12047 156th Ave SE

King County Parcel No. 9353300560

Mitigation Plan

12047 156th Ave SE

King County Parcel No. 9353300560
Mitigation Plan

Prepared For:

Catherine Nguyen

Prepared by:

Peterman Consulting, LLC
12450 80th Ave S
Seattle, WA 98178
(206) 666-8736

Revised February 4th, 2026

Tom Peterman MEH, PWS
Biologist

Date

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

INTRODUCTION

Peterman Consulting, LLC has been contracted to prepare a mitigation plan in support of the construction of a single family residence (RESS24-0025) at 12047 156th Ave SE (King County parcel No. 9353300560). The purpose of this plan is to demonstrate compliance with King County Code (KCC) Chapter 21A.24. Design plans are attached for reference in Appendix A. Photographs of the subject property are attached in Appendix B. A map of the impact and restoration areas is included in Appendix C.

EXISTING CONDITIONS

The subject property is approximately 0.25 acres in size and is developed with a single family home. Access to the property was gained from 156th Ave SE which abuts the east border of the subject property. Most of the neighboring properties have private residences. The subject property is designated as residential and zoned as R-4. The subject property is located within the Lake Washington-Sammamish River subwatershed (HUC 12) of the Cedar-Sammamish Watershed (WRIA 8). The vegetation on the subject property is a mix of native and nonnative species with patches of invasive Himalayan blackberry (*Rubus armeniacus*).

Figure 1. Map showing the wetland and buffer.

The wetland's buffer is defined according to King County Code (KCC) 21A.24.325. The wetland is rated as a Category II feature (Table 1). According to KCC 21A.24.325, the wetland buffer is 150-feet for Category II wetlands with moderate habitat scores within the Urban Growth Area. The entire subject property is situated within the wetland's buffer.

Table 1. Wetland feature summary

Feature	Size (Approximate)	Cowardin Class[1]	Hydrology Modifier	HGM Class	Wetland Category[2]	Buffer Width[2]
WA	1.3 acres	PFO	Seasonally Flooded, Saturated	Depressional	II	150 ft.

[1] Classification based on Cowardin et. al. (1979).
[2] According to Chapter 21A.24.325 of the KCC.

WILDLIFE STUDY AND HABITAT ASSESSMENT

A Peterman Consulting biologist visited the subject property on March 13th, 2025 to conduct a wildlife study and habitat assessment. The assessment included traversing the subject property and observing habitat conditions and any potential wildlife use within the project site. Based on the recent development of a single family home, the subject property likely provides only minimal foraging and refuge for small mammals as well as foraging and refuge for birds and amphibians.

There were no habitats or active breeding sites observed for the species listed in KCC Section 21A.24.382 or for any federal or state listed endangered, threatened, sensitive, and candidate species. Wildlife activity on the subject property is likely limited by the proximity and intensity of surrounding residential development, and the fragmentation of local habitat and corridors relative to major wildlife networks.

The Washington Department of Fish and Wildlife's (WDFW) Priority Habitats and Species (PHS) database on-line mapper was queried to determine if state or federally listed fish or wildlife species occur on or near the subject property (WDFW 2025a). According to the PHS database, there are no priority habitats or species mapped on or within 300 feet of the subject property. Additionally, WDFW's SalmonScape on-line mapper was queried to determine if salmonids are known to use the subject property or surrounding area (WDFW 2025b). According to SalmonScape, there is a seasonal stream southeast of the subject property. The seasonal stream does not have documentation of fish habitat or fish utilization.

PROJECT DESCRIPTION

The purpose of the project is to connect water and sewer lines to the existing single-family residence (Appendix A). The lines were installed within portions of the onsite category II wetland and buffer. Fill was deposited in the wetland in order to install both the water and sewer lines. To provide reasonable use of the home with water and sewer utilities, the fill will remain in place and mitigation will be used to compensate for impacts.

ALTERNATIVES ANALYSIS

Work for this project included installing new water and sewer lines. The overall work disturbs less than 5,000 ft^2 of wetland and buffer. Based on the recommendation from the local sewer district, the sewer line was installed into its current location to facilitate the shortest and simplest connection to the existing sewer stub on 156th Ave SE. All of the sewer stubs for 156th Ave SE were installed almost a decade before the start of this project. Relocating the sewer stub is not feasible.

For the water line, the water district required that the new line be placed 10 feet from the sewer line and away from the utility lines located under the driveway. Based on the size of the parcel, there are no feasible alternatives available to relocate the water and sewer lines to provide less adverse impact.

MITIGATION APPROACH

Per KCC 21A.24.125, all uses and activities within a critical area or its associated buffer shall be avoided or, where that is not possible, minimize all adverse impacts to those critical areas and/or buffers. The project has minimized impacts by not exceeding 5000 ft^2 of total footprint and by minimizing the amount of direct impacts to wetland. Native vegetation has been retained on the periphery of the subject property. The total amount of wetland area that was filled was 195 ft^2 and the amount of buffer that was impacted was 460 ft^2 (Appendix B). Onsite mitigation is proposed in the form of enhancement of 1,350 ft^2 of wetland and 460 ft^2 of wetland buffer.

