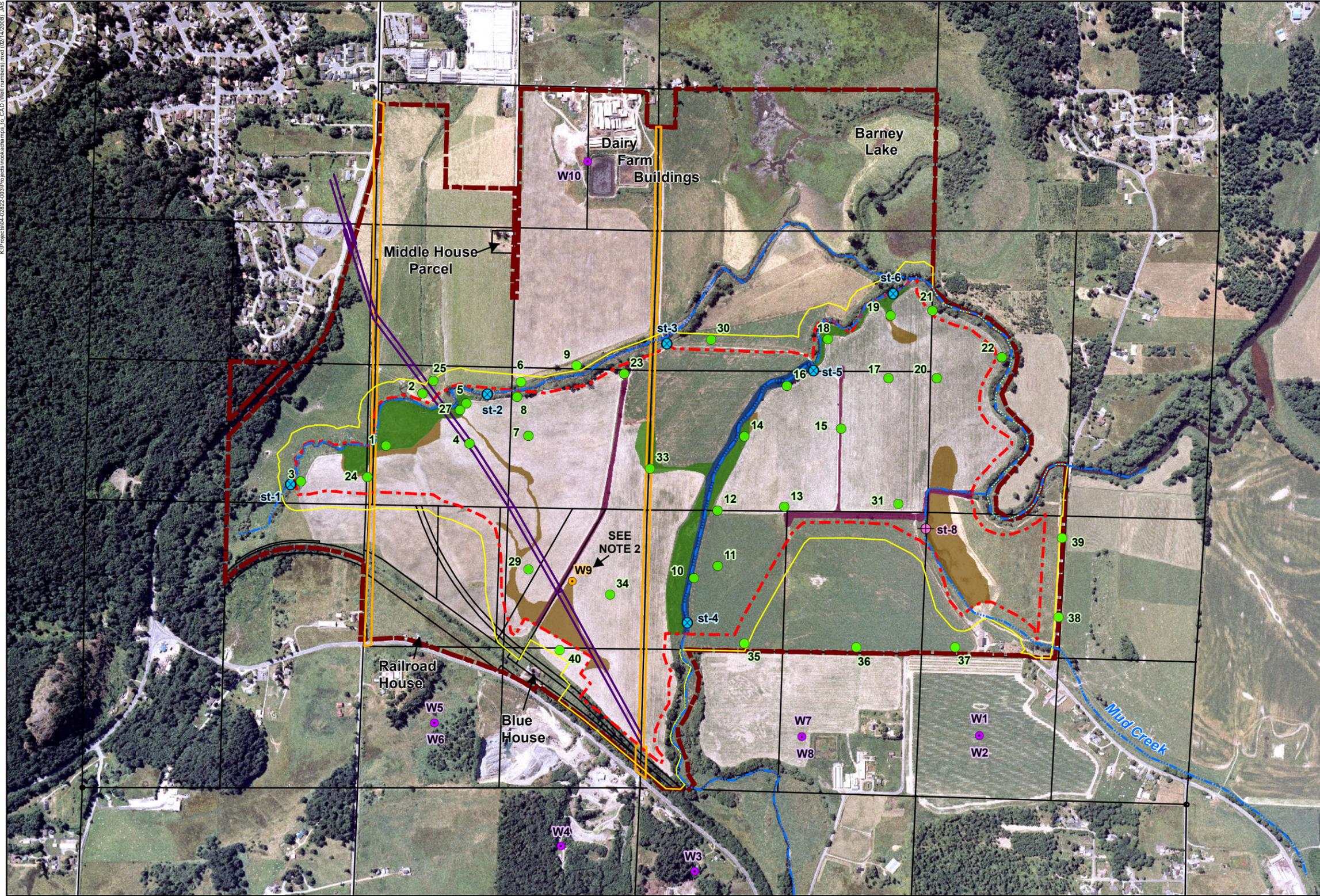
SKAGIT ENVIRONMENTAL BANK
 PHASE 1
EROSION AND SEDIMENT CONTROL DETAILS

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	ESC-2
SHEET NO.:	36 OF 47

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- Legend :**
- 23 Well location and number
 - W1 Adjacent Ecology-documented well
 - ⊗ st-1 Staff gauge location
 - ⊗ st-8 Proposed staff gauge location
 - Stream
 - Waterline easement
 - Powerline easement
 - Mitigation bank boundary
 - Clear Valley Farm property boundary
 - Edge of buffer
 - Parcel boundary
- Existing wetlands**
- Palustrine: persistent
 - Palustrine: non-persistent and plowed
 - Palustrine: ditch
 - Riverine

Note:
 1. Adjacent Ecology-documented wells are not part of Skagit Environmental Bank.
 2. Well W9 is an abandoned irrigation well from the previous land owner.

