FINAL WETLAND AND BUFFER MITIGATION PLAN

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

WSP PROJECT PS21204410

Prepared for:

SKAGIT COUNTY PUBLIC WORKS

Mount Vernon, Washington

MARCH 22, 2024

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Skagit County Public Works
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LIST OF ACRONYMS AND ABBREVIATIONS

Ecology	Washington State Department of Ecology
GCLL	geosynthetic clay laminated liner
HTL	high tide line
LFG	landfill gas
MLLW	mean lower low water
Site	March Point (Whitmarsh) landfill Site

1 INTRODUCTION

The former March Point (Whitmarsh) landfill (the Site) is one of the locations on Padilla Bay and the nearby Fidalgo Bay that was identified for remediation as part of the Puget Sound Initiative. The Site is located at 9663 South March Point Road in Anacortes, Washington (Figure 1), and is listed on the Washington State Department of Ecology (Ecology) Hazardous Sites List as Facility Site ID 2662. A remedial investigation/feasibility study (AMEC, 2017) was conducted, and a cleanup action plan (Ecology, 2020) was prepared for the selected alternative. Subsequently, Ecology and Skagit County signed a Consent Decree (No. 21-2 00194 29) for the cleanup of the landfill. WSP USA Environment and Infrastructure Inc. has prepared this wetland and buffer mitigation plan on behalf of Skagit County.

As part of the landfill remediation, approximately 0.39 acres of existing wetland habitat will be impacted by the construction. Ecology requested that a wetland and buffer mitigation plan be prepared that describes the habitats that will be impacted by the remedial activities, the habitats that will be restored/created to offset those impacts, and the maintenance and monitoring of the newly created habitat. This plan supersedes and replaces the maintenance plan that was included as Appendix A to the Cleanup Action Plan and that was an exhibit in the Consent Decree.

1.1 PROJECT DESCRIPTION

Several remedial alternatives were developed for the Site. The selected remedy was the installation of a geosynthetic clay laminated liner (GCLL) cap. The cleanup is comprised of the following:

- Demolition of the structures on Site.
- Installing stormwater control measures on and around the landfill.
- Moving approximately 62,000 cubic yards of solid waste (including concrete and anthropogenic debris on the shorelines) from the edges of the landfill inward, to allow construction of a permanent cap without expanding the footprint of the landfill. Approximately 2,600 of the 62,000 cubic yards of solid waste is below the high tide line (HTL[1]) at 10.27 feet mean lower low water (MLLW).
- Grading the waste to a mound per the Minimum Functional Standards in Washington Administrative Code 173-304 to promote stormwater runoff.
- Installing an approximately 3-foot-thick cap system, including an enhanced GCLL extending to the surrounding mudflats. The engineered cap will minimize infiltration of groundwater into the landfill and the GCLL will minimize discharge of groundwater from the landfill to surface waters.
- Treating wastewater generated during the construction work.
- Installing a landfill gas (LFG) collection system, which would passively vent LFG to the atmosphere.
- Providing groundwater collection/treatment as needed during construction to prevent off-site migration.
- Installation of a perimeter road for access to the wells and the LFG vent system.
- Installation of stub-outs for an irrigation system.
- Performing long-term monitoring of groundwater (quality and levels for hydraulic control purposes), leachate seepage, LFG, and the landfill closure facility.

[1] The HTL for the site was based on the highest predicted tide over a 10-year period. Under Section 404 of the Clean Water Act, the Corps regulates discharges of dredged and/or fill material at and waterward of the jurisdictional line, in tidal waters the jurisdictional line is high tide line (HTL). For determination of the HTL, the USACE lists several information sources used by the USACE, including but not limited to the annual highest predicted tides over a 10-year period into the future, and physical indicators observed at the site (USACE 2021).

- Institutional controls will be implemented when the cleanup action is complete, including deed restrictions and installation of a permanent chain link fence around the perimeter of the landfill to limit Site access.