BUFFER ENHANCEMENT PLAN

Impact Analysis

This impact analysis is intended to summarize the impacts of the project on the identified wetland and the associated buffer as well as demonstrate that the project will conform to the development standards defined in Chapter 21A.24 of the KCC. Per KCC 21A.25.080, adverse impacts to important habitats and associated buffers shall be fully compensated to improve overall habitat functions as a result of the actions of this project.

Existing Wetland Buffer Conditions

The existing buffer habitat on the subject property has been mostly cleared for the development of the existing single family home (Appendix C). The vegetation in the wetland and surrounding buffer in the neighborhood consists of a mix of native and nonnative species. The forested canopy consists of cottonwood (*Populus trichocarpa*), big leaf maple (*Acer macrophyllum*), western redcedar (*Thuja plicata*), and Douglas fir (*Pseudotsuga menziesii*). The upland shrub species consisted of vine maple (*Acer circinatum*), hazelnut (*Corylus cornuta*), osoberry (*Oemleria cerasiformis*), and patches of holly (*Ilex aquifolium*) and Himalayan blackberry (*Rubus armeniacus*). Groundcover species include sword fern (*Polystichum munitum*), thimbleberry (*Rubus parviflorus*), trailing blackberry (*Rubus ursinus*) and a small patch of yellow archangel (*Lamium galeobdolon*).

Wetland and Buffer Impacts

The wetland area that was impacted was functioning mainly as a ditch along 156th Ave SE. The buffer area for the wetland as a whole is in a densely populated urban neighborhood. Within the project area most of the buffer was previously cleared for the existing home (RESS24-0025). The remaining buffer provides minimal protection to the natural functions of the onsite wetland. The impacts from the construction activities are to both the wetland and buffer vegetation and hydrology. The impact to the portions of the wetland from the installation of the water and sewer lines and the use of fill is permanent but minimal given that the area previously functioned as a ditch with little to no vegetation.

Vegetation Impacts

The current buffer includes areas of the project that will undergo clearing and construction activities. Impacts include removal of existing buffer vegetation. All of the work is set to occur in an area where the vegetation is a mix of native and nonnative species. The activities have had a modest impact on the effectiveness of the buffer to provide the existing level of water quality, hydrology and habitat functions.

Hydrology Impacts

Other impacts of the actions may have included accidental spills and releases of sediment-laden runoff. Erosion from upland ground-disturbing activities has the potential to contribute to sediment inputs to the wetland. To minimize the risk of an accidental spill of hazardous materials during construction, the project contractor has implemented spill prevention Best Management Practices (BMPs) to minimize direct effects to water quality.

Wetland and Buffer Enhancement Goals

The goal of the wetland and buffer enhancement described herein is to offset impacts from the line installations to the residence. Mitigation for the unavoidable impacts will be offset with the enhancement of onsite wetland and buffer. Native vegetation will be installed onsite in 1,350 ft^2 of wetland and 460 ft^2 of buffer that has been degraded by previous land use activities. The enhanced buffer area will provide increased quality of function over the existing buffer conditions including increased native species diversity, increased habitat complexity, and increased buffer screening and water quality enhancement.

Enhancement Plant Schedule

Installation of native trees, shrubs and groundcover should occur in either the early spring or late fall planting season. Table 2 specifies the selection of native plant species to be planted within the identified areas. The selected native species are adapted to grow within the planting areas based on moisture tolerances and available sunlight, as well as use in similar, previously successful buffer installations in the area. Almost all of the species below are also found currently in the wetland buffer on the subject property.

The landscape contractor shall make a good faith effort to secure all species specified in this plan. All plant stock will be obtained from a reputable, local dealer and will be free of any diseases or defects. Plant species will be native to the Puget Sound Trough; no hybrids or nonnative varieties will be allowed. Variations from the approved plan with respect to native species will require review and approval by King County and the project biologist prior to purchase and installation.

Table 2. Wetland Enhancement Plant Schedule

Scientific Name	Common Name	Size	Spacing	Quantity
Trees/Shrubs				
Thuja plicata	western redcedar	1 gallon	12 ft. on center	3
Rubus spectabilis	salmonberry	1 gallon	6 ft on center	7
Physocarpus capitatus	nine bark	1 gallon	6 ft on center	6
Cornus sericea	red osier dogwood	1 gallon	6 ft on center	7
Groundcover				
Athyrium filix-femina	lady fern	4 in. pot	4 ft on center	18
Tolmiea menziesii	piggy back plant	4 in. pot	4 ft on center	22
Geum macrophyllum	large leaf avens	4 in. pot	4 ft on center	16
Cornus canadensis	bunchberry	4 in. pot	4 ft on center	25

Table 3. Buffer Enhancement Plant Schedule

Scientific Name	Common Name	Size	Spacing	Quantity
Trees/Shrubs				
Thuja plicata	western redcedar	1 gallon	12 ft. on center	1
Rubus spectabilis	salmonberry	1 gallon	6 ft on center	2
Acer circinatum	vine maple	1 gallon	6 ft on center	2
Cornus sericea	red osier dogwood	1 gallon	6 ft on center	2
Groundcover				
Polystichum munitum	sword fern	4 in. pot	4 ft on center	10
Gaultheria shallon	salal	4 in. pot	4 ft on center	10
Mahonia nervosa	Oregon grape	4 in. pot	4 ft on center	10
Arctostaphyllos uva-ursa	kinnikinnick	4 in. pot	4 ft on center	10

Preparation and Installation of Plant Materials

The landscape contractor shall verify the location of all elements of the enhancement plan prior to installation. The project biologist may adjust the locations of enhancement elements during the installation period as necessary, with final approval from King County.

