SEPA Environmental Checklist

Mercer Island Center for the Arts

Attachment J
Critical Area Study

January 2017

CRITICAL AREA STUDY

Mercer Island Center for the Arts

Mercer Island, WA

Prepared for: Bruce Lorig, Mercer Island Center for the Arts

THE WATERSHED COMPANY

November 2016

CRITICAL AREA STUDY

Mercer Island Center for the Arts: Wetland Buffer Reduction

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The Watershed Company Reference Number:
150320

Cite this document as:
The Watershed Company. November 2016. Critical Area Study, Mercer Island Center for the Arts: Wetland Buffer Reduction.

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CRITICAL AREA STUDY

MERCER ISLAND CENTER FOR THE ARTS

1 INTRODUCTION

This critical area study is prepared as part of a proposal to permit a wetland buffer reduction as part of the development of the Mercer Island Center for the Arts (MICA). The proposed MICA is to be located within a portion of Mercerdale Park at 3205 77th Avenue SE (parcel #1224049068) in the City of Mercer Island. Proposed construction of the MICA facility will include an approximate 28,300-square-foot structure situated in the north-central portion of the parcel.

The site contains one area of regulated wetland as documented in the *Mercer Island Center for the Arts Wetland Delineation Study* prepared by The Watershed Company in May 2015. The wetland is classified as a Category III wetland, which requires a standard buffer width of 50 feet.

The applicant proposes to reduce the standard 50-foot buffer to 25 feet through buffer enhancement. This report is intended to satisfy the requirements of the Mercer Island City Code (MICC). It provides a description of existing site conditions, proposed wetland buffer reductions, and includes compensatory mitigation to ensure no net loss of wetland or buffer functions.

2 EXISTING CONDITIONS

2.1 Setting

The subject parcel (parcel number 1224049068) is located at 3205 77th Avenue SE in Mercer Island, Washington; in Section 12 of Township 24 North, Range 4 East of the Public Land Survey System (PLSS). It is approximately 12.3 acres in size and situated in the Mercer Island sub-basin of the Cedar-Sammamish Watershed (Water Resource Inventory Area [WRIA] 8; Figure 1). The subject parcel is zoned Public Institution (P).

The study area is located north of the Mercerdale Skate Park. Developed areas are present north and northwest of the study area. A forested hillside with trails is located to the west, and a maintained park lawn area is present to the east. The study area

contains a paved parking lot and building accessed from SE 32nd Street. The rest of the study area is undeveloped. Non-wetland, undeveloped areas are dominated by forested vegetation including Douglas-fir, red alder, bigleaf maple, and Oregon ash in the canopy. One wetland, referred to here as Wetland A, is present at the toe of a forested slope within the study area. Outside of the study area, the wetland unit extends to the south, and includes a relatively large forested slope to the southwest.

2.2 Wetland A

Wetland A contains slope and depressional hydrogeomorphic (HGM) classes; the depressional class is estimated to be less than 10 percent of the wetland unit. Therefore, Wetland A is rated as a slope wetland. Cowardin vegetation classes that are present in the wetland include palustrine forested and palustrine scrub-shrub. Common plants observed during the site visit include Oregon ash, red alder, and black cottonwood in the canopy, with red-twig dogwood, Sitka willow, Dewey's sedge, creeping buttercup, soft rush, small-fruited bulrush, and giant horsetail in the shrub and herbaceous layers. Additional information on Wetland A can be found in the *Mercer Island Center for the Arts Wetland Delineation Study*.

The parcel is mapped with a combination of Kitsap silt loam, 15 to 30 percent slopes, Bellingham silt loam, and Kitsap silt loam, 2 to 8 percent slopes by the Natural Resources Conservation Service's (NRCS) Web Soil Survey (USDA 2016). Steep slope areas dominate the west side of the site; the east side of the parcel also contains the flatter developed areas, with the wetland located along the toe of the slope (Figure 2).

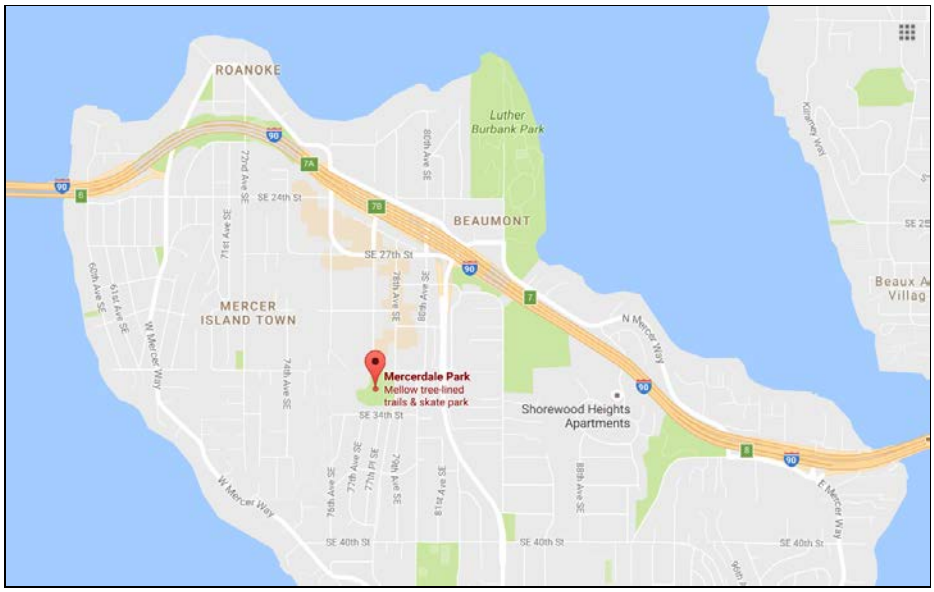

Figure 1. A vicinity map showing the location of the site (imagery source: Google Maps).

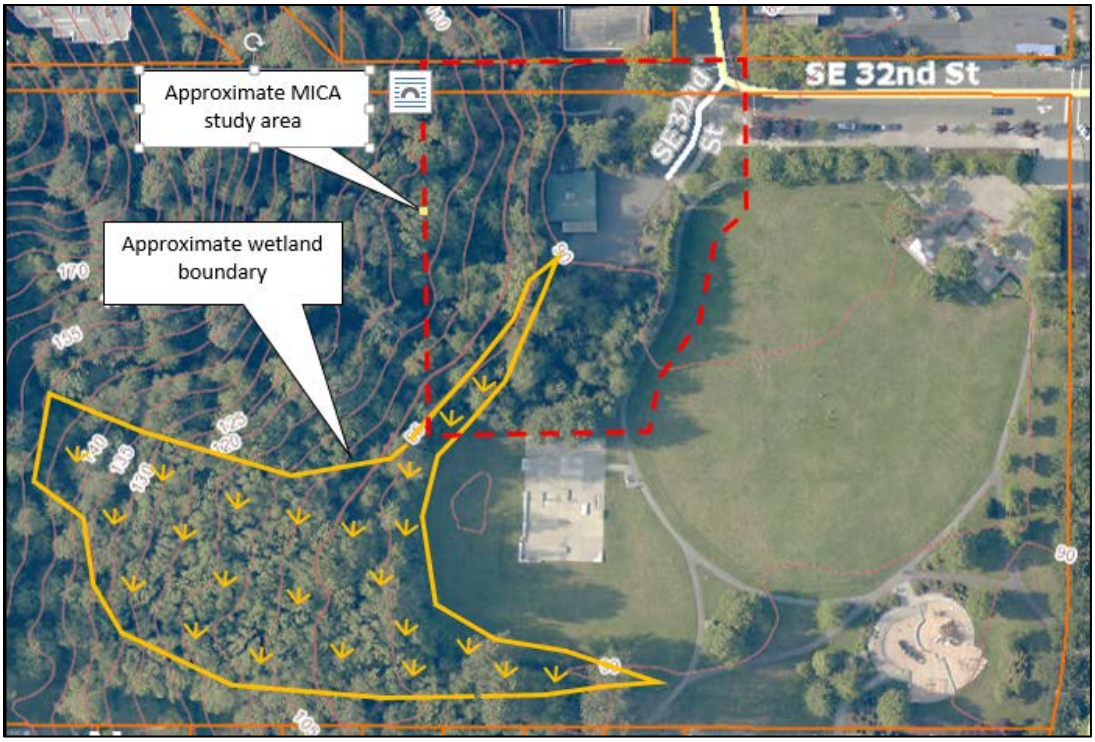

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Figure 5. Wetland conditions in study area.

Figure 6. Wetland conditions in study area.

Figure 7. View of wetland from Mercerdale Park, looking west.

Figure 8. View of slope portion of wetland, looking west.

2.3 Wildlife Habitat Conservation Areas

As indicated by both the City of Mercer Island's online mapping portal and PHS maps (WDFW 2016), an active bald eagle nest is located approximately 1,000 feet southwest of Mercerdale Park, with the study area within the park roughly 1,500 feet from the nest (Figure 9). This distance places the proposed development outside of all recommended buffer management zones for the nest. No other sensitive species are known to occur within or immediately adjacent to the project area.

Figure 9. Mapped nest location (red square) in vicinity of subject parcel showing 330-foot buffer (blue dashed-line) and 660-foot buffer (brown dashed-line) from the nest (imagery source: Mercer Island online mapping portal).

3 REGULATIONS

3.1 Local Regulations

In the City of Mercer Island, wetlands are regulated under the Mercer Island City Code (MICC), Chapter 19.07 – Environment. Wetland buffers are designated based on the wetland classification (MICC 19.07.080). Wetlands on Mercer Island are classified using the 2004 Ecology Rating System (MICC 19.16.10). Wetland A rates as a Category III wetland, with a total functions score of 32 points (12 water quality function points, 5 hydrologic function points, and 15 habitat function points). Per MICC 19.07.080.C, Category III wetlands require a standard buffer width of 50 feet.

Category III wetland buffers may be reduced to 25 feet, provided it is shown that a smaller area is adequate to protect the wetland, the impacts will be mitigated by using a combination of options, and the proposal will result in no net loss of wetland and buffer functions (MICC 19.07.080.C.2).

Wildlife habitat conservation areas are also regulated as critical areas; they are defined as "those areas the city council determine are necessary for maintaining species in suitable habitat within their natural geographic distribution so that isolated subpopulations are not created…" in MICC 19.16.010. Areas used by bald eagles for

nesting and breeding were considered wildlife habitat conservation areas when the species was protected under the Endangered Species Act. Since the MICC was written, bald eagles have been de-listed and are no longer considered threatened or endangered. Currently, the City of Mercer Island directs applicants potentially conducting activities that may disturb bald eagles to follow recommendations outlined in the US Fish and Wildlife Service's (FWS) *National Bald Eagle Management Guidelines* (FWS 2007).

