DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
ENVIRONMENTAL COORDINATOR
450 110th Ave NE., P.O. BOX 90012
BELLEVUE, WA 98009-9012

OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS

The attached materials are being sent to you pursuant to the requirements for the Optional DNS Process (WAC 197-11-355). A DNS on the attached proposal is likely. This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal may be obtained upon request.

File No. 08-136695-WG

Project Name/Address: Mercer Slough 112th Ave SE Restoration
1402 112th Ave SE

Planner: Kevin LeClair

Phone Number: 425-452-2928

Minimum Comment Period:

Materials included in this Notice:

- ☒ Blue Bulletin
- ☒ Checklist
- ☒ Vicinity Map
- ☒ Plans
- ☒ Other:

ENVIRONMENTAL CHECKLIST

12/21/00

Thank you in advance for your cooperation and adherence to these procedures. If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Our TTY number is 425-452-4636.

INTRODUCTION
Purpose of the Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21c RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the City of Bellevue identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the City decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Answer the questions briefly, with the most precise information known, or give the best description you can. You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the Planner in the Permit Center can assist you.
The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. Include references to any reports or studies that you are aware of which are relevant to the answers you provide. The City may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impacts.

Use of a Checklist for Nonproject Proposals: *A nonproject proposal includes plans, policies, and programs where actions are different or broader than a single site-specific proposal.*

For nonproject proposals, complete the Environmental Checklist even though you may answer "does not apply" to most questions. In addition, complete the Supplemental Sheet for Nonproject Actions available from Permit Processing.

For nonproject actions, the references in the checklist to the words *project*, *applicant*, and *property* or *site* should be read as *proposal*, *proposer*, and *affected geographic area*, respectively.

Attach an 8½" x 11" vicinity map which accurately locates the proposed site.

City of Bellevue Submittal Requirements	**27a**

ENVIRONMENTAL CHECKLIST

12/21/00

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BACKGROUND INFORMATION

Property Owner: **City of Bellevue**

Proponent: **City of Bellevue – Parks and Community Services Department, Attn: Geoff Bradley**
450 110th Ave NE
Bellevue, WA 98004
(425) 452-2740

Contact Person: **The Watershed Company, Attn: Kenny Booth**
(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: **750 Sixth Street South, Kirkland, WA 98033**

Phone: **(425) 822-5242**

Proposal Title: **112th Ave SE/Mercer Slough Restoration**

Proposal Location (Street address and nearest cross street or intersection) Provide a legal description if available:

Project is located on the east side of 112th Ave SE just north of Bellevue Way SE, Bellevue, 98004 King County. Project is located within two parcels:

1. **No address, Tax parcel 066288TRCT, no Legal**
2. **No address, Tax parcel 0662870090, Legal: BELLEFIELD OFFICE PARK**

Please attach an 8½“ X 11” vicinity map that accurately locates the proposal site.

Give an accurate, brief description of the proposal’s scope and nature:

1. General description:

The applicant proposes to remove invasive blackberries (approximately 73,625 square feet) from an area located between 112th Avenue SE and Mercer Slough. After removal of the blackberries, the applicant proposes to install a soft surface pervious pedestrian trail along the slough. A portion of the trail will cross a small unnamed stream that flows into Mercer Slough. A small bridge will be installed at this location to allow pedestrian access over the drainage. All portions of the bridge will be located above the ordinary high water mark of the stream. The bridge will be assembled on-site with pre-fabricated materials. No in-water work is proposed as part of the bridge installation project. A timber staircase will also be constructed to connect the proposed trail to the sidewalk near the intersection of 112th Avenue SE and Bellevue Way. The proposed project also includes restoration planting alongside the trail and slough. After removal of all invasive blackberries, native plantings will be installed over approximately 62,875 square feet of the project area.

All proposed improvements (invasive species removal, trail construction, staircase and bridge installation, and restoration plantings) would occur entirely within the 200-foot shoreline buffer of Mercer Slough and within the 225-foot buffer of the onsite Category II wetland. The proposed bridge and 220 feet of trail will be located within the 100-foot stream buffer of the on-site Type F stream. 87 feet of trail and the timber staircase are proposed to be located within the 50-foot stream buffer of the on-site Type N stream.

The project site is located adjacent to the Mercer Slough Nature Park. The park contains over 320 acres of wildlife habitat and freshwater wetlands. The park also contains over 7 miles of interconnected elevated boardwalks, soft surface trails, and asphalt paths that transport visitors through the unique urban park. The project proposes to construct an additional soft surface trail adjacent to the park that will allow additional public access along Mercer Slough.

2. Acreage of site: **Tax parcel 066288TRCT is approximately 4 acres. Tax parcel 0662870090 is approximately 14.59 acres. However, the project area (where construction will occur) is approximately 144,415 sq. ft. (3.31 acres).**

3. Number of dwelling units/buildings to be demolished: **None**

4. Number of dwelling units/buildings to be constructed: **None**

5. Square footage of buildings to be demolished: **N/A**

6. Square footage of buildings to be constructed: **N/A**

7. Quantity of earth movement (in cubic yards): **Cut: 10.5 cubic yards / Fill: 100 cubic yards**

8. Proposed land use: **The project site is just north of the Mercer Slough Nature Park. The subject parcel is located between 112th Avenue SE and the Mercer Slough. Currently undeveloped and overrun with invasive blackberries, the City has proposed using the parcel to extend a portion of the Mercer Slough trail to the north. There are no existing structures on the property and no changes are proposed to the existing land use.**

9. Design features, including building height, number of stories, and proposed exterior materials: **The applicant proposes to remove all invasive blackberries from the site and construct a soft surface pervious trail along the parcel. A 25-foot-long, 4-foot-wide wood bridge will also be installed over a small stream channel that crosses the site before entering the Mercer Slough. The bridge will be assembled on-site with pre-fabricated materials. A small timber staircase will be installed near the intersection of 112th Avenue SE and Bellevue Way SE. The staircase will connect the proposed trail to the existing sidewalk along 112th Avenue SE. Native plantings will also be added along the trail and near the Mercer Slough.**

10. Other

Estimated date of completion of the proposal or timing of phasing:

Once started, blackberry removal, trail and bridge construction, and native planting should take approximately 4-6 weeks. It is anticipated that construction would occur sometime in the summer of 2008.

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

None at this time.

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

The Watershed Company. ***112th Avenue/Mercer Slough Restoration Project – Wetland and Stream Delineation Study – TWC Ref# 070203, Bellevue, Washington.*** **January 29, 2008**

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.

None.

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

Critical Areas Land Use Permit – submitted concurrently with this SEPA Checklist (City of Bellevue)
Shoreline Substantial Development Permit (City of Bellevue)
Clearing and Grading Permit (City of Bellevue)
Washington Department of Fish and Wildlife Hydraulic Project Approval (HPA)

Please provide one or more of the following exhibits, if applicable to your proposal.
(Please check appropriate box(es) for exhibits submitted with your proposal):

☐ Land Use Reclassification (rezone)
Map of existing and proposed zoning

☐ Preliminary Plat or Planned Unit Development
Preliminary plat map

☑ Clearing & Grading Permit
Plan of existing and proposed grading
Development plans

☐ Building Permit (or Design Review)
Site plan
Clearing & grading plan

☐ Shoreline Management Permit
Site plan

A. ENVIRONMENTAL ELEMENTS

1. EARTH

a. General description of the site (circle one): Flat Rolling Hilly Steep slopes Mountains Other:

The subject site is relatively flat near 112th Avenue SE, but begins to slope as it nears Mercer Slough. Slopes adjacent to Mercer Slough are steep. The proposed trail will run roughly parallel to 112th Avenue SE and will be cut into the gradual slope.

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

The steepest slope on-site is approximately 65%, located along the edge of Mercer Slough.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

According to the King County Soil Survey, the site is mapped as Alderwood gravelly sandy loam, 6 to 30 percent slopes and Seattle muck.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No indications of unstable soils were observed.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

	FILL	CUT
Purpose	**All cut and fill activities are planned as part of trail and bridge construction.**	
Type and Quantity	**Trail: 90 c.y. woodchips 10 c.y. soil Bridge: 0 c.y.**	**Trail: 10 c.y. soil Bridge: 0.5 c.y. soil**
Total	**100 c.y.**	**10.5 c.y.**
Fill Source	**-Local source for woodchips -Balance on-site for fill soil**	

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

Erosion could occur if exposed soils are mobilized by rainfall. Short-term erosion may occur during the trail construction, at the stream bank during bridge construction, and in buffer and wetland areas cleared of invasive vegetation. However, any impacts would be short-term and the measures described below would help minimize erosion.

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

The proposed trail would be constructed of 100% pervious materials. However, the bridge crossing and timber stairs would be considered impervious surfaces. These surfaces, however, total less than 350 square feet and are not anticipated to affect drainage patterns on the site or flow regimes in Mercer Slough and surrounding tributaries.

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

All clearing and grading construction would be in accordance with City of Bellevue Clearing & Grading Code (Chapter 23.76), permit conditions, and all other applicable codes, ordinances, and standards. All construction activities are to occur above the OHWM and therefore no erosion impacts to the streams are anticipated. However, to ensure that no impacts occur, the applicant proposes to use temporary erosion and sedimentation control measures such as silt fencing. The fencing would be installed around soil stockpile areas and exposed soils as necessary to prevent any silt-laden water from reaching adjacent waters during rainfall.

The work is expected to occur during the dry season and it is not anticipated that soils would be left exposed for more than 5 days. However, to ensure that erosion potential is minimized, disturbed soils shall be covered with straw, hydroseeded, or otherwise revegetated with native plants as soon after construction as possible. In all cases, exposed soil must be covered at the end of the construction week and also at the threat of rain.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Any air quality impacts from construction-related vehicle trips would be temporary. No heavy equipment will be used during the construction process. Only hand-held power equipment will be used. After project completion, no further impacts to air would occur.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no off-site sources of emissions that will affect the project.

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

Standard methods of reducing impacts to air would be utilized, and include keeping all hand-held power equipment in good operating condition and managing disturbed soils as described above under 1h.

3. WATER

a. Surface:

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

The project site is adjacent to Mercer Slough and its associated wetlands. Mercer Slough is classified as a Type S water and the adjacent wetland has been delineated as Category II wetland. Additionally, a Type F stream drains into Mercer Slough near the northern boundary of the project site and a Type N stream drains into the slough near the southern boundary of the project site.

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

The proposed bridge will be built directly over an unnamed Type F stream channel, but above the ordinary high water mark. The proposed trail will be constructed above the ordinary high water mark of the Mercer Slough and outside the limits of its associated Category II wetland.

All proposed improvements (invasive species removal, trail construction, staircase and bridge installation, and restoration plantings) would occur entirely within the 200-foot shoreline zone of Mercer Slough and within the 225-foot buffer of the onsite Category II wetland. The proposed bridge and 220 feet of trail will be located within the 100-foot stream buffer of the on-site Type F stream. 87 ft of trail and the timber staircase are proposed to be located within the 50-foot stream buffer of the on-site Type N stream.

Critical Area	Buffer	Improvements Proposed Within Critical Area/Buffers					
		Invasive Removal	Restoration Plantings	Ornamental Plantings	Trail	Bridge	Staircase
Wetland	---	9,720 s.f.	9,720 s.f.	----	----	----	----
Shoreline Buffer	200 ft	73,625 s.f.	62,875 s.f.	45,500 s.f.	7,560 s.f. (1,890 ft)	120 s.f.	280 s.f.
Wetland Buffer	225 ft	73,625 s.f.	62,875 s.f.	45,500 s.f.	7,560 s.f. (1,890 ft)	120 s.f.	280 s.f.
Stream A (Type F) Buffer	100 ft	7,650 s.f.	7,000 s.f.	5,650 s.f.	880 s.f. (220 ft)	120 s.f.	----
Stream B (Type N) Buffer	50 ft	---	1,100 s.f.	2,200 s.f.	348 s.f. (87 ft)	----	280 s.f.
Total		73,625 s.f.	62,875 s.f.	45,500 s.f.	7,560 s.f.	120 s.f.	280 s.f.

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

No material would be installed in or excavated from Mercer Slough, two unnamed stream channels, or onsite wetland. All trail and bridge improvements are located outside of the on-site wetland and above the ordinary high water mark of all on-site waters.

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

No.

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

The subject parcel is adjacent to Mercer Slough, which is considered to be within a 100-year floodplain. However, all trail and bridge improvements are proposed outside the ordinary high water mark of the Mercer Slough and outside of the 100-year floodplain.

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

No intentional discharges of waste materials would occur during project construction.

b. Ground

1. Will ground water be withdrawn, or will water be discharged to ground water? Give a general description, purpose, and approximate quantities if known.

There will be no withdrawal of or discharge to ground water associated with this project.

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

There will be no waste material from septic tanks or other sources discharged into the ground as part of this project.

c. Water runoff (including stormwater):

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

Runoff from the immediate project site is not expected except at natural, pre-project rates. The proposed trail will be made of a pervious surface. The bridge will be sufficiently wide enough and located above the ordinary high water mark so as not to affect the flow of water within the unnamed stream channel.

2) Could waste materials enter ground or surface waters? If so, generally describe.

It is not expected that waste materials will enter either Mercer Slough or the unnamed drainage channel. All construction and installation will be done by hand. Therefore, no heavy equipment is required and the chance of a fuel spill is not likely.

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

The erosion control measures described under question 1h would help control impacts to surface and runoff water. Hydraulic Project Approvals (HPAs) issued by Washington Department of Fish and Wildlife (WDFW) direct the contractor to take extreme care for the duration of the project to "ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into adjacent waters." In addition, all hand-held power equipment would be in good working order.

4. PLANTS

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

☒ deciduous tree: **alder**, **maple**, aspen, other: **black cottonwood**
☒ evergreen tree: **fir**, cedar, **pine**, other:
☒ shrubs: **Himalayan blackberry, Pacific willow, red-osier dogwood, salmonberry, red elderberry, Bohemian knotweed**
☐ pasture
☐ crop or grain

☒ wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other: **reed canarygrass, yellow pond-lily**
☐ water plants: water lily, eelgrass, milfoil, other:
☐ other types of vegetation:

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

Himalayan blackberry is present on site. Blackberries will be removed and replanted with native species. Approximately 73,625 sq. ft. of blackberries will be removed.

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

No threatened or endangered plant species are known to be on or near the site.

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

Invasive vegetation will be removed from the majority of the project site and patches of native vegetation will be planted. It is anticipated that approximately 62,875 square feet of native plantings are proposed along the trail corridor and adjacent to Mercer Slough.

5. ANIMALS

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: **hawk**, **heron**, **eagle**, **songbirds**, other: **waterfowl, herons, blackbirds, chickadees, wrens finches, robins**
mammals: deer, bear, elk, **beaver**, other:
fish: **bass**, **salmon**, **trout**, herring, shellfish, other:

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

Adult and juvenile chinook salmon, steelhead trout (listed as Threatened under the Federal Endangered Species Act), coho salmon, and sockeye salmon migrate through Lake Washington and up Mercer Slough. Adults migrate upstream to reach spawning grounds; juveniles migrate downstream from their natal streams to reach the ocean.

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

As described above, adult and juvenile salmonids migrate up and downstream, respectively. Migrating waterfowl may use the nearby slough as resting and foraging areas during spring and fall migrations.

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

The proposed project will enhance wildlife habitat through the removal of invasive species and the planting of native species along Mercer Slough. It is anticipated that approximately 62,875 sq. ft. of native restoration plantings will occur. This proposed enhancement would add habitat complexity and help improve fish passage conditions along the shoreline.

6. ENERGY AND NATURAL RESOURCES

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

Hand-held power equipment or a slope mower will be used for invasive species removal, and hand-held power equipment will be used for the trail construction and bridge installation. However, no energy will be necessary after the project is completed.

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

No

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

No forms of energy are necessary for the completed project.

7. ENVIRONMENTAL HEALTH

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Typical hazards related to electrical and gasoline powered hand tools are associated with construction of the proposed project.

1) Describe special emergency services that might be required.

Emergency services are not anticipated at the site. In the unlikely event that an accident (spill, fire, other exposure) occurs involving toxic chemicals or hazardous wastes, the local Fire Department's Hazardous Materials Team would respond. If necessary, local medical services might also be required. The full range of safety and accident response supplies would be on-site to treat any emergency during construction.

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

Standard precautions would be taken to ensure the safety of the work crew. The construction manager would be contacted by a crew member immediately upon discovery of a spill. The construction manager would then ensure that the spill is cleaned up in the manner dictated by the chemical use instructions and would contact the appropriate authorities.

b. Noise

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

There is no noise in the area that would affect this project.

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

Noise associated with the proposed project would be restricted to the use of a slope mower, hand-operated power tools, and hand excavation during the construction phase. Construction noise would be limited to normal daytime working hours as dictated by the City of Bellevue's noise policy. There would be no long-term noise associated with the proposed project.

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

As mentioned above, noise would be limited to daylight weekday hours. No other noise-control measures are necessary.

8. LAND AND SHORELINE USE

a. What is the current use of the site and adjacent properties?