Circular plant pits with vertical sides will be excavated for all container stock. The pits should be at least twice the diameter of the root system, and the depth of the pit should accommodate the entire root system. The bottom of each pit will be scarified to a depth of at least 4 inches, and the pit should be thoroughly wetted prior to plant insertion to prevent capillary stress. The planting hole shall be amended with a mixture of topsoil and organic material if necessary to provide appropriate rooting media. Broken roots should be pruned with a sharp instrument and rootballs should be thoroughly soaked prior to installation. Set plant material upright in the planting pit to proper grade and alignment. Water pits upon completion of backfilling. No filling should occur around stems. Do not use frozen or muddy mixtures for backfilling. Form a ring of soil around the edge of each planting pit to retain water, and install at least a 2-1/2 inch layer of organic mulch around the base of each container plant. Ensure the mulch ring does not come into contact with the plant stem to avoid stem rot.

Buffer Mitigation Maintenance

Temporary Irrigation

The project proponent will provide regular irrigation to the buffer enhancement areas for the first year following the installation of plant materials. Irrigation should commence by June 1st and should stop by September 15th or as determined by the project biologist. The project proponent may choose to use any feasible method to supply supplemental irrigation as long as any associated irrigation infrastructure is removed after the irrigation period, or after installed plants are mature enough to survive without supplemental irrigation.

Site Maintenance

Maintenance of the enhancement area for the duration of the monitoring period will be the responsibility of the Applicant. Annual maintenance visits should be conducted by a landscaping contractor, at the direction of the biologist. During each maintenance visit, all litter including paper, plastic, bottles, debris, etc., will be removed. Any invasive plant species (such as Himalayan blackberry, holly, or yellow archangel) shall also be removed during site maintenance. Work to be completed on the second maintenance visit (one year after plant installation) also includes replacement of dead or failed plant materials with plantings of the same species, size and location as original plantings. Replacement plantings are to be installed during the dormant period.

Performance Standards

Performance standards provide a clear means of evaluating the success of an enhancement action. The following performance standards have been developed to reflect the goals and

functional objectives of this plan (Table 4). Success of the enhancement plantings in regards to species richness and enhancement of wetland and buffer functions will be based upon the site meeting these standards. In addition, coverage by invasive weed species will be monitored to evaluate the habitat value of the enhanced buffers.

In the event the site fails a Performance Standard, the project biologist, Applicant and King County staff will meet in good faith to evaluate the potential causes for the failing Performance Standard(s) and determine an appropriate contingency action or actions.

Table 4. Performance Standards

Enhancement Goal	Functional Objective	Performance Standard	Parameter Measured	Year Inspected	Sampling Method
Enhance functioning of the onsite wetland and buffer	Plant 1,350 ft^2 of wetland and 460 ft^2 of buffer with native tree, shrub and groundcover species	1. Minimum 80% survival of planted vegetation at the end of Year 3 (100% survival at Year 1).	Survivorship	1,2,3	Plant Census
		2. Minimum of three (3) native shrub species and three (3) groundcover species will be present within the planting area at the end of Year 3.	Plant structural diversity	1,2,3	Plant Census
		3. Minimum 50% aerial coverage of installed species within the enhancement area at the end of Year 3.	Aerial coverage	1,2,3	Line-Intercept
		4. No more than 10% aerial coverage by invasive weed species within the planted buffer area during all monitoring years.	Aerial coverage and species composition	1,2,3	Line-Intercept

MONITORING AND CONTINGENCY SCHEDULE

Monitoring Schedule

A monitoring program will be established for the project in order to regularly evaluate the progress of the buffer enhancement area. Monitoring inspections and reports will be prepared by a qualified biologist, and follow the Monitoring Schedule detailed below.

- Immediately after plant installation ("As-Built report", within 30 days following installation);
- Late in the growing season of the first year after plant installation;
- Late in the growing season of the second year after plant installation;
- Once in year 3

Vegetation monitoring conducted in the later portion of the growing season should be conducted within the period between July 15 and September 15.

Installation Monitoring

Installation monitoring will require coordination between the project biologist and landscaping personnel in order to ensure that the enhancement areas are properly prepared and plantings are installed in an appropriate manner, as outlined in this plan. A pre-planting meeting will be held to discuss the planting plan. The overall purpose of the meeting will be to discuss the primary intent of the plan, establish lines of communication between the project biologist and landscaping personnel, and address any questions or problems. The biologist will inspect and approve the planting stock, review the plans with the field crew to ensure they both recognize the species selected for installation and understand the staking, and will also observe plant installation to ensure plants are installed appropriately. In addition, the biologist will assist the landscape contractor in making any final adjustments in the planting schedule or plan, as needed, in response to field conditions.

Any changes made to the planting schedule or plan in response to field conditions will be documented in the As-built report to be submitted to King County following the post-installation inspection.