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No.	REVISION	BY	APPD	DATE

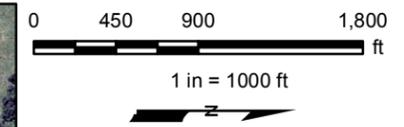
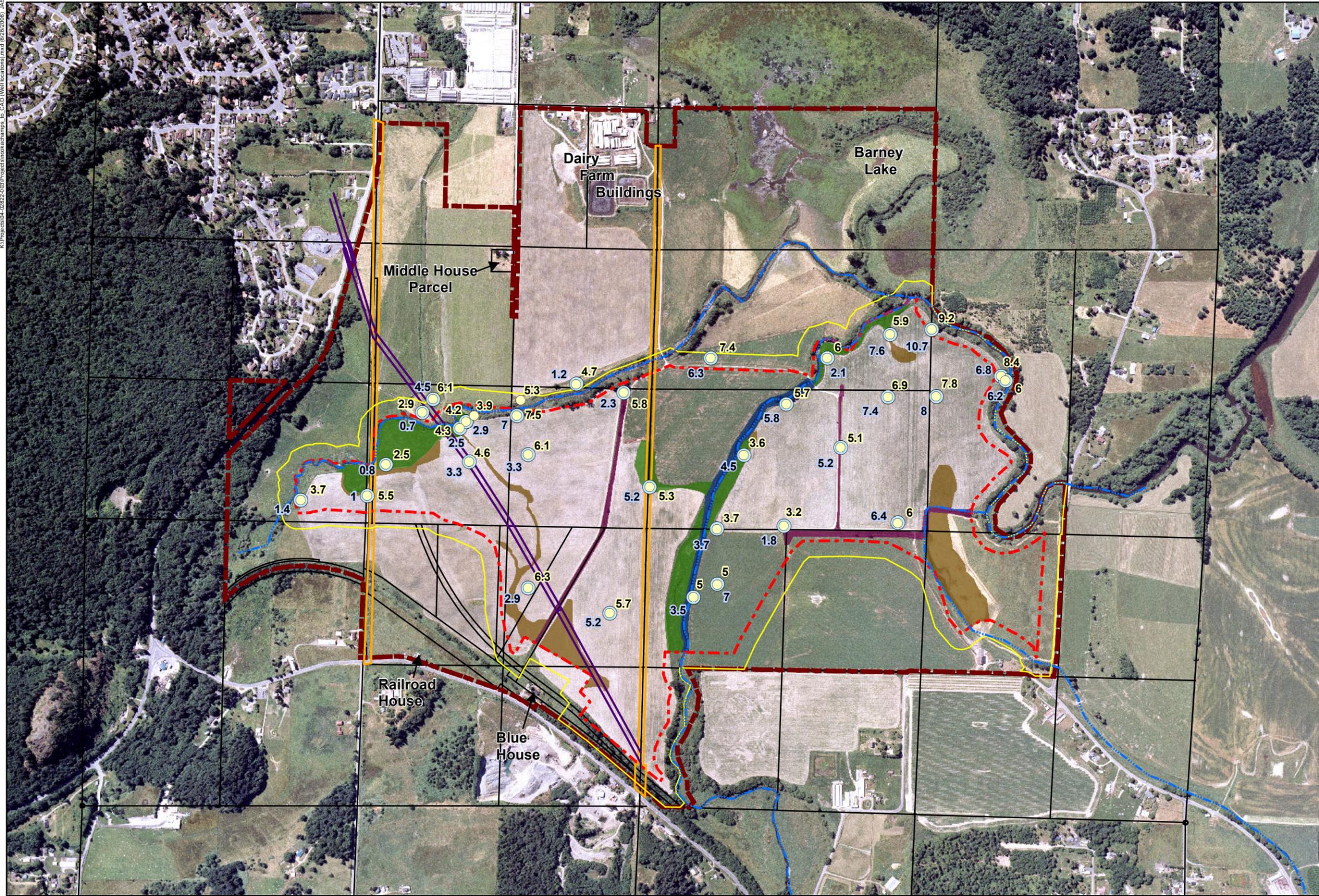
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 Seattle, Washington
 98121-1820
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 206-441-9108 FAX

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DESIGNED:	DRAWN:
DESIGNED:	CHECKED:
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SKAGIT ENVIRONMENTAL BANK
WELL LOCATIONS AND STAFF GAUGE LOCATIONS
(INDICATING WELL NUMBER)

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: R-1
SHEET NO: 37 of 47

K:\Projects\04-02822-003\Projects\workshops\to_CAD\Well Locations.mxd (6/26/2006) JAS



- Legend :**
- 7.6 Ground water depth - second quarter 2005 (ft)
 - 7.6 Ground water depth - third quarter 2005 (ft)
 - Stream
 - Waterline easement
 - Powerline easement
 - Mitigation bank boundary
 - Clear Valley Farm property boundary
 - Edge of buffer
 - Parcel boundary
- Existing wetlands**
- Palustrine: persistent
 - Palustrine: non-persistent and plowed
 - Palustrine: ditch
 - Riverine