The Archon Group, owner of the nearby Bellefield Office Park, currently owns the project site. The City of Bellevue Parks and Community Services Department is negotiating with the Archon Group to obtain an easement for use of the proposed trail and restoration plantings. Single-family residences are located westerly of the site and commercial office buildings within the Bellefield Office Park are located easterly of the site across the Mercer Slough.

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

There are currently no structures on the site.

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

No structures are proposed for demolition.

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

The northern portion of the project site is designated as Office (O) zoning. The southern portion of the project site (within the Mercer Slough Nature Park) is zoned Single-Family Residential (R-1).

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

The northern portion of the project site is designated as Office (O). The southern portion of the project site (within the Mercer Slough Nature Park) has a Comprehensive Plan designation of Parks/Single-Family Residential – Low Density (P/SF-L).

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

Residential

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Mercer Slough, on-site wetland, and two on-site unnamed streams are considered to be "environmentally sensitive" areas. The applicant will apply for a Critical Areas Land Use Permit to allow for disturbances within the sensitive area buffers.

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

No person will reside or work in the completed project.

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

No person will be displaced as a result of this project.

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

Does not apply.

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

The size, topography, and sensitive area status of the site will prevent any future development opportunities. Therefore, it is appropriate and compatible that the site be used as open space and managed by the Parks and Community Services Department. The improved trail and bridge crossing are in accordance with the City's long-term goal of making open and natural spaces accessible to citizens for passive recreation.

9. HOUSING

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

None.

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

None.

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

Does not apply.

10. AESTHETICS

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

The proposed bridge will be approximately 3.5-ft above the top of bank and will be composed of wood.

b. What views in the immediate vicinity would be altered or obstructed?

The bridge will be visible from the trail on both sides of the drainage channel. However, the bridge will provide an additional view for trail users, as they would now be able to view the creek and surrounding area from the bridge. Additionally, all invasive plants will be removed from the site and replaced with plantings of native species. Overall, the proposed project will provide increased passive recreational and wildlife viewing opportunities for the public.

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

No measures are necessary.

11. LIGHT AND GLARE

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

No light or glare will be produced by the proposed project.

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

No.

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

None.

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

No measures are necessary.

12. RECREATION

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

The Mercer Slough Nature Area is used for passive recreational activities such as hiking, bird watching, etc. The proposed project will create an additional portion of trail and additional open space accessible to the public for passive recreational use.

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

No. The proposed project will enhance passive recreational use within the area.

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

No measures are necessary.

13. HISTORIC AND CULTURAL PRESERVATION

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

No places or objects of this type are known to exist in the immediate vicinity.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

There is no known evidence of historic or cultural importance on the project site.

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

Should historic, archeological, scientific or cultural significant items be encountered during implementation of this project, work would be temporarily stopped while the appropriate agencies are notified.

14. TRANSPORTATION

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

The proposed trail will connect to the intersection of Bellevue Way SE and 112th Avenue NE. It will then run in a north-northeast direction and roughly parallel to 112th Avenue NE before connecting with SE 15th Street.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

The nearest King County Metro transit stop is located at the corner of 112th Avenue SE and SE 15th Street, at the northern terminus of the proposed trail. A second transit stop is located at the corner of Bellevue Way SE and 108th Avenue SE (several hundred feet west of the proposed trail).

c. How many parking spaces would the completed project have? How many would the project eliminate?

This project will neither create nor eliminate parking spaces.

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

This project will not affect public roads in any way.

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

Water, rail, or air transportation would not be utilized by the completed project.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

None.

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

None.

15. PUBLIC SERVICES

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

No increase in public service needs will result from this project.

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

None

16. UTILITIES

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

No utilities are currently available at the site.

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

No new utilities are proposed as part of the project.

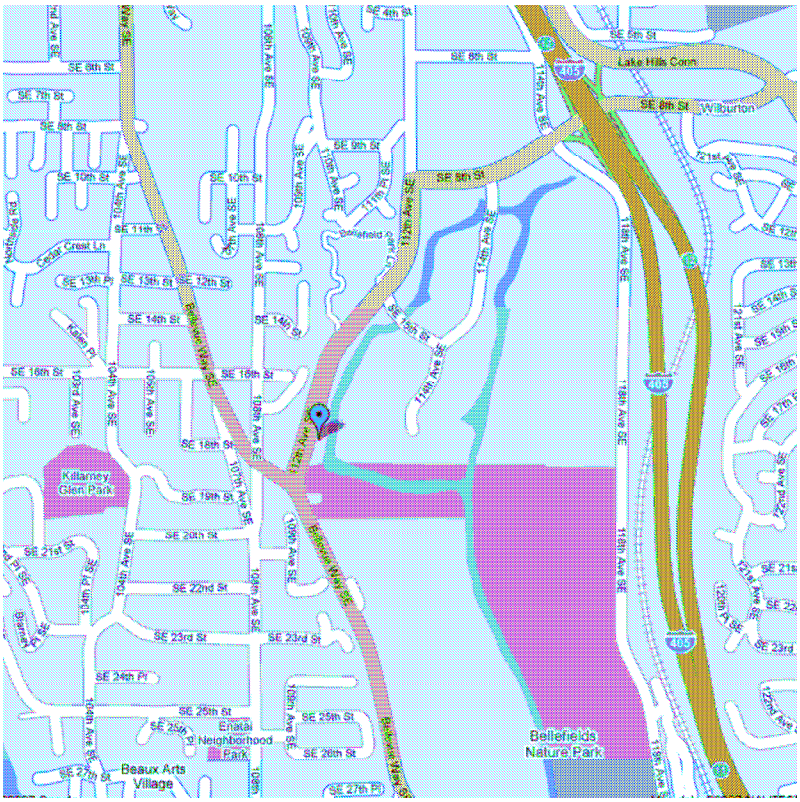
Signature

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

Signature

Date Submitted: _____

Vicinity Map from Google Maps (top) Google Earth (middle) and iMAP (bottom)



SE 12TH ST
SE 13TH ST
SE 14TH ST
SE 16TH ST
SE 17TH ST
SE 18TH ST
SE 19TH ST
SE 20TH ST
BELLEVUE WAY SE
108TH AVE SE
112TH AVE SE
114TH AVE SE
Bellevue
Mercer Slough Nature Park
(C) 2008 King County
0
658ft

January 29, 2008

Geoff Bradley
City of Bellevue
Parks and Community Services Department
450 – 110th Avenue NE
Bellevue, WA 98004
Email: gbradley@bellevuewa.gov

Re: **112th Avenue/Mercer Slough Restoration Project**
Wetland and Stream Delineation Study – TWC Ref# 070203

Dear Geoff:

On January 25, 2008, The Watershed Company Ecologists Meagan McManus and I conducted a wetland and stream delineation study along Mercer Slough West, located east of 112th Avenue NE and north of Bellevue Way SE in Bellevue. Bellevue Parks is currently considering an improvement plan for this site that would include invasive plant removal, a trail, and native plantings.

This letter summarizes the findings of this study and details applicable federal, state, and local wetland regulations. The following attachments are included:

- Wetland and Stream Delineation Sketch
- Wetland Determination Data Forms
- Wetland Rating Form

Methods

Wetland

The subject property was evaluated for wetlands using methodology from the *Washington State Wetlands Identification and Delineation Manual* (Manual) (Washington Department of Ecology [Ecology] 1997). Wetland boundaries were determined on the basis of an examination of vegetation, soils, and hydrology. Areas meeting the criteria set forth in the Manual were determined to be wetland. Soil, vegetation, and hydrologic data were sampled at several locations on the property to make the determination. We recorded data at six of these locations. Data points are marked with yellow- and black-striped flags.

Wetland edges are marked with pink- and black-striped flags. The boundary of Wetland A is marked with 109 flags.

Pursuant to the Bellevue Land Use Code (LUC 20.25H.095), Wetland A was classified using the *Western Washington Wetland Rating System* (Ecology, Aug 2004, version 2). Field observations and aerial photos from King County's mapping website (iMAP) were used to rate this wetland.

Streams

Stream ordinary high water marks (OHWM) in the restoration project vicinity were determined based on the definition provided by the Washington Department of Fish and Wildlife (WDFW) and WAC 220-110-020(57). The OHWM is located by examining the bed and bank physical characteristics and vegetation to ascertain the water elevation for mean annual floods. Areas meeting the WDFW definition were determined to be the OHWM edge.

Stream OHWMs are marked with blue- and white-striped flags. Streams A and B are marked with 11 and 15 flags, respectively. The streams are classified according to LUC 20.25H.075. Field observations and King County watershed maps (iMAP) were used to classify the subject streams.

Findings

The restoration project area is located along Mercer Slough West in the Cedar-Sammamish Watershed (WRIA 08). Two streams and one wetland are located in or adjacent to the project area.

Wetland

The on-site wetland area closely follows the edge of the slough, except at the south end where it spreads out beyond the dredged channel. Patches of yellow pond-lily (*Nuphar lutea*) are scattered along the Mercer Slough West channel. Red alder (*Alnus rubra*), Pacific willow (*Salix lucida spp lasiandra*), red osier-dogwood (*Cornus sericea*), salmonberry (*Rubus spectabilis*), and Himalayan blackberry (*Rubus armeniacus*) characterize the wetland edge. Native trees and shrubs dominate the southern extent of the flagged wetland area. Some invasive Himalayan blackberry and reed canarygrass (*Phalaris arundinacea*) are also present. Soils in Wetland A range in color from a black (7.5YR 2.5/1) to a very dark brown (7.5YR 2.5/2, 10YR 2/2). These wetland soils are organic and emit a strong sulfidic odor. Soils were saturated to the surface at the time of our site visit and free water was observed at a 10-inch depth.

Non-wetland

The non-wetland project area is dominated by Himalayan blackberry and mowed lawn grasses. Birch (*Betula* sp.), black cottonwood, red alder, and red elderberry are sparsely interspersed with the Himalayan blackberry. The south end of the site is characterized by black cottonwood, Himalayan blackberry, and highly invasive Bohemian knotweed (*Polygonum x. bohemicum*). Soils beyond the wetland edge ranged from a dry dark gray (10YR 3/1) silty loam to a very dark brown (7.5YR 2.5/2) organic soil with no sulfidic odor. Soils in these areas either lacked saturation or had minimal surface saturation. Additionally, fifty percent or fewer of the

dominant plants were facultative, facultative-wet, or obligate. These areas did not meet the wetland criteria for vegetation or hydrology.

Streams

King County DNR maps show that Chinook, Coho, and Steelhead utilize the eastern channel through Mercer Slough. Cutthroat trout and Sockeye salmon are known to use both the eastern and western slough channels. It is reasonable to presume that fish in Lake Washington could potentially access Mercer Slough West.

Stream A, located near the north end of the site, is conveyed under 112th Avenue SE via a corrugated metal pipe. The stream daylights at the end of the culvert, which is approximately three feet in diameter, and flows into Mercer Slough West. The stream channel is approximately ten feet wide and the gradient is slight. Fish use is presumed in this short segment of Stream A, between the culvert and Mercer Slough West, due to a lack of fish barriers, low gradient, and connectivity to the slough and Lake Washington. However, fish use upstream is unlikely due to a plunge of approximately two feet at the culvert.

Located at the south end of the project area, Stream B is conveyed under the 112th Avenue SE and Bellevue Way SE intersection via two corrugated metal pipes. The pipes are approximately three feet and two feet in diameter, respectively. There is a four to five foot plunge at the culverts, where the stream daylights and flows through an incised channel before sheet flowing through Wetland A. Stream B had some flow on the day of our site visit, but the flow and defined channel infiltrated inside Wetland A before reaching Mercer Slough. Approaching the edge of the slough, a narrow shallow channel appears to carry flow along a moderate gradient during storm events. However, this stream appears to be ephemeral and not fish passable.

Wildlife

The slough wetland area provides habitat for a variety of waterfowl, including herons, and several duck species. Forested and scrub-shrub wetland patches also provide habitat for song birds, including red-wing blackbirds, chidadees, wrens, finches, and robins. The dense corridor of Himalayan blackberry along the wetland edge also provides habitat and food for these birds.

Local Regulations

In Bellevue, wetlands and streams are regulated under critical areas ordinance no. 5680. According to LUC 20.25H.095, buffer width determinations for wetlands are based on wetland category and habitat functions score. Wetland A contains multiple hydrogeomorphic (HGM) classes, including lake-fringe, depressional, and some riverine patches. This makes Wetland A difficult to classify by HGM class. Therefore, the ratings for both depressional and lake-fringe HGM classes were compared using the Ecology rating form. Both HGM ratings resulted in a Category II rating. Additionally according to the special conditions rating criteria, Wetland A is a Category II wetland, because it is at least 1 acre, contains depressions with open water, and contiguous freshwater wetlands. Wetland A scores 31 points for habitat functions and 66 points

total. Category II wetlands in the City of Bellevue with habitat scores of 29 to 36 points require a 225 foot buffer (LUC 20.25H.095.C). Additionally, Bellevue requires that there be a structure setback of 20 feet (for Category II wetlands with high habitat functions) measured from the edge of the wetland buffer (20.25H.035.A). However, no structures are proposed for this project.

Buffer width determinations for streams are based on stream type and the current site condition (developed or undeveloped). This parcel tract is currently undeveloped. Due to documented fish use in the adjacent slough, Stream A meets the definition of a Type F stream. Stream B is classified as Type N, due to ephemeral flow and lack of a channel through the wetland area above the slough. Open streams on undeveloped sites in Bellevue require the buffer listed in Table 2 below. Additionally, Bellevue requires that there be a structure setback of 20 feet for Type F streams and 15 feet for Type N streams (20.25H.075.D).

Table 2. Stream classification and buffer per LUC 20.25H.075.C.

Stream	**Stream Classification**	**Buffer**
Stream A	Type F	100 feet
Stream B	Type N	50 feet

Uses and development allowed within critical areas pursant to LUC 20.25H.055 include new or expanded city and public parks, vegetation management, and new or expanded bridges and culverts. The applicable performance standards in subsection C would apply to the allowed uses. Pursuant to LUC 20.25H.055.C.2, new and expanded uses or development may be allowed in a critical area or critical area buffer if there are no feasible alternatives with less impact. The project plan must minimize critical area impacts. New or expanded bridges and culverts shall comply with the WDFW *Design of Road Culverts for Fish Passage*. According to LUC 20.25H.055.C.3.g, trails in new and expanded city and public parks that are located within a critical area and/or buffer must meet the following standards:

(A) Trail location and design shall result in the least impacts on the critical area or critical area buffer;
(B) Trails shall be designed to compliment and enhance the environmental, educational, and social functions and values of the critical area with trail design and construction focused on managing and controlling public access and limiting uncontrolled access;
(C) Trails shall be designed to avoid disturbance of significant trees and to limit disturbance of native understory vegetation;
(D) Trails shall be designed to avoid disturbance of habitat used for salmonid rearing or spawning or by any species of local importance;
(E) The trail shall be the minimum width necessary to accommodate the intended function or objective;
(F) All work shall be consistent with the City of Bellevue's "Environmental Best Management Practices" and all applicable City of Bellevue codes and standards, now or as hereafter amended;
(G) The facility shall not significantly change or diminish overall aquatic area flow peaks, duration or volume or flood storage capacity, or hydroperiod;

(H) Where feasible and consistent with any accessibility requirements, any trail shall be constructed of pervious materials;
(I) Crossings over and penetrations into wetlands and streams shall be generally perpendicular to the critical area, and shall be accomplished by bridging or other technique designed to minimize critical area disturbance considering the entire trail segment and function; and
(J) Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.

Removal of noxious/invasive species from a critical area buffer is allowed without a Critical Areas Land Use Permit or a Vegetation Management Plan, if the removal is done with hand labor and hand-operated equipment. Hazard trees may also be removed from a critical area or critical area buffer if removed trees are replaced pursuant to a restoration plan meeting the requirements of LUC 20.25H.210, wildlife snags are created where possible, and all cut tree stems and branches are left in the critical area or critical area buffer (LUC 20.25H.055.C.i). Short- and long-term management of vegetation in a critical area or critical area buffer including vegetation replacement requires a Vegetation Management Plan (LUC 20.25H.055.C.iv).

Pursuant to 20.25H.080.A and 20.25H.100, development on sites with a type S or F stream, wetland, or associated critical area buffer must reduce impacts by directing lights and noise away from the critical area, redirecting toxic runoff away from the critical area, limiting the use of pesticides, insecticides and fertilizers as directed by the city's *Environmental Best Management Practices*, and densely planting the outer edge of the buffer to limit access.

Any plan drafted to do work in a critical area or it's buffer must be approved by the City of Bellevue through a review process.

State and Federal Regulation

Wetlands are also regulated by the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act. Any filling of Waters of the State, including wetlands (except isolated wetlands), would likely require notification and permits from the Corps. Wetland A would not be considered isolated. Federally permitted actions that could affect endangered species (i.e. salmon or bull trout) may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Services and/or the National Marine Fisheries Service. Application for Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from the State Department of Ecology.

WDFW has jurisdiction over any project that may "use, divert, obstruct, or change the natural bed of any of the salt or freshwaters of the state" (RCW 77.55.011). Any proposal to conduct in-stream work requires a Hydraulic Project Approval from WDFW.