The remediation is expected to significantly reduce or eliminate leachate seepage to the surface water, promote passive venting of LFG into the atmosphere, and limit sedimentation into the Padilla Bay Inner Lagoon from uncontrolled surface water drainage.

The work includes removal of existing concrete and anthropogenic debris from the shoreline and flattening the shoreline slope to 5H:1V (horizontal to vertical) or 4H:1V and constructing a multi-layer cap system. The upper 18 inches of the cap system will be of suitable soil to support growth of planted vegetative communities.

1.2 HABITAT IMPACTS AND RESTORATION

Portions of the shoreline along the Site consist partially of riprap, concrete, and anthropogenic debris. The shoreline is vegetated with invasive non-native plants, including Himalayan blackberry (*Rubus armeniacus*), Scotch broom (*Cytisus scoparius*), and teasel (*Dipsacus fullonum),* with very little native vegetation. Native vegetation is generally restricted to patchy areas on the north, east, and south-southwest sides of the site. The native species observed include primarily red alder (*Alnus rubra*), big-leaf maple (*Acer macrophyllum*), Douglas fir (*Pseudotsuga menziesii*), salmonberry (*Rubus spectabilis*), nettle (*Urtica dioica*), and sword fern (*Polystichum munitum*).

As part of the permitting for the implementation of the project, a critical areas assessment and wetland delineation was conducted (Hamer, 2021). The wetland delineation identified estuarine marsh along the north, east, and southeast edges of the Site (Figure 2). The estuarine marsh is dominated by herbaceous saltmarsh species such as saltmarsh bulrush (*Schoenoplectus maritimus*) and seaside arrowgrass (*Triglochin maritima*). In addition to the saltmarsh vegetated areas, there are large mudflat areas that contain no vegetation. On the southern edge of the landfill there is a small palustrine emergent marsh located in a swale between the site and South March Point Road (Figure 2). Vegetation within the palustrine emergent marsh is dominated by facultative and obligate species such as red alder (*A. rubra*), cattail (*Typha sp.*), and skunk cabbage (*Symplocarpus foetidus*).

Based on the extent of waste shown on the project drawings, a portion of the footprint of the landfill overlaps the footprint of both the estuarine and palustrine marshes and will be excavated as part of the construction. Although the exact extent of the landfill waste is not known, it is estimated that approximately 0.29 acre of estuarine marsh and 0.10 acre of palustrine emergent marsh will be excavated (Figure 3). The total affected area of the estuarine and palustrine emergent marsh is approximately 0.39 acres. The actual area of marsh that will be excavated is dependent on the extent of the landfill waste, which may vary from what is shown on the drawings. If the landfill waste does not extend as far into the marshes as currently estimated, then the affected area of existing marsh will be less than what is currently estimated.

Mitigation for the 0.39 acres impacted estuarine and palustrine emergent marsh will be accomplished through creation of approximately 1.15 acres of new intertidal habitat and establishment of 1.69 acres of riparian shrub habitat for a total of 2.84 acres (Figure 4). It is expected that restored intertidal habitat will recolonize with estuarine and palustrine vegetation naturally over time from native seed sources in the (bay/lagoon/adjacent marsh). Mitigation success is not dependent on the colonization of the intertidal area over the monitoring period.

Riparian plantings will be established from approximately the HTL (10.27 feet MLLW) to an elevation of approximately 17 feet MLLW (see Figure 5 and Figure 6). The vegetation that will be selected to be planted will include a variety of native shrubs and herbaceous plants; however, trees will not be planted to avoid the presence of root systems that could penetrate the cap system and possibly damage the GCLL. The decision to not plant trees was based on no trees being identified that would not potentially affect the integrity of GCLL. A temporary irrigation system will be installed to supplement rainfall. It is anticipated that supplemental watering will cease by Year 3 after the initial planting or sooner, if deemed appropriate. Approximately 1.69 acres of riparian shrub habitat will be created and/or restored upon completion of the project (Figure 5).