Post-Installation Inspection

Compliance monitoring will consist of evaluating the plantings after installation to confirm the plan was followed and plants were installed appropriately. A walk-through survey will be conducted to serve as the as-built survey, including inspection of all planted vegetation to verify that all design features agreed to in this plan have been correctly and fully implemented. Any changes made in the field will be consistent with the overall objective of the plan. In addition, permanent photo-points and monitoring transects will be established within the enhancement areas to be used during the long-term monitoring.

Compliance monitoring will be conducted by a qualified biologist. The buffer enhancement area will be walked and observations including plant health and vigor, mulching, plant spacing, and installation issues will be documented. In addition, photographs will be taken at the permanent photo-points to document the installation. Following completion of the compliance monitoring, an As-Built Report will be prepared by the qualified biologist verifying that all design features have been correctly implemented. Any changes to the planting plan will also be discussed in this report. The As-Built Report will be submitted to King County within 30 days of the completion of plant installation. King County will be responsible for inspecting and approving the As-Built Report.

Long-Term Monitoring

Long-term monitoring will be conducted over a three year period with observations conducted following the Monitoring Schedule. The purpose of the long-term monitoring program will be to evaluate the survival and maintenance of the plant communities within the enhancement areas to determine if the goals and objectives of this plan have been met. Photographs will be taken at photo-points to document the status of the plantings.

Monitoring reports that describe the status of the enhancement will be submitted following each monitoring visit. King County will be the agency responsible for inspecting and approving the monitoring reports. The long-term monitoring at the site will be conducted according to the following methods.

Plant Census

The plant census will be conducted by qualified biologists walking throughout the enhancement area. A mortality count of each species planted in the areas will be documented, to be compared to the as-built results for the plant survival calculation. In addition, the condition of the planted vegetation will be documented to qualitatively describe the growth trajectory of the vegetation community, including plant health and vigor, reproductive potential, and signs of wildlife use.

Line-Intercept Method

The line-intercept method (Canfield 1941) will be used to quantify the planted shrubs and trees along each established monitoring transect. The transect lines established during the as-built inspections will be used as the sampling area for the line-intercept method. The field procedure follows:

- The measuring tape will be laid out along the transect with the sampling crew making sure to stay on the left side of the transect to avoid disturbing the vegetation to be sampled. The samplers will make sure the tape is taut, straight, and anchored firmly.
- Starting at the end of the transect line, the species and intercept length of each shrub and small tree along the transect will be recorded on the line-intercept data form. The intercept length is the portion of the transect length intercepted by a perpendicular projection of the plant's foliage.
- The total length of the transect sampled will be recorded.

The procedure will be repeated for each transect. The estimated percent cover for the site will be calculated by dividing the sum of the intercept lengths by the total length of all sampled transects.

Photograph Points

During the as-built inspections and documentation, permanent photo points will be established. These points will be used during each monitoring visit (including the installation inspection) to document the development of the enhancement vegetation. The photographs will be taken facing the same direction each monitoring year, and will be included as an appendix to the annual monitoring report submitted to King County.

Contingency Plan

If the monitoring results indicate that any of the performance standards are not being met, it may be necessary to implement a contingency plan. Careful attention to maintenance is essential in ensuring that problems do not arise. Should any portion of the enhancement fail to meet the success criteria, a contingency plan will be developed and implemented with King County input

and approval. Such plans are prepared on a case-by-case basis to reflect the failed enhancement characteristics. Contingency/adaptive management actions may include, but are not limited to:

- Replacing all plants lost to vandalism, drought, or disease, as necessary.
- Replacing any plant species with a 20% or greater mortality rate after three growing seasons with the same species or similar species approved by the biologist and King County.
- Increased irrigation in the enhancement area only as necessary during dry weather if plants appear to be too dry, with an appropriate quantity of water.

Reporting

Monitoring reports will be prepared at the end of the monitoring year; these reports will summarize the results of each monitoring site visit. The monitoring report will be submitted to King County as per the schedule. The monitoring reports will document the changes that have occurred within the enhancement areas and make recommendations for improvements and/or corrective measures for any problems noted during the monitoring visits. The report will also document any and all maintenance activities conducted. The monitoring reports will be due to King County by December 31st of each year that monitoring activities occur.

BIOLOGIST QUALIFICATIONS

Tom Peterman

Tom Peterman is a Biologist with training in wetland science and ecological restoration. Tom has professional experience in wetland and stream restoration, mitigation planning and monitoring, fisheries and marine mammal monitoring, and fish and wildlife assessments. Tom has earned a graduate degree and a certificate in wetland science and management from the University of Washington. Tom is certified as a Professional Wetland Scientist (#3676) with the Society of Wetland Scientists. For a list of representative projects, please contact him at Peterman Consulting.

REFERENCES

Environmental Laboratory (Corps). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

J.S. Jones and Associates, Inc. 2021. *Wetland Study of 12049 156th Ave SE*. December 6th, 2021.

Washington Department of Fish and Wildlife (WDFW). 2025a. PHS on the Web [map online]. Priority Habitats and Species Queried October 9th, 2025. URL: http://wdfw.wa.gov/mapping/phs/.

Washington Department of Fish and Wildlife (WDFW). 2025b. SalmonScape [map online]. All SalmonScape Species. Queried October 9th, 2025. URL: http://wdfw.wa.gov/mapping/phs/.