4 PROJECT APPROACH

4.1 Project Description

The purpose of the project is to construct the MICA facility within a portion of Mercerdale Park. MICA will be a cultural focal point on Mercer Island for the public to enjoy, create, and celebrate the arts. MICA will be a multi-theater venue along with classrooms and studios for dance, music, and art. Plays, concerts, recitals, lectures, films, and all forms of arts will take place within the building. MICA will be the permanent home for Youth Theatre Northwest (YTN). It will also be a venue to serve Island Youth Ballet/Children's Dance Conservatory, Music Works Northwest, Russian Chamber Music Foundation of Seattle, Mercer Island Visual Arts League (MIVAL), and Musical Mind Studio. MICA will also provide space to support a local farmer's market.

The use of MICA by YTN is particularly relevant, as the organization needs a new home. In 2014, Mercer Island voters approved a bond to reclaim the North Mercer campus (where YTN was founded 30 years ago) and construct Northwood Elementary School to remedy overcrowding in the Mercer Island School District. YTN is currently operating out of interim space provided by Emmanuel Episcopal Church and is struggling to survive. MICA will provide YTN with a permanent home.

The MICA facility will consist of a single building, with an approximate 21,860 square foot footprint. The building will be situated in the location of the existing recycling center, near the intersection of 77th Avenue SE and SE 32nd Street. The building will be L-shaped to avoid direct impacts to Wetland A. In order to achieve the purpose of the project and provide for a building of adequate size to meet all programming needs, a portion of the Wetland A buffer will be reduced from 50-feet to 25-feet. As mitigation for the buffer reduction, an area of existing degraded wetland buffer will be significantly enhanced.

4.2 Site Selection

The project site was chosen for the MICA facility after an extensive search. In August 2013, the City Council selected the abandoned recycling center at Mercerdale Park for study and analysis as the possible location of a future arts center to be developed by YTN. In June of 2014, the City confirmed that this site was still under consideration as the location for a center for the arts and that MICA had succeeded YTN as the potential developer/owner/operator of the facility, with YTN as its primary user. In July of 2014, the City Council approved expansion of the project into a portion of the wooded area south of the abandoned recycling center.

Other sites considered included attempts to partner with private developers to build multi-use structures on commercial sites in the City's Town Center. Properties explored either proved unavailable due to lease agreements, had irregular and/or insufficient building footprints, or resulted in buildings of excessive height. There were also significant financial challenges in pairing the needs of commercial developers with a small nonprofit arts organization.

Another plan involved a proposed partnership with the Mercer Island School District to create a school for the arts, including a performing arts center with YTN in residence. However, this plan was abandoned due to insufficient interest on the part of the school district. In a separate attempt, the City explored purchasing the old Boys and Girls Club site for YTN but found the purchase price prohibitively expensive. Luther Burbank Park, "Kite Hill," and several commercial sites west of City Hall were also explored, but the costs and other extenuating factors made them untenable. Finally, YTN began looking off-Island and exploring partnerships with other arts organizations, all of which were unsuccessful.

Ultimately the only site deemed viable was the abandoned recycling center at Mercerdale Park. The City's Task Force made this recommendation to the City Council in August of 2013, and the City issued a letter of agreement with YTN, affirming its intention to make the former recycling center site available for further study and analysis as a future performing arts facility.

4.3 Mitigation Sequencing

The project has been designed to avoid, minimize and compensate for impacts to the greatest extent possible given the constraints of the site. The following describes how the mitigation sequencing requirements of the MICC have been met.

Avoid

The project area contains one wetland and its associated critical area buffer. The wetland includes a 'finger' that extends to near the existing recycling center building.

Prior versions of the project included a building that impacted the finger of the wetland. However, under the current proposal, direct impacts to the wetland have been avoided through the design of an L-shaped structure. The structure will, however, require a reduction to a portion of the standard wetland buffer.

Minimize

Impacts to the standard 50-foot wetland buffer have been minimized to the greatest extent feasible through the siting of the structure. Specifically, the proposed L-shaped building will be orientated to limit impacts to only a portion of the northeast corner of the standard buffer associated with the finger portion of the wetland. Remaining buffers areas will be unaffected and will maintain a standard 50-foot buffer. During the construction phase, impacts will be minimized through implementation of best management practices (BMPs).

Mitigate

Compensatory mitigation measures are proposed to offset the reduction in the standard buffer width. A total of 5,768 square feet of buffer reduction will occur, with the buffer reduced to a minimum of 25-feet. An area totaling 11,362 square feet will be restored within the reduced buffer. This includes an area of pavement removal and restoration with amended soils and native trees, shrubs, and groundcover. Others areas of degraded forested buffer will be enhanced with the planting of native conifers and shrubs. Together, the combined mitigation areas will achieve no net loss of critical area or buffer functions in light of the critical area buffer reductions.

Monitor

A five-year monitoring and maintenance plan is proposed to ensure the success of mitigation area over time.

5 IMPACT ASSESSMENT

The proposal involves the construction of the MICA facility within a portion of the standard wetland buffer. The building footprint will total approximately 21,860 square feet and will necessitate a portion of the standard buffer to be reduced from 50-feet to 25-feet. The proposal also includes improving the existing paved access trail within the park, ensuring it is compatible with fire access requirements. This will include improvements to a small section of the trail within the standard wetland buffer, including potential replacement of an existing culvert beneath the trail (to allow for fire

truck access). The buffer will be reduced by approximately 15 feet in this area to allow for the improvements.

To compensate for the proposed buffer reduction, an area totaling 11,362 square feet will be restored within the reduced buffer. This includes removal of a significant area of existing parking lot, which is a pollution-generating surface. This area will be restored with amended soils and native trees, shrubs, and groundcover. Others areas of degraded forested buffer will be enhanced with the planting of native conifers and shrubs. Species include western red cedar, grand fir, bigleaf maple, Douglas-fir, Sitka spruce, snowberry, baldhip rose, oceanspray, osoberry, thimbleberry, twinberry, nootka rose, red elderberry, sword fern, and salal. As described below, mitigation is expected to result in no net loss of wetland and buffer functions.

5.1 Buffer Reduction Criteria

MICC 19.07.080.C.2 provides the criteria to authorize a reduction in the standard wetland buffer width. Category III wetlands can have their buffers reduced from 50-feet to 25-feet. Such a reduction requires compliance with the following criteria:

The smaller area is adequate to protect the wetland functions;

Buffer reduction will result in a buffer loss of 5,768 square feet, which represents a small fraction of the total buffer area. This smaller area of buffer will include the enhancement of 11,362 square feet of existing degraded buffer to a native assemblage of trees, shrubs, and groundcover. This area of enhancement will provide improved water quality, hydrology, and habitat functions in areas closest to the proposed building (see Table 1 below). Therefore, while the buffer will be reduced in size, it's functionality will improve, thereby maintaining and protecting wetland functions.

The impacts will be mitigated consistent with MICC 19.07.070.B.2;

Proposed mitigation includes enhancement of a portion of the existing degraded wetland buffer. Specifically, area of pavement will be removed and restored with amended soils and native trees, shrubs, and groundcover. Others areas of degraded forested buffer will be enhanced with the planting of native conifers and shrubs. Species include western red cedar, grand fir, bigleaf maple, Douglas-fir, Sitka spruce, snowberry, baldhip rose, oceanspray, osoberry, thimbleberry, twinberry, nootka rose, red elderberry, sword fern, and salal. This mitigation method is consistent with MICC 19.07.070.B.2, which includes the replacement or replanting of areas with native vegetation as part of an approved mitigation plan.

The proposal will result in no net loss of wetland and buffer functions.

The mitigation plan is designed to ensure no net loss of ecological function as a result of the proposed improvements. Proposed mitigation will benefit on-site critical area buffers by increasing the ability of the buffer vegetation to store/trap sediments and nutrients, increasing the ability of the buffer to attenuate flood flow during heavy rain, and improving cover and forage opportunities for wildlife. Table 1, below, summarizes how the proposed mitigation will achieve no net loss of ecological functions on-site.

Table 1. Summary showing no net loss of critical area buffer functions with proposed conditions.

Critical Area Buffer Function	Existing Conditions	Proposed Conditions	Determination
Water Quality	The current water quality function of the wetland buffer is limited by an area of parking lot, a sparsely vegetated understory and multiple dead trees, which do not contribute significantly to water quality functions.	Vegetative density to be substantially increased in the wetland buffer through the removal of parking lot, and the planting of native trees, shrubs, and groundcovers.	Increasing amount of dense, rigid vegetation and vertical structure will improve the ability to slow surface water and help filter and capture nutrients and sediments that might otherwise enter the wetland. Removal of the parking lot adjacent to the wetland will eliminate a direct point source of pollutants into the wetland.
Hydrology	The current hydrologic function of the wetland buffer is limited by a sparsely vegetated understory and area of existing pavement.	Vegetative density to be substantially increased in the wetland buffer through the removal of pavement, and the planting of native trees, shrubs, and groundcovers.	The addition of trees, shrubs, groundcover plants will help attenuate flood flow during heavy rain events. Removal of paved areas will greatly reduce the amount of stormwater generated within the standard buffer area.
Habitat	The habitat function of the wetland buffer is restricted by limited understory vegetative density, low structural diversity, and the presence of non-native plant species.	Non-native plant species to be removed. Vegetative density to be substantially increased through the planting of native trees, shrubs, and groundcovers. Woody debris to be installed throughout the restored wetland area.	Woody debris installation and understory planting of trees, shrubs, and groundcover plants will increase vegetative density and structural diversity, improving cover, providing forage opportunities for wildlife, and creating specialized habitat niches.

Overall	Moderate to low functioning wetland buffer in the project area, including an area of existing parking lot, which is detrimental to water quality. Existing vegetated areas are characterized by multiple dead trees and a relatively open or sparsely vegetated understory.	Removal of existing pavement and restoration with amended soils and native plantings. Planting of trees, shrubs, and groundcovers in existing degraded portions of the buffer, including the placement of woody debris.	The proposed project is expected to improve ecological functions over existing conditions. This includes habitat, hydrology, and water quality functions of the wetland buffer. Overall no net loss of wetland or buffer functions is expected.

6 MITIGATION AND RESTORATION PLAN

6.1 Overview

A comprehensive five-year maintenance and monitoring plan is included as part of the buffer mitigation. The plan specifies appropriate species for planting and planting techniques, describes proper maintenance activities, and sets forth performance standards to be met yearly during monitoring. This will ensure that mitigation plantings will be maintained, monitored, and successfully established within the first five years following implementation.

