

1.0 RESTORATION/ENHANCEMENT CONCEPT AND GOALS

1.1 RESTORATION CONCEPT

The proposed project will fill Wetland B, a 3,154 sf Category 4 Wetland. This impact will be compensated by enhancing 8,016 sf of Wetland A. In addition, the stream buffer will be reduced by 6,660 sf for the storm pond. As compensation, 14,796 sf of buffer will be enhanced. In addition, due to grading in the buffer below a wall near Lots 49 - 51, 10,818 sf of temporary stream buffer impact will be restored with native plantings.

The mitigation area will be monitored and bonded for a period of 5 years.

1.2.0 MITIGATION GOALS

- 1.2.1 Enhance 8,016 sf of Wetland A with native tree and shrub species.
1.2.2 Enhance 14,796 sf of stream buffer with native tree and shrub plantings.
1.2.3 Restore 10,818 sf of temporary stream buffer disturbance with native trees and shrubs.

2.0 CONSTRUCTION SEQUENCE

The construction sequence of this project will be implemented as follows:

2.1 Pre-construction Meeting

A pre-construction meeting will be held on-site prior to commencement of construction, to include the Owner's biologist, the contractor, the Owner and the City. The approved plans and specifications will be reviewed to ensure that all parties involved understand the intent of the construction documents, specifications, site environmental constraints, sequences, and inspection requirements.

2.2 Construction Staking

The limits of clearing and grading of the mitigation area will be marked in the field by a licensed professional land surveyor prior to commencement of construction activities.

2.3 Construction Fencing & Erosion Control

All erosion control measures adjacent to the mitigation area, including silt fencing and orange construction fencing will be installed. Erosion control fencing will remain around the mitigation area until clearing, grading and hydroseeding are complete. The existing paved driveway in the buffer will be removed and soils de-compacted through tilling or diskling.

2.4 Plant Material Installation

All plant material will be planted by hand per detail and Construction and Planting Notes. The Mitigation Plan specifies the required size, species, quantity, and location of plant materials to be installed. The contractor will re-seed or over-seed all hydroseeded areas disturbed during the planting process. Upon completion of the planting, the erosion control fencing will be restored and repaired. Plant substitutions or modifications to locations shall be approved in writing, by the Owner's biologist and the City prior to installation.

2.5 Construction Inspection

Upon completion of installation, the Owner's biologist will conduct an inspection to confirm proper implementation of the Mitigation Plan. Any corrections, substitutions or missing items will be identified in a "punch list". Items of particular importance will be soils in pits, pit size, plant species, plant size, mulch around pits, and tree staking.

Upon completion of planting, if installation or materials vary significantly from the Mitigation Plan, the contractor will submit a reproducible "as-built" drawing to the Owner.

2.6 Agency Approval

Following acceptance of the installation by the Owner's biologist, a letter will be prepared to the City requesting inspection and approval of the installation.

2.7 Monitoring Inspection and Reporting

The monitoring program will begin one year after installation sign off and will continue for a minimum of 5 years. The subsequent monitoring inspections will be conducted in accordance with the approved Monitoring Program.

2.8 Silt Fence Removal

Erosion control fencing adjacent to the mitigation area will remain in place until all areas adjacent to the mitigation area have been stabilized. Disturbance shall be minimized and disturbed areas re-seeded.

2.9 Project Completion

If, after the final year (Year 5) of monitoring, the project has satisfied the objectives and goals of the approved Mitigation Plan, the Owner's biologist will prepare a letter to the City requesting final approval, cessation of monitoring, & closure of the mitigation plan.

3.1 SITE PREPARATION

3.1.1 The Landscape Contractor will approve existing conditions of subgrade prior to initiation of any mitigation installation work. The Landscape Contractor will inform the Owner of any discrepancies between the approved construction document and existing conditions.

3.1.2 The General Contractor will flag the limits of clearing with orange construction fencing and will observe these limits during construction. No natural features or vegetation will be disturbed beyond the designated "limits of clearing".