After regrading of the bank within the previous footprint of the landfill, the final surface of the regraded bank will be sand, which will be below the HTL. Approximately 1.15 acres of new intertidal habitat (below the HTL), that should be suitable for natural recruitment of marsh plants, will be created (Figure 4). Currently, the inner lagoon is a rich salt marsh that will serve as a seed source for the newly constructed intertidal area.

After the riparian buffer is planted, maintenance and monitoring will be conducted to ensure that the plants meet performance expectations. The planned maintenance and monitoring activities are described in Sections 3 and 4, respectively.

2 SHORELINE RESTORATION

As described above, riparian plantings will be established from approximately the HTL (10.27 feet MLLW) to an elevation of approximately 17 feet MLLW. The vegetation that will be selected to be planted will include a variety of native shrubs and herbaceous plants; however, trees will not be planted to avoid the presence of root systems that could penetrate the cap system and possibly damage the GCLL. A temporary irrigation system will be installed to supplement rainfall. The riparian plantings will be installed in the areas depicted in Figures 5 and 6. The detailed plans and specifications for the riparian plantings and irrigation system are provided in Appendix A. Included in Appendix A is the proposed plant schedule that shows the species that will be planted, the US Department of Agriculture Plant Wetland Indicator Status, the number of plants, and the plant spacing. The plant schedule also shows the species in the proposed herbaceous seed mix and the proposed seed mix for the upland portions of landfill. It is anticipated that the plantings will occur in the fall immediately following the landfill excavation and grading.

3 MAINTENANCE REQUIREMENTS

This section presents the maintenance requirements needed to ensure that the newly planted riparian vegetation on the Site becomes established. This wetland and buffer mitigation plan and its maintenance implementation is a key factor for establishment of the vegetation.

The initial five-year maintenance requirements have been developed to ensure that newly planted vegetation becomes established and is not out-competed by invasive species or destroyed by herbivores. The initial maintenance may include watering, mulching, weeding, and removal of trees, dead invasive shrubs, and anthropogenic debris. Dead native plants will be left on Site as a soil nutrient source and possible nesting and food source for animals.

The long-term maintenance section of this plan (Section 3.2) describes the maintenance activities that will be conducted after the initial five-year maintenance period and includes maintaining vegetation and other habitat attributes, control of invasive vegetation, and undertaking actions to address perturbations with a foreseeable probability of occurrence (e.g., rail accidents, illegal dumping, etc.), excluding force majeure events.

3.1 INITIAL FIVE-YEAR PERIOD

During the initial five-year period, Site inspections will be conducted periodically to assess whether:

- the plants are receiving sufficient water,
- the plants require additional mulching,
- the Site requires weeding,
- naturally recruited trees are colonizing the Site,
- the Site requires replanting,
- the Site requires anthropogenic debris removal, and
- herbivory is effectively controlled.

These are discussed below. The maintenance and monitoring timing and frequency is summarized in Table 1.

3.1.1 WATERING

A temporary irrigation system will be installed that can be used when rainfall is inadequate to sustain vegetation and "supplemental watering" is needed. Supplemental watering will likely be necessary for vegetation in the upland areas for a minimum of two years post-planting. Transplanted shrubs and herbaceous ground cover may require 1-inch or more of water each week during the summer months. Plants will be watered deeply, slowly, and thoroughly. Watering will be conducted to limit surface water runoff of irrigation water. Watering will occur early in the morning or evening/night to limit evaporation. The initial planting for the habitat project will occur after completion of the landfill cap in the fall. Plants will need to be watered following installation until rainfall amounts (1-inch weekly total) are sufficient to meet the requirements of the individual plants or until the plants enter dormancy. Once supplemental watering is started for the growing season, the watering system will need to be monitored to ensure it is operating correctly and effectively.

Plantings will be inspected weekly immediately after planting until they have entered dormancy or until rainfall amounts consistently reach 1-inch weekly total. The irrigation system may be controlled by moisture meters that are connected to the irrigation system. Moisture meters would allow the system to be operated based on the moisture of the soil rather than rainfall estimates. Alternatively, if soil moisture meters are not used, rainfall will be quantified by using a nearby meteorological observation station.