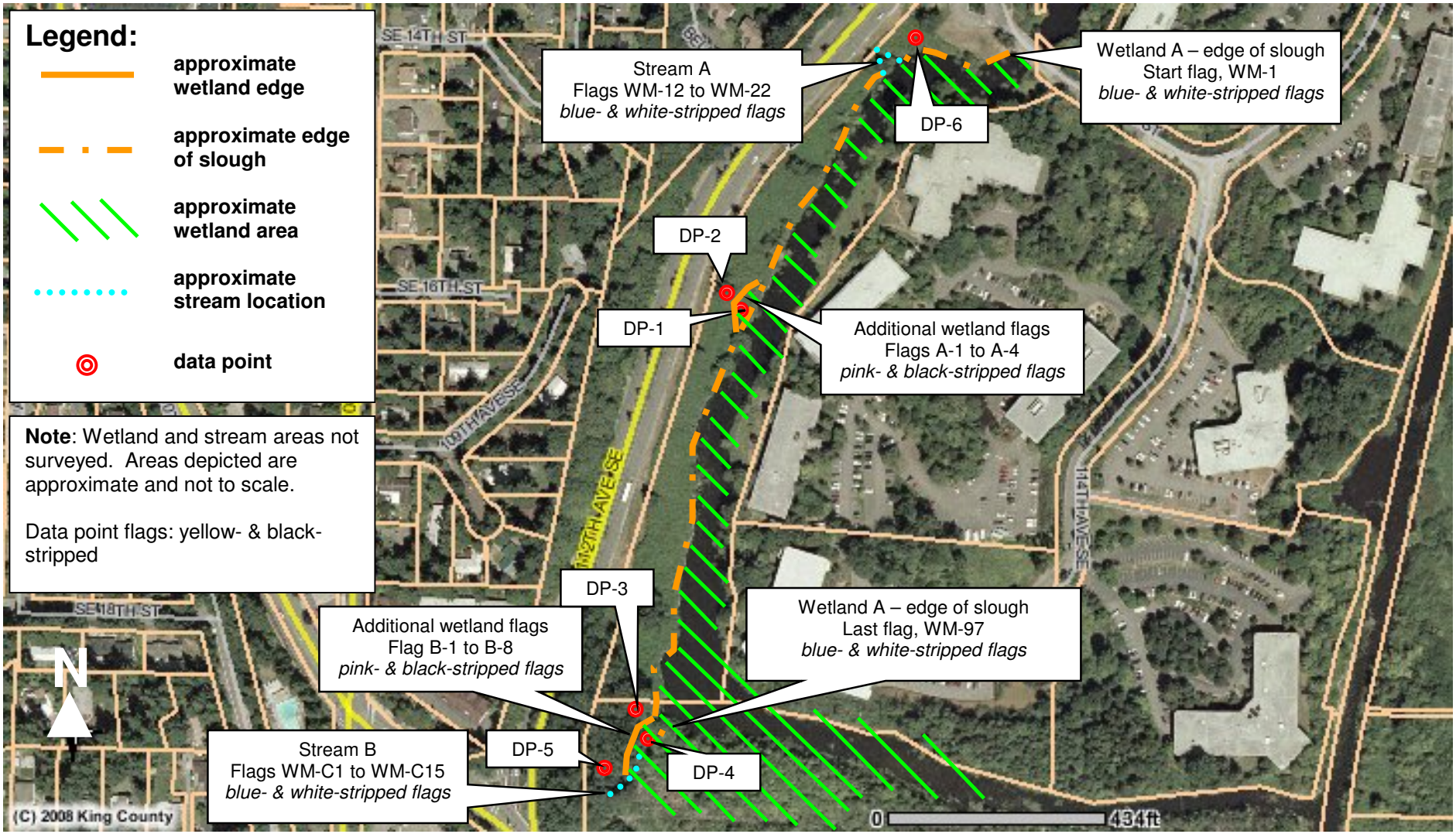
Generally, neither the Corps nor Ecology regulates buffers unless direct wetland impacts are proposed.

Please call if you have any questions or if we can provide additional information.

Sincerely,

Nell Lund
Ecologist

Enclosures



Wetland and Stream Delineation Sketch
(parcel number 066288TRCT)
East of 112th Avenue SE and north of Bellevue Way SE
City of Bellevue, Washington
Prepared for Bellevue Parks & Community Services Dept.
Attn: Geoff Bradley
January 24, 2008

THE WATERSHED COMPANY
750 Sixth Street South | Kirkland | WA 98033
p 425.822.5242 f 425.827.8136

Wetland name or number __A_____

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): 112th Ave SE/Mercer Slough Date of site visit: 1/24/2008

Rated by: MF, NL Trained by Ecology? Yes ☒ No ☐ Date of Training Fall '06

SEC: 5 TWNSHP: 24N RNGE: 5E Is S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure ___ Estimated Size ____

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ II ☒ III ☐ IV ☐

Score for Water Quality Functions	24
Score for Hydrologic Functions	11
Score for Habitat Functions	31
TOTAL score for functions	**66**

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☒ Does not Apply ☐

Final Category (choose the "highest" category from above)

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		**Depressional**	**X**
Natural Heritage Wetland		**Riverine**	**X**
Bog		**Lake-fringe**	**X**
Mature Forest		**Slope**	
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above	**X**	Check if unit has multiple HGM classes present	**X**

Wetland name or number __A_____

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered* ***animal*** *or* ***plant*** *species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered* ***animal*** *species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).	X [1]	X
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	X [2]	
SP4. *Does the wetland unit have a local significance in addition to its functions*? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	X [3]	

[1]Threatened and Endangered animals (fish) are <u>not</u> documented as present in Mercer Slough West, but cannot be presumed absent

[2] Puget sound Steelhead are listed as a Washington State Species of Concern

[3] Continuation of 320-acre park, largest wetland on Lake Washington

<u>To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.</u>

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number __A_____

Classification of Wetland Units in Western Washington

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

1. Are the water levels in the wetland unit usually controlled by tides (i.e. except during floods)?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

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

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

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

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

☐ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m)?

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake-fringe (Lacustrine Fringe)**

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

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☐ The water leaves the wetland **without being impounded**?

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

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

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

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river.

☐ The overbank flooding occurs at least once every two years

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

☒ NO - go to 6 ☐ **YES** – The wetland class is **Riverine**

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

☒ NO – go to 7 ☐ **YES –** The wetland class is **Depressional**

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

☒ NO – go to 8 ☐ **YES –** The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	*HGM Class to Use in Rating*
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

Wetland name or number __A_____

D	Depressional and Flats Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
D	**D 1. Does the wetland have the <u>potential</u> to improve water quality?**	***(see p. 38)***
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)..... points = 3 Unit has an intermittently flowing, or highly constricted permanently flowing outlet..... points = 2 Unit has an unconstricted, or slightly constricted, surface outlet *(permanently flowing)*. points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet**, and/or outlet is a man-made ditch ..... points = 1 (*If ditch is not permanently flowing treat unit as "intermittently flowing"*)	1
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (*use NRCS definitions*). YES points = 4 NO points = 0	4
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed, vegetation > = 95% of area ..... points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area ..... points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area ..... points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area..... points = 0	5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.* Area seasonally ponded is > ½ total area of wetland..... points = 4 Area seasonally ponded is > ¼ total area of wetland..... points = 2 Area seasonally ponded is < ¼ total area of wetland..... points = 0 NOTE: *See text for indicators of seasonal and permanent inundation.*	2
D	**Total for D 1** *Add the points in the boxes above*	12
D	**D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ☐ Grazing in the wetland or within 150 ft ☒ Untreated stormwater discharges to wetland ☒ Tilled fields or orchards within 150 ft of wetland ☒ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging ☒ Residential, urban areas, golf courses are within 150 ft of wetland ☐ Wetland is fed by groundwater high in phosphorus or nitrogen ☐ Other_____ **YES** multiply score in D 1. **by 2** **NO** multiply score in D 1. **by 1**	***(see p. 44)*** multiplier <u>2</u>
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	**24**

Wetland name or number __A_____

D	Depresssional and Flats Wetlands	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	***(see p. 46)***
D	D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)..... points = 4 Unit has an intermittently flowing, or highly constricted permanently flowing outlet..... points = 2 Unit has an unconstricted, or slightly constricted, surface outlet *(permanently flowing)*. points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet**, and/or outlet is a man-made ditch ..... points = 1 (*If ditch is not permanently flowing treat unit as "intermittently flowing")* Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*). points = 0	1
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet For units with no outlet measure from the surface of permanent water or deepest part (if dry).* Marks of ponding are at least 3 ft or more above the surface or bottom of outlet..... points = 7 The wetland is a "headwater" wetland" ..... points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet..... points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet ..... points = 3 Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water ..... points = 1 Marks of ponding less than 0.5 ft..... points = 0	7
D	D 3.3 Contribution of wetland unit to storage in the watershed *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit ..... points = 5 The area of the basin is 10 to 100 times the area of the unit ..... points = 3 The area of the basin is more than 100 times the area of the unit ..... points = 0 Entire unit is in the FLATS class ..... points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	11
D	**D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. **Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc.** OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. *Note which of the following conditions apply.* ☐ Wetland is in a headwater of a river or stream that has flooding problems ☐ Wetland drains to a river or stream that has flooding problems ☐ Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems ☐ Other _ _____ ☐ **YES** multiplier is **2** ☒ **NO** multiplier is **1**	*(see p. 49)* multiplier <u>1</u>
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	**11**

Wetland name or number __A_____

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat**	
H 1. Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure ***(see p. 72)*** *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ☒ Aquatic bed ☒ Emergent plants ☒ Scrub/shrub (areas where shrubs have >30% cover) ☒ Forested (areas where trees have >30% cover) ☒ Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more ..... points = 4 3 types ..... points = 2 2 types ..... points = 1 1 type ..... points = 0	4
H 1.2. Hydroperiods ***(see p. 73)*** *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* ☒ Permanently flooded or inundated — 4 or more types present ..... points = 3 ☒ Seasonally flooded or inundated — 3 types present..... points = 2 ☒ Occasionally flooded or inundated — 2 types present ..... points = 1 ☒ Saturated only — 1 types present…….points = 0 ☒ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ ***Lake-fringe wetland* = 2 points** ☐ ***Freshwater tidal wetland* = 2 points**	3
H 1.3. Richness of Plant Species ***(see p. 75)*** Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle* If you counted: > 19 species..... points = 2 *List species below if you want to:* 5 - 19 species..... points = 1 < 5 species ..... points = 0	2

Wetland name or number __A_____

H 1.4. Interspersion of habitats ***(see p. 76)*** Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. None = 0 points Low = 1 point Moderate = 2 points [riparian braided channels] High = 3 points NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".	3
H 1.5. Special Habitat Features: ***(see p. 77)*** *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* ☒ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). ☒ Standing snags (diameter at the bottom > 4 inches) in the wetland ☒ Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream for at least 33 ft (10m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present ☒ At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in each stratum of plants	4
H 1. TOTAL Score - potential for providing habitat *Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5*	16

Wetland name or number __A_____

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers ***(see p. 80)*** *Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."* ☐ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) ..... Points = 5 ☐ 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... Points = 4 ☐ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference..... Points = 4 ☒ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... Points = 3 ☐ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference..... Points = 3 **If buffer does not meet any of the criteria above** ☐ No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK..... Points = 2 ☐ No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK..... Points = 2 ☐ Heavy grazing in buffer. ..... Points = 1 ☐ Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland ..... Points = 0 ☐ Buffer does not meet any of the criteria above. Points = 1	3
H 2.2 Corridors and Connections ***(see p. 81)*** H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors*, *heavily used gravel roads*, *paved roads, are considered breaks in the corridor*). YES = **4 points** (*go to H 2.3*) **NO** = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? YES = **2 points** (*go to H 2.3*) **NO** = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? YES = **1 point** NO = **0 points**	4

Wetland name or number __A_____

H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see p. 82)*** Which of the following priority habitats are within 330ft (100m) of the wetland? *(see text for a more detailed description of these priority habitats)* ☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.8 ha (2 acres). ☐ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft. ☐ **Old-growth forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. ☐ **Mature forests:** Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. ☐ **Prairies:** Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community. ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages ☐ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. ☒ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. ☐ **Estuary/Estuary-like:** Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5% during the period of average annual low flow. Includes both estuaries and lagoons. ☐ **Marine/Estuarine Shorelines**: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control). If wetland has **3 or more** priority habitats **= 4 points** If wetland has **2** priority habitats = **3 points** If wetland has **1** priority habitat **= 1 point** No habitats = **0 points** *Note: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4.*	3

Wetland name or number __A_____

H 2.4 Wetland Landscape *(choose the **one** description of the landscape around the wetland that best fits)* ***(see p. 84)*** There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. ..... points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile ..... points = 5 There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed ..... points = 3 The wetland is Lake-fringe on a lake **with** disturbance and there are 3 other lake-fringe wetland within ½ mile ..... points = 3 There is at least 1 wetland within ½ mile. ..... points = 2 There are no wetlands within ½ mile. ..... points = 0	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4*	15
TOTAL for H1 from page 14	16
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	31

WETLAND DETERMINATION DATA FORM

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242 Fax (425) 827-8136

WETLAND? YES NO

Date: January 25, 2008 Data point: 1 Wetland # : A
Project Name: 112th Ave/Mercer Slough Data point location: See sketch
Biologist(s): MF, NL

Do normal environmental conditions exist? YES NO
Has vegetation, soils &/or hydrology been significantly disturbed within the past 5 yrs? YES NO

VEGETATION

Stratum: T=tree, S=shrub, H=herb, V=vine

Dominant Species	Stratum	WIS	Other Species	Stratum	WIS
Cornus sericea	S	FACW	*Alnus rubra*	T	FAC
Rubus armeniacus	V	FACU			
Salix lucida spp. *lasiandra*	T	FACW+			

Percent of dominant species that are FAC, FACW or OBL 67%

Vegetation criteria met? YES NO
Notes:

SOILS

Depth	Horizon	Matrix Color	Mottles (Distinct/Prominent)	Texture
0-14”	B	10YR 2/2	None	organic

Hydric Indicators:
- ____ Gleyed/Low Chroma
- X Sulfidic odor
- ____ Histosol
- ____ Other (list in notes)

Soil Criteria Met? YES NO
Notes:

HYDROLOGY

Surface saturation? YES NO
Depth to saturation 0”
Depth of inundation 0”
Depth to free water in pit 10”
Flow? YES NO
Channel? ____ Sheet? ____

Primary Indicators: (1 required)
- ____ Observation of inundation
- X Observation of soil saturation
- ____ Water marks
- ____ Drift lines or drainage patterns
- ____ Sediment deposits

Secondary Indicators: (≥2 required)
- ____ Oxidized root channels
- ____ Water-stained leaves
- ____ Local soil survey data
- ____ FAC-neutral test

Hydrologic Criteria Met? YES NO

Recent rainfall: Very high High Normal Low Very low

Notes:

WILDLIFE OBSERVATIONS AND GENERAL NOTES

WETLAND DETERMINATION DATA FORM

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242 Fax (425) 827-8136

WETLAND? YES NO

Date: January 25, 2008 Data point: DP-2 Wetland # : A
Project Name: 112th Ave/Mercer Slough Data point location:
Biologist(s): MF, NL

Do normal environmental conditions exist? YES NO
Has vegetation, soils &/or hydrology been significantly disturbed within the past 5 yrs? YES NO

VEGETATION

Stratum: T=tree, S=shrub, H=herb, V=vine

Dominant Species	Stratum	WIS	Other Species	Stratum	WIS
Rubus armeniacus	V	FACU			

Percent of dominant species that are FAC, FACW or OBL 0%

Vegetation criteria met? YES NO
Notes:

SOILS

Depth	Horizon	Matrix Color	Mottles (Distinct/Prominent)	Texture
0-12"	B	10YR 2/2	None	organic

Hydric Indicators:
- ____ Gleyed/Low Chroma
- No Sulfidic odor
- ____ Histosol
- X Other (list in notes)

Soil Criteria Met? YES NO
Notes: Soil texture crumbly, profile not saturated

HYDROLOGY

Surface saturation? YES NO
Depth to saturation ~top 6"
Depth of inundation No
Depth to free water in pit No
Flow? YES NO
Channel? ____ Sheet? ____

Primary Indicators: (1 required)
- ____ Observation of inundation
- * X Observation of soil saturation
- ____ Water marks
- ____ Drift lines or drainage patterns
- ____ Sediment deposits

Secondary Indicators: (≥2 required)
- ____ Oxidized root channels
- ____ Water-stained leaves
- ____ Local soil survey data
- ____ FAC-neutral test

Hydrologic Criteria Met? YES NO *

Recent rainfall: Very high High Normal Low Very low

Notes: * saturation in top of profile only, most likely not saturated in the growing season

WILDLIFE OBSERVATIONS AND GENERAL NOTES

Song birds

WETLAND? YES NO

WETLAND DETERMINATION DATA FORM

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242 Fax (425) 827-8136

Date: January 25, 2008 Data point: DP-3 Wetland # : A
Project Name: 112th Ave/Mercer Slough Data point location:
Biologist(s): MF, NL

Do normal environmental conditions exist? YES NO
Has vegetation, soils &/or hydrology been significantly disturbed within the past 5 yrs? YES NO