3.1.3 The Landscape Contractor will hand grub all blackberry varieties as specified in Section 4.13 of the approved Mitigation plan. Weed debris will be disposed of off site.

3.2 PLANT MATERIALS

3.2.1 All plant materials will be as specified in the plant schedule. Only vigorous plants free of defects, diseases and infestation are acceptable for installation.

3.2.2 All plant materials will conform to the standards and size requirements of ANSI Z60.1 "American Standard for Nursery Stock". All plant materials will be native to the northwest, and preferably the Puget Sound Region. Plant materials will be propagated from native stock; no cultivars or horticultural varieties will be allowed. All plant materials will be grown from nursery stock unless otherwise approved.

3.2.3 All nursery grown plant materials will be in containers or balled and burlapped. Bare root plantings will be subject to approval.

3.2.4 All plant materials stored on-site longer than two (2) weeks will be organized in rows and maintained by the contractor at no additional cost to the owner. Plants will not be stockpiled on the site longer than four week or during severe weather. Plant materials temporarily stored will be subject to inspection and approval prior to installation.

3.2.5 Substitution of species or plant size requests must be submitted in writing to the Owner and approved by the Owner's biologist and City in writing prior to delivery to site.

3.2.6 All plant materials will be dug, packed, transported and handled with care to ensure protection from injury. All plant materials to be stored on site more than 24 hours will be heeled into topsoil or sawdust. Precautionary measures shall be taken to ensure plant materials do not dry out before planting. Immediately after installation the mitigation planting area will be saturated to avoid capillary stress.

3.2.7 The contractor will verify all plant materials, the quantities shown on the planting plan, and the plant schedule. The quantity of plant materials shown on the plan takes precedent over the quantity on the plant list.

3.3 PLANT MATERIAL INSTALLATION

3.3.1 All plant materials must be inspected prior to installation to verify conformance of the materials with the plant schedule including size, quality and quantity. Any plant or habitat materials deemed unsatisfactory will be rejected.

3.3.2 All plant materials delivered and accepted should be planted immediately, following installation of the habitat features depicted on the plan. Plant materials not planted within 24 hours will be heeled-in per note 3.2.6. Plant materials stored under temporary conditions will be the sole responsibility of the contractor. Plants will be protected at all times to prevent the root ball from drying out before, during, or after planting.

3.3.3 All planting pits will be circular with vertical sides, and will be sized per detail on the mitigation plan and filled with pit soils approved by the Owner's biologist. If native soils are determined to be unacceptable by the Owner's biologist, pit soils will be amended with Cedar Grove mulch or equivalent.

3.3.4 No fertilizers will be used within the restoration area. In buffer areas only, install "Agriform", or equal plant fertilizer to all planting pits as specified by manufacturer. Fertilizers are allowed only below grade in the planting pits in the buffer areas. No sewage sludge fertilizer ("SteerCo" or "Growco") is allowed in the mitigation area.

3.3.5 All containerized plant materials will be removed from their containers carefully to prevent damage to the plant and its roots. Plants removed from their containers will be planted immediately.

3.3.6 All plant materials will be placed as shown on the approved mitigation plan. If the final installation varies from the approved mitigation plan, the contractor will provide a reproducible as-built of the installed conditions. All plant material will be flagged by the contractor.

3.3.7 All conifer trees will be staked per the detail on the mitigation plan. All deciduous trees 1" caliper and larger will be staked per the detail on the mitigation plan. Remove tree staking and guy wires from all trees after one year. Cut guy wires away from trees and remove wire and tree stakes from site.

3.4 PLANTING SCHEDULE AND WARRANTY

3.4.1 A fall-winter installation schedule (October 1st - March 15th) is preferred for lower mortality rates of new plantings. If plant installation occurs during the spring or summer (March 15th - Oct. 1st) the plantings will be irrigated with a temporary automatic irrigation system throughout the summer months. The automatic irrigation system will provide head to head coverage of the entire planting area. The automatic controller will be scheduled for a minimum of fifteen (15) minutes every day until fall rains can provide adequate rainfall to support the plant material. The mitigation plantings will be watered twice a day for fifteen (15) minutes for the first week.