During the growing season (April through October) soil moisture monitoring using soil moisture meters or best professional judgment will be conducted to determine whether plants are receiving sufficient water and whether supplement watering is required each week. Supplemental watering will cease by Year 3 (or sooner, if deemed

appropriate), to assess and ensure conditions are suitable for plant survival without irrigation in the following years. See Appendix A for the design requirements for the irrigation system.

3.1.2 MULCHING

Mulching will occur during initial plant installation to help retain soil moisture by reducing evaporation and erosion, and to provide nutrients to the plants. A 3-inch-thick layer of mulch 18-inches in diameter will be applied around each plant. Supplemental mulching may occur during weeding activities, as necessary. The specifications for the much are provided in Appendix A. Mulch should be aged plant material comprising coarse-ground wood byproducts or chips ranging in size from 0.50 inch to 6 inches along the longest dimension. Mulch is typically obtained from mechanical grinding or shredding of harvested trees or portions of trees. Mulch may contain ground or shredded bark fines. Fines content of the mulch should not be greater than 20 percent.

The mulch may contain a mix of hardwood and softwood species such as hemlock and Douglas fir species. The mulch material should be free of weeds, weed seeds, deleterious materials, resins, tannins, and other materials that are detrimental to plant survival or vigor, or could lead to exceedances of hazardous substance cleanup levels at the Site. Mulch containing bark material or chips from cedar trees is unacceptable.

3.1.3 WEEDING

Weeding around upland riparian shrubs will be important to ensure establishment of the shrubs and prevent stress to the plants from competition for resources. The frequency will be determined using best professional judgment; however, weeding will be scheduled to occur as shown in Table 1. If deemed appropriate, the weeding schedule will be adjusted, or the frequency changed, to ensure that the growth or survival of the plantings are not affected by weeds.

A list of common weed species is provided in the Skagit County Noxious Weed List (Appendix B). If any of the Class "A" weeds or "Class B" and "Class C" weeds (see Appendix B) are found colonizing any portion of the site, they will be immediately controlled as required by law. If the invasive plant *Spartina* spp. (a Class "A" weed) is found colonizing any portion of the adjacent marsh, it will be controlled consistent with the Swinomish *Spartina* Control Program. If the invasive Scotch broom (*Cytisus scoparius*; Class "B" weed) or the Himalayan blackberry (*Rubus armeniacus*; Class "C" weed) is found colonizing any portion of the Site, they will be controlled.

A majority of the weeding will be performed using simple hand tools (e.g., rakes, hoes). Chemical treatment (herbicides) will be considered only if physical removal fails. Chemical treatments will only be applied after consultation and coordination with the appropriate local jurisdictions and Ecology.

3.1.4 TREE REMOVAL

Trees with deep root systems pose a potential threat to the integrity of the GCLL engineered cap and will not be planted or allowed to propagate. Research of potential tree options included shorter stature native trees that may have shallower root systems, but all species evaluated were determined to pose unacceptable risks to the cap. Additionally, large trees with shallow, but broad root systems (greater than 6 feet in diameter) also pose a threat to the engineered cap if they blow over. Volunteer tree species that recruit to the Site will be removed as needed to prevent establishment.

3.1.5 DEAD SHRUBS

Dead native plants will be left on Site as a potential soil nutrient source and possible nesting and food source for animals. Dead native plants will only be removed if the plants will potentially interfere with replanting if required. Replacement planting will be conducted and documented if shrub mortality of 30 percent or greater is observed during the first five years. If wide-scale replanting is proposed, species recommendations to maintain the desired diversity in the plant communities will be provided to the Potentially Liable Parties and Ecology. Replanting, if required, will be conducted in consultation with Ecology.

Any dead invasive shrubs will be removed from the site to limit potential invasive seed sources.

3.1.6 DEBRIS REMOVAL

Anthropogenic material that potentially impairs habitat functions will be removed from the perimeter of the Site on an as-needed basis. Small material will be removed by hand when practical.