VEGETATION

Stratum: T=tree, S=shrub, H=herb, V=vine

Dominant Species	Stratum	WIS	Other Species	Stratum	WIS
Polygonum bohemicum	H	NI	*Populus balsamifera*	T	FAC
Rubus armeniacus	V	FACU			
Salix sp.	T	FAC			

Percent of dominant species that are FAC, FACW or OBL 33%

Vegetation criteria met? YES NO
Notes:

SOILS

Depth	Horizon	Matrix Color	Mottles (Distinct/Prominent)	Texture
0-10”	B	7.5YR 2.5/2	None	organic

Hydric Indicators:
- ____ Gleyed/Low Chroma
- No Sulfidic odor
- ____ Histosol
- X Other (list in notes)

Soil Criteria Met? YES NO
Notes:

HYDROLOGY

Surface saturation? YES NO
Depth to saturation 12”
Depth of inundation No
Depth to free water in pit No
Flow? YES NO
Channel? ____ Sheet? ____

Primary Indicators: (1 required)
- ____ Observation of inundation
- X Observation of soil saturation
- ____ Water marks
- ____ Drift lines or drainage patterns
- ____ Sediment deposits

Secondary Indicators: (≥2 required)
- ____ Oxidized root channels
- ____ Water-stained leaves
- ____ Local soil survey data
- ____ FAC-neutral test

Hydrologic Criteria Met? YES NO

Recent rainfall: Very high High Normal Low Very low

Notes: Soil saturation starts at 12 inch depth

WILDLIFE OBSERVATIONS AND GENERAL NOTES

Song birds

WETLAND? YES NO

Date: January 25, 2008 Data point: DP-4 Wetland # : A

WETLAND DETERMINATION DATA FORM

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242 Fax (425) 827-8136

Project Name: 112th Ave/Mercer Slough Data point location: _____
Biologist(s): MF, NL

Do normal environmental conditions exist? YES NO
Has vegetation, soils &/or hydrology been significantly disturbed within the past 5 yrs? YES NO

VEGETATION

Stratum: T=tree, S=shrub, H=herb, V=vine

Dominant Species	Stratum	WIS	Other Species	Stratum	WIS
Phalaris arundinacea	H	FACW	*Rubus armeniacus*	V	FACU
			Populus balsamifera	T	FAC
			Polygonum x bohemicum	H	NI

Percent of dominant species that are FAC, FACW or OBL 100%

Vegetation criteria met? YES NO
Notes:

SOILS

Depth	Horizon	Matrix Color	Mottles (Distinct/Prominent)	Texture
0-10”	B	7.5YR 2.5/1	None	Organic
10-16”	B	7.5YR 2.5/1	None	Organic
10-16”	B	7.5YR 2.5/2	None	Organic

Hydric Indicators:
- ____ Gleyed/Low Chroma
- Yes Sulfidic odor
- ____ Histosol
- ____ Other (list in notes)

Soil Criteria Met? YES NO
Notes: Sulfidic odor starts at approximate 10-inch depth

HYDROLOGY

Surface saturation? YES NO
Depth to saturation 0”
Depth of inundation No
Depth to free water in pit 10”
Flow? YES NO
Channel? ____ Sheet? ____

Primary Indicators: (1 required)
- ____ Observation of inundation
- X Observation of soil saturation
- ____ Water marks
- ____ Drift lines or drainage patterns
- ____ Sediment deposits

Secondary Indicators: (≥2 required)
- ____ Oxidized root channels
- ____ Water-stained leaves
- ____ Local soil survey data
- ____ FAC-neutral test

Hydrologic Criteria Met? YES NO

Recent rainfall: Very high High Normal Low Very low

Notes:

WILDLIFE OBSERVATIONS AND GENERAL NOTES

Song birds

WETLAND? YES NO

Date: January 25, 2008 Data point: DP-5 Wetland # : A
Project Name: 112th Ave/Mercer Slough Data point location: _____

WETLAND DETERMINATION DATA FORM

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242 Fax (425) 827-8136

Biologist(s): MF, NL

Do normal environmental conditions exist? YES NO
Has vegetation, soils &/or hydrology been significantly disturbed within the past 5 yrs? YES NO

VEGETATION

Stratum: T=tree, S=shrub, H=herb, V=vine

Dominant Species	Stratum	WIS	Other Species	Stratum	WIS
Pyrus fusca	T	FACW	*Populus balsamifera*	T	FAC
Sambucus racemosa	S	FACU	*Rubus armeniacus*	V	FACU
			Polystichum munitum	H	FACU
			Cornus sericea	S	FACW

Percent of dominant species that are FAC, FACW or OBL 50%

Vegetation criteria met? YES NO
Notes:

SOILS

Depth	Horizon	Matrix Color	Mottles (Distinct/Prominent)	Texture
0-10”	B	10YR 3/1	None	Silty loam

Hydric Indicators:
- ____ Gleyed/Low Chroma
- No Sulfidic odor
- ____ Histosol
- x Other (list in notes)

Soil Criteria Met? YES NO
Notes: Approx. 15% of matrix contains brown organic specs

HYDROLOGY

Surface saturation? YES NO
Depth to saturation NA
Depth of inundation NA
Depth to free water in pit NA
Flow? YES NO
Channel? ____ Sheet? ____

Primary Indicators: (1 required)
- ____ Observation of inundation
- ____ Observation of soil saturation
- ____ Water marks
- ____ Drift lines or drainage patterns
- ____ Sediment deposits

Secondary Indicators: (≥2 required)
- ____ Oxidized root channels
- ____ Water-stained leaves
- ____ Local soil survey data
- ____ FAC-neutral test

Hydrologic Criteria Met? YES NO

Recent rainfall: Very high High Normal Low Very low

Notes: Soil not saturated

WILDLIFE OBSERVATIONS AND GENERAL NOTES

WETLAND? YES NO

Date: January 25, 2008 Data point: DP-6 Wetland # : A
Project Name: 112th Ave/Mercer Slough Data point location:
Biologist(s): MF, NL

WETLAND DETERMINATION DATA FORM

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242 Fax (425) 827-8136

Do normal environmental conditions exist? YES NO
Has vegetation, soils &/or hydrology been significantly disturbed within the past 5 yrs? YES NO

VEGETATION

Stratum: T=tree, S=shrub, H=herb, V=vine

Dominant Species	Stratum	WIS	Other Species	Stratum	WIS
Rubus armeniacus	V	FACU			
Cornus sericea	S	FACW			

Percent of dominant species that are FAC, FACW or OBL 0%

Vegetation criteria met? YES NO
Notes:

SOILS

Depth	Horizon	Matrix Color	Mottles (Distinct/Prominent)	Texture
0-12"	B	10YR 2/1.5	None	Sandy loam

Hydric Indicators:
- ____ Gleyed/Low Chroma
- No Sulfidic odor
- ____ Histosol
- ____ Other (list in notes)

Soil Criteria Met? YES NO
Notes: Chroma brighter than 1, but slightly darker than 2

HYDROLOGY

Surface saturation? YES NO
Depth to saturation NA
Depth of inundation NA
Depth to free water in pit NA
Flow? YES NO
Channel? ____ Sheet? ____

Primary Indicators: (1 required)
- ____ Observation of inundation
- ____ Observation of soil saturation
- ____ Water marks
- ____ Drift lines or drainage patterns
- ____ Sediment deposits

Secondary Indicators: (≥2 required)
- ____ Oxidized root channels
- ____ Water-stained leaves
- ____ Local soil survey data
- ____ FAC-neutral test

Hydrologic Criteria Met? YES NO

Recent rainfall: Very high High Normal Low Very low

Notes: Soil moist but not saturated

WILDLIFE OBSERVATIONS AND GENERAL NOTES

Song birds

Critical Areas Land Use Permit Decision Criteria
20.30P.140

The Director may approve or approve with modifications an application for a Critical Areas Land Use Permit if:

A. The proposal obtains all other permits required by the Land Use Code.

Response: In addition to a Critical Areas Land Use Permit, the project applicant will apply for a Shoreline Substantial Development Permit and a Clear and Grade Permit. No other City of Bellevue land use permits will be required of this project.

B. The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical are and critical area buffer.

Response: The proposed project involves the removal of invasive species (Himalayan blackberry) from a critical area and critical area buffer to allow for construction of a pervious pedestrian trail, bridge crossing and timber staircase. Design and placement of the trail, bridge and staircase have avoided impacts to the on-site wetland and stream channels. Impacts are proposed within the 200-foot shoreline buffer (from Mercer Slough), 225-foot Category II wetland buffer, 100-foot Type F stream buffer, and 50-foot Type N stream buffer. Additionally, the project proposes an extensive restoration plan that includes native plantings within the wetland and wetland buffer (see attached plans). Therefore, through blackberry removal and native restoration, the design and development of the proposed project will not decrease ecological function of the project site, and may improve ecological function over the long-term. Furthermore, the public will now have access to this area to enjoy the improved habitat.

C. The proposal incorporates the performance standards of Part 20.25H LUC to the maximum extent applicable.
20.25H.055.C.3.g New and Expanded City and Public Parks

i. Trails. New nonmotorized trails within the critical area or critical area buffer must meet the following standards:

(A) Trail location and design shall result in the least impacts on the critical area or critical area buffer.

Response: Design of the proposed trail, bridge crossing, and staircase will result in the least amount of critical area impacts possible. All impacts will take place within critical area buffers. Additionally, invasive species within the critical area and critical area buffer will be removed and an extensive restoration plan will be implemented. The entire length of the trail is approximately 1,890 feet long, all of which will be located within shoreline

and wetland buffers, and 307 feet of which will be located within stream buffers. The project also proposes the removal of approximately 73,625 sq. ft. of invasive plants and the planting of 62,875 sq. ft. of native vegetation. Furthermore, to limit impacts within the critical area buffer, the proposed trail will be constructed of pervious materials. The woodchips proposed for the trail will help avoid erosion of the trail during wet weather.

(B) *Trails shall be designed to compliment and enhance the environmental, educational, and social functions and values of the critical area with trail design and construction focused on managing and controlling public access and limiting uncontrolled access.*

Response: The proposed trail, stream crossing, and restoration plantings have been designed to enhance several aspects of the critical area.

- Environmentally, the critical area will be improved through implementation of an extensive restoration plan that includes removal of invasive species and plantings of native species within and adjacent to the critical area. Additionally, signs will be placed adjacent to the proposed trail identifying the critical areas and prohibiting access to them. Overall, ecological function within the critical area will improve as a result of the proposed project.
- Educational and social values of the critical area will also be improved as a result of the proposed project. Currently, the critical areas within the project site are inaccessible due to overgrown blackberries. Implementation of the proposed project will involve removal of these species, construction of a pedestrian trail and stream crossing, and the planting of native vegetation. Therefore, the public would be provided with additional passive access opportunities, all while protecting the critical area and creating further awareness of the ecological sensitivity and uniqueness of the area.

(C) *Trails shall be designed to avoid disturbance of significant trees and to limit disturbance of native understory vegetation.*

Response: Approximately 22 significant trees exist within the project area. All existing trees will be protected during invasive species removal and trail construction and will remain post-construction. Non-native blackberries dominate the area and will be removed. Therefore, no significant trees or native plant species will be permanently impacted by the proposed project.

(D) *Trails shall be designed to avoid disturbance of habitat used for salmonid rearing or spawning or by any species of local importance.*

Response: The proposed trail has been located above the ordinary high water mark of Mercer Slough and outside of its associated wetland.

Additionally, the proposed bridge crossing will span the ordinary high water mark of the on-site stream channel. Therefore, the project will not disturb any habitat potentially used for salmonid rearing or spawning.

(E) *The trail shall be the minimum width necessary to accommodate the intended function or objective.*

Response: The proposed trail and bridge crossing have been designed at a width of approximately four feet. The proposed width is intended to provide adequate and safe capacity for expected demand. The entire trail alignment has been located outside of the on-site wetlands and above the ordinary high water mark of streams, and no native plants will be impacted by trail or bridge construction. Additionally, the trail will be constructed of pervious bark chips.

(F) *All work shall be consistent with the City of Bellevue's "Environmental Best Management Practices" and all applicable City of Bellevue codes and standards, now or as hereafter amended.*

Response: All trail, bridge crossing, and staircase work shall be consistent with the City of Bellevue Clearing & Grading Code (Chapter 23.76), permit conditions, and all other applicable codes, ordinances, and standards, including "Environmental Best Management Practices".

(G) *The facility shall not significantly change or diminish overall aquatic area flow peaks, duration or volume or flood storage capacity, or hydroperiod.*

Response: All impacts associated with the proposed trail, bridge crossing, and staircase project are located above the ordinary high water mark of the on-site streams and outside the limits of nearby wetlands. Additionally, the trail will be constructed of pervious materials, thereby eliminating any additional runoff from the area. Therefore, there will be no change in flow peaks or storage capacity within Mercer Slough or its associated wetland and tributaries as a result of this project.

(H) *Where feasible and consistent with any accessibility requirements, any trail shall be constructed of pervious materials.*

Response: Although the proposed bridge is not considered pervious, it only temporarily interrupts precipitation that would otherwise immediately enter the stream. It will, however, be constructed of pressure-treated timber with deck panels that are designed to have ¼" gaps between each panel. The proposed trail will be covered with woodchips, and would therefore be considered 100% pervious.

(I) Crossings over and penetrations into wetlands and streams shall be generally perpendicular to the critical area, and shall be accomplished by bridging or other technique designed to minimize critical area disturbance considering the entire trail segment and function.

Response: The proposed trail project is being constructed above the ordinary high water mark of Mercer Slough and outside of its associated wetland. Additionally, the proposed bridge crossing will span the ordinary high water mark of the on-site stream channel and will be constructed perpendicular to the existing channel. Therefore, all disturbances will take place outside of the on-site critical areas.

(J) Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.

Response: The project proposes to remove invasive species and construct a pervious pedestrian trail and bridge crossing. The entire length of the 4-foot-wide trail is approximately 1,890 feet, all of which is located within the shoreline and Category II wetland buffer, and 307 feet of which is located within stream buffers. The project also proposes the removal of approximately 73,625 sq. ft. of invasive plants along the trail corridor and the planting of 62,875 sq. ft. of native vegetation. These actions are included in a mitigation and restoration plan in accordance with LUC 20.25H.210. Monitoring and maintenance obligations are outlined on Sheet 10 of the attached project plans.

D. The proposal will be served by adequate public facilities including streets, fire protection, and utilities.

Response: The proposed project will be served by adequate public facilities. No additional public facilities will be required with implementation of the proposed project.

E. The proposal includes a mitigation or restoration plan consistent with the requirements of LUC 20.25H.210; except that a proposal to modify or remove vegetation pursuant to an approved Vegetation Management Plan under LUC 20.25H.055.C.3.i shall not require a mitigation or restoration plan.

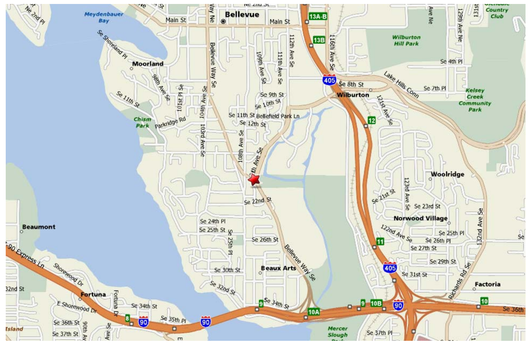
Response: A mitigation and restoration plan has been prepared in accordance with the requirements of LUC 20.25H.210.

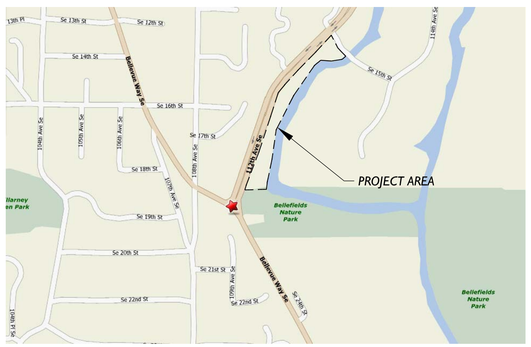
F. The proposal complies with other applicable requirements of this code.

Response: The proposed project complies with all other applicable City of Bellevue Land Use Codes, including 20.25H and 20.25E.

MERCER SLOUGH / 112th AVE SE RESTORATION

BELLEVUE, WA





VICINITY MAPS

SHEET INDEX

1	CRITICAL AREA / BUFFER FIGURE
2	TESC PLAN
3	CLEARING / GRADING PLAN - SOUTH
4	CLEARING / GRADING PLAN - NORTH
5	PLANTING PLAN - SOUTH / PLANT SPECS.
6	PLANTING PLAN - CENTER
7	PLANTING PLAN - NORTH
8	IRRIGATION PLAN
9	STRUCTURAL DETAILS
10	ENHANCEMENT PLAN NOTES

ORIGINAL PLANS ON 24" x 36" SHEETS. ADJUST SCALES ACCORDINGLY.

PROJECT AERIAL VIEW

IMPORTANT:
ANY ALTERATION OR REVISION TO THESE PLANS REQUIRES A SEPARATE REVIEW OR OTHER WRITTEN APPROVAL.