3.4.2 All disturbed areas will be mulched or seeded with mixes as specified on the plans as soon as the mitigation area grading is complete. The seed must be germinated and a grass cover established by October 1st. If the cover is not adequately established by October 1st, exposed soils will be covered with approved erosion control material and the contractor will notify the Owner in writing of alternative soil stabilization method used.

3.4.3 The installer will warrant all plant materials to remain healthy and alive for a period of one year after installation acceptance. The installer will replace all dead or unhealthy plant materials per the approved plans and specifications.

3.5 SITE CONDITIONS

3.5.1 The installer will coordinate with the Owner and the Owner's biologist for construction scheduling.

3.5.2 Landscape installation will begin after biologist acceptance of grading and construction.

3.5.3 Silt fences will be installed as shown on the approved mitigation grading plans. The installer is responsible for repair and replacement of silt fences disturbed during plant installation. No equipment or soils will be stored inside the silt fences.

3.5.4 After clearing and grading is complete in the mitigation area, exposed soils will be seeded or mulched. Orange construction fence will be placed around the mitigation area to prohibit equipment and personnel in the mitigation area.

3.5.5 All plant material will be planted with suitable soils per planting details. Soils from planting holes will be spread and smoothed across the mitigation area.

4.0 MAINTENANCE PROGRAM

INTRODUCTION

This maintenance program outlines the program, procedures and goals for restoration area.

This maintenance program will be the responsibility of the project owner through the duration of its ownership of the mitigation area, or throughout the duration of the monitoring period until the Standards of Success are met and City approval of closure is obtained. The maintenance contractor will complete the work as outlined below.

4.1 MAINTENANCE WORK SCOPE

4.1.1 The primary goals of the mitigation plan are to restore the cleared area with native plant community typically found around undisturbed uplands and steep slopes. To accomplish this goal, normal landscaping methods must be modified to include:

- a. No mowing or trimming of ground cover or vegetation in the mitigation area.
b. No placement of fertilizers in the mitigation area.
c. No placement of bark mulch or equivalent in the mitigation area, except as noted in the planting details.
d. No placement of grass clippings, landscape debris, fill or ornamental plant materials in the mitigation area.

4.1.2 Work to be included in each site visit:

- a. Remove all litter including paper, plastic, bottles, construction debris, yard debris, concrete, etc.
b. Remove all blackberry varieties and scotch broom within the mitigation area. All debris is to be removed from site and disposed in an approved landfill.
c. Repair silt and/or permanent fencing and signage as needed.

4.1.3 Work to be completed on an annual basis includes:

- d. Areas containing Himalayan blackberry or other invasive plant species should be controlled by hand cutting the blackberry and treating the remaining cut stems only with a glyphosphate herbicide such as Roundup or Rodeo.
e. Replace dead or failed plant materials. Replacement plantings are to be of same species, size and location as original plantings. Plantings are to be installed during the dormant period.
f. Remove tree staking and guy wires from all trees after one year.

4.2 MAINTENANCE SCHEDULE

The Owner will conduct all items listed in the Maintenance Work Scope at least on an annual basis. Additional work may be required per the Monitoring Report and as approved by the City. Additional work may include removal of the grasses around each shrub and tree, installation of wood chips at each shrub and tree base, reseeding the mitigation area, re-staking existing trees and erosion control protection.

4.3 WATERING REQUIREMENTS

4.3.1 If plantings are installed within the dormant period throughout the winter months (October through March 15th) watering is not required.

4.3.2 If plantings are installed during the summer months (March through October 1st) a temporary irrigation system will be required. The temporary irrigation system may be removed after the first year providing the plantings are established and acclimated to on-site conditions per Construction and Plantings Notes Sec. 4.0.