3.1.7 HERBIVORY CONTROL

In addition to monitoring of herbivory described in Section 4.5.3, during periodic Site inspections and routine maintenance, plants will be inspected to determine if herbivory is potentially affecting riparian shrub survival. If severe cropping of plants by herbivores is observed, herbivory control measures (e.g., tree tubes or fencing) will be considered for installation.

3.2 LONG-TERM MAINTENANCE

Long-term maintenance will be conducted after the initial five-year period to ensure that habitat functions of the project are maintained. This includes maintaining vegetation and other habitat attributes, control of invasive vegetation, control and removal of trees, and undertaking actions to address perturbations with a foreseeable probability of occurrence (e.g., rail accidents, illegal dumping, etc.), excluding force majeure events. These activities will be conducted on an as-needed basis by facility maintenance or landscaping crews. Facility maintenance or landscaping crews will be instructed in recognizing and dealing with invasive species. Surveys for invasive species should occur in the spring and in late summer. These surveys will be used as the basis for determining whether maintenance is required. Visual surveys and cleanup of anthropogenic debris should occur a minimum of once per year. Large woody debris that recruits to the Site should be evaluated for stability and scour potential. Unstable logs should be anchored (if needed) to prevent damage to marsh vegetation.

This wetland and buffer mitigation plan will not cover force majeure events. Force majeure in the context of this discussion includes all physical events (e.g., storm or seismic events) that exceed the design criteria for the project (which was developed using accepted professional engineering standards) or other natural events such as wildfires.

4 MONITORING GOALS, CRITERIA, AND METHODS

4.1 GOALS AND OBJECTIVES

The goal of the construction of the riparian shrub buffer and new intertidal habitat is to create self-sustaining habitats that will restore and enhance ecosystem processes that support the array of key species groups. The construction of the habitat component of the landfill cleanup is intended to provide appropriate habitat diversity and ecological niches necessary for foraging and refuge opportunities for fish, birds, and other wildlife. The riparian shrub buffer will provide allochthonous inputs to the marsh e.g., leaves, twigs, and terrestrial insects. It is anticipated that the shrub buffer will also provide habitat for other terrestrial organisms including birds and small mammals.

The construction of the new intertidal area will provide suitable habitat for marsh colonization. It is expected that restored intertidal habitat will recolonize with estuarine and palustrine vegetation naturally over time from native seed sources in the (bay, lagoon, and adjacent marsh). The goal of intertidal habitat creation is to provide critical habitat functions, such as feeding and refuge for juvenile anadromous salmonids and other species.

Monitoring will be conducted at Years 1, 3, and 5 post-planting. In addition, an as-built survey will be prepared that will document the plants that were installed and will serve also as a "Year 0" monitoring report. The timing of the monitoring events is shown in Table 1. Table 2 provides a summary of the monitoring methods, criteria, and contingency measures which area described below.

4.2 SUCCESS CRITERIA

These success criteria are chosen because these are standards that can be measured and for which there are contingency or adaptive management measures that can be applied during the monitoring period. The following success criteria will apply to the project at Year 5:

- Planted shrub survival will be ≥ 70 percent,
- There will be ≤ 20 percent bare ground,
- There will be ≤ 10 percent cover invasive species identified on the 2024 Skagit County Noxious Weed List (Appendix B), and
- Herbivory is effectively controlled (based on obvious plant mortality due to herbivory).

Although monitoring to assess the above will be conducted during Years 1 and 3, the success criteria will only apply at Year 5. The Years 1 and 3 monitoring will be used to determine if adaptive management or contingency measures may need to be applied to meet the success criteria at Year 5. Monitoring of potential recruitment of marsh plants to the newly constructed intertidal area will be conducted in Years 1, 3, and 5; however, no success criteria for marsh plant recruitment will apply.