12047 156th Ave SE

King County Parcel No. 9353300560

Mitigation Plan

Appendix A. Site Plans

King County
Department of Permitting
and Environmental Review

Residential Site Plan Template

Ref: KCC 21a.12.030

Max. Impervious Surface Allowed _____

Max. Bldg. Height Allowed _____

Ref: KCC 21a.12.170

Min. Blg. Setback From Street _____

Min. Garage Setback From Street _____

Min. Blg. Setback From Interior _____

Permit Center validation:

- o Zoning
- o Site Review Not Applicable

Validated Signature _____

Login Initials _____ Date: _____

Engineering / Drainage Approval

KING COUNTY DEPARTMENT OF LOCAL SERVICES PERMITTING DIVISION
ENGINEERING/DRAINAGE REVIEW
APPROVED
By: Kevin Fitts, PE Engineer III Date: **06/28/2023**

Critical Areas Approval

Signature: _____

Date: _____

Clearing / Grading Approval

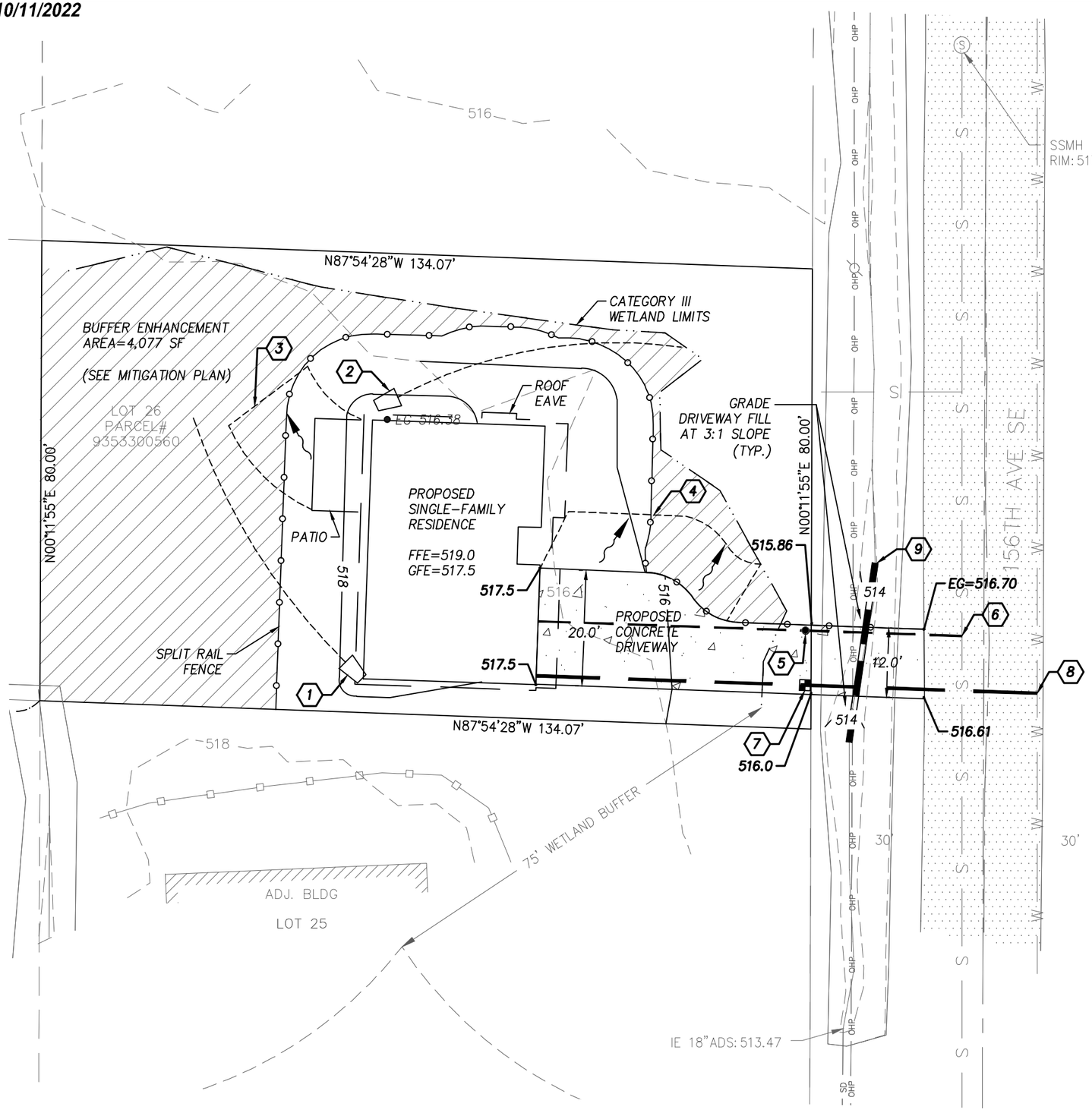
Signature: _____

Date: _____

Fire Approval

KING COUNTY DEPARTMENT OF LOCAL SERVICES PERMITTING DIVISION
FIRE ACCESS REVIEW
APPROVED
By: José Pacheco, Plans Examination, Engineer Date: **05/26/2023**