GENERAL NOTES

1. All construction must be in accordance with the City of Bellevue's Development Standards; the City of Bellevue's Engineering & Utility Standards; the Bellevue City Code; the Uniform Building Codes; permit conditions; and all other applicable codes, ordinances, standards and policies. Applicable installation details are incorporated by reference to Bellevue's Engineering & Utilities published standards. All applicable erosion control measures must be taken.
2. A copy of approved plans must be on-site whenever construction is in progress.
3. The Contractor is responsible for obtaining any mechanical, electrical, or other required permits prior to beginning construction.
4. *The survey information was provided by the City of Bellevue based on Aerial photography & GIS database and contains limited information on the location of existing utilities and site structures. Contractor is to field check grades, elevations, underground utilities and site conditions prior to construction.*
5. It is the sole responsibility of the contractor to: 1) *independently verify all existing utility locations* and 2) *discover and avoid any other utilities / features which may be affected by implementation of this plan.*
6. Site shall be restored to better or equal conditions in any areas affected by this work.
7. Scheduling: All work shall be coordinated with Owner to achieve minimal disturbance to roadway operations.
8. Contractor shall have proven experience in similar projects and be thoroughly familiar with City of Bellevue applicable standards and codes prior to commencement of work.
9. This layout is diagrammatic. Contractor shall coordinate exact locations of points of connection to existing systems with Owner prior to beginning of work.

PROJECT SUMMARY:

RESTORATION OF HILLSIDE AND WETLAND ALONG MERCER SLOUGH. WORK INCLUDES (BUT IS NOT LIMITED TO) MOBILIZATION, TEMPORARY EROSION & SEDIMENTATION CONTROL, REMOVAL OF ALL BLACKBERRY & OTHER INVASIVE PLANTS, CONSTRUCTION OF A 4' WIDE SOFT SURFACE TRAIL, WOODEN BRIDGE & STAIRS, AND THE INSTALLATION OF TREES, SHRUBS, AND GROUNDCOVER.

BEFORE WORK BEGINS:

CALL 425 - 452 - 6865 TO SCHEDULE PRE-CONSTRUCTION MEETING WITH THE BUILDING INSPECTOR.

CLEARING AND GRADING STANDARD NOTES

1. All clearing & grading construction must be in accordance with City of Bellevue (COB) *Clearing & Grading Code, Clearing & Grading Erosion Control Standard Details (EC-1 through EC-23), Development Standards, Land Use Code, Uniform Building Code*, permit conditions, and all other applicable codes, ordinances, and standards. The design elements within these plans have been reviewed according to these requirements. Any variance from adopted erosion control standards is not allowed unless specifically approved by the City of Bellevue Department of Planning & Community Development (PCD) prior to construction.
   It shall be the sole responsibility of the applicant and the professional civil engineer to correct any error, omission, or variation from the above requirements found in these plans. All corrections shall be at no additional cost or liability to the COB. All details for structural walls, rockeries over four feet in height, geogrid reinforced rockeries and geogrid reinforced modular block walls, must be stamped by a professional engineer.
2. A copy of the approved plans must be on-site during construction. The applicant is responsible for obtaining any other required or related permits prior to beginning construction.
3. All locations of existing utilities have been established by field survey or obtained from available records and should, therefore, be considered only approximate and not necessarily complete. It is the sole responsibility of the contractor to independently verify the accuracy of all utility locations and to discover and avoid any other utilities not shown which may be affected by the implementation of this plan.
4. The area to be cleared and graded must flagged by the contractor and approved by the Clearing and Grading Inspector prior to beginning any work on the site.
5. A reinforced silt fence must be installed in accordance with COB EC-5 and shall be located as shown on the approved plans or per the Clearing and Grading Inspector, along slope contours and down slope from the building site.
6. A hard-surface construction access pad is required per Clearing & Grading Standard Detail EC-1 or EC-2. This pad must remain in place until paving is installed.
7. Clearing shall be limited to the areas within the approved disturbance limits. Exposed soils must be covered at the end of each working day when working from October 1st through April 30th. From May 1st through September 30th, exposed soils must be covered at the end of each construction week and also at the threat of rain.
8. Any excavated material removed from the construction site and deposited on property within the City limits must be done in compliance with a valid clearing & grading permit. Locations for the mobilization area and stockpiled material must be approved by the Clearing and Grading Inspector at least 24 hours in advance of any stockpiling.
9. To reduce the potential for erosion of exposed soils, or when rainy season construction is permitted, the following Best Management Practices (BMPs) are required.
   - Preserve natural vegetation for as long as possible or as required by the Clearing and Grading Inspector.
   - Protect exposed soil using plastic (EC-14), erosion control blankets, straw or mulch (COB Guide to Mulch Materials, Rates, and Use Chart), or as directed by the Clearing and Grading Inspector.
   - Install catch basin inserts as required by the Clearing and Grading Inspector or permit conditions of approval.
   - Install a temporary sediment pond, a series of sedimentation tanks, temporary filter vaults, or other sediment control facilities. Installation of exposed aggregate surfaces requires a separate effluent collection pond onsite.
10. Final site grading must direct drainage away from all building structures at a minimum 2% slope, per the *Uniform Building Code*.
11. The contractor must maintain a sweeper on site during earthwork and immediately remove soil that has been tracked onto paved areas as result of construction.
12. Turbidity monitoring may be required as a condition of clearing and grading permit approval. If required, turbidity monitoring must be performed in accordance with the approved turbidity monitoring plan and as directed by the Clearing and Grading Inspector. Monitoring must continue during site (earthwork) construction until the final sign-off by the Clearing and Grading Inspector.
13. Any project that is subject to Rainy Season Restrictions will not be allowed to perform clearing and grading activities without written approval from the PCD Director. The rainy season extends from November 1st through April 30th, as defined in section 23.76.093A of the Clearing and Grading Code.

NO.	DATE	BY	APPR.	REVISIONS
	11.28.06	JM/JB	JFB	PERMIT SET
	03.21.07	JM/JB	JFB	REVIEW SET
	02.21.08	MG/ZS	MG/KB	REVIEW FOR PERMITTING

Approved By

PARKS DESIGN MANAGER — DATE
Geoff Bradley
PROJECT MANAGER — DATE

MG / ZS — 02.18.08 — DESIGNED BY — DATE
ZS — 02.18.08 — DRAWN BY — DATE
MG / KB — 02.18.08 — CHECKED BY — DATE

City of Bellevue
Dept. of Parks and Community Services

THE WATERSHED COMPANY
Science & Design
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242 / 425.827.8136
www.watershedco.com

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
MARK S. GARFF
CERTIFICATE NO. 888

MERCER SLOUGH / 112th AVE SE
RESTORATION

COVER

TWC #: 070203

CRITICAL AREA / BUFFER FIGURE

SCALE: 1" = 50'-0" ORIGINAL PLANS ON 24" x 36" SHEETS. ADJUST SCALES ACCORDINGLY.

0 50' 100' 200'

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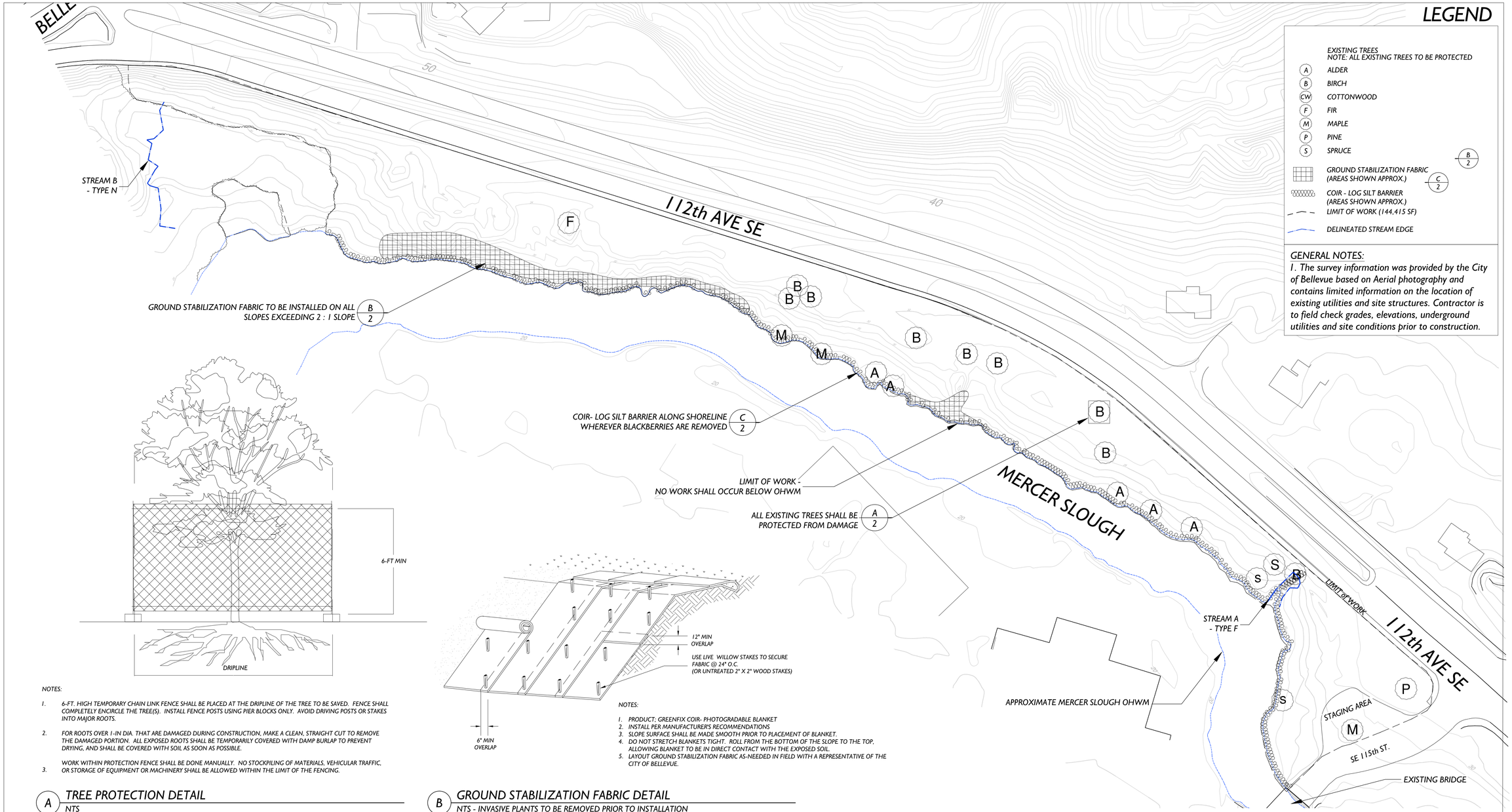
RESTORATION

CRITICAL AREA / BUFFER FIGURE

TWC #: 070203

Sheet 1 of 10



LEGEND

EXISTING TREES
NOTE: ALL EXISTING TREES TO BE PROTECTED

- A — ALDER
- B — BIRCH
- CW — COTTONWOOD
- F — FIR
- M — MAPLE
- P — PINE
- S — SPRUCE

GROUND STABILIZATION FABRIC (AREAS SHOWN APPROX.) — B 2

COIR - LOG SILT BARRIER (AREAS SHOWN APPROX.) — C 2

LIMIT OF WORK (144,415 SF)

DELINEATED STREAM EDGE

GENERAL NOTES:

1. The survey information was provided by the City of Bellevue based on Aerial photography and contains limited information on the location of existing utilities and site structures. Contractor is to field check grades, elevations, underground utilities and site conditions prior to construction.

NOTES:

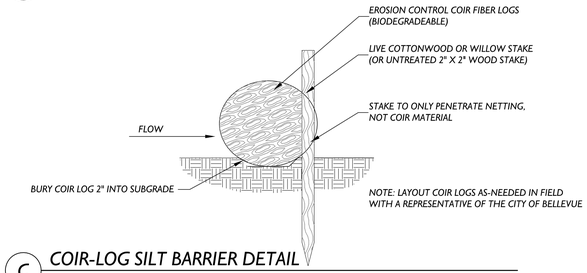
1. 6-FT. HIGH TEMPORARY CHAIN LINK FENCE SHALL BE PLACED AT THE DRIPLINE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE THE TREE(S). INSTALL FENCE POSTS USING PIER BLOCKS ONLY. AVOID DRIVING POSTS OR STAKES INTO MAJOR ROOTS.
2. FOR ROOTS OVER 1-IN DIA. THAT ARE DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE THE DAMAGED PORTION. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND SHALL BE COVERED WITH SOIL AS SOON AS POSSIBLE.
3. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING.

A TREE PROTECTION DETAIL
NTS

NOTES:

1. PRODUCT: GREENFIX COIR- PHOTOGRADABLE BLANKET
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS
3. SLOPE SURFACE SHALL BE MADE SMOOTH PRIOR TO PLACEMENT OF BLANKET.
4. DO NOT STRETCH BLANKETS TIGHT. ROLL FROM THE BOTTOM OF THE SLOPE TO THE TOP, ALLOWING BLANKET TO BE IN DIRECT CONTACT WITH THE EXPOSED SOIL.
5. LAYOUT GROUND STABILIZATION FABRIC AS-NEEDED IN FIELD WITH A REPRESENTATIVE OF THE CITY OF BELLEVUE.

B GROUND STABILIZATION FABRIC DETAIL
NTS - INVASIVE PLANTS TO BE REMOVED PRIOR TO INSTALLATION



C COIR-LOG SILT BARRIER DETAIL
NTS

TESC PLAN

SCALE: 1" = 50'-0" ORIGINAL PLANS ON 24" x 36" SHEETS. ADJUST SCALES ACCORDINGLY.

0 50' 100' 200'

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Approved By

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STATE OF WASHINGTON
TERRI S. LAMPT
LANDSCAPE ARCHITECT
CERTIFICATE NO. 1889

MERCER SLOUGH / 112th AVE SE
RESTORATION

TESC

TWC #: 070203

Sheet 2 of 10

LEGEND

EXISTING TREES
NOTE: ALL EXISTING TREES TO BE PROTECTED

- (A) ALDER
- (B) BIRCH
- (CW) COTTONWOOD
- (F) FIR
- (M) MAPLE
- (P) PINE
- (S) SPRUCE

EXISTING BLACKBERRY VINE THICKETS

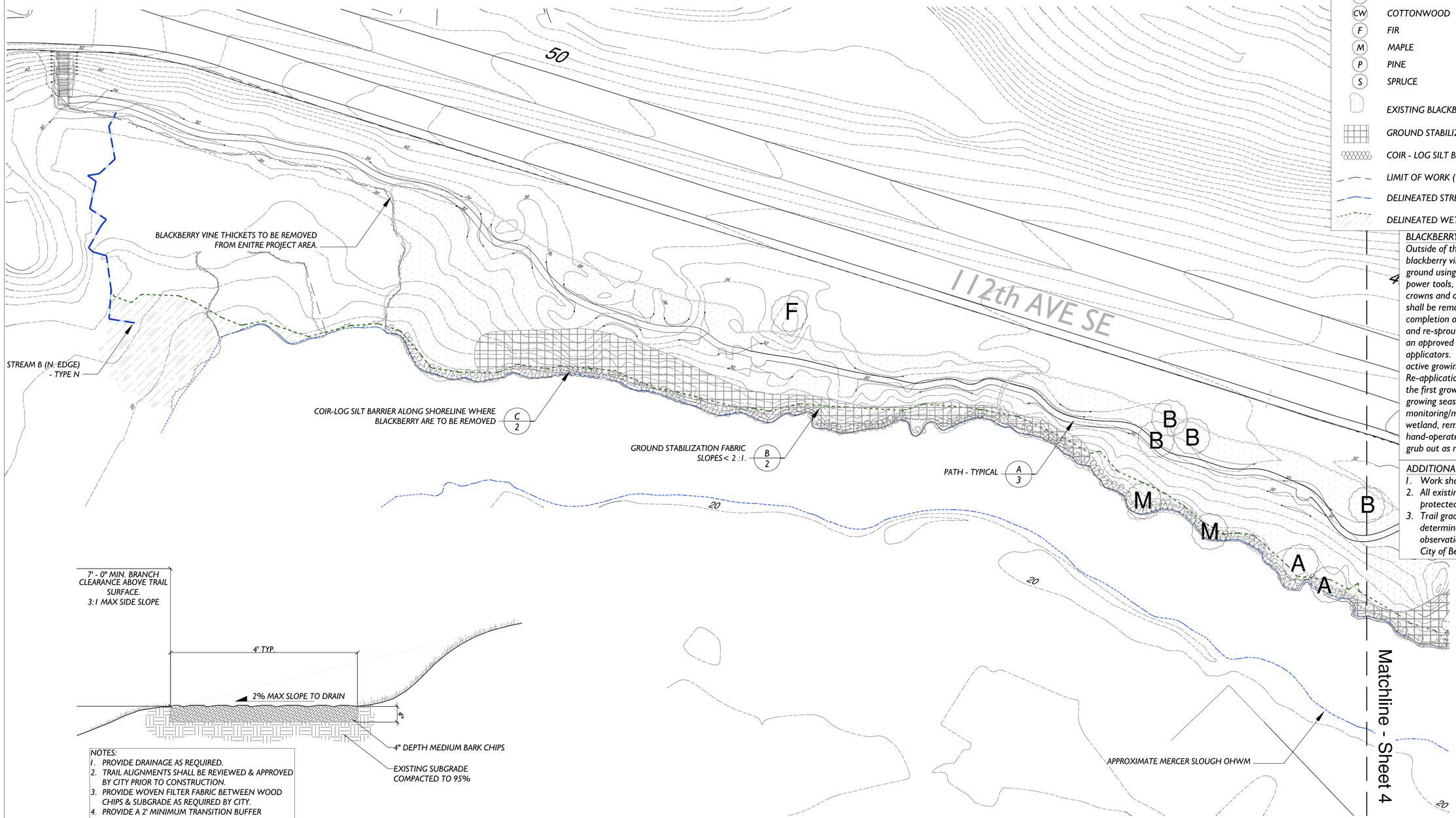
GROUND STABILIZATION FABRIC (B/2)

COIR - LOG SILT BARRIER (C/2)

LIMIT OF WORK (144,415 SF)

DELINEATED STREAM EDGE

DELINEATED WETLAND



BLACKBERRY REMOVAL NOTES:
Outside of the delineated wetland area, blackberry vine thickets shall be cut to the ground using a slope mower, by hand operated power tools, or other approved method. Vines, crowns and other removal-generated debris shall be removed from the site during or upon completion of the clearing work. Re-emerging and re-sprouting growth shall be treated with an approved herbicide by state-licensed applicators. Such treatment is to be during the active growing season only (May-September). Re-application may be necessary throughout the first growing season and in subsequent growing seasons during the monitoring/maintenance period. Within the wetland, removal will be by hand tools or hand-operated power tools only, making sure to grub out as many roots as practical.