Proposed restoration begins with removal of invasive weeds such as Himalayan blackberry, English ivy, and English laurel and placement of woody debris in the buffer. Soil amendments, including removal of asphalt paving in the parking area and incorporation of compost in all planting areas, would follow weed removal. Woody debris generated from removal of standing dead trees on the site would be placed throughout the buffer. Finally, installation of native tree, shrub, and groundcover species suitable to the site (Appendix A) would be initiated. The site would then be stabilized with a thick application of woodchip mulch. Four native tree species, eight native shrub species, and two native groundcover species are proposed in the mitigation area. The plan calls for new plantings within the reduced wetland buffer. Native plantings and woody material are intended to increase native plant cover, improve native species diversity, increase vegetative structure, and provide food and other habitat resources for wildlife.

6.2 Goals

1. Enhance the wetland buffer.

    a. Remove and control all invasive woody species in the mitigation area including but not limited to Himalayan blackberry, English ivy, and English laurel.

b. Establish dense and diverse native tree, shrub and groundcover vegetation throughout the mitigation area.

6.3 Performance Standards

Infill Planting Areas

1. Survival:

    a. 100% survival of all trees and shrubs at the end of Year One. This standard may be met through establishment of installed plants or by replanting as necessary to achieve the required numbers.

    b. 80% survival of all trees and shrubs at the end of Year Two. This standard may be met through establishment of installed plants or by replanting as necessary to achieve the required numbers.

        i. Survival beyond Year Two is difficult to track. Therefore, a diversity standard is proposed in place of survival (see #3, below).

2. Native vegetation cover in planted areas:

    a. Achieve at least 30% cover of native plants by the end of Year 3, excluding the existing canopy. Volunteer species may count towards this standard.

    b. Achieve at least 80% cover of native plants by the end of Year 5, excluding the existing canopy. Volunteer species may count towards this standard.

3. Species diversity in planted areas:

    a. Establish at least two native tree species, four native shrub species and one native groundcover species throughout the buffer area by Year 5. Volunteer species may count towards this standard.

4. Invasive species standard: No more than 10% cover of invasive species in the planting area, in any monitoring year. Invasive species are defined as any Class A, B, or C noxious weeds as listed by the King County Noxious Weed Control Board.

Buffer Restoration Area

5. Survival:

    a. 100% survival of all trees and shrubs at the end of Year One. This standard may be met through establishment of installed plants or by replanting as necessary to achieve the required numbers.

b. 80% survival of all trees and shrubs at the end of Year Two. This standard may be met through establishment of installed plants or by replanting as necessary to achieve the required numbers.

i. Survival beyond Year Two is difficult to track. Therefore, a diversity standard is proposed in place of survival (see #3, below).

6. Native vegetation cover in planted areas:

a. Achieve at least 50% cover of native plants by the end of Year 3. Volunteer species may count towards this standard.

b. Achieve at least 80% cover of native plants by the end of Year 5. Volunteer species may count towards this standard.

7. Species diversity in planted areas:

a. Establish at least two native tree species, four native shrub species and one native groundcover species throughout the buffer area by Year 5. Volunteer species may count towards this standard.

8. Invasive species standard: No more than 10% cover of invasive species in the planting area, in any monitoring year. Invasive species are defined as any Class A, B, or C noxious weeds as listed by the King County Noxious Weed Control Board.

6.4 Monitoring Methods

This monitoring program is designed to track the success of the mitigation site over time by measuring the degree to which the performance standards listed above are being met. An as-built plan will be prepared within 30 days of substantially complete construction of the mitigation area. The as-built plan will document conformance with these plans and will disclose any substitutions or other non-critical departures. The as-built plan will establish baseline plant installation quantities, photopoints, and monitoring transects that will be used throughout the monitoring period to measure the performance standards.

Monitoring will occur twice annually for five years. The first monitoring visit will take place in the spring. This visit will record necessary weeding, invasive control, and other maintenance needs. The **restoration specialist** will then notify the owner and/or maintenance crews of necessary early season maintenance. The late-season visit will occur in late summer or fall and will record the following and be submitted in an annual report to the City:

1. General summary of the spring visit.

2. First- and second-year counts of surviving and dead/dying plants by species in the planting areas.
3. Estimates of native species cover using the line-intercept method along the monitoring transects.
4. Estimates of invasive species cover using the line-intercept method along the monitoring transects.
5. Counts of established native species to determine species richness.
6. Photographic documentation at permanent photopoints.
7. Intrusions into the planting areas, erosion, vandalism, trash, and other actions detrimental to the overall health of the mitigation areas.
8. Recommendations for maintenance in the mitigation areas.
9. Recommendations for replacement of all dead or dying plant material with same or like species and number as on the approved plan.

6.5 Construction Notes and Specifications

Specifications for items in **bold** can be found under "Material Specifications and Definitions."

General Notes

The restoration specialist will oversee the following:

1. Clearing, soil preparation (including asphalt removal), and placement of **woody debris**;
2. Invasive weed clearing; and
3. Plant material inspection.
    a) Plant delivery inspection.
    b) 50% plant installation/layout inspection.
    c) 100% plant installation inspection.

The project arborist will oversee the following:

1. Placement of Tree Protection fencing
2. Any pruning or cutting of trees within the project area.

Work Sequence

1. Ensure tree protection fencing and silt fence are in place before the start of any work activities.

2. Clear the planting area of all invasive woody vegetation including but not limited to Himalayan blackberry, English ivy, and English laurel.
3. Manually or mechanically remove all invasive woody vegetation roots. Cut ivy growing on trees at approximately eye-level and remove roots from the soil. Rake out remaining roots to the maximum extent practical.
4. Remove all asphalt and areas of lawn from the planting areas and loosen all compacted soils in preparation for planting. Rototill two inches of **compost** into the upper six inches of the soil where decompaction is necessary in soil preparation area 1.
5. Place **woody debris** retained from tree removal in the buffer as shown in plans. Unless too dense, trees may be left where they fall rather than as exactly shown on the plan.
6. All plant installation will take place during the dormant season (October 15 to March 1).
7. Layout vegetation to be installed per the planting plan and plant schedule.
8. Prepare a planting pit for each plant and install per the container planting detail.
9. Mulch entire mitigation area with **wood chip mulch**, 4 inches thick pulled away from truck and stems of installed container trees, shrubs or groundcover.
10. Install a temporary or permanent irrigation system as needed to ensure that all plants receive at least one inch of water per week from June 1st – September 30th. Maintain irrigation system in working condition for at least two summers after initial plant installation.

6.6 Maintenance

This site will be maintained for five years following completion of the plant installation. Specifications in **bold** can be found under "Material Specifications and Definitions."

1. Replace each plant found dead in the summer monitoring visit during the upcoming fall dormant season (October 15to March 1).
2. Follow the recommendations noted in the spring monitoring site visit.
3. Invasive species maintenance plan:
    a) Himalayan blackberry, English ivy, English laurel, and other invasive woody vegetation will be grubbed out by hand on an ongoing basis, with care taken to grub out roots except where such work will jeopardize the roots of installed or volunteer native plants.

b) If it is likely that hand removal will not be completely effective or will damage desirable species, then application of an herbicide approved for use in aquatic areas may be used. Herbicide applications must be conducted only by a state-licensed applicator. Applications should be done between mid-spring and mid-summer to maximize uptake by plants. Application should be a targeted method such as spot spray (preferred for Himalayan blackberry), or wick.

4. At least twice yearly, remove by hand 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 as needed during the spring and summer. Frequent weeding will result in lower mortality and lower plant replacement costs.
5. Do not weed the area near the plant bases with string trimmer (weed whacker). Native plants are easily damaged or killed, and weeds easily recover after trimming.
6. Apply slow release granular **fertilizer** to each installed plant annually in the spring (by June 1) of Years 2 through 5.
7. Mulch the weeded areas beneath each plant with **wood chip mulch** as necessary to maintain a minimum 4-inch-thick, 18-inch-diameter mulch ring.
8. The temporary irrigation system will be operated to ensure that plants receive a minimum of one inch of water per week from June 1 through September 30 for the first two years following installation. Irrigation beyond the second year may be needed based on site performance or significant replanting.

6.7 Material Specifications and Definitions

1. **Compost**: Cedar Grove Compost or equivalent product. 100% vegetable compost with no appreciable quantities of sand, gravel, sawdust, or other non-organic materials.

2. **Fertilizer**: Slow release, granular phosphorous-free fertilizer. 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 2 through 5 and **not in the first year.**

3. **Restoration specialist**: The Watershed Company [(425) 822-5242] personnel or other person qualified to evaluate environmental restoration projects.

4. **Project Arborist**: The Watershed Company [(425) 822-5242] personnel or other person certified by The International Society of Arboriculture.

5. **Wood chip mulch**: Chipped woody material approximately 1 inch minimum to 3 inches in maximum dimension (not sawdust or coarse hog fuel). Mulch shall not

contain appreciable quantities of garbage, plastic, metal, soil, and dimensional lumber or construction/ demolition debris. Pacific Topsoil sells suitable woodchip mulch called "Wood Chip Mulch" at many of their locations. Pacific Topsoil: (800) 884-7645. Note: Arborist woodchips generally contain weed seeds and are not a reliable alternative.

6. **Woody debris**: Large pieces of downed wood such as logs, rootwads, and limbs which are placed on the ground. These pieces of downed wood should have a diameter of at least 12 inches and a minimum length of 10 feet but will vary since they are sourced from existing standing dead trees already on the site. Debris to be placed to maximize ground contact.

7 SUMMARY

The applicant proposes the construction of the Mercer Island Center for the Arts. The facility will include a single building, approximately 21,860 square feet in size and positioned partially within the standard wetland buffer. In order to accommodate the facility, a 50 percent reduction in the on-site wetland buffer is proposed through the allowances outlined in MICC 19.07.080. A second small area of buffer reduction will occur to allow for fire access improvements. Reduction of the buffer will be mitigated through the removal of areas of existing pavement and lawn and restoration with amended soils and native trees, shrubs, and groundcover. Others areas of degraded forested buffer will be enhanced with the planting of native conifers and shrubs, including the placement of woody debris. Species include western red cedar, grand fir, bigleaf maple, Douglas-fir, Sitka spruce, snowberry, baldhip rose, oceanspray, osoberry, thimbleberry, twinberry, nootka rose, red elderberry, sword fern, and salal. A mitigation plan has been developed that details the plantings proposed to mitigate for the allowed buffer reduction. A total of 11,362 square feet of native plantings is proposed within the reduced buffer.

The mitigation plantings and large woody material proposed within the reduced wetland buffer will increase habitat function value and improve overall buffer functions. The proposed planting plan incorporates a diversity of native plant species, including trees, shrubs, and groundcover plants. The proposed plan will provide better protection of the on-site critical area functions and values than exists under current conditions, including increased water quality, hydrology, and habitat functions.

Additionally, a comprehensive five-year maintenance and monitoring plan has been prepared. This plan will ensure that proposed enhancement plantings will be maintained, monitored, and successfully established within the first five years following

implementation. Overall, a net gain in on-site critical area functions and values is the expected result of the implemented project.