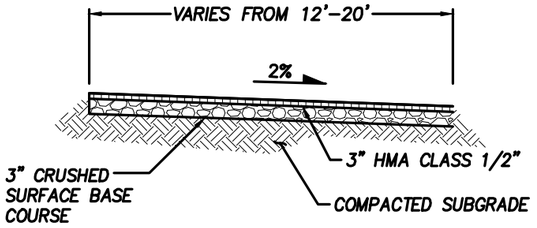
10/11/2022



NORTH
0 5 10 20
SCALE 1" = 20'

STORM DRAINAGE & UTILITY KEYNOTES

1. SPLASH BLOCK FOR BASIC DISPERSION W/ 50-FOOT FLOW PATH. 700 SF MAX ROOFTOP TRIBUTARY AREA
2. SPLASH BLOCK FOR BASIC DISPERSION W/ 50-FOOT FLOW PATH. 700 SF MAX ROOFTOP TRIBUTARY AREA
3. DECK AREA TO SHEET FLOW DISPERSE W/ 10-FOOT FLOWPATH
4. ON-SITE DRIVEWAY AREA TO SHEET FLOW DISPERSE W/ 10-FOOT FLOW PATH
5. SANITARY SEWER CLEANOUT. 6" SIDE SEWER TO PROPERTY LINE.
6. CONENCT TO EXSITING CITY OF RENTON 8" SEWER MAIN.
7. 1" WATER METER AND SERVICE
8. CONNECTION TO EXISTING WATER MAIN
9. 32 LF 12" CPEP CULVERT @ 1.0%
   IE (IN)=513.87
   IE (OUT)=513.55



PAVED DRIVEWAY SECTION

NTS

FOOTING DRAIN NOTE:

DAYLIGHT FOOTING DRAIN
TO EXISTING GRADE

FIRE SPRINKLER NOTE

THE SINGLE-FAMILY RESIDENCE IS REQUIRED TO BE EQUIPPED WITH FIRE SPRINKLERS

Encompass
ENGINEERING & SURVEYING

GRADING AND DRAINAGE PLAN
CATHERINE NGUYEN RESIDENCE
PROJECT # 22526
WITHIN NE 1/4 SE 1/4 SEC 15, TWN 24N, RGE 07E

Permit Number: DWEL22-0221 Parcel Number: 935330-0560 Applicant Name: CATHERINE NGUYEN Site Address: TBD 156TH AVE SE

Engineering Scale: 1" = 20'