ADDITIONAL NOTES:
1. Work shall not occur below OHWM.
2. All existing trees within project area shall be protected.
3. Trail grading may need alteration as determined by contractor based on in-field observations. Verify all layout change with City of Bellevue.

NOTES:
1. PROVIDE DRAINAGE AS REQUIRED.
2. TRAIL ALIGNMENTS SHALL BE REVIEWED & APPROVED BY CITY PRIOR TO CONSTRUCTION.
3. PROVIDE WOVEN FILTER FABRIC BETWEEN WOOD CHIPS & SUBGRADE AS REQUIRED BY CITY.
4. PROVIDE A 2' MINIMUM TRANSITION BUFFER BETWEEN PATH EDGE & PLANTING(S).

(A) PATH DETAIL - TYPICAL
NTS

CLEARING / GRADING PLAN - SOUTH

SCALE: 1" = 30'-0" ORIGINAL PLANS ON 24" x 36" SHEETS. ADJUST SCALES ACCORDINGLY.

0 30' 60' 120'

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Geoff Bradley
PROJECT MANAGER — DATE

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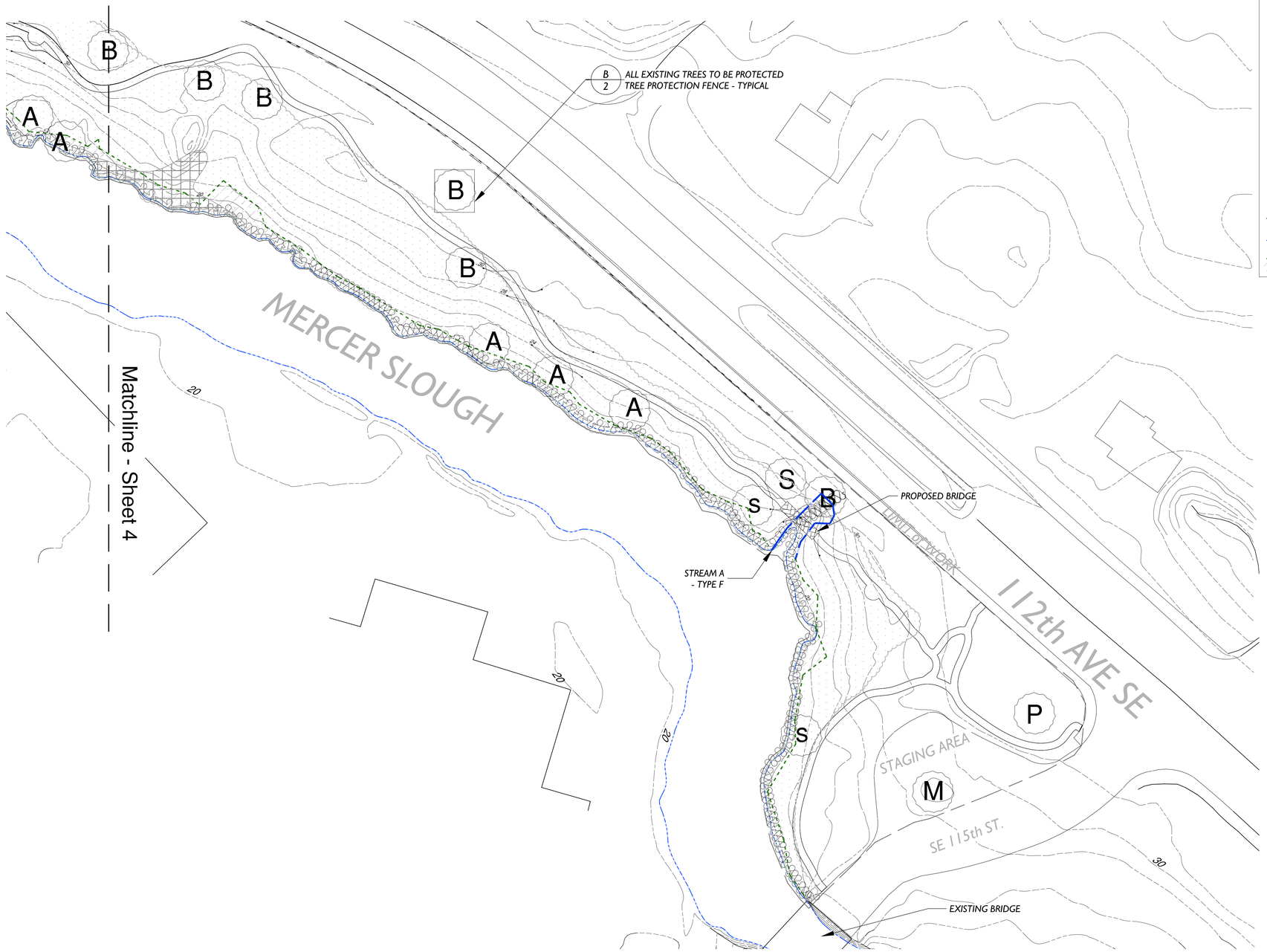
MARC S. GARFF
CERTIFICATE NO. 886

MERCER SLOUGH / 112th AVE SE
RESTORATION

CLEARING / GRADING PLAN - SOUTH

TWC #: 070203

Sheet 3 of 10



LEGEND

EXISTING TREES
NOTE: ALL EXISTING TREES TO BE PROTECTED

- (A) ALDER
- (B) BIRCH
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- (F) FIR
- (M) MAPLE
- (P) PINE
- (S) SPRUCE
- EXISTING BLACKBERRY VINE THICKETS
- GROUND STABILIZATION FABRIC (B/2)
- COIR - LOG SILT BARRIER (C/2)
- LIMIT OF WORK (144,415 SF)
- DELINEATED STREAM EDGE
- DELINEATED WETLAND

BLACKBERRY REMOVAL NOTES:

Outside of the delineated wetland area, blackberry vine thickets shall be cut to the ground using a slope mower, by hand operated power tools, or other approved method. Vines, crowns and other removal-generated debris shall be removed from the site during or upon completion of the clearing work. Re-emerging and re-sprouting growth shall be treated with an approved herbicide by state-licensed applicators. Such treatment is to be during the active growing season only (May-September). Re-application may be necessary throughout the first growing season and in subsequent growing seasons during the monitoring/maintenance period. Within the wetland, removal will be by hand tools or hand-operated power tools only, making sure to grub out as many roots as practical.

ADDITIONAL NOTES:

1. *Work shall not occur below OHWM.*
2. *All existing trees within project area shall be protected.*
3. *Trail grading may need alteration as determined by contractor based on in-field observations. Verify all layout change with City of Bellevue.*

CLEARING / GRADING PLAN - NORTH

SCALE: 1" = 30'-0"

ORIGINAL PLANS ON 24" x 36" SHEETS. ADJUST SCALES ACCORDINGLY.

0 30' 60' 120'

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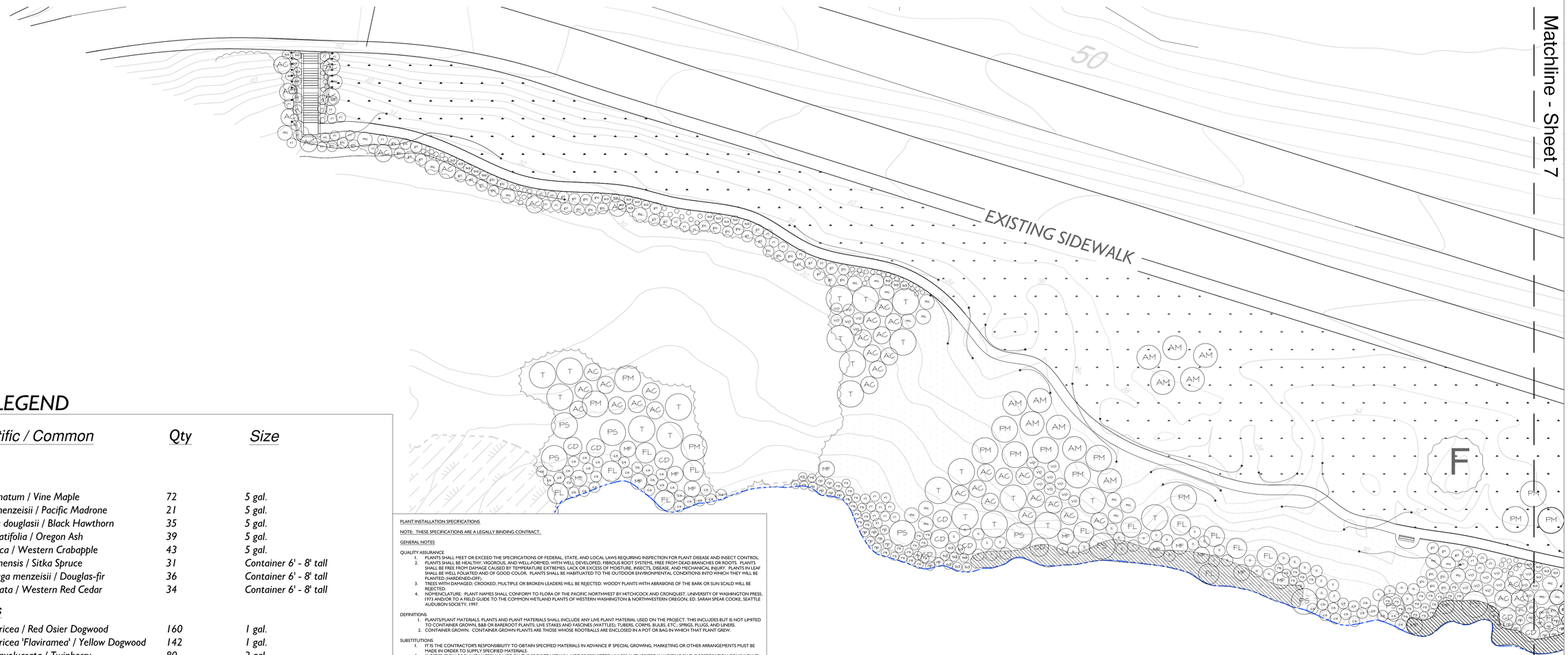
STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
MARK S. GARFF
CERTIFICATE NO. 660

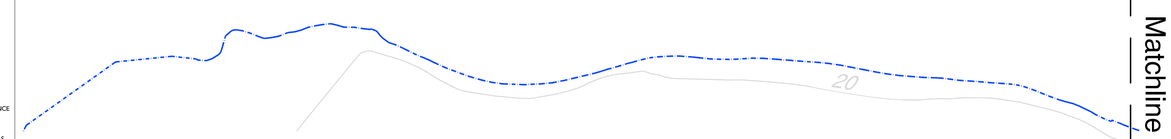
MERCER SLOUGH / 112th AVE SE
RESTORATION

CLEARING / GRADING PLAN -NORTH

TWC #: 070203

Sheet 4 of 10





Matchline - Sheet 7

Matchline - Sheet 7

PLANTING LEGEND

Scientific / Common	Qty	Size
Trees		
AC — *Acer circinatum / Vine Maple*	72	5 gal.
AM — *Arbutus menzeisii / Pacific Madrone*	21	5 gal.
CD — *Cratageus douglasii / Black Hawthorn*	35	5 gal.
FL — *Fraxinus latifolia / Oregon Ash*	39	5 gal.
MF — *Malus fusca / Western Crabapple*	43	5 gal.
PS — *Picea sitchensis / Sitka Spruce*	31	Container 6' - 8' tall
PM — *Psuedotsuga menzeisii / Douglas-fir*	36	Container 6' - 8' tall
T — *Thuja plicata / Western Red Cedar*	34	Container 6' - 8' tall
Shrubs		
cs — *Cornus sericea / Red Osier Dogwood*	160	1 gal.
csf — *Cornus sericea 'Flaviramea' / Yellow Dogwood*	142	1 gal.
li — *Lonicera involucrata / Twinberry*	80	2 gal.
mc — *Morella californica / California Wax Myrtle*	79	2 gal.
pl — *Philadelphus lewisii / Mock Orange*	57	2 gal.
pv — *Physocarpus capitatus / Pacific Ninebark*	63	1 gal.
r1 — *Ribes sanguineum / Red Flowering Currant*	99	2 gal.
rp — *Rosa nutkana / Nootka Rose*	147	1 gal.
rs — *Rubus spectabilis / Salmonberry*	86	1 gal.
ss — *Spiraea douglasii / Hardhack*	26	1 gal.
sa — *Symphoricarpos albus / Snowberry*	54	1 gal.
vo — *Vaccinium ovatum / Evergreen Huckleberry*	84	1 gal.
Groundcover & Live Stakes		
Polystichum munitum / Sword Fern	123	1 gal.
Ledum palustre / Labrador Tea	(100 - 1 gal. to be field located)	

** Hydroseed all disturbed or exposed soil areas that are not to be planted using spec. below.*

PROTIME 404 NATIVE WATER QUALITY SEED MIX
Bromus carinatus / California Brome - 55%
Elymus glaucus / Blue Wild Rye - 25%
Lupinus albicaulus / Lupine - 15%
Yarrow millefolium / Western Yarrow - 5%
SEED AT A RATE OF 1 LB PER 1000 SF.

Re-seeded lawn where existing lawn is disturbed by construction.

1250	*Cornus sericea / Red-twig Dogwood - Stakes*	*SEE DETAIL D, SHEET 7 FOR LAYOUT.*
500	*Salix lasiandra & Salix Stichensis - Fascine Bundles Pacific & Stika Willow*	*SEE DETAIL D, SHEET 7 FOR LAYOUT.*

PLANT INSTALLATION SPECIFICATIONS

NOTE: THESE SPECIFICATIONS ARE A LEGALLY BINDING CONTRACT.

GENERAL NOTES

QUALITY ASSURANCE
1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS. FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1973 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

DEFINITIONS
1. PLANTS/PLANT MATERIALS. PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BAREROOT PLANTS, LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC., SPRIGS, PLUGS, AND LINERS.
2. CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

SUBSTITUTIONS
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
3. IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
4. SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION
1. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS. EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
2. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
3. THE RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE STREAM RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENTS OF PLANTS
1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
2. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
3. WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.)

SUBMITTALS

PROPOSED PLANT SOURCES
1. WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

PRODUCT CERTIFICATES
1. PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION .
2. HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION
CONTRACTOR MUST NOTIFY CONSULTANT 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS
3. TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
4. SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
5. HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
6. LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY
PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

REPLACEMENT
7. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONSULTANT'S DISCRETION.
8. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED.

PLANT MATERIAL

GENERAL
1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES
SEE PLANT LIST ON ACCOMPANYING PLANS.

ROOT TREATMENT
9. CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
10. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
11. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.