REFERENCES

City of Mercer Island. Accessed October 2016. City of Mercer Island GIS Portal. Website: http://pubmaps.mercergov.org/SilverlightViewerEssentialsExternal/Viewer.html?Viewer=ExternalWebGIS

Washington Department of Fish and Wildlife (WDFW). Accessed October 2016. Priority Habitats and Species (PHS): PHS on the Web. Website: http://wdfw.wa.gov/mapping/phs/.

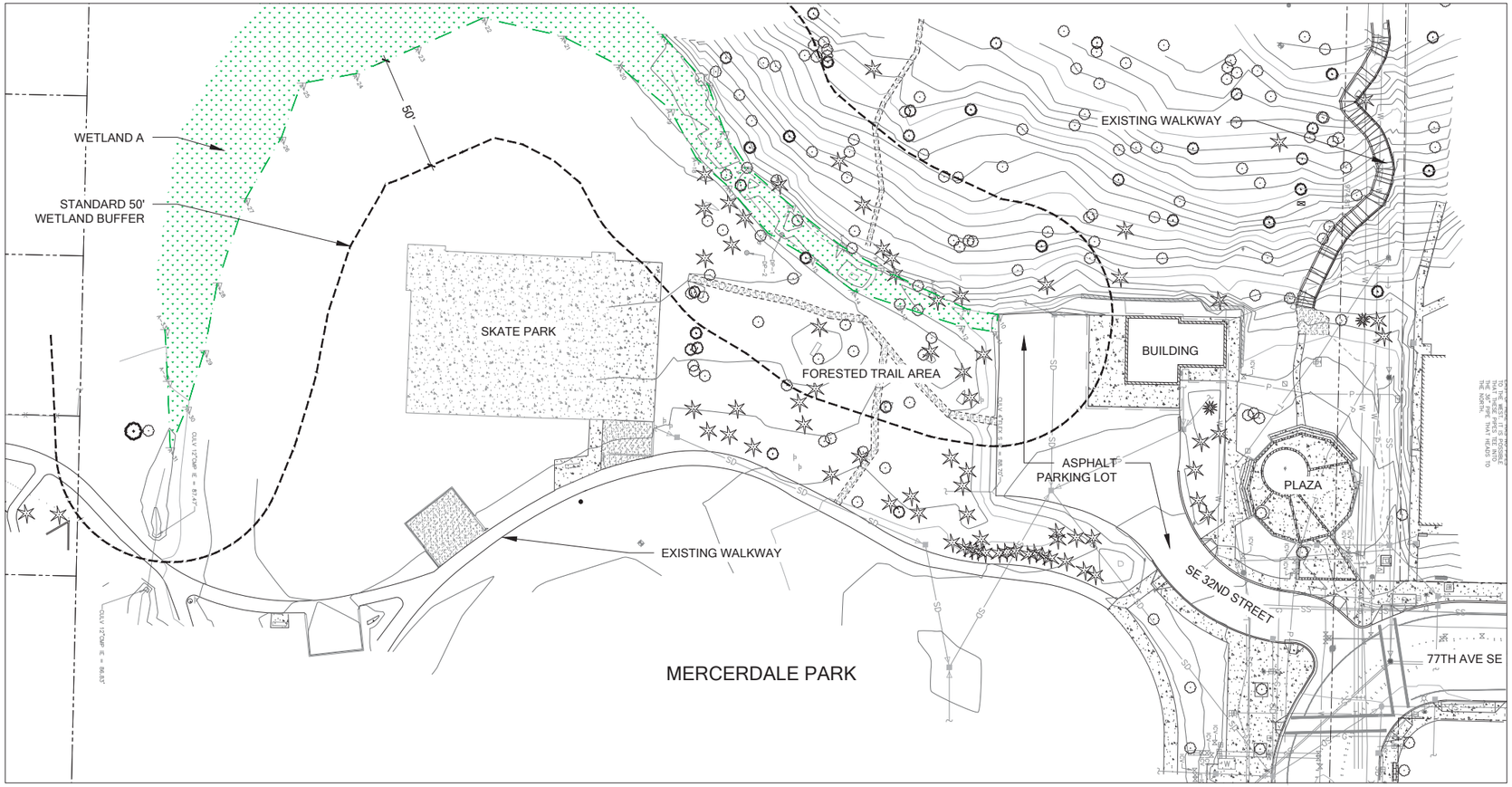
US Department of Agriculture (USDA). Accessed October 2016. Natural Resources Conservation Service: Web Soil Survey. Website: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

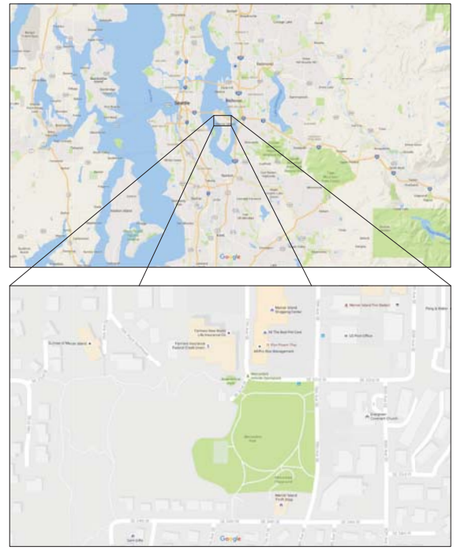
US Fish and Wildlife Service (FWS). May 2007. National Bald Eagle Management Guidelines. Available online: https://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines.pdf.

APPENDIX A

Mitigation Plan

MERCER ISLAND CENTER FOR THE ARTS





VICINITY MAPS

SHEET INDEX

W1 EXISTING SITE CONDITIONS
W2 IMPACTS ASSESSMENT AND MITIGATION PLAN
W3 TREE DEMO AND PROTECTION PLAN
W4 SITE PREPARATION PLAN
W5 PLANTING PLAN
W6 PLANT INSTALLATION SPECIFICATIONS AND MITIGATION DETAILS
W7 MITIGATION PLAN DETAILS AND NOTES

NOTES

1. THIS PLAN IS TO BE REVIEWED BY MERCER ISLAND PARKS AND RECREATION PRIOR TO BUILDING PERMIT APPROVAL.
2. CRITICAL AREAS DELINEATED BY THE WATERSHED COMPANY APRIL 2ND, 2015
3. SURVEY RECEIVED FROM MAGNUSSON KLEMENCIC ASSOCIATES ON OCTOBER 14TH, 2016.

LEGEND

- DELINEATED WETLAND
- WETLAND BUFFER
- EXISTING SURVEYED TREE
- PARCEL BOUNDARIES

EXISTING SITE CONDITIONS

0 15' 30' 60' 120'

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MERCER ISLAND, WA 98040

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	08-21-15	REVIEW SET	MSF
1	10-20-2016	CONCEPT PLANS	KMB
3	11-16-2016	SEPA	KMB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: HM
DESIGNED: KMB
DRAFTED: KMB
CHECKED: KC/KB

JOB NUMBER:
150320

SHEET NUMBER:
W1 OF 7

DATE 11/16/2016 | PRINTED BY KYLE BRAUN | FILENAME 150320_MICA_MITIGATION.DWG

LEGEND

- DELINEATED WETLAND
- STANDARD WETLAND BUFFER
- PROPOSED REDUCED BUFFER
- PROPOSED BUFFER REDUCTION AREA (5,768 SQUARE FEET)
- PROPOSED BUFFER RESTORATION PLANTING AREA (2,908 SQUARE FEET) - PLANTING OF NATIVE TREES, SHRUBS, AND GROUNDCOVER
- PROPOSED BUFFER ENHANCEMENT PLANTING AREA (8,454 SQUARE FEET) - INFILL PLANTING OF NATIVE CONIFERS, SHRUBS, AND GROUNDCOVER
- PROPOSED LARGE WOODY DEBRIS STRUCTURES (57) (LARGE WOODY DEBRIS IS TO BE SOURCED FROM TREES TO BE REMOVED ON SITE. SEE SHEET W3) 1/W6

IMPACTS ASSESSMENT AND MITIGATION PLAN

0 10' 20' 40' 80'