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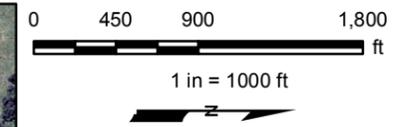
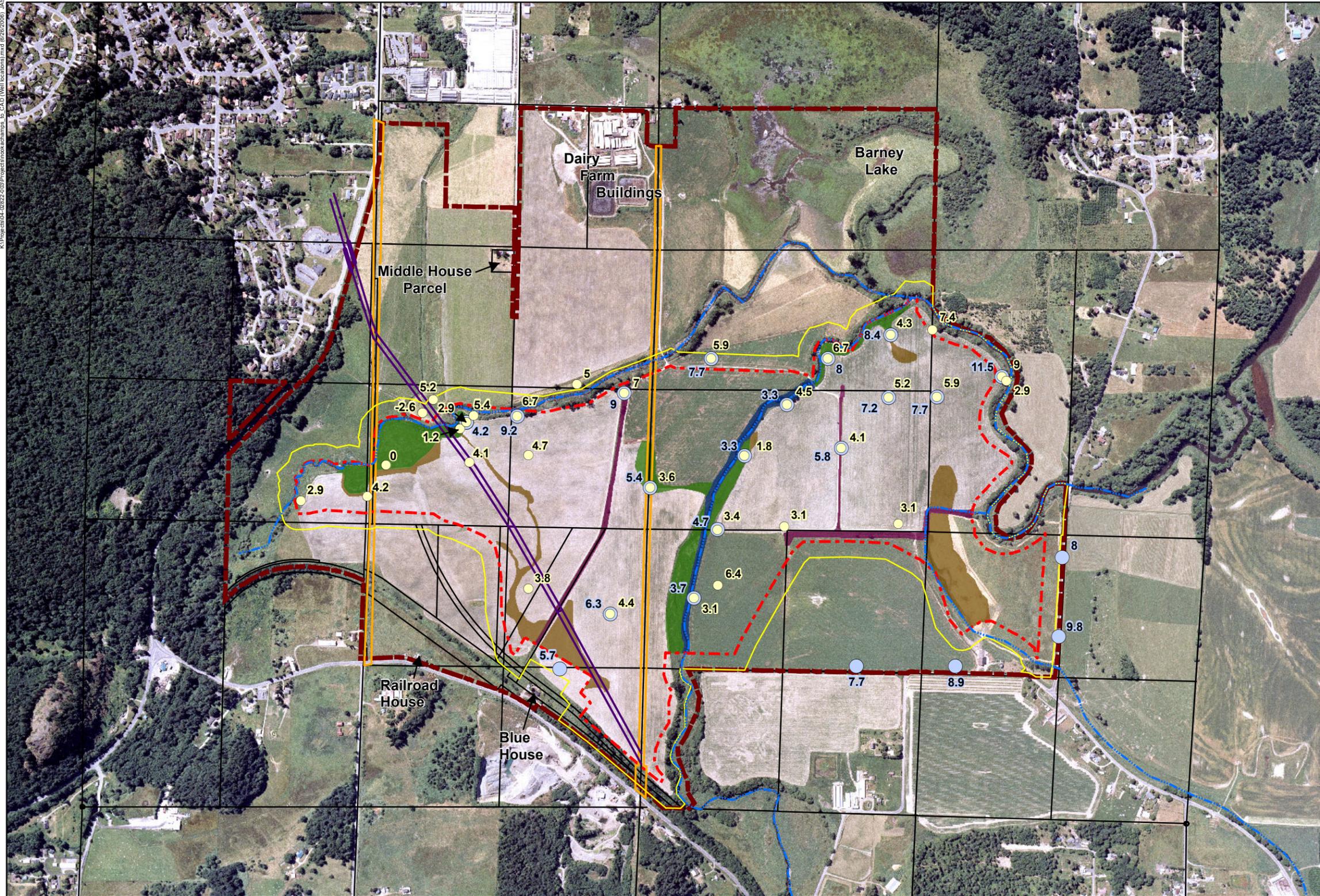
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SKAGIT ENVIRONMENTAL BANK
WELL DEPTH TO GROUNDWATER (SECOND AND THIRD QUARTER 2005)

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: R-2A
SHEET NO: 38 of 47

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- Legend :**
- 7.6 Ground water depth - second quarter 2006 (ft)
 - 7.6 Ground water depth - third quarter 2006 (ft)
 - Stream
 - Waterline easement
 - Powerline easement
 - Mitigation bank boundary
 - Clear Valley Farm property boundary
 - Edge of buffer
 - Parcel boundary
- Existing wetlands**
- Palustrine: persistent
 - Palustrine: non-persistent and plowed
 - Palustrine: ditch
 - Riverine

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3	REVISION NO.3	MM	MS	07/07



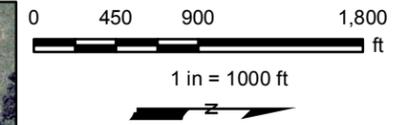
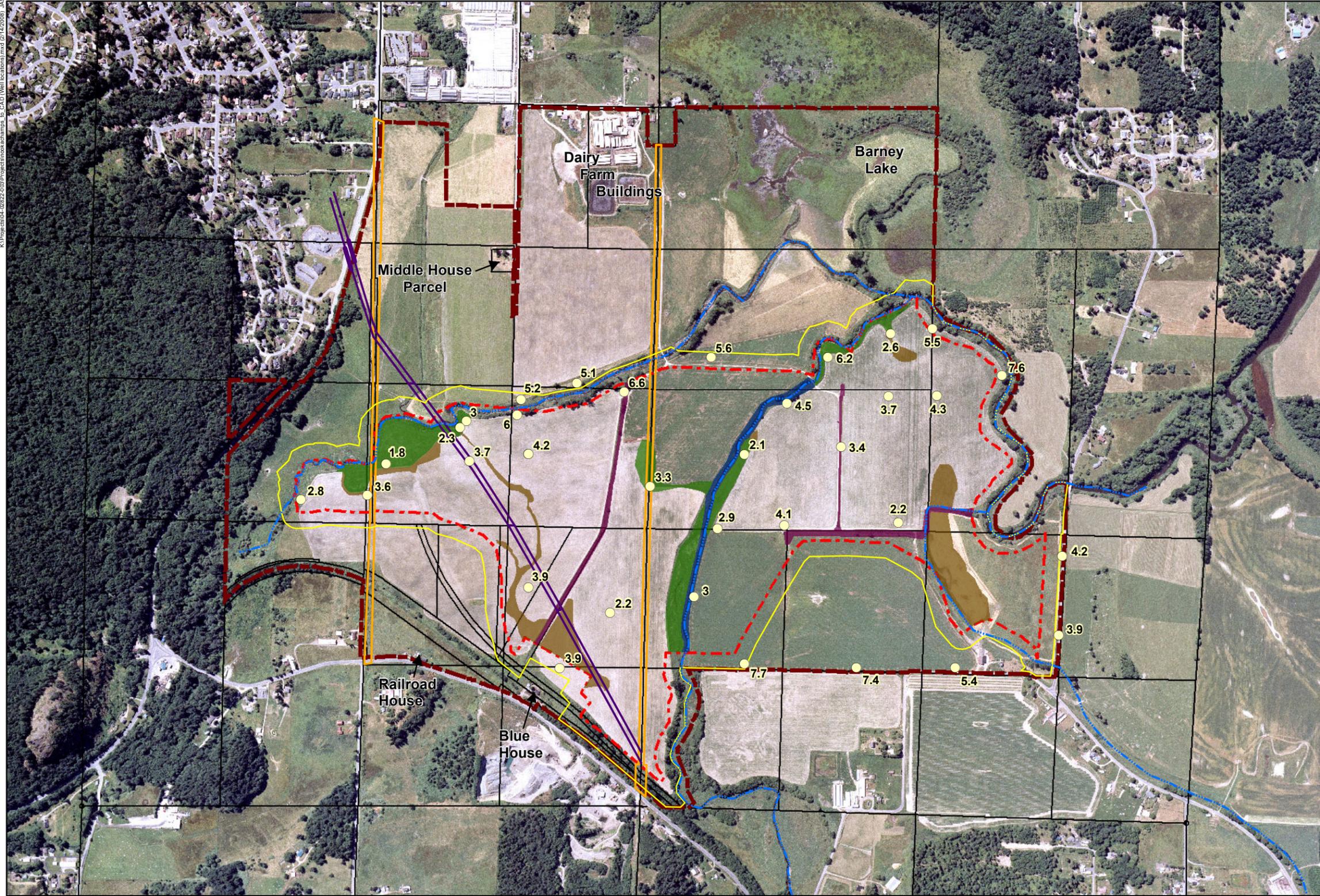
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**SKAGIT ENVIRONMENTAL
BANK**
**WELL DEPTH TO GROUNDWATER
(SECOND AND THIRD QUARTER 2006)**