PLANTING PLAN - SOUTH

SCALE: 1" = 20'-0" *ORIGINAL PLANS ON 24" x 36" SHEETS. ADJUST SCALES ACCORDINGLY.*

0 20' 40' 80'

NO.	DATE	BY	APPR.	REVISIONS
	11.28.06	JM/JB	JFB	PERMIT SET
	03.21.07	JM/JB	JFB	REVIEW SET
	02.21.08	MG/ZS	MG/KB	REVIEW FOR PERMITTING

Approved By

PARKS DESIGN MANAGER — DATE
Geoff Bradley
PROJECT MANAGER — DATE

MG / ZS 02.18.08 — DESIGNED BY — DATE
ZS 02.18.08 — DRAWN BY — DATE
MG / KB 02.18.08 — CHECKED BY — DATE

City of Bellevue
Dept. of Parks and Community Services

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750 Sixth Street South
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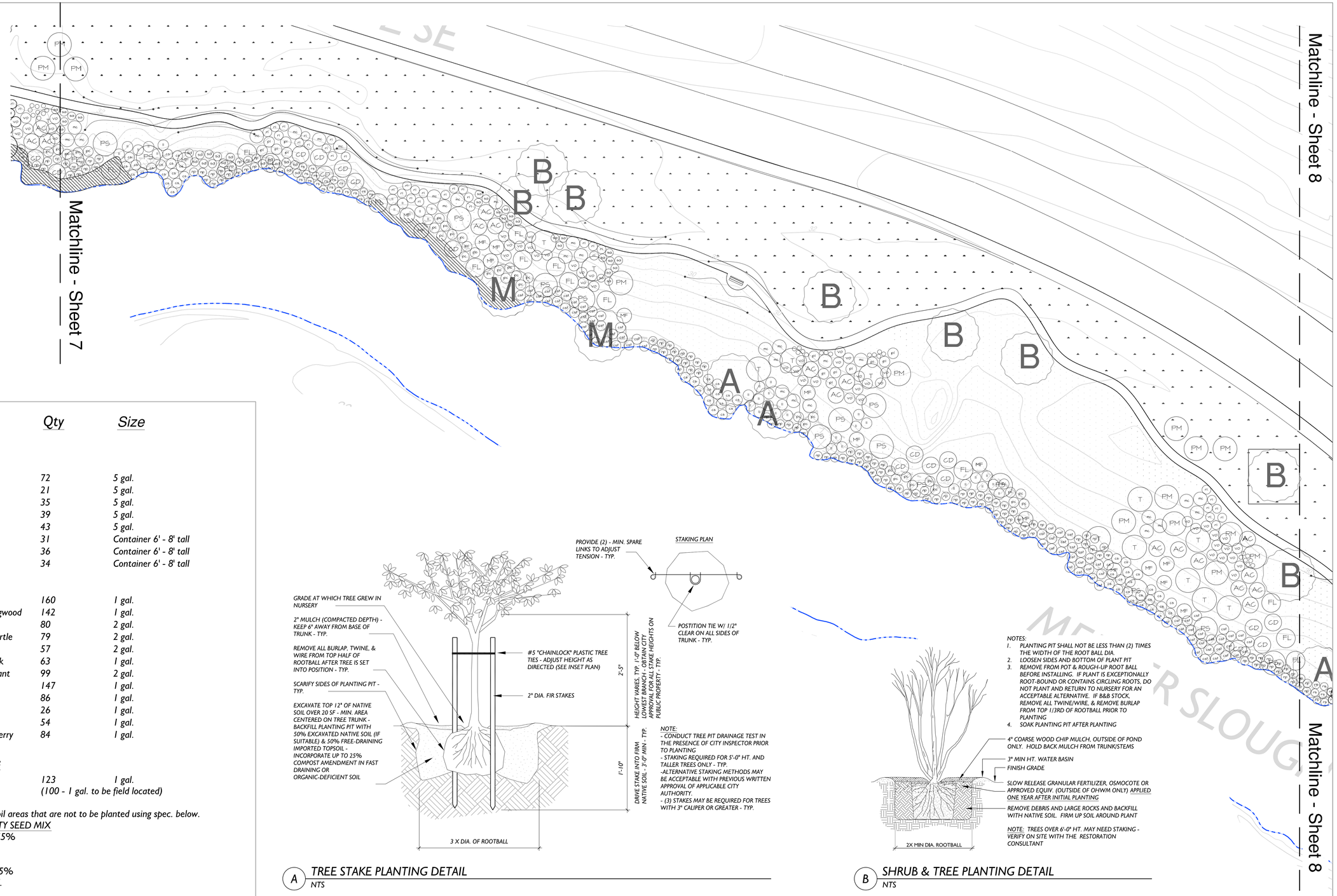
www.watershedco.com

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
MARK S. GARRY
CERTIFICATE NO. 888

MERCER SLOUGH / 112th AVE SE
RESTORATION

PLANTING PLAN - SOUTH

TWC #: 070203



PLANTING LEGEND

	Scientific / Common	Qty	Size
	Trees		
AC	*Acer circinatum / Vine Maple*	72	5 gal.
AM	*Arbutus menzeisii / Pacific Madrone*	21	5 gal.
CD	*Cratageus douglasii / Black Hawthorn*	35	5 gal.
FL	*Fraxinus latifolia / Oregon Ash*	39	5 gal.
MF	*Malus fusca / Western Crabapple*	43	5 gal.
PS	*Picea sitchensis / Sitka Spruce*	31	Container 6' - 8' tall
PM	*Psuedotsuga menzeisii / Douglas-fir*	36	Container 6' - 8' tall
T	*Thuja plicata / Western Red Cedar*	34	Container 6' - 8' tall
	Shrubs		
cs	*Cornus sericea / Red Osier Dogwood*	160	1 gal.
csf	*Cornus sericea 'Flaviramea' / Yellow Dogwood*	142	1 gal.
li	*Lonicera involucrata / Twinberry*	80	2 gal.
mc	*Morella californica / California Wax Myrtle*	79	2 gal.
pl	*Philadelphus lewisii / Mock Orange*	57	2 gal.
pc	*Physocarpus capitatus / Pacific Ninebark*	63	1 gal.
rs	*Ribes sanguineum / Red Flowering Currant*	99	2 gal.
rn	*Rosa nutkana / Nootka Rose*	147	1 gal.
rs	*Rubus spectabilis / Salmonberry*	86	1 gal.
sd	*Spiraea douglasii / Hardhack*	26	1 gal.
so	*Symphoricarpos albus / Snowberry*	54	1 gal.
vo	*Vaccinium ovatum / Evergreen Huckleberry*	84	1 gal.
	Groundcover & Live Stakes		
	Polystichum munitum / Sword Fern	123	1 gal.
	Ledum palustre / Labrador Tea	(100 - 1 gal. to be field located)	

** Hydroseed all disturbed or exposed soil areas that are not to be planted using spec. below.*

PROTIME 404 NATIVE WATER QUALITY SEED MIX
Bromus carinatus / California Brome - 55%
Elymus glaucus / Blue Wild Rye - 25%
Lupinus albicaulus / Lupine - 15%
Yarrow millefolium / Western Yarrow - 5%
SEED AT A RATE OF 1 LB PER 1000 SF.

Re-seeded lawn where existing lawn is disturbed by construction.

1250	*Cornus sericea / Red-twig Dogwood*	*- Stakes*	*SEE DETAIL D, SHEET 7 FOR LAYOUT.*
500	*Salix lasiandra & Salix Stichensis Pacific & Stika Willow*	*- Fascine Bundles*	*SEE DETAIL D, SHEET 7 FOR LAYOUT.*

A TREE STAKE PLANTING DETAIL
NTS

B SHRUB & TREE PLANTING DETAIL
NTS

NOTE: ADDITIONAL PLANTING DETAILS ON NEXT SHEET.

PLANTING PLAN - CENTER

SCALE: 1" = 20'-0"
ORIGINAL PLANS ON 24" x 36" SHEETS. ADJUST SCALES ACCORDINGLY.

0 20' 40' 80'

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	02.21.08	MG/ZS	MG/KB	REVIEW FOR PERMITTING

Approved By

PARKS DESIGN MANAGER — DATE
Geoff Bradley
PROJECT MANAGER — DATE
Geoff Bradley

MG / ZS — 02.18.08
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STATE OF WASHINGTON
JAMES G. SCHMIDT
LANDSCAPE ARCHITECT
CERTIFICATE NO. 888

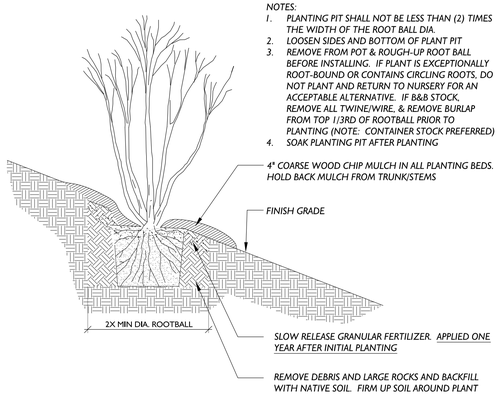
MERCER SLOUGH / 112th AVE SE
RESTORATION

PLANTING PLAN - MID

ORIGINAL PLANS ON 24" x 36" SHEETS ADJUST SCALES ACCORDINGLY

TWC #: 070203

Sheet 6 of 10



NOTES:
1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOM OF PLANT PIT
3. REMOVE FROM POT & ROUGH-UP ROOT BALL BEFORE INSTALLING. IF PLANT IS EXCEPTIONALLY ROOT-BOUND OR CONTAINS CIRCLING ROOTS, DO NOT PLANT AND RETURN TO NURSERY FOR AN ACCEPTABLE ALTERNATIVE. IF B&B STOCK, REMOVE ALL TWINE/WIRE, & REMOVE BURLAP FROM TOP 1/3RD OF ROOTBALL PRIOR TO PLANTING (NOTE: CONTAINER STOCK PREFERRED)
4. SOAK PLANTING PIT AFTER PLANTING

C SHRUB & TREE PLANTING DETAIL - SLOPE
NTS

PLANTING LEGEND

	Scientific / Common	Qty	Size
	Trees		
AC	Acer circinatum / Vine Maple	72	5 gal.
AM	Arbutus menzeisii / Pacific Madrone	21	5 gal.
CD	Cratageus douglasii / Black Hawthorn	35	5 gal.
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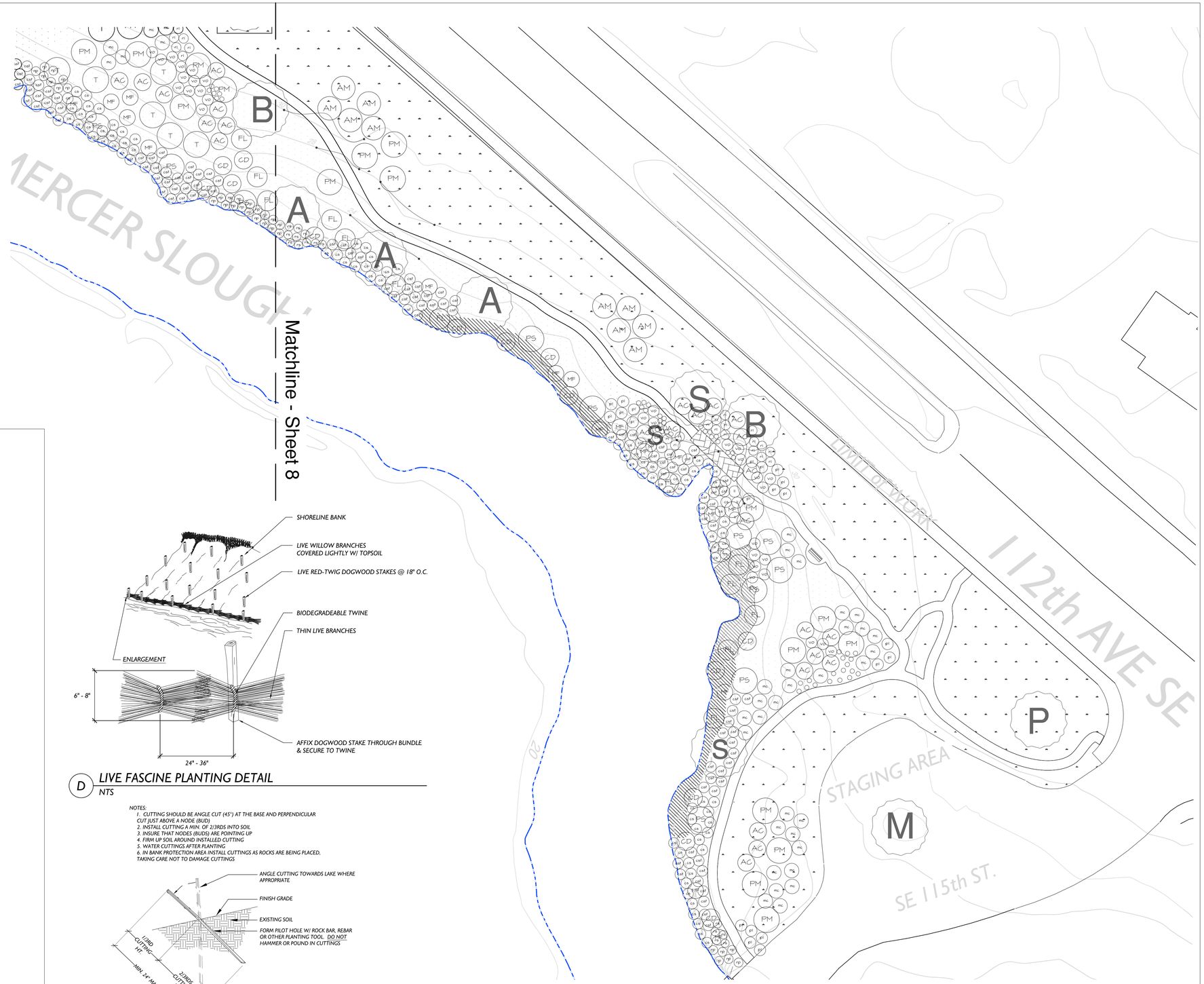
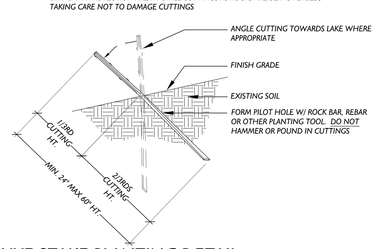


D LIVE FASCINE PLANTING DETAIL
NTS

NOTES:
1. CUTTING SHOULD BE ANGLE CUT (45°) AT THE BASE AND PERPENDICULAR CUT JUST ABOVE A NODE (BUD)
2. INSTALL CUTTING A MIN. OF 2/3RDS INTO SOIL
3. INSURE THAT NODES (BUDS) ARE POINTING UP
4. FIRM UP SOIL AROUND INSTALLED CUTTING
5. WATER CUTTINGS AFTER PLANTING
6. IN BANK PROTECTION AREA INSTALL CUTTINGS AS ROCKS ARE BEING PLACED, TAKING CARE NOT TO DAMAGE CUTTINGS



E LIVE STAKE PLANTING DETAIL
NTS

PLANTING PLAN - NORTH

SCALE: 1" = 20'-0" ORIGINAL PLANS ON 24" x 36" SHEETS. ADJUST SCALES ACCORDINGLY.

0 20' 40' 80'

NO.	DATE	BY	APPR.	REVISIONS
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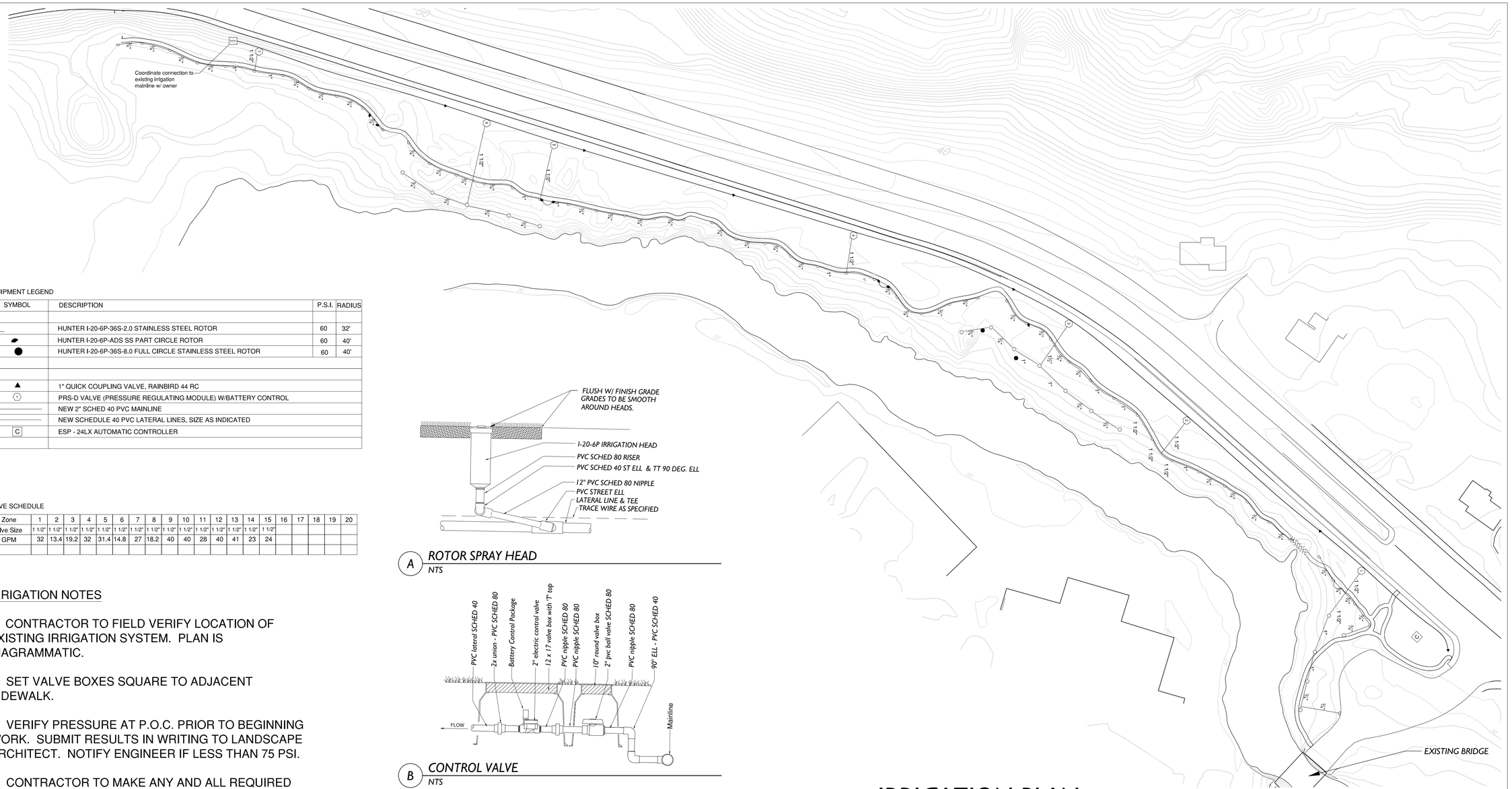
STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
MARK S. GARRITY
CERTIFICATE NO. 888