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SHEET NUMBER: W2 OF 7

FILENAME 150320_MICA_MITIGATION.DWG
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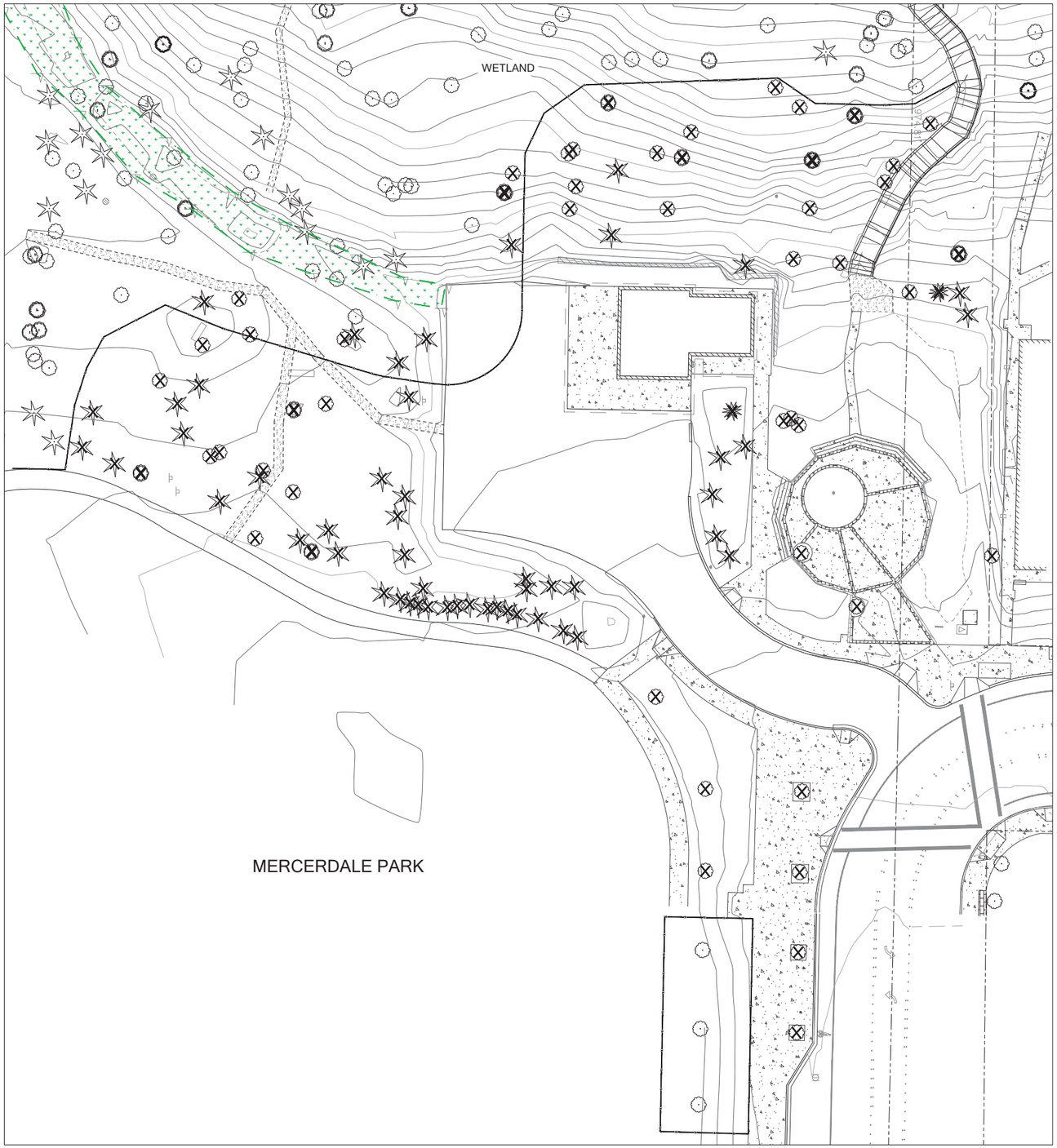
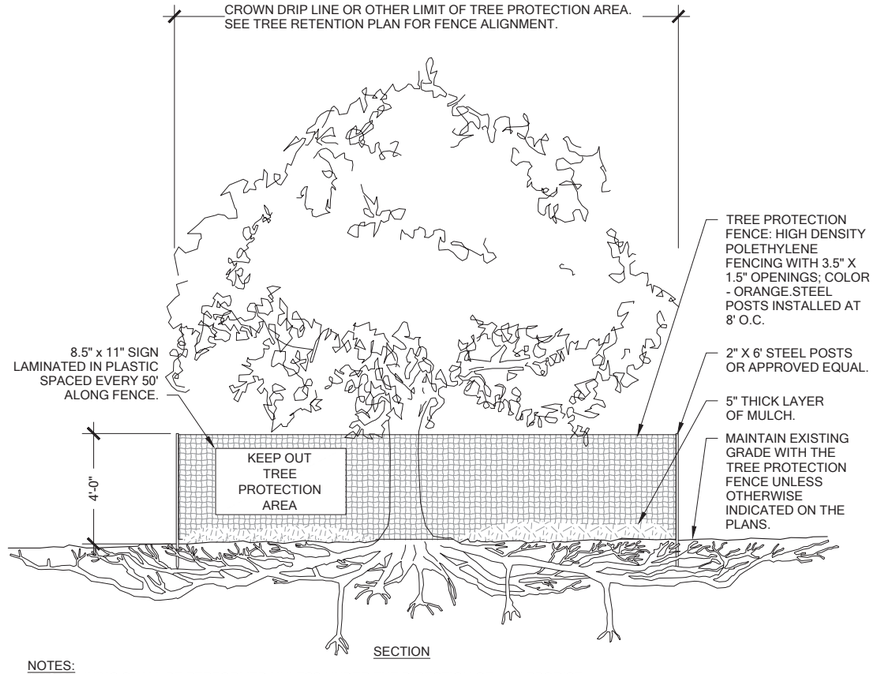
DATE 11/16/2016



TREE DEMO AND PROTECTION PLAN

0 10' 20' 40' 80'



SECTION

NOTES:
1.NO PRUNING SHALL BE PERFORMED UNLESS UNDER THE DIRECTION OF AN ARBORIST.
2.NO EQUIPMENT SHALL BE STORED OR OPERATED INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
3. NO STORAGE OF MATERIALS SHALL OCCUR INSIDE THE PROTECTIVE FENCING.
4. UNAUTHORIZED ACTIVITIES IN TREE PROTECTION AREA MAY REQUIRE EVALUATION BY A CERTIFIED ARBORIST TO IDENTIFY IMPACTS AND MITIGATION REQUIRED.
5. EXPOSED ROOTS: FOR ROOTS GREATER THAN 1" DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE DAMAGED PORTION AND INFORM PROJECT ARBORIST.

1 TREE PROTECTION FENCING

Scale: NTS

NOTES

1. TREE PROTECTION FENCING SHALL NOT BE MOVED WITHOUT PRIOR APPROVAL FROM PROJECT ARBORIST.
2. TREE PROTECTION FENCING SHALL BE PLACED BEFORE THE START OF ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT.
3. OF THE 112 TREES TO BE REMOVED THE LARGEST CONIFER TREES IN THE BEST OVERALL HEALTH SHALL BE USED FOR LARGE WOODY DEBRIS STRUCTURES AS SHOW ON THE MITIGATION PLAN.
4. TREES TO BE REMOVED INSIDE OF PROTECTION AREA OR LOCATED WITHIN THE PROPOSED MITIGATION AREA SHALL BE FALLED IN PLACE AND LEFT AS IS.

LEGEND

DELINEATED WETLAND
TREE PROTECTION FENCING (1 / W3)
TREES TO BE REMOVED (54 CONIFERS, 58 DECIDUOUS)
TREES TO REMAIN

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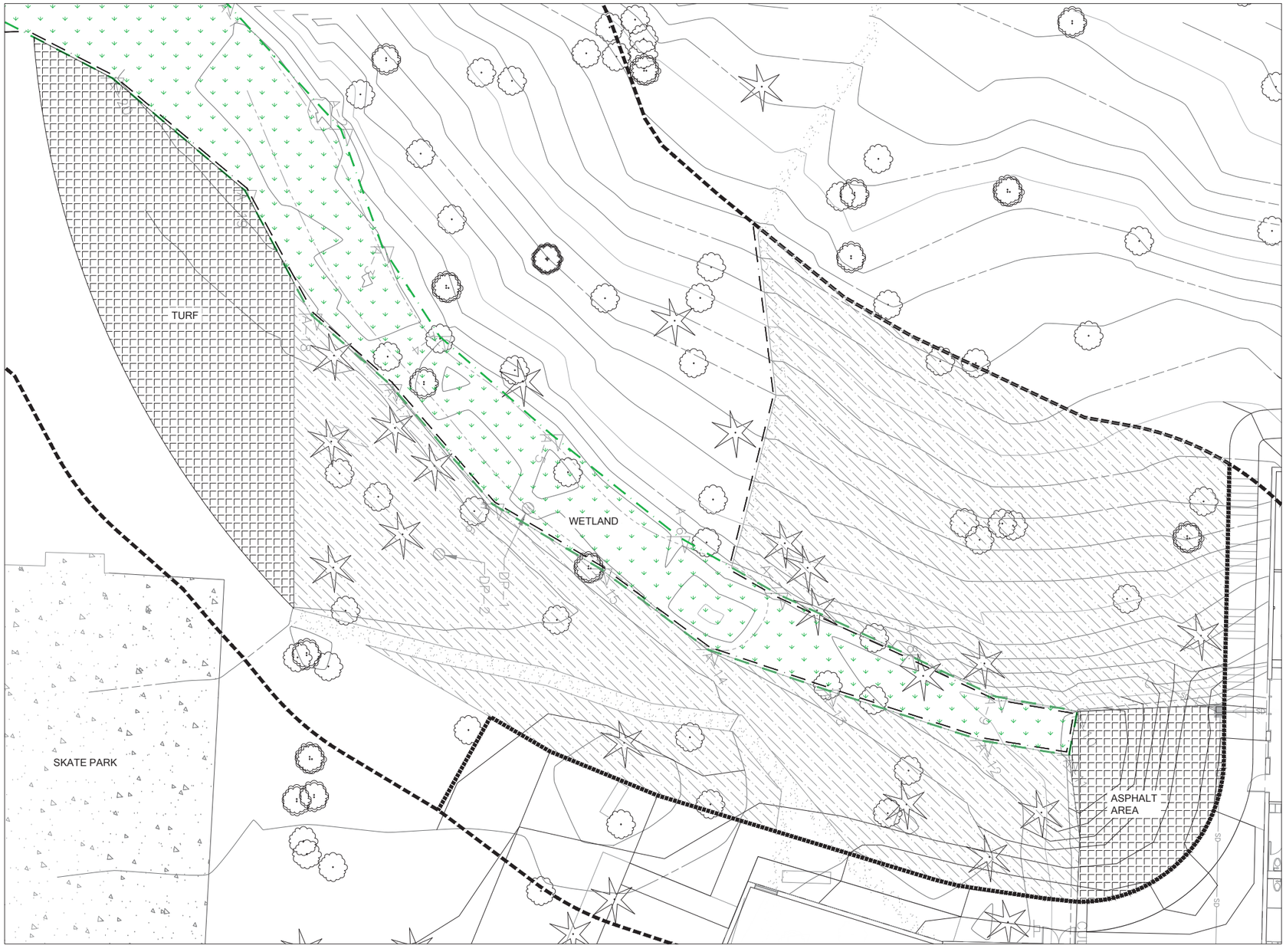
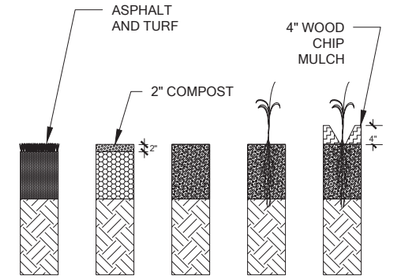




PLANTING AREA PREPARATION

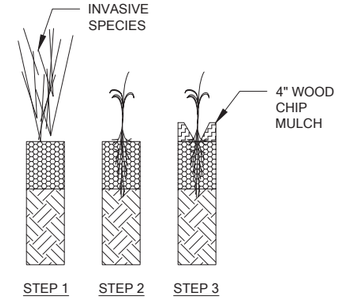
STEP 1
REMOVE ASPHALT, GRAVEL SUB-BASE AND TURF. ADDRESS COMPACTION TO A MINIMUM SIX (6) INCH DEPTH. DRAINAGE RATE SHALL BE BETWEEN 1 - 5 INCHES PER HOUR OR AS OTHERWISE APPROVED BY THE RESTORATION SPECIALIST. WORK WITHIN ROOT ZONES OF ANY TREES OR NATIVE PLANTS SHALL BE DONE BY HAND. THEN PLACE (2) INCHES OF COMPOST.

STEP 2
AMEND EXISTING SOIL AND COMPOST.

STEP 3
INSTALL PLANTS. (SEE CONTAINER PLANTING DETAIL)

STEP 4
PLACE 4" OF WOODCHIP MULCH. PULL MULCH BACK FROM STEMS AND TRUCK OF PLANTS AND TREES.

SOIL PREPARATION AREA 1
SEQUENCE OF WORK - NOT TO SCALE



PLANTING AREA PREPARATION

STEP 1
REMOVE INVASIVE SPECIES AND TURF. HAND GRUB IN AND AROUND EXISTING NATIVE VEGETATION.