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: R-2B
SHEET NO: 39 of 47

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- Legend :**
- 7.6 Ground water depth - second quarter 2006 (ft)
 - Stream
 - Waterline easement
 - Powerline easement
 - Mitigation bank boundary
 - Clear Valley Farm property boundary
 - Edge of buffer
 - Parcel boundary
- Existing wetlands**
- Palustrine: persistent
 - Palustrine: non-persistent and plowed
 - Palustrine: ditch
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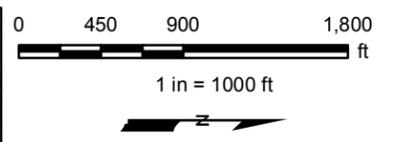
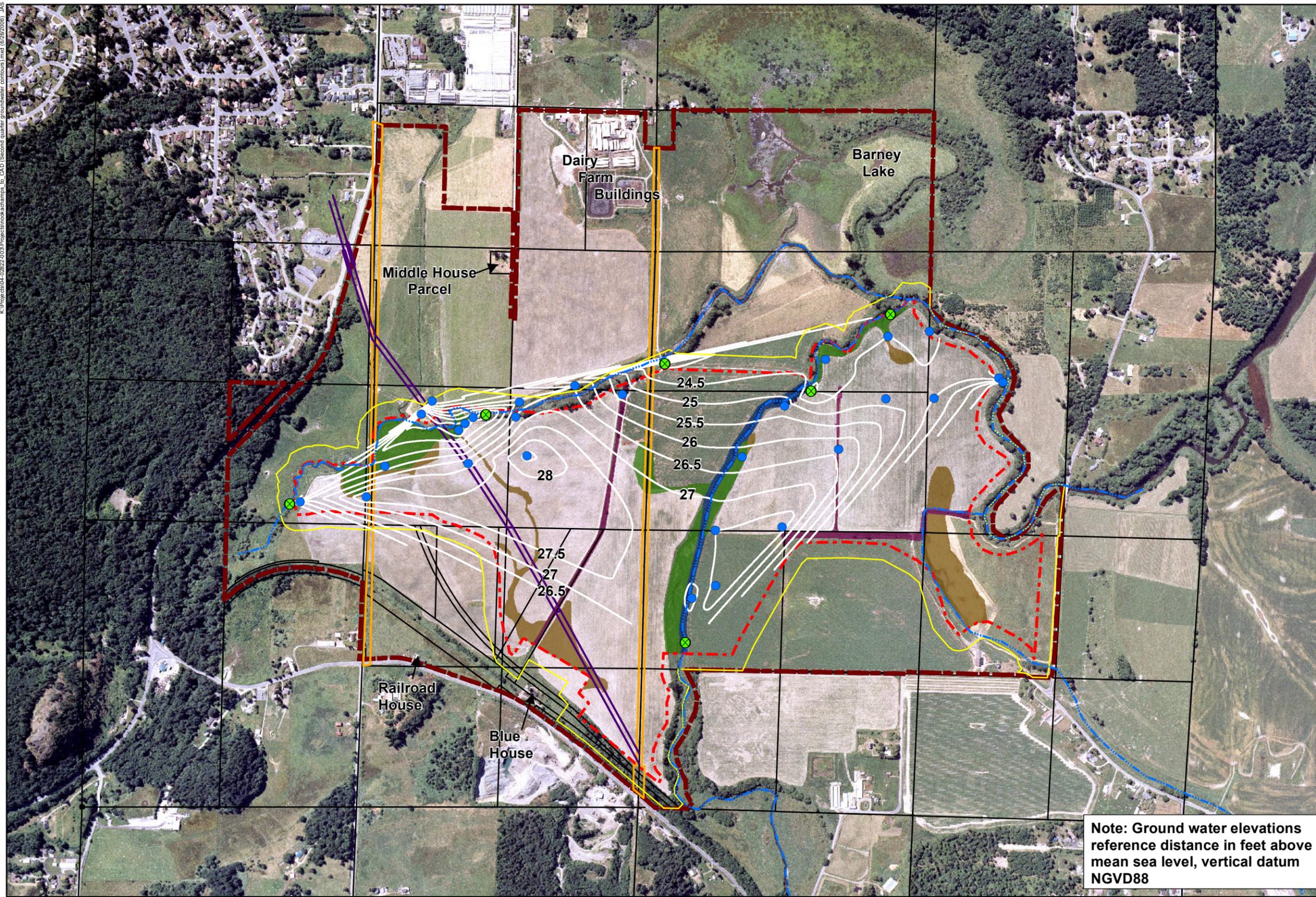
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SKAGIT ENVIRONMENTAL BANK
WELL DEPTH TO GROUNDWATER (SECOND QUARTER 2007)

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: R-2C
SHEET NO: 40 of 47

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Legend :