The above success criteria can be assessed by monitoring riparian vegetation survival and cover, invasive species cover, and plant herbivory. If the success criteria are met prior to Year 5, then monitoring may be terminated in consultation with Ecology and other applicable permitting entities.

4.3 CONTINGENCY MEASURES

Contingency measures are activities designed to help meet success criteria, such as replacing (replanting) dead plants, adding soil amendments, installing supplemental irrigation, augmenting herbivore exclusion systems, etc. Prior to any contingency measure being implemented, an investigation as to why the criterion was not met will

be conducted. In the event that a success criterion is not met because of installation flaws or lack of routine maintenance, then contingency measures will be implemented. If the success criterion is not met because of design flaws, mortality due to herbivory, or routine maintenance is not sufficient, then an adaptive management approach will be used.

4.4 ADAPTIVE MANAGEMENT

Prior to any adaptive management measures being implemented, the cause for the failure to meet a success criterion will be investigated. Adaptive management measures could include, but are not limited to, changing plant species, changing plant densities, adding fertilizer, or installing herbivore exclusion systems (e.g., netting, cages, or tubes around plants).

4.5 MONITORING METHODS

4.5.1 RIPARIAN SHRUB SURVIVAL AND RIPARIAN HERBACEOUS PLANTS AND MARSH VEGETATION AREAL COVERAGE

4.5.1.1 Monitoring Methods

An "as-planted" survey will be conducted following initial planting to serve as baseline of various cover classes (e.g., herbaceous plants and shrubs) using established photo points (fixed locations from which a time-series of photographs will be collected). Transects will be established through the riparian zone and intertidal zone to determine percent survival of planted shrubs and areal coverage for riparian herbaceous and marsh plants. Survival of planted shrubs will be evaluated during these surveys by counting dead or missing plants.

Survey techniques may include line intercept and established photo points.

4.5.1.2 Contingency Measures

Excessive failure rates (30 percent loss annually) for riparian plant survival or > 20 percent bare ground may be addressed by secondary planting if appropriate, and if causal factors of failure can be determined and corrected. Evidence of plant failure will trigger consideration of contingency measures. Depending on the hypothesized reason for failure, responses could include additional planting, soil amendments, herbivore exclusions, and/or focused stewardship efforts. Assumptions about appropriate plant species and other design factors will be reexamined and the project goals readjusted, in consultation with Ecology and other applicable permitting entities, if new information suggests adjustment is appropriate.

There are no contingency measures for colonization of the newly constructed intertidal area.

4.5.2 RIPARIAN AREA INVASIVE SPECIES AREAL COVERAGE

4.5.2.1 Monitoring Methods

Several permanent statistically based transects will be established relative to the shoreline; the number of transects will be based on habitat area and shape to adequately define the entire project. The transects will encompass portions of the project area suitable for marsh and riparian vegetation establishment. Permanent sampling locations (quadrats along transects) will be established and marked for elevation. Species composition of marsh and riparian vegetation and the occurrence of an individual invasive species that exceeds 1 percent by area will be reported. Invasive species to be identified and potentially controlled as part of this monitoring are defined as those invasive species that are on the 2024 Skagit County Noxious Weed List (Appendix B).

4.5.2.2 Contingency Measures

Any occurrence of total non-native and invasive species exceeding 10 percent by vegetated area will be controlled primarily by physical means (pulling, mowing, burning). Physical removal will occur as soon as invasive plants are identified and definitely prior to seed set. *Spartina spp.* that is found to colonize any portion of the Site

(irrespective of the areal coverage) will be immediately controlled consistent with the Swinomish *Spartina* Control Program; chemical treatment (herbicides) will only be considered if physical removal fails.

4.5.3 RIPARIAN VEGETATION HERBIVORY CONTROL

4.5.3.1 Monitoring Methods

Periodic, and initially frequent, visual inspections to determine if planted shrubs are affected by herbivory will be conducted.