STEP 2
PLANT INFILL PLANTINGS IN AND AROUND EXISTING NATIVE VEGETATION. (SEE CONTAINER PLANTING DETAIL.)

STEP 3
PLACE WOOD CHIP MULCH 4" DEEP. PULL BACK MULCH FROM STEMS OF PLANTS.

SOIL PREPARATION AREA 2
SEQUENCE OF WORK - NOT TO SCALE

LEGEND

- DELINEATED WETLAND
- STANDARD WETLAND BUFFER
- REDUCED BUFFER
- SILT FENCE (2 / W6)

NOTES

1. ASPHALT AREA IS TO BE USED FOR CONSTRUCTION STAGING. RESTORATION TO COMMENCE UPON SUBSTANTIAL DEMOBILIZATION FROM THE SITE.

SITE PREPARATION PLAN

0 5' 10' 20' 40'

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SHEET NUMBER: W4 OF 7

FILENAME: 150320_MCA_MITIGATION.DWG
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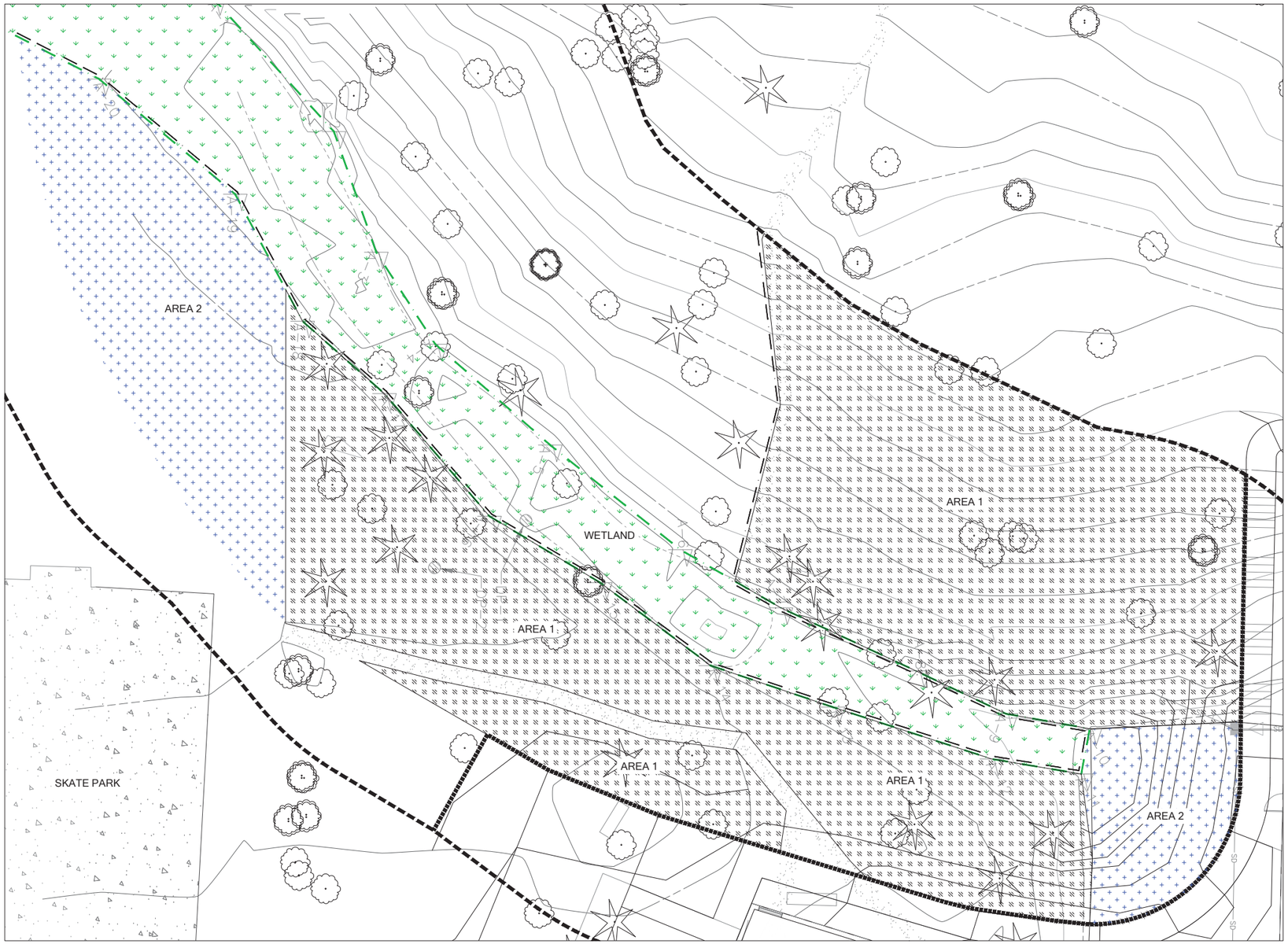
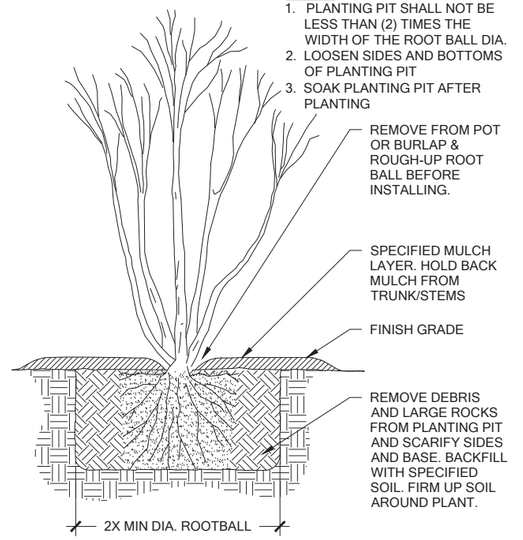
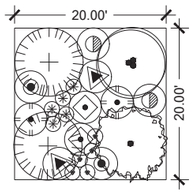
DATE: 11/16/2016





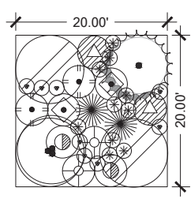
1 CONTAINER PLANTING

Scale: 1:1



NOTES:
1. PLANT IN AND AROUND EXISTING NATIVE TREES AND SHRUBS.
2. SEE PLANTING DETAIL FOR CONTAINER PLANTING.
3. REFER TO SHEET W3 FOR SOIL PREPARATION.
4. OMIT TREE PLANTING WITHIN 25' OF PROPOSED BUILDINGS.

PLANTING AREA 1 (INFILL PLANTING)
8,454 SQUARE FEET



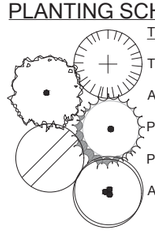
NOTES:
1. SEE PLANTING DETAIL FOR CONTAINER PLANTING.
2. REFER TO SHEET W3 FOR SOIL PREPARATION.
4. OMIT TREE PLANTING WITHIN 25' OF PROPOSED BUILDINGS.

PLANTING AREA 2 (BUFFER RESTORATION)
2,908 SQUARE FEET

LEGEND

- DELINEATED WETLAND
- STANDARD WETLAND BUFFER
- REDUCED BUFFER
- SILT FENCE (2 / W6)

PLANTING SCHEDULE



TREES / SPACING @ 9'-0" O.C.	AREA 1 QTY	AREA 2 QTY	SIZE
THUJA PLICATA / WESTERN RED CEDAR	42	0	2 GAL.
ABIES GRANDIS / GRAND FIR	22	8	2 GAL.
PICEA SITCHENSIS / SITKA SPRUCE	0	8	2 GAL.
PSEUDOTSUGA MENZIESII / DOUGLAS-FIR	0	8	2 GAL.
ACER MACROPHYLLUM / BIGLEAF MAPLE	22	8	2 GAL.

SHRUBS / SPACING @ 42" O.C.	AREA 1 QTY	AREA 2 QTY	SIZE
SYMPHORICARPOS ALBUS / SNOWBERRY	42	0	1 GAL.
HOLODISCUS DISCOLOR / OCEANSPRAY	42	16	1 GAL.
RUBUS PARVIFLORUS / THIMBLEBERRY	42	16	1 GAL.
ROSA GYMNOCARPA / BALDHIP ROSE	42	16	1 GAL.
OEMLERIA CERASIFORMIS / OSO BERRY	42	0	1 GAL.

SHRUBS / SPACING @ 42" O.C.	AREA 1 QTY	AREA 2 QTY	SIZE
SAMBUCUS RACEMOSA / RED ELDERBERRY	0	16	1 GAL.
ROSA NUTKANA / NUTKA (NOOTKA) ROSE	0	16	1 GAL.
LONICERA INVOLUCRATA / BLACK TWINBERRY	0	16	1 GAL.
GROUNDCOVERS / SPACING @ 24" O.C.			
POLYSTICHUM MUNITUM / SWORD FERN	110	80	4" POT
GAULTHERIA SHALLON / SALAL	110	80	4" POT

PLANTING PLAN

0 5' 10' 20' 40'

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JOB NUMBER: 150320
SHEET NUMBER: W5 OF 7

FILENAME: 150320_MICA_MITIGATION.DWG
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PLANT INSTALLATION SPECIFICATIONS

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 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.

MEASUREMENT 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
1. 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.
2. 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.
3. 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.
4. 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.

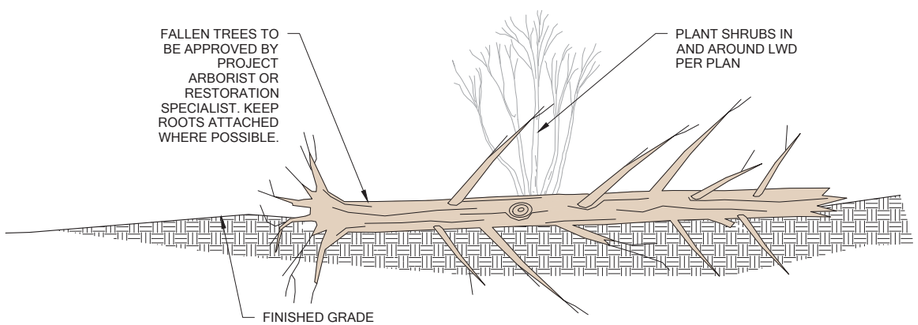
REPLACEMENT
1. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT THE CONSULTANT'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

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 AND PLANT SCHEDULES.