MERCER SLOUGH / 112th AVE SE
RESTORATION

PLANTING PLAN - NORTH

Sheet 7 of 10



EQUIPMENT LEGEND

SYMBOL	DESCRIPTION	P.S.I.	RADIUS
	HUNTER I-20-6P-36S-2.0 STAINLESS STEEL ROTOR	60	32'
	HUNTER I-20-6P-ADS SS PART CIRCLE ROTOR	60	40'
	HUNTER I-20-6P-36S-8.0 FULL CIRCLE STAINLESS STEEL ROTOR	60	40'
	1" QUICK COUPLING VALVE, RAINBIRD 44 RC		
1	PRS-D VALVE (PRESSURE REGULATING MODULE) W/BATTERY CONTROL		
	NEW 2" SCHED 40 PVC MAINLINE		
	NEW SCHEDULE 40 PVC LATERAL LINES, SIZE AS INDICATED		
C	ESP - 24LX AUTOMATIC CONTROLLER		

VALVE SCHEDULE

Zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Valve Size	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"					
GPM	32	13.4	19.2	32	31.4	14.8	27	18.2	40	40	28	40	41	23	24					

A ROTOR SPRAY HEAD
NTS

B CONTROL VALVE
NTS

IRRIGATION PLAN

SCALE: 1" = 50'-0" ORIGINAL PLANS ON 24" x 36" SHEETS. ADJUST SCALES ACCORDINGLY.

0 50' 100' 200'

IRRIGATION NOTES

1. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING IRRIGATION SYSTEM. PLAN IS DIAGRAMMATIC.

2. SET VALVE BOXES SQUARE TO ADJACENT SIDEWALK.

3. VERIFY PRESSURE AT P.O.C. PRIOR TO BEGINNING WORK. SUBMIT RESULTS IN WRITING TO LANDSCAPE ARCHITECT. NOTIFY ENGINEER IF LESS THAN 75 PSI.

4. CONTRACTOR TO MAKE ANY AND ALL REQUIRED ADJUSTMENTS TO THE IRRIGATION PLAN TO ASSURE COMPLETE AND ADEQUATE COVERAGE WITH MINIMUM OVERSPRAY.

5. REFER TO TYPICAL IRRIGATION DETAILS.

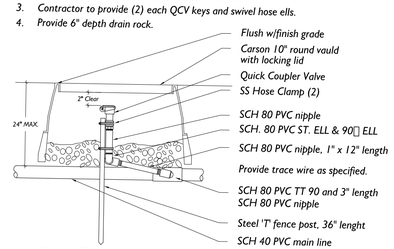
6. SEE CORRESPONDING LAYOUT PLAN FOR PRECISE PLANTING LAYOUT.

7. SEE SPECIFICATIONS FOR FURTHER INFORMATION.

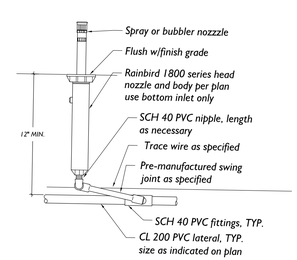
8. USE VARIABLE ARC NOZZLES ONLY WHERE FIXED NOZZLES WILL NOT WORK.

9. ALLOW AND PROVIDE 8 NEW HUNTER I-20'S & SWING JOINTS FOR THIS WORK. UNUSED HEADS SHALL BE PROVIDED TO OWNER.

NOTES:
1. Do not allow vault to rest on pipe. Use extensions as necessary.
2. Valve to be set plumb and centered in valve box
3. Contractor to provide (2) each QCV keys and swivel hose ells.
4. Provide 6" depth drain rock.



C QUICK COUPLER
NTS



D POP-UP SPRAY HEAD
NTS

NO.	DATE	BY	APPR.	REVISIONS
	11.28.06	JM/JB	JFB	PERMIT SET
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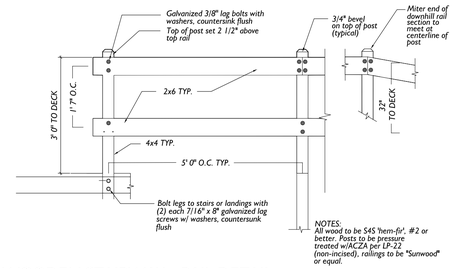
RESTORATION

IRRIGATION OPTION B

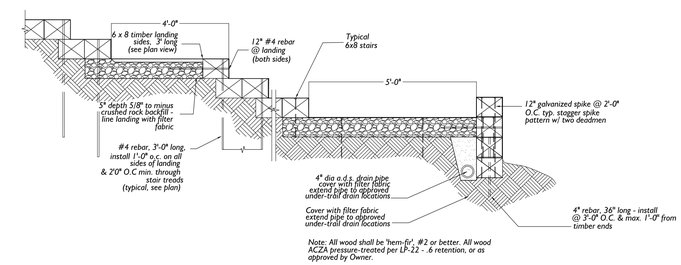
TWC #: 070203

Sheet 8 of 10



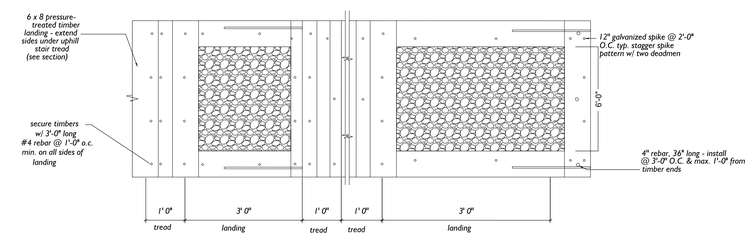
A WOODEN STAIRWAY - RAIL DETAIL

NTS



B WOODEN STAIRWAY - SECTION

NTS



Note: All wood shall be 'hem-fir', #2 or better (w/rough-sawn walking surface). All wood ACZA pressure-treated per LP-22, .6 retention, or as approved by City.

C WOODEN STARIWAY - PLAN

NTS

NO.	DATE	BY	APPR.	REVISIONS
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City of Bellevue
Dept. of Parks and Community Services

MERCER SLOUGH / 112th AVE SE
RESTORATION

STUCTURE DETAILS

TWC #: 070203

Sheet 9 of 10

Executive Summary

This project is to provide a pedestrian trail, invasive weed removal, and enhancement plantings along Mercer Slough, just east of 112th Avenue SE in Bellevue. The trail will be a soft surface path except for the bridge crossing at a small Type F stream, which is a tributary to the slough near the southern project limit. The entire trail will be built within stream, wetland and shoreline buffers. A wide variety of trees, shrubs and groundcover will replace most of the areas where blackberry vines will be removed. A few new plantings and some new lawn areas are proposed west of the proposed trail.

Goals

1. Provide pedestrian access along Mercer Slough.
2. Remove invasive vegetation from the wetland and buffer areas shown on the plan.
3. Establish a predominance of diverse native vegetation in the cleared areas east of the trail.
4. Limit re-invasion of invasive weeds within planted areas.

Performance Standards

The standards listed below shall be used to judge the success of the plan over time. If performance standards are met at the end of Year 5, then the City shall consider the plant implementation successful. The following performance standards apply to all planted areas within the wetland and wetland and stream buffers:

1. Survival: Achieve 100% survival of installed plants by the end of Year 1. This standard can be met through plant establishment or through replanting as necessary to achieve the required numbers. Experimental plants excluded from this standard: Pacific madrone, Labrador tea. Further, this standard shall not apply to the seed mix areas (covered under a separate standard, below).
2. Seed mix cover: Seeded areas shall reach 100% cover within one year of installation. At least three of the four species shall be established in seeded areas in each year of the monitoring period.
3. Native woody vegetation cover within shrub and tree areas (buffer areas east of the trail only):
   - Achieve 40% cover of native trees and shrubs by Year 3. Volunteer species may count towards this cover standard.
   - Achieve 60% cover of native trees and shrubs by Year 5. Volunteer species may count towards this cover standard.
4. Native woody vegetation cover within shrub and tree areas (wetland areas only):
   - Achieve 60% cover of native trees and shrubs by Year 3. Volunteer species may count towards this cover standard.
   - Achieve 85% cover of native trees and shrubs by Year 5. Volunteer species may count towards this cover standard.
5. Diversity standard:
   - Container plant areas: Establish at least 8 native sapling tree or shrub species by Year 5 in each planted segment east of the trail. Volunteer species may count towards this standard.
   - Live stake/cuttings areas: Establish at least one native willow species. Establish red-twig dogwood shrubs.
6. Invasive cover:
   - No more than 10% cover by invasive weed species in the planted/seeded areas in any monitoring year (formal lawn areas are excluded).

Monitoring Methods

This monitoring program is designed to track the success of the planted/seeded areas over time and to measure the degree to which it is meeting the performance standards outlined elsewhere in this document. Formal lawn areas are excluded from the monitoring.

An as-built plan will be prepared prior to the beginning of the monitoring period. The as-built plan shall be a mark-up of the planting plans included in this plan set. The as-built plan will document any departures in plant placement or other components from the proposed plan.

All planted areas will be visually assessed and noted as to how they are meeting the performance standards during regularly scheduled Parks maintenance visits.

Monitoring will take place on an on-going basis during regularly scheduled park maintenance visits for no less than five years. First-year monitoring should commence in the first spring subsequent to installation.

Construction Notes and Specifications

Work Sequence

Note: specifications for items in **bold** can be found below under "Material Specifications and Definitions."

Note: A **Restoration Specialist** shall monitor:

1. All site preparation
   - Weed removal
   - Soil deconsolidation and amendment.
2. Plant material inspection
   - 50% plant installation inspection.
   - 100% plant installation inspection.

General Work Sequence

1. Install tree protection on all trees to remain per detail A on sheet 2 of these plans.
2. Clear the trail corridor and all blackberries where shown on the plans taking care to avoid existing desirable native tree and shrub vegetation where possible.
3. Install the trail and bridge crossing per the details in this plan set.
4. Evaluate existing soil conditions. If the **Restoration Specialist** determines the soils are deficient in organic material, the **Restoration Specialist** shall make a recommendation for amendment with **compost.**
5. Invasive blackberry removal just prior to planting:
   - If practical roto-till areas infested with Himalayan or evergreen blackberry to loosen soil and roots.
   - Hand-rake and grub the roto-tilled area to remove as many blackberry roots and root fragments as is practical.
   - Dispose of blackberry roots off-site in an approved manner.
   - Cover with at least 4 inches of **wood chip mulch** where directed by the **Restoration Specialist**.
6. Immediately upon completion of soil preparation, install ground stabilization fabric and coir-log silt barrier per details B and C on sheet 2 of these plans.
7. Prepare a planting pit for each container plant and install per the planting details A and B on sheet 6 of these plans. Container plant installation is to take place during the dormant season only (October 15th - May 1st), for best survival.
8. Prepare a pilot hole for each willow live stake and install per the live stake detail E on sheet 7 of these plans. All live stake/cutting installation shall only take place prior to leaf-out of cutting species (October 15th - March 15th).
9. Mulch the entire live stake area with **wood chip mulch** to a depth of four inches thick.

Material Specifications and Definitions

1. **Wood chip mulch**: "Arborist chips" (chipped woody material) approximately 1 to 3 inches in maximum dimension (not sawdust or coarse hog fuel). This material is commonly available in large quantities from arborists or tree-pruning companies. This material is also sold as "Animal Friendly Hog Fuel" at Pacific Topsoils [(800) 884-7645]. Mulch shall not contain appreciable quantities of garbage, plastic, metal, soil, and dimensional lumber or construction/demolition debris.
2. **Fertilizer**: Slow release, no phosphorous, granular fertilizer such as OsmocoteTM or equal product. Most retail nurseries carry this product. Follow manufacturer's instructions for application. Keep fertilizer in a weather-tight container while on site. Note that fertilizer is to be applied only in years two, three, four and five and not in the first year. Do not apply fertilizer to saturated or inundated areas of the shoreline.
3. **Compost**: Cedar Grove Compost or equivalent product. 100% vegetable compost with no appreciable quantities of sand, gravel sawdust or other non-organic materials.
4. **Restoration Specialist**: Qualified professional able to evaluate and monitor the construction of environmental restoration projects.

Maintenance

The site will be maintained for five years following completion of the construction. Note: specifications for items in **bold** can be found above under "Material Specifications and Definitions."

1. Replace each plant found dead in the summer monitoring visits during the upcoming fall dormant season (October 15th to March 1st).
2. Reed canarygrass is currently not present on site, but may develop following blackberry clearing. Reed canarygrass maintenance plan (within planted areas only):
   - Remove reed canarygrass and roots from the base of all installed plants and desirable volunteer vegetation to a distance of 18 inches from the main plant stem. If weeding is difficult due to a thick sod layer, herbicide may be used if approved by City of Bellevue Best Management Practices Notebook. Areas around desirable plants shall be treated with herbicide only by a state licensed applicator. Glyphosate without a surfactant (Rodeo) is approved for use in aquatic areas.
   - Identify reed canarygrass monoculture areas defined as a 50 square-foot patch of 100% reed canarygrass that is entirely absent of healthy native trees or shrubs. Patches are not linear or long and narrow (e.g. 2 feet wide and 25 feet long). Rather, patches are roughly square, circular, or otherwise simply shaped polygons.
     (1) Cut monoculture areas to the ground and install trees and shrubs in monoculture areas. Species selection shall be based on plants shown on this plan or as directed by the **Restoration Specialist**.
     (2) Cover with at least 4 inches of **wood chip mulch**.
3. Blackberry maintenance plan (within planted areas only):
   - Ensure adequate native plants cover the infested area. Install replacement plants at the direction of the **Restoration Specialist** to ensure adequate native cover.
   - Ensure a 4-inch thick cover of **wood chip mulch** is in place in all planted areas.
   - Encroaching Himalayan blackberry from off-site shall be cut back to 10 feet beyond the project boundary on an ongoing basis (at least 4 times per growing season).
   - Sprouting or rooted Himalayan blackberry shall be grubbed out by hand on an ongoing basis, being careful to grub out roots.
   - Should hand grubbing of invasive weeds prove unsuccessful, application of an herbicide approved for use in aquatic areas may be used. Herbicide applications must be conducted by a state licensed applicator. Applications should be done only between mid-spring and mid-summer for maximum effectiveness. Application should be by a targeted method such as spot spray or wick (preferred).
4. General weeding for all planted areas:
   - At least twice-yearly, remove all competing weeds and weed roots from beneath each installed plant and any desirable volunteer vegetation to a distance of 18 inches from the main plant stem. Weeding should occur at least twice during the spring and summer. Frequent weeding will result in lower mortality and lower plant replacement costs.
   - More frequent weeding may be necessary depending on weed conditions that develop after plan installation.
   - Do not weed the area near the plant bases with string trimmer (weed whacker/weed eater). Native plants are easily damaged or killed, and weeds easily recover after trimming.
5. Apply slow release granular **fertilizer** to each installed plant annually in the spring (by June 1) of years two through five.
6. Mulch the weeded areas beneath each plan with **wood chip mulch** as necessary to maintain a 4-inch thick mulch ring and keep down weeds.
7. The manager shall ensure that water is provided should it be necessary during the summer drought period.

NO.	DATE	BY	APPR.	REVISIONS
	11.28.06	JM/JB	JFB	PERMIT SET
	03.21.07	JM/JB	JFB	REVIEW SET
	02.21.08	MG/ZS	MG/KB	REVIEW FOR PERMITTING

Approved By

PARKS DESIGN MANAGER — DATE
Geoff Bradley
PROJECT MANAGER — DATE

MG / ZS — 02.18.08
DESIGNED BY — DATE
ZS — 02.18.08
DRAWN BY — DATE
MG / KB — 02.18.08
CHECKED BY — DATE

City of Bellevue
Dept. of Parks and Community Services

MERCER SLOUGH / 112th AVE SE
RESTORATION

ENHANCEMENT NOTES

TWC #: 070203

Sheet 10 of 10