- Well location
 - ⊗ Staff gauge location
 - 27.5 Ground water elevation contour (0.5 foot interval)
 - Stream
 - Waterline easement
 - Powerline easement
 - Wetland bank boundary
 - Property boundary
 - Edge of buffer
 - Parcel boundary
- Existing wetlands**
- Palustrine: persistent
 - Palustrine: non-persistent and plowed
 - Palustrine: ditch
 - Riverine

Note: Ground water elevations reference distance in feet above mean sea level, vertical datum NGVD88

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8	REVISION NO.8	MM	MS	03/11
6	REVISION NO.6	MS	MS	02/08
5	REVISION NO.5	MS	MS	12/07
4	REVISION NO.4	MS	MS	09/07
3	REVISION NO.3	MS	MS	07/07

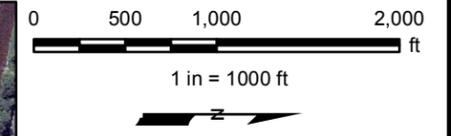
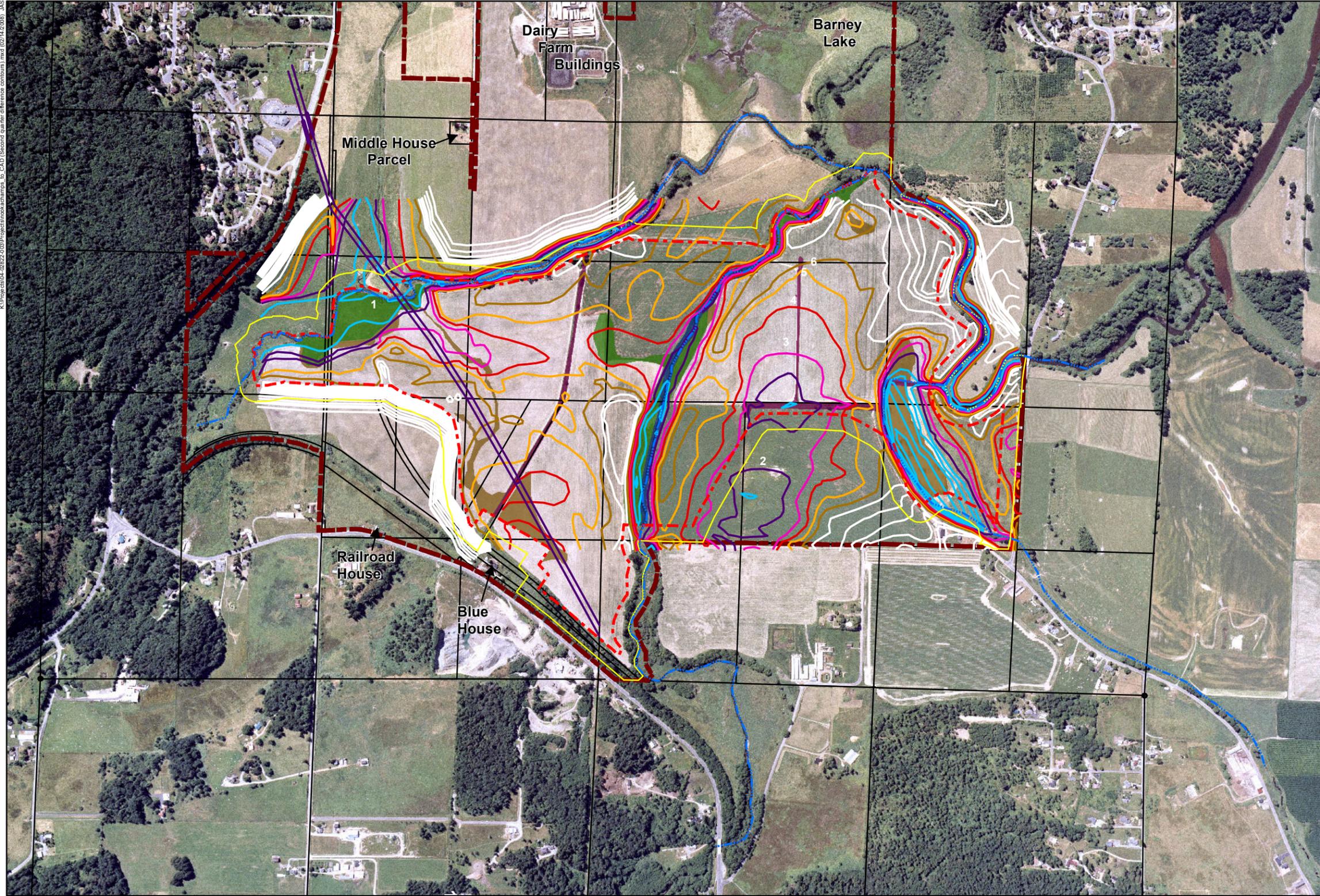
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Suite 1100
Seattle, Washington
98121-1820
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206-441-9108 FAX

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DESIGNED:	CHECKED:
DESIGNED:	APPROVED: M. SPILLANE

SKAGIT ENVIRONMENTAL BANK
GROUND WATER CONTOURS
(SECOND QUARTER 2005/2006/2007)

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: R-3
SHEET NO: 41 of 47

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Legend :

Depth to ground water from surface (in feet)

- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- > 6

Stream

Waterline easement

Mitigation bank boundary

Clear Valley Farm property boundary

Edge of buffer

Parcel boundary

Existing wetlands

- Palustrine: persistent
- Palustrine: non-persistent and plowed
- Palustrine: ditch
- Riverine

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3	REVISION NO.3	MM	MS	07/07
No.	REVISION	BY	APPD	DATE