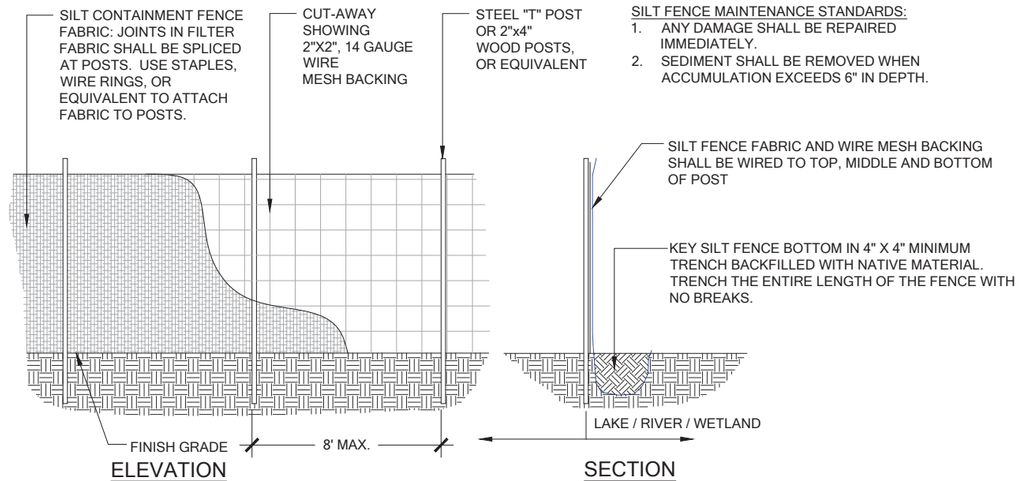
ROOT TREATMENT
1. CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
2. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.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



NOTES:
1. LAYOUT OF DETAIL IS CONCEPTUAL. SEE PLAN FOR LOCATION. LAYOUT IN FIELD WITH ASSISTANCE FROM THE PROJECT ARBORIST OR RESTORATION SPECIALIST.
2. ENSURE SOIL CONTACT OVER MINIMUM TWO THIRDS LOG LENGTH.
3. DO NOT DISTURB EXISTING NATIVE VEGETATION.
4. TREES TO BE REMOVED WITHIN MITIGATION AREA ARE TO BE FALLEN IN PLACE AND LEFT AS IS.

1 LARGE WOODY DEBRIS STRUCTURE

Scale: NTS



SILT FENCE MAINTENANCE STANDARDS:
1. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.
2. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION EXCEEDS 6" IN DEPTH.

2 SILT FENCE

Scale: NTS

PLANT INSTALLATION SPECIFICATIONS AND MITIGATION DETAILS

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MERCER ISLAND CENTER FOR THE ARTS
MITIGATION PLAN
PREPARED FOR BRUCE LORIG
MERCERDALE PARK
77TH AVE SE & SE 32ND STREET (PARCEL # 1224049068)
MERCER ISLAND, WA 98040

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	08-21-15	REVIEW SET	MSF
1	10-20-2016	CONCEPT PLANS	KMB
3	11-16-2016	SEPA	KMB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: HM
DESIGNED: KMB
DRAFTED: KMB
CHECKED: KC/KB
JOB NUMBER: 150320
SHEET NUMBER: W6 OF 7

FILENAME: 150320_MICA_MITIGATION.DWG
PRINTED BY: KYLE BRAUN
DATE: 11/16/2016

MITIGATION PLAN NOTES

OVERVIEW

A COMPREHENSIVE FIVE-YEAR MAINTENANCE AND MONITORING PLAN IS INCLUDED AS PART OF THE BUFFER MITIGATION. THE PLAN SPECIFIES APPROPRIATE SPECIES FOR PLANTING AND PLANTING TECHNIQUES, DESCRIBES PROPER MAINTENANCE ACTIVITIES, AND SETS FORTH PERFORMANCE STANDARDS TO BE MET YEARLY DURING MONITORING. THIS WILL ENSURE THAT MITIGATION PLANTINGS WILL BE MAINTAINED, MONITORED, AND SUCCESSFULLY ESTABLISHED WITHIN THE FIRST FIVE YEARS FOLLOWING IMPLEMENTATION.

PROPOSED RESTORATION BEGINS WITH REMOVAL OF INVASIVE WEEDS SUCH AS HIMALAYAN BLACKBERRY, ENGLISH IVY, AND ENGLISH LAUREL AND PLACEMENT OF WOODY DEBRIS IN THE BUFFER. SOIL AMENDMENTS, INCLUDING REMOVAL OF ASPHALT PAVING IN THE PARKING AREA AND INCORPORATION OF COMPOST IN ALL PLANTING AREAS, WOULD FOLLOW WEED REMOVAL. WOODY DEBRIS GENERATED FROM REMOVAL OF STANDING DEAD TREES ON THE SITE WOULD BE PLACED THROUGHOUT THE BUFFER. FINALLY, INSTALLATION OF NATIVE TREE, SHRUB, AND GROUNDCOVER SPECIES SUITABLE TO THE SITE (APPENDIX A) WOULD BE INITIATED. THE SITE WOULD THEN BE STABILIZED WITH A THICK APPLICATION OF WOODCHIP MULCH. FOUR NATIVE TREE SPECIES, EIGHT NATIVE SHRUB SPECIES, AND TWO NATIVE GROUNDCOVER SPECIES ARE PROPOSED IN THE MITIGATION AREA. THE PLAN CALLS FOR NEW PLANTINGS WITHIN THE REDUCED WETLAND BUFFER. NATIVE PLANTINGS AND WOODY MATERIAL ARE INTENDED TO INCREASE NATIVE PLANT COVER, IMPROVE NATIVE SPECIES DIVERSITY, INCREASE VEGETATIVE STRUCTURE, AND PROVIDE FOOD AND OTHER HABITAT RESOURCES FOR WILDLIFE.

GOALS

1. ENHANCE THE WETLAND BUFFER.
   a. REMOVE AND CONTROL ALL INVASIVE WOODY SPECIES IN THE MITIGATION AREA INCLUDING BUT NOT LIMITED TO HIMALAYAN BLACKBERRY, ENGLISH IVY, AND ENGLISH LAUREL.
   b. ESTABLISH DENSE AND DIVERSE NATIVE TREE, SHRUB AND GROUNDCOVER VEGETATION THROUGHOUT THE MITIGATION AREA.

PERFORMANCE STANDARDS

INFILL PLANTING AREAS

1. SURVIVAL:
   a. 100% SURVIVAL OF ALL TREES AND SHRUBS AT THE END OF YEAR ONE. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   b. 80% SURVIVAL OF ALL TREES AND SHRUBS AT THE END OF YEAR TWO. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   i. SURVIVAL BEYOND YEAR TWO IS DIFFICULT TO TRACK. THEREFORE, A DIVERSITY STANDARD IS PROPOSED IN PLACE OF SURVIVAL (SEE #3, BELOW).
2. NATIVE VEGETATION COVER IN PLANTED AREAS:
   a. ACHIEVE AT LEAST 30% COVER OF NATIVE PLANTS BY THE END OF YEAR 3, EXCLUDING THE EXISTING CANOPY. VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD.
   b. ACHIEVE AT LEAST 80% COVER OF NATIVE PLANTS BY THE END OF YEAR 5, EXCLUDING THE EXISTING CANOPY. VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD.
3. SPECIES DIVERSITY IN PLANTED AREAS:
   a. ESTABLISH AT LEAST TWO NATIVE TREE SPECIES, FOUR NATIVE SHRUB SPECIES AND ONE NATIVE GROUNDCOVER SPECIES THROUGHOUT THE BUFFER AREA BY YEAR 5. VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD.
4. INVASIVE SPECIES STANDARD: NO MORE THAN 10% COVER OF INVASIVE SPECIES IN THE PLANTING AREA, IN ANY MONITORING YEAR. INVASIVE SPECIES ARE DEFINED AS ANY CLASS A, B, OR C NOXIOUS WEEDS AS LISTED BY THE KING COUNTY NOXIOUS WEED CONTROL BOARD.

BUFFER RESTORATION AREA

1. SURVIVAL:
   a. 100% SURVIVAL OF ALL TREES AND SHRUBS AT THE END OF YEAR ONE. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   b. 80% SURVIVAL OF ALL TREES AND SHRUBS AT THE END OF YEAR TWO. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   i. SURVIVAL BEYOND YEAR TWO IS DIFFICULT TO TRACK. THEREFORE, A DIVERSITY STANDARD IS PROPOSED IN PLACE OF SURVIVAL (SEE #3, BELOW).
2. NATIVE VEGETATION COVER IN PLANTED AREAS:
   a. ACHIEVE AT LEAST 50% COVER OF NATIVE PLANTS BY THE END OF YEAR 3. VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD.
   b. ACHIEVE AT LEAST 80% COVER OF NATIVE PLANTS BY THE END OF YEAR 5. VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD.
3. SPECIES DIVERSITY IN PLANTED AREAS:
   a. ESTABLISH AT LEAST TWO NATIVE TREE SPECIES, FOUR NATIVE SHRUB SPECIES AND ONE NATIVE GROUNDCOVER SPECIES THROUGHOUT THE BUFFER AREA BY YEAR 5. VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD.
4. INVASIVE SPECIES STANDARD: NO MORE THAN 10% COVER OF INVASIVE SPECIES IN THE PLANTING AREA, IN ANY MONITORING YEAR. INVASIVE SPECIES ARE DEFINED AS ANY CLASS A, B, OR C NOXIOUS WEEDS AS LISTED BY THE KING COUNTY NOXIOUS WEED CONTROL BOARD.

MONITORING METHODS

THIS MONITORING PROGRAM IS DESIGNED TO TRACK THE SUCCESS OF THE MITIGATION SITE OVER TIME BY MEASURING THE DEGREE TO WHICH THE PERFORMANCE STANDARDS LISTED ABOVE ARE BEING MET. AN AS-BUILT PLAN WILL BE PREPARED WITHIN 30 DAYS OF SUBSTANTIALLY COMPLETE CONSTRUCTION OF THE MITIGATION AREA. THE AS-BUILT PLAN WILL DOCUMENT CONFORMANCE WITH THESE PLANS AND WILL DISCLOSE ANY SUBSTITUTIONS OR OTHER NON-CRITICAL DEPARTURES. THE AS-BUILT PLAN WILL ESTABLISH BASELINE PLANT INSTALLATION QUANTITIES, PHOTOPOINTS, AND MONITORING TRANSECTS THAT WILL BE USED THROUGHOUT THE MONITORING PERIOD TO MEASURE THE PERFORMANCE STANDARDS.