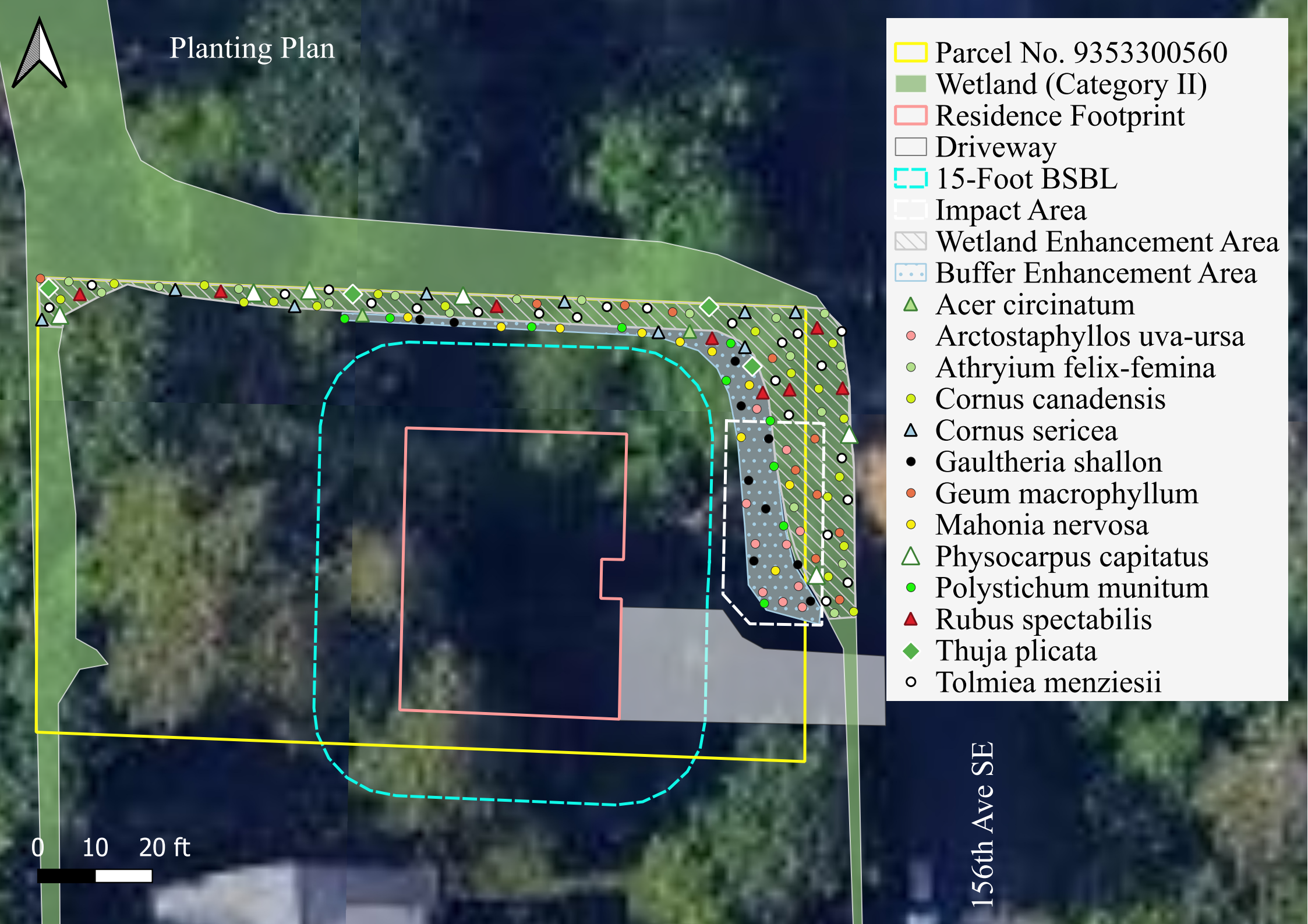
Sheet 4 of 5

12047 156th Ave SE

King County Parcel No. 9353300560

Mitigation Plan

Appendix B. Map of Wetland and Buffer Impact Area


Planting Plan
Parcel No. 9353300560
Wetland (Category II)
Residence Footprint
Driveway
15-Foot BSBL
Impact Area
Wetland Enhancement Area
Buffer Enhancement Area
Acer circinatum
Arctostaphyllos uva-ursa
Athryium felix-femina
Cornus canadensis
Cornus sericea
Gaultheria shallon
Geum macrophyllum
Mahonia nervosa
Physocarpus capitatus
Polystichum munitum
Rubus spectabilis
Thuja plicata
Tolmiea menziesii
0 10 20 ft
156th Ave SE

12047 156th Ave SE

King County Parcel No. 9353300560

Mitigation Plan

Appendix C. Site Photos

Site photos

Photo 1. Looking northwest toward the onsite wetland.

Photo 2. Looking southwest at driveway.

Photo 3. Looking southwest towards water and sewer lines installed in the wetland.

Photo 4. Looking north towards water and sewer lines installed in the wetland.

12047 156th Ave SE

King County Parcel No. 9353300560

Mitigation Plan

Appendix D. Bond Quantity Worksheet

King County

Critical Areas Mitigation
Bond Quantity Worksheet

Project Name:

Date: 2/4/2026

Prepared by:

Project Number: RESS24-0025

Applicant:

Peterman Consulting, LLC

Location: Parcel No. 9353300560

Phone Number: **206-666-8736**

PLANT MATERIALS*

Type	Unit Price	Unit	Quantity	Description	Cost
PLANTS: Potted, 4" diameter, medium	$5.00	Each	121.00		$ 605.00
PLANTS: Container, 1 gallon, medium soil	$11.50	Each	30.00		$ 345.00
PLANTS: Container, 2 gallon, medium soil	$20.00	Each			$ -
PLANTS: Container, 5 gallon, medium soil	$36.00	Each			$ -
PLANTS: Seeding, by hand	$0.50	SY			$ -
PLANTS: Slips (willow, red-osier)	$2.00	Each			$ -
PLANTS: Stakes (willow)	$2.00	Each			$ -
PLANTS: Stakes (other)	$2.00	Each	0.00		$ -
					$ -
					$ -
* All costs include installation				*TOTAL*	**$ 950.00**

INSTALLATION COSTS (LABOR, EQUIPMENT, & OVERHEAD)

Type	Unit Price	Unit			Cost
Compost, vegetable, delivered and spread	$37.88	CY	1.00		$ 37.88
Decompacting till/hardpan, medium, to 6" depth	$1.57	CY			$ -
Decompacting till/hardpan, medium, to 12" depth	$1.57	CY			$ -
Hydroseeding	$0.51	SY			$ -
Labor, general (landscaping)	$40.00	HR			$ -

Labor, general (construction)	$40.00	HR	24.00		$ 960.00
Labor: Consultant, supervising	$55.00	HR	1.00		$ 55.00
Labor: Consultant, on-site re-design	$95.00	HR			$ -
Rental of decompacting machinery & operator	$70.00	HR			$ -
Sand, coarse builder's, delivered and spread	$42.00	CY			$ -
Staking material (set per tree)	$7.00	Each			$ -
Surveying, line & grade	$250.00	HR			$ -
Surveying, topographical	$250.00	HR			$ -
Watering, 1" of water, 50' soaker hose	$3.62	MSF			$ -
Irrigation - temporary	$3,000.00	Acre	0.10		$ 300.00
Irrigation - buried	$4,500.00	Acre			$ -
Tilling topsoil, disk harrow, 20hp tractor, 4"-6" deep	$1.02	SY			$ -
					$ -
					$ -
				TOTAL	**$ 1,352.88**