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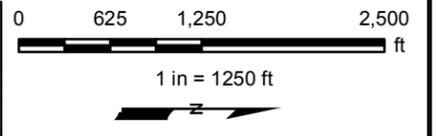
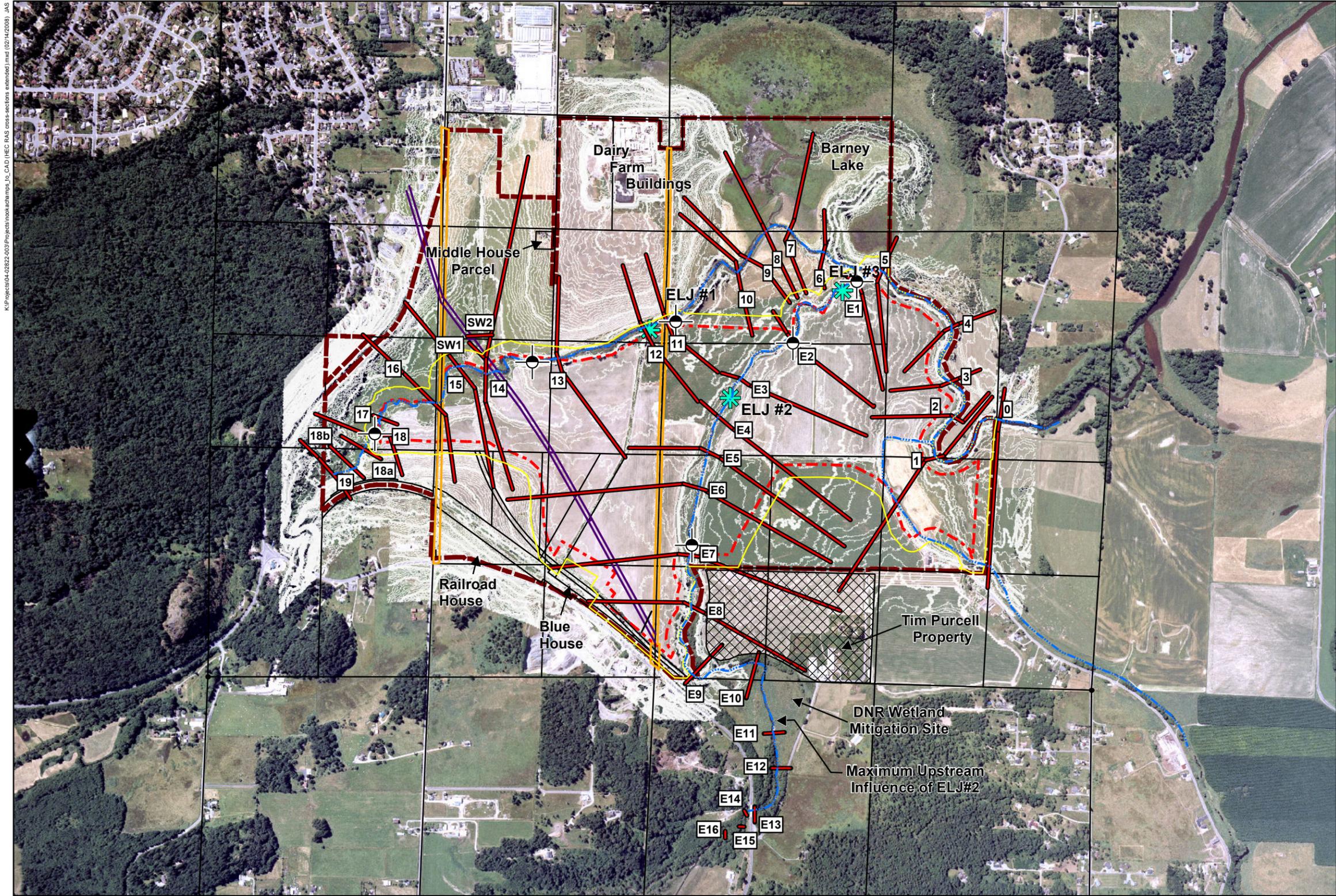
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SKAGIT ENVIRONMENTAL BANK

DIFFERENCE BETWEEN GROUND SURFACE AND GROUND WATER ELEVATIONS (SECOND QUARTER 2005/2006/2007)

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: R-4
SHEET NO: 42 of 47



- Legend :**
- Proposed Engineered logjam (ELJ)
 - Stream
 - Water line easement
 - Power line easement
 - Mitigation bank boundary
 - Clear Valley Farm property boundary
 - Edge of buffer
 - Parcel boundary
 - Stream gauge
 - HEC-RAS cross-section location
 - 10-foot contours
 - 1 foot contours

Notes:
 1. Updated hydraulic analysis is found in the Skagit Environmental Bank Response to Skagit County on Public Comments (2007).

K:\Project\04-02822-003\Project\skagitbank.mxd (02/14/2009) - JAS

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**SKAGIT ENVIRONMENTAL
 BANK
 UPDATED HEC-RAS CROSS-
 SECTION LOCATIONS**

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: R-5
SHEET NO: 43 of 47

04-05-0810bHEC-R04-02822-003-001



6 Open ditch upstream of culvert



5 24-inch culvert on upstream end of crossing



1 Confluence of drainage to Nookachamps Creek



2 Facing east downstream of culvert



3 Crossing over ditch culvert



4 Downstream culvert is covered with rip-rap that is sloughing down slopes

No.	REVISION	BY	APP'D	DATE
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2	REVISION NO. 5	MM	MS	09/07
1	REVISION NO. 4	MM	MS	07/07