4.5.3.2 Contingency Measures

Herbivory of riparian shrubs by nutria (*Myocastor coypus*) has occurred during fall and winter at another restoration site in Puget Sound. Although it is not known if nutria are present in the vicinity of the landfill, if any herbivory can be attributed to nutria, tree tubes and/or wire enclosures may be installed around the affected plants. If herbivory control devices are installed, they will be inspected periodically to ensure they are providing proper protection to the plants. If installed herbivory control devices are damaged, they will be repaired as soon as practicable.

Raccoons (*Procyon lotor*), beavers (*Castor canadensis*), and rabbits (unknown species) have been problematic at other Puget Sound restoration sites. It is unknown if these species occur at the Site; however, herbivory control for these species is similar to that of nutria (i.e., fenced enclosures) although fencing can be less effective in reducing herbivory by raccoons (they climb fences). Since the project is not installing marsh plants, it is not expected that Canada geese (*Branta canadensis*) will be a significant source of herbivory especially to the riparian shrubs. However, if Canada geese are present, they could graze the herbaceous plants that will be seeded at the Site but are unlikely to significantly affect herbaceous plant survival and coverage.

5 REPORTS

After completion of the construction of the restoration project, a restoration as-built report will be submitted that documents the acreages of the habitats that were created, number and species of shrubs that were planted, and as-built planting drawings. The planting as-built report may be included as part of the as-built report that will be submitted for the overall cleanup. The as-built report will provide the information detailed in Ecology's guidance for as-built reports.

An ecologist will prepare a draft and final monitoring report for submittal to Ecology after each monitoring event as described in Section 3.0. The following will be included in each report:

- Data tables with results from the monitoring event,
- Detailed species lists of plants and animals observed during the survey,
- Date of survey,
- Weather and tides during survey,
- A narrative description of any proposed contingency measures and reasoning,
- A narrative description of methods and contingency measures taken,
- Identification of planted and naturally recruited trees and shrubs,
- Any evidence of events such as large storms, dumping, or camping that may have affected the mitigation area,
- Interpretation of results,
- Map of photo points,
- Color photos, and
- A description of maintenance activities that were conducted.

Ecology may request that additional information be provided in the report, if needed to evaluate mitigation project conditions. The draft report will be submitted within 60 days of completion of the yearly monitoring event and will provide the information that is detailed in Ecology's guidance for monitoring reports. The final report will address Ecology's comments on the draft report and will be submitted within 30 days of comment receipt.

6 REFERENCES

AMEC Environment & Infrastructure, Inc. (AMEC). 2017. Final Remedial Investigation/Feasibility Study Report, March Point (Whitmarsh) Landfill, Skagit County, Washington. February.

Hamer Environmental, LP (Hamer). 2021. City of Anacortes, Critical Areas Assessment Report, Wetland Delineation and Marine OHWM, Whitmarsh Landfill Anacortes, WA. Prepared for Wood PLC.

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TABLES

Table 1. Maintenance and Monitoring Timing and Frequency
March Point (Whitmarsh) Landfill
Skagit County, Washington

Activity	Years After Construction					
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Periodic Site Inspections	- Weekly until weekly rainfall 1-inch or plant dormancy	- Biweekly during growing season (Apr-Oct) - Monthly Nov-Mar	- Biweekly during growing season (Apr-Oct) - Monthly Nov-Mar	- Biweekly during growing season (Apr-Oct) - Monthly Nov-Mar	- Biweekly during growing season (Apr-Oct) - Monthly Nov-Mar	- Biweekly during growing season (Apr-Oct) - Monthly Nov-Mar
Maintenance/ Weeding	NC	- 2 times during spring - 1 time late summer - Additional times if needed	- 2 times during spring - 1 time late summer - Additional times if needed	- 2 times during spring - 1 time late summer - Additional times if needed	- 2 times during spring - 1 time late summer - Additional times if needed	- 2 times during spring - 1 time late summer - Additional times if needed
Riparian and Marsh Vegetation Areal Coverage (Section 4.5.1)	NC	- During peak of growing season (May-June)	NC	- During peak of growing season (May-June)	NC	- During peak of growing season (May-June)
Riparian Area Invasive Species Areal Coverage (Section 4.5.2)	NC	- During peak of growing season (May-June)	NC	- During peak of growing season (May-June)	NC	- During peak of growing season (May-June)
Riparian Vegetation Herbivory Control (Section 4.5.3)	- Weekly (Oct-Dec)	- During peak of growing season (May-June) - Late fall/early winter	- During peak of growing season (May-June) - Late fall/early winter	- During peak of growing season (May-June) - Late fall/early winter	- During peak of growing season (May-June) - Late fall/early winter NC	- During peak of growing season (May-June) - Late fall/early winter