HABITAT STRUCTURES*

ITEMS	Unit Cost	Unit			Cost
Fascines (willow)	$ 2.00	Each			$ -
Logs, (cedar), w/ root wads, 16"-24" diam., 30' long	$1,000.00	Each			$ -
Logs (cedar) w/o root wads, 16"-24" diam., 30'	$400.00	Each			$ -
Logs, w/o root wads, 16"-24" diam., 30' long	$245.00	Each			$ -
Logs w/ root wads, 16"-24" diam., 30' long	$460.00	Each			$ -
Rocks, one-man	$60.00	Each			$ -
Rocks, two-man	$120.00	Each			$ -
Root wads	$163.00	Each			$ -
Spawning gravel, type A	$22.00	CY			$ -
Weir - log	$1,500.00	Each			$ -
Weir - adjustable	$2,000.00	Each			$ -
Woody debris, large	$163.00	Each			$ -
Snags - anchored	$400.00	Each			$ -
Snags - on site	$50.00	Each			$ -
Snags - imported	$800.00	Each			$ -
					$ -
					$ -
* All costs include delivery and installation				*TOTAL*	**$ -**

EROSION CONTROL

ITEMS	Unit Cost	Unit			Cost
Backfill and Compaction-embankment	$ 4.89	CY			$ -
Crushed surfacing, 1 1/4" minus	$30.00	CY			$ -
Ditching	$7.03	CY			$ -
Excavation, bulk	$4.00	CY			$ -
Fence, silt	$1.60	LF			$ -
Jute Mesh	$1.26	SY			$ -
Mulch, by hand, straw, 2" deep	$1.27	SY			$ -
Mulch, by hand, wood chips, 2" deep	$3.25	SY			$ -
Mulch, by machine, straw, 1" deep	$0.32	SY			$ -
Piping, temporary, CPP, 6"	$9.30	LF			$ -
Piping, temporary, CPP, 8"	$14.00	LF			$ -
Piping, temporary, CPP, 12"	$18.00	LF			$ -
Plastic covering, 6mm thick, sandbagged	$2.00	SY			$ -
Rip Rap, machine placed, slopes	$33.98	CY			$ -
Rock Constr. Entrance 100'x15'x1'	$3,000.00	Each			$ -
Rock Constr. Entrance 50'x15'x1'	$1,500.00	Each			$ -
Sediment pond riser assembly	$1,695.11	Each			$ -
Sediment trap, 5' high berm	$15.57	LF			$ -
Sediment trap, 5' high berm w/spillway incl. riprap	$59.60	LF			$ -
Sodding, 1" deep, level ground	$5.24	SY			$ -
Sodding, 1" deep, sloped ground	$6.48	SY			$ -
Straw bales, place and remove	$600.00	TON			$ -
Hauling and disposal	$20.00	CY			$ -
Topsoil, delivered and spread	$35.73	CY			$ -
					$ -
					$ -
				TOTAL	**$ -**

GENERAL ITEMS

ITEMS	Unit Cost	Unit			Cost
Fencing, chain link, 6' high	$18.89	LF			$ -
Fencing, chain link, corner posts	$111.17	Each			$ -
Fencing, chain link, gate	$277.63	Each			$ -

Fencing, split rail, 3' high (2-rail)	$10.54	LF			$ -
Fencing, temporary (NGPE)	$1.20	LF			$ -
Signs, sensitive area boundary (inc. backing, post, install)	$28.50	Each	1.00		$ 28.50
					$ -
					$
					$ -
				TOTAL	**$ 28.50**

OTHER				*(Construction Cost Subtotal)*	**$ 2,331.38**
ITEMS	Percentage of Construction	Unit			Cost
Mobilization	10%				$ 233.14
Contingency	30%				$ 699.41
				TOTAL	**$ 932.55**

MAINTENANCE AND MONITORING	NOTE: Projects with multiple permit requirements may be required to have longer monitoring and maintenance terms. This will be evaluated on a case-by-case basis for development applications. Monitoring and maintance ranges may be assessed anywhere from 5 to 10 years.				
Maintenance, annual					
Less than 1,000 sq.ft. and buffer impact only	$ 1.08	SF		(Includes monitoring)	$ -
Less than 1,000 sq.ft. with wetland or aquatic area impacts	$ 1.35	SF		(Includes monitoring)	$ -
Larger than 1,000 sq.ft. but < 1 acre -buffer impact only	$ 360.00	EACH		(8 hrs @ 45/hr)	$ -
Larger than 1,000 sq.ft. but < 1 acre with wetland or aquatic area impacts	$ 450.00	EACH	3.00	(10 hrs @ $45/hr)	$ 1,350.00
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	$ 1,600.00	DAY		(WEC crew)	$ -
Larger than 5 acres - buffer and / or wetland or aquatic area impacts	$ 2,000.00	DAY		(1.25 X WEC crew)	$ -
Monitoring, annual					
Larger than 1,000 sq.ft. but < 1 acre -buffer impact only	$ 720.00	EACH		(8 hrs @ 90/hr)	$ -

Larger than 1,000 sq.ft. but < 1 acre with wetland or aquatic area impacts	$ 900.00	EACH	3.00	(10 hrs @ $90/hr)	$ 2,700.00
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	$ 1,440.00	DAY		(16 hrs @ $90/hr)	$ -
Larger than5 acres - buffer and / or wetland or aquatic area impacts	$ 2,400.00	DAY		(24 hrs @ $90/hr)	$ -
Maintenance and Monitoring Inspection (DDES), annual	$362.25	EACH		(2.5 hrs @ $144.90/hr)	$ -
Maintenance and Monitoring Inspection (DDES), final	$579.60	EACH		(4 hrs @ $144.90/hr)	$ -
				TOTAL	**$ 4,050.00**

Total	**$7,313.93**