4.3.3 Irrigation will continue from initiation through October 1st, or between June 1st and Oct. 1st for any subsequent year. Irrigation, if required, will provide head to head coverage for 15 minutes per day every day.

4.3.4 Irrigation will only be used to help establish plant materials and is not intended to supplement or create additional hydrology in the mitigation area. Irrigation water for the mitigation area will be taken from the existing water lines in the area and not pumped out any wetlands, pond or streams.

4.4 CLOSEOUT OF FIVE YEAR MONITORING PROGRAM

Upon completion of the monitoring program and acceptance of the mitigation area by the City, construction is complete and the maintenance of the project will be reduced to include removal of litter and debris, removal of noxious weeds and undesirable vegetation, and repair of vandalized areas.

5.0 MONITORING PROGRAM

5.1 SAMPLING METHODOLOGY

The restored area will be monitored at least bi-annually for the monitoring period unless another schedule is approved. Monitoring will be conducted using the techniques and procedures described below to quantify the survival, relative health and growth of plant material. A monitoring report submitted annually following each monitoring visit will describe and quantify the status of the mitigation area at that time. The monitoring report will be submitted to all involved agencies, including the City of Auburn. Monitoring will occur once a year for 5 years and a report will be submitted prior to the end of each year to the City.

5.1.1 Vegetation

The vegetation monitoring consists of inspection of the planted material to determine the health and vigor of the installation. All the planted material in the restoration area will be inspected during each monitoring visit to determine the level of survival of the installation.

5.2 STANDARDS OF SUCCESS

- 1. Evaluation of the success of the mitigation project will be based upon an 80% survival for all planted woody vegetation at the end of year 3.
2. Not more than 10% cover of non-native invasive species within mitigation area after year 3.
3. Volunteer native, non-invasive species will be included as acceptable components of the mitigation, but will not be counted towards the 80% survival requirement.
4. Continued viability of Wetland A.
5. Successful of establishment of buffers.

5.3 CONTINGENCY PLAN

A contingency plan can be implemented if necessary. Contingency plans can include re-grading, additional plant installation, erosion control, additional water quality facilities, modifications to hydrology, and plant substitutions including type, size, and location.

If the monitoring results indicate that any of the performance standards are not being met, it may be necessary to implement all or part of the contingency plan. Careful attention to maintenance is essential in ensuring that problems do not arise. Should any of the mitigation area fail to meet the success criteria, a contingency plan will be developed and implemented with the City approval. Such plans are prepared on a case-by-case basis to reflect the failed mitigation characteristics.

Contingency/maintenance activities will include, but are not limited to:

- Replacing all plants lost to vandalism, drought, or disease, as necessary.
- Replacing any plant species with a 20 percent or greater mortality rate with the same species or similar species approved by the City.
- Irrigating the area only as necessary during dry weather if plants appear to be too dry, with a minimal quantity of water.
- Reseeding the mitigation area with an approved grass mixture as necessary if erosion/sedimentation occurs.
- Replacing fencing or signs.

PROJECT REF: SEP05-0039
THESE PLANS ARE APPROVED FOR CONFORMANCE WITH THE CITY OF AUBURN'S CRITICAL AREA REQUIREMENTS.
APPROVED BY: [Signature]
DATE APPROVED: 5/15/13

RECORD DRAWING CERTIFICATION
THESE DRAWINGS CONFORM TO THE CONTRACTOR'S CONSTRUCTION RECORDS.
BY: _____ DATE: _____
TITLE/POSITION: _____
CONFIRMED BY CITY: _____ DATE: _____

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Sewall Wetland Consulting, Inc.

REVISIONS
REVISED PER CITY COMMENTS 2-27-08
REVISED PER CITY COMMENTS 03/20/13

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LAKELAND HILLS ESTATES
MITIGATION NOTES

Job No. 13-108
Designed by: AW
Drawn by: CML
Checked by:
Date: JUNE 2007
SHEET W-3
OF W-3