MONITORING WILL OCCUR TWICE ANNUALLY FOR FIVE YEARS. THE FIRST MONITORING VISIT WILL TAKE PLACE IN THE SPRING. THIS VISIT WILL RECORD NECESSARY WEEDING, INVASIVE CONTROL, AND OTHER MAINTENANCE NEEDS. THE RESTORATION SPECIALIST WILL THEN NOTIFY THE OWNER AND/OR MAINTENANCE CREWS OF NECESSARY EARLY SEASON MAINTENANCE. THE LATE-SEASON VISIT WILL OCCUR IN LATE SUMMER OR FALL AND WILL RECORD THE FOLLOWING AND BE SUBMITTED IN AN ANNUAL REPORT TO THE CITY:

1. GENERAL SUMMARY OF THE SPRING VISIT.
2. FIRST- AND SECOND-YEAR COUNTS OF SURVIVING AND DEAD/DYING PLANTS BY SPECIES IN THE PLANTING AREAS.
3. ESTIMATES OF NATIVE SPECIES COVER USING THE LINE-INTERCEPT METHOD ALONG THE MONITORING TRANSECTS.
4. ESTIMATES OF INVASIVE SPECIES COVER USING THE LINE-INTERCEPT METHOD ALONG THE MONITORING TRANSECTS.
5. COUNTS OF ESTABLISHED NATIVE SPECIES TO DETERMINE SPECIES RICHNESS.
6. PHOTOGRAPHIC DOCUMENTATION AT PERMANENT PHOTOPOINTS.
7. INTRUSIONS INTO THE PLANTING AREAS, EROSION, VANDALISM, TRASH, AND OTHER ACTIONS DETRIMENTAL TO THE OVERALL HEALTH OF THE MITIGATION AREAS.
8. RECOMMENDATIONS FOR MAINTENANCE IN THE MITIGATION AREAS.
9. RECOMMENDATIONS FOR REPLACEMENT OF ALL DEAD OR DYING PLANT MATERIAL WITH SAME OR LIKE SPECIES AND NUMBER AS ON THE APPROVED PLAN.

CONSTRUCTION NOTES AND SPECIFICATIONS

SPECIFICATIONS FOR ITEMS IN BOLD CAN BE FOUND UNDER "MATERIAL SPECIFICATIONS AND DEFINITIONS."

GENERAL NOTES

THE RESTORATION SPECIALIST WILL OVERSEE THE FOLLOWING:

1. CLEARING, SOIL PREPARATION (INCLUDING ASPHALT REMOVAL), AND PLACEMENT OF WOODY DEBRIS;
2. INVASIVE WEED CLEARING; AND
3. PLANT MATERIAL INSPECTION.
   a) PLANT DELIVERY INSPECTION.
   b) 50% PLANT INSTALLATION/LAYOUT INSPECTION.
   c) 100% PLANT INSTALLATION INSPECTION.

THE PROJECT ARBORIST WILL OVERSEE THE FOLLOWING:

1. PLACEMENT OF TREE PROTECTION FENCING
2. ANY PRUNING OR CUTTING OF TREES WITHIN THE PROJECT AREA.

WORK SEQUENCE

1. ENSURE TREE PROTECTION FENCING AND SILT FENCE ARE IN PLACE BEFORE THE START OF ANY WORK ACTIVITIES.
2. CLEAR THE PLANTING AREA OF ALL INVASIVE WOODY VEGETATION INCLUDING BUT NOT LIMITED TO HIMALAYAN BLACKBERRY, ENGLISH IVY, AND ENGLISH LAUREL.
3. MANUALLY OR MECHANICALLY REMOVE ALL INVASIVE WOODY VEGETATION ROOTS. CUT IVY GROWING ON TREES AT APPROXIMATELY EYE-LEVEL AND REMOVE ROOTS FROM THE SOIL. RAKE OUT REMAINING ROOTS TO THE MAXIMUM EXTENT PRACTICAL.
4. REMOVE ALL ASPHALT AND AREAS OF LAWN FROM THE PLANTING AREAS AND LOOSEN ALL COMPACTED SOILS IN PREPARATION FOR PLANTING. ROTOTILL TWO INCHES OF COMPOST INTO THE UPPER SIX INCHES OF THE SOIL WHERE DECOMPACTION IS NECESSARY IN SOIL PREPARATION AREA 1.
5. PLACE WOODY DEBRIS RETAINED FROM TREE REMOVAL IN THE BUFFER AS SHOWN IN PLANS. UNLESS TOO DENSE, TREES MAY BE LEFT WHERE THEY FALL RATHER THAN AS EXACTLY SHOWN ON THE PLAN.
6. ALL PLANT INSTALLATION WILL TAKE PLACE DURING THE DORMANT SEASON (OCTOBER 15 TO MARCH 1).
7. LAYOUT VEGETATION TO BE INSTALLED PER THE PLANTING PLAN AND PLANT SCHEDULE.
8. PREPARE A PLANTING PIT FOR EACH PLANT AND INSTALL PER THE CONTAINER PLANTING DETAIL.
9. MULCH ENTIRE MITIGATION AREA WITH WOOD CHIP MULCH, 4 INCHES THICK PULLED AWAY FROM TRUCK AND STEMS OF INSTALLED CONTAINER TREES, SHRUBS OR GROUNDCOVER.
10. INSTALL A TEMPORARY OR PERMANENT IRRIGATION SYSTEM AS NEEDED TO ENSURE THAT ALL PLANTS RECEIVE AT LEAST ONE INCH OF WATER PER WEEK FROM JUNE 1ST - SEPTEMBER 30TH. MAINTAIN IRRIGATION SYSTEM IN WORKING CONDITION FOR AT LEAST TWO SUMMERS AFTER INITIAL PLANT INSTALLATION.

MAINTENANCE

THIS SITE WILL BE MAINTAINED FOR FIVE YEARS FOLLOWING COMPLETION OF THE PLANT INSTALLATION. SPECIFICATIONS IN BOLD CAN BE FOUND UNDER "MATERIAL SPECIFICATIONS AND DEFINITIONS."

1. REPLACE EACH PLANT FOUND DEAD IN THE SUMMER MONITORING VISIT DURING THE UPCOMING FALL DORMANT SEASON (OCTOBER 15TO MARCH 1).
2. FOLLOW THE RECOMMENDATIONS NOTED IN THE SPRING MONITORING SITE VISIT.
3. INVASIVE SPECIES MAINTENANCE PLAN:
   a) HIMALAYAN BLACKBERRY, ENGLISH IVY, ENGLISH LAUREL, AND OTHER INVASIVE WOODY VEGETATION WILL BE GRUBBED OUT BY HAND ON AN ONGOING BASIS, WITH CARE TAKEN TO GRUB OUT ROOTS EXCEPT WHERE SUCH WORK WILL JEOPARDIZE THE ROOTS OF INSTALLED OR VOLUNTEER NATIVE PLANTS.
   b) IF IT IS LIKELY THAT HAND REMOVAL WILL NOT BE COMPLETELY EFFECTIVE OR WILL DAMAGE DESIRABLE SPECIES, THEN APPLICATION OF AN HERBICIDE APPROVED FOR USE IN AQUATIC AREAS MAY BE USED. HERBICIDE APPLICATIONS MUST BE CONDUCTED ONLY BY A STATE-LICENSED APPLICATOR. APPLICATIONS SHOULD BE DONE BETWEEN MID-SPRING AND MID-SUMMER TO MAXIMIZE UPTAKE BY PLANTS. APPLICATION SHOULD BE A TARGETED METHOD SUCH AS SPOT SPRAY (PREFERRED FOR HIMALAYAN BLACKBERRY), OR WICK.
4. AT LEAST TWICE YEARLY, REMOVE BY HAND 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 AS NEEDED DURING THE SPRING AND SUMMER. FREQUENT WEEDING WILL RESULT IN LOWER MORTALITY AND LOWER PLANT REPLACEMENT COSTS.
5. DO NOT WEED THE AREA NEAR THE PLANT BASES WITH STRING TRIMMER (WEED WHACKER). NATIVE PLANTS ARE EASILY DAMAGED OR KILLED, AND WEEDS EASILY RECOVER AFTER TRIMMING.
6. APPLY SLOW RELEASE GRANULAR FERTILIZER TO EACH INSTALLED PLANT ANNUALLY IN THE SPRING (BY JUNE 1) OF YEARS 2 THROUGH 5.
7. MULCH THE WEEDED AREAS BENEATH EACH PLANT WITH WOOD CHIP MULCH AS NECESSARY TO MAINTAIN A MINIMUM 4-INCH-THICK, 18-INCH-DIAMETER MULCH RING.
8. THE TEMPORARY IRRIGATION SYSTEM WILL BE OPERATED TO ENSURE THAT PLANTS RECEIVE A MINIMUM OF ONE INCH OF WATER PER WEEK FROM JUNE 1 THROUGH SEPTEMBER 30 FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION. IRRIGATION BEYOND THE SECOND YEAR MAY BE NEEDED BASED ON SITE PERFORMANCE OR SIGNIFICANT REPLANTING.

MATERIAL SPECIFICATIONS AND DEFINITIONS

1. COMPOST: CEDAR GROVE COMPOST OR EQUIVALENT PRODUCT. 100% VEGETABLE COMPOST WITH NO APPRECIABLE QUANTITIES OF SAND, GRAVEL, SAWDUST, OR OTHER NON-ORGANIC MATERIALS.
2. FERTILIZER: SLOW RELEASE, GRANULAR PHOSPHOROUS-FREE FERTILIZER. 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 2 THROUGH 5 AND NOT IN THE FIRST YEAR.
3. RESTORATION SPECIALIST: THE WATERSHED COMPANY [(425) 822-5242] PERSONNEL OR OTHER PERSON QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS.
4. PROJECT ARBORIST: THE WATERSHED COMPANY [(425) 822-5242] PERSONNEL OR OTHER PERSON CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE.
5. WOOD CHIP MULCH: CHIPPED WOODY MATERIAL APPROXIMATELY 1 INCH MINIMUM TO 3 INCHES IN MAXIMUM DIMENSION (NOT SAWDUST OR COARSE HOG FUEL). MULCH SHALL NOT CONTAIN APPRECIABLE QUANTITIES OF GARBAGE, PLASTIC, METAL, SOIL, AND DIMENSIONAL LUMBER OR CONSTRUCTION/ DEMOLITION DEBRIS. PACIFIC TOPSOIL SELLS SUITABLE WOODCHIP MULCH CALLED "WOOD CHIP MULCH" AT MANY OF THEIR LOCATIONS. PACIFIC TOPSOIL: (800) 884-7645. NOTE: ARBORIST WOODCHIPS GENERALLY CONTAIN WEED SEEDS AND ARE NOT A RELIABLE ALTERNATIVE.
6. WOODY DEBRIS: LARGE PIECES OF DOWNED WOOD SUCH AS LOGS, ROOTWADS, AND LIMBS WHICH ARE PLACED ON THE GROUND. THESE PIECES OF DOWNED WOOD SHOULD HAVE A DIAMETER OF AT LEAST 12 INCHES AND A MINIMUM LENGTH OF 10 FEET BUT WILL VARY SINCE THEY ARE SOURCED FROM EXISTING STANDING DEAD TREES ALREADY ON THE SITE. DEBRIS TO BE PLACED TO MAXIMIZE GROUND CONTACT.

MITIGATION PLAN DETAILS AND NOTES

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