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SKAGIT ENVIRONMENTAL BANK

WETLAND 1 DRAINAGE DIAGRAM

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: R-6
SHEET NO: 44 OF 47



6 Downstream end of Mud Creek flowing towards Nookachamps Creek



5 Confluence of drainage to Mud Creek



1 Facing south up the Wetland 4 drainage



2 Upstream end of culverts



3 Two 48-inch corrugated metal culverts on downstream end



4 Downstream end of culverts

No.	REVISION	BY	APP'D	DATE
3	REVISION NO. 6	MM	MS	02/08
2	REVISION NO. 5	MM	MS	09/07
1	REVISION NO. 4	MM	MS	07/07

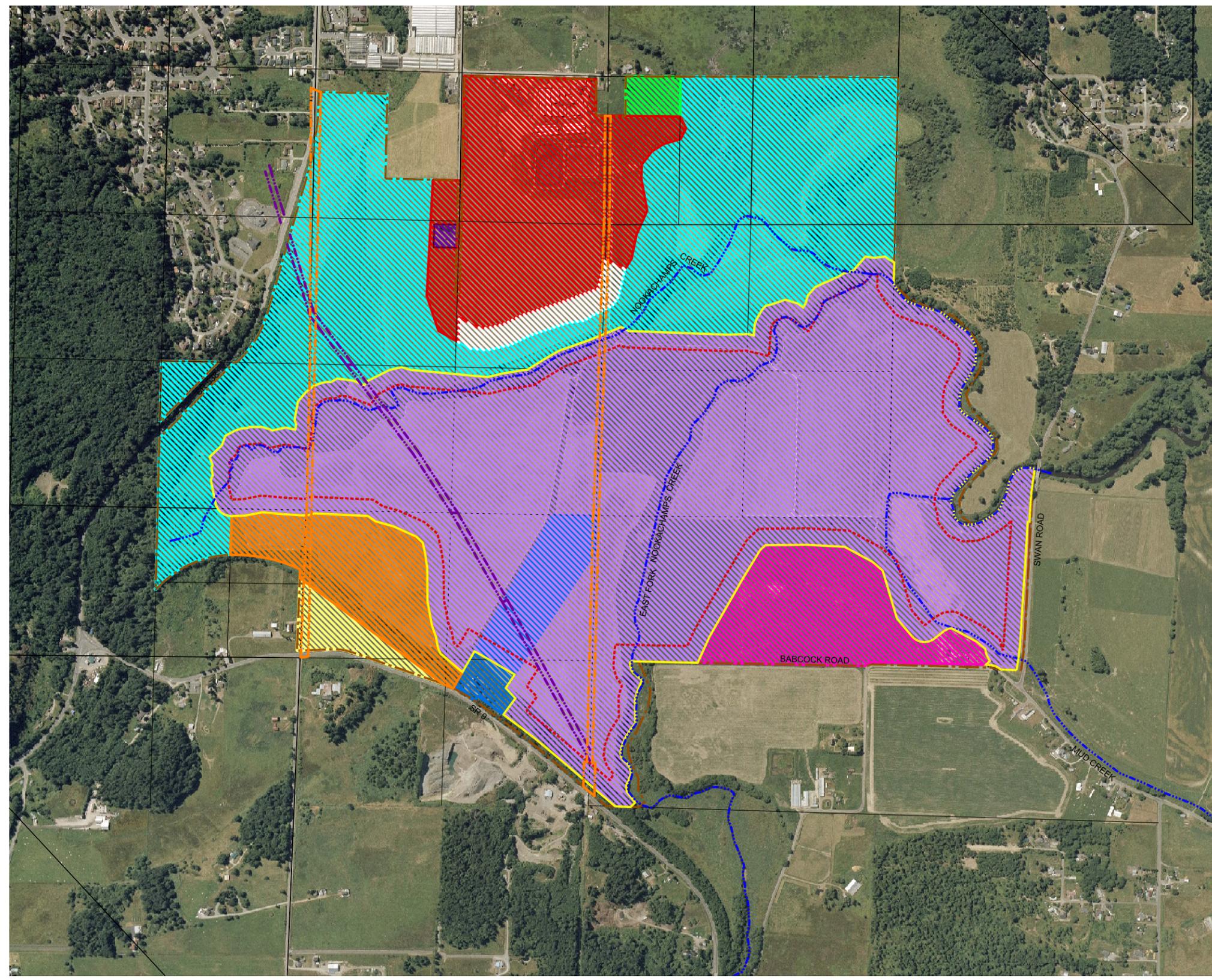
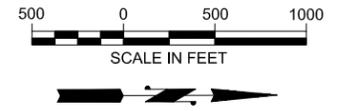


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SKAGIT ENVIRONMENTAL BANK
WETLAND 4 DRAINAGE DIAGRAM

DATE: MARCH 2011
PROJECT NO: 04-02822-003
DRAWING NO: R-7
SHEET NO: 45 OF 47



LEGEND:

- STREAM
- PARCEL BOUNDARY
- WATER LINE EASEMENT
- POWER LINE EASEMENT
- ORIGINAL CLEAR VALLEY FARM PROPERTY BOUNDARY
- EDGE OF BUFFER
- MITIGATION BANK BOUNDARY
- KORTHUIS PROPERTY* (4.2 ACRES) [AG-NRL]
- KNOLL PROPERTY* (82.8 ACRES) [AG-NRL]
- KNOLL APRON PROPERTY* (8.0 ACRES) [AG-NRL]
- MIDDLE HOUSE PROPERTY* (1.0 ACRES) [AG-NRL]
- RED BARN PROPERTY (42.7 ACRES) [AG-NRL]
- 33 ACRE PROPERTY (33.1 ACRES) [AG-NRL]
- RAILROAD HOUSE PROPERTY* (8.6 ACRES) [RRV]
- BLUE HOUSE PROPERTY* (4.0 ACRES) [AG-NRL]
- POSSIBLE SKAGIT LAND TRUST PROPERTY (223.6 ACRES) [AG-NRL, AREA SOUTH OF SR538 ZONED AS MOUNT VERNON CITY LIMITS]
- SKAGIT ENVIRONMENTAL BANK (396.0 ACRES) [AG-NRL]

* PROPERTIES HAVE BEEN SOLD AND ARE NO LONGER OWNED BY CLEAR VALLEY ENVIRONMENTAL, INC.

NOTE:

- ZONING FOR EACH PROPERTY IS PROVIDED IN BRACKETS [AG-NRL=AGRICULTURAL, RRV=RURAL RESERVE]

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 Plotter: Adobe PDF

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8	REVISION NO. 8	MRM	MS	3/11
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<http://www.herreralnc.com>

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DESIGNED:	-	CHECKED:	-
DESIGNED:	-	CHECKED:	-
SCALE:	AS NOTED	APPROVED:	M. SPILLANE

SKAGIT ENVIRONMENTAL BANK

PURCHASED, SOLD, AND INTENDED FUTURE
USES OF THE SKAGIT ENVIRONMENTAL
BANK AND SURROUNDING PROPERTIES

DATE:	MARCH 2011
PROJECT NO.:	04-02822-003
DRAWING NO.:	R-8
SHEET NO. OF	46 47

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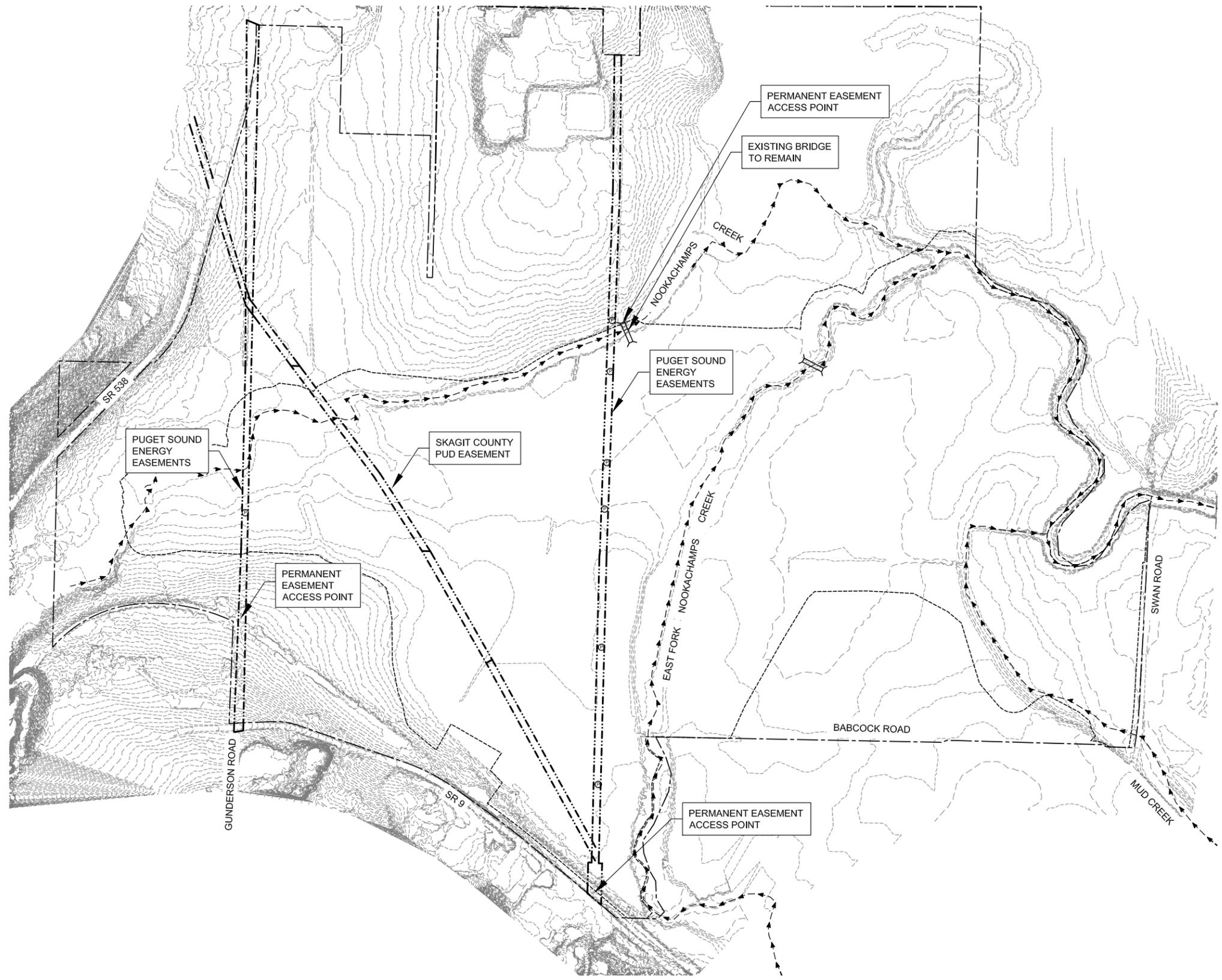


LEGEND:

	STREAM
	EXISTING UTILITY EASEMENT
	POWER POLE
	MITIGATION BANK BOUNDARY
	CLEAR VALLEY FARM PROPERTY BOUNDARY
	EXISTING CONTOURS

NOTES:

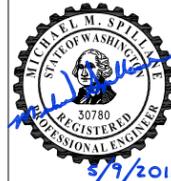
1. SEE DRAWING G-4 FOR UTILITY EASEMENT NOTES.
2. PUGET SOUND ENERGY EASEMENT CONTAINS OVERHEAD POWER LINES AND WOOD POWER POLES.
3. SKAGIT COUNTY PUD EASEMENT CONTAINS A 24-INCH BURIED WATER TRANSMISSION PIPELINE.



Path: C:\proj\04-02822-003\Cad\Drawings\Phase 1-2-3 Rev 6\1R-3.dwg
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 2200 Sixth Avenue
 Suite 1100
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SKAGIT ENVIRONMENTAL BANK

PERMANENT UTILITY EASEMENT ACCESS POINTS

DATE:	MARCH 2011
PROJECT NO:	04-02822-003
DRAWING NO:	R-9
SHEET NO: OF	47 47

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