Note:
NC = Not Conducted

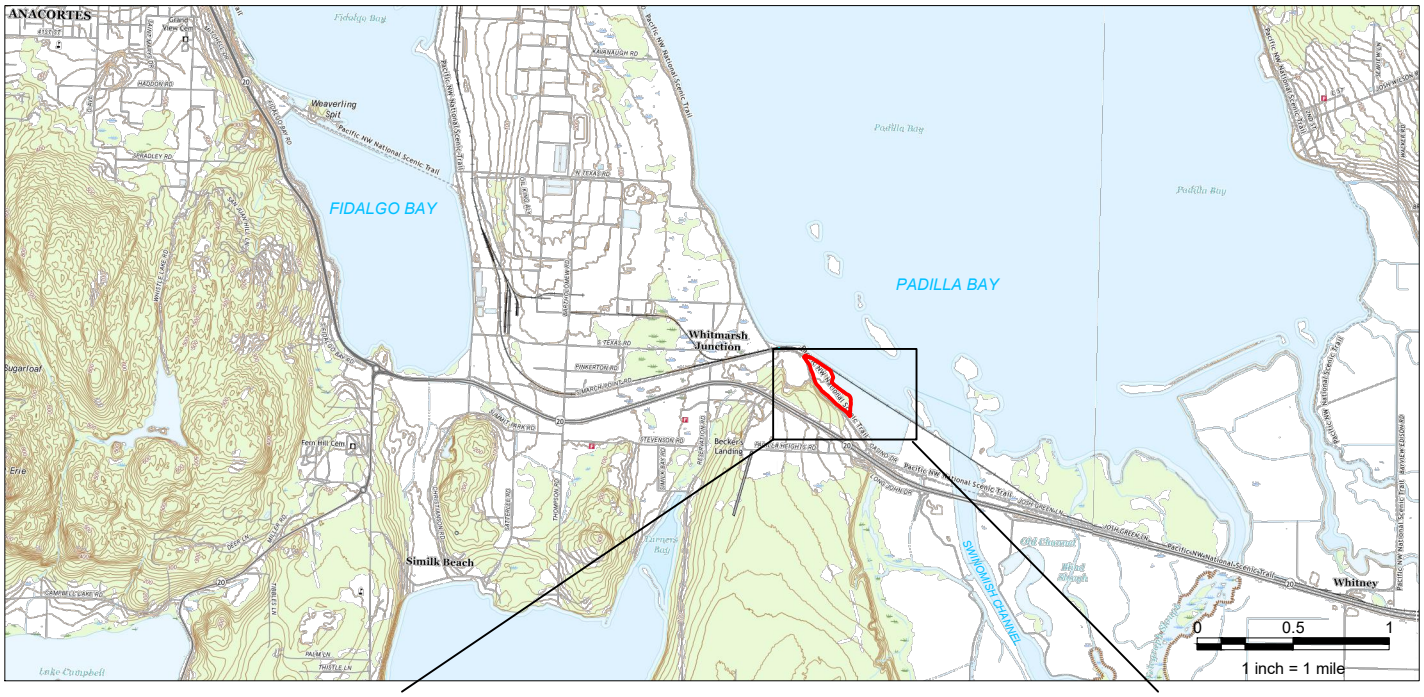
Table 2. Monitoring Methods, Criteria, and Contingency Measures
March Point (Whitmarsh) Landfill
Skagit County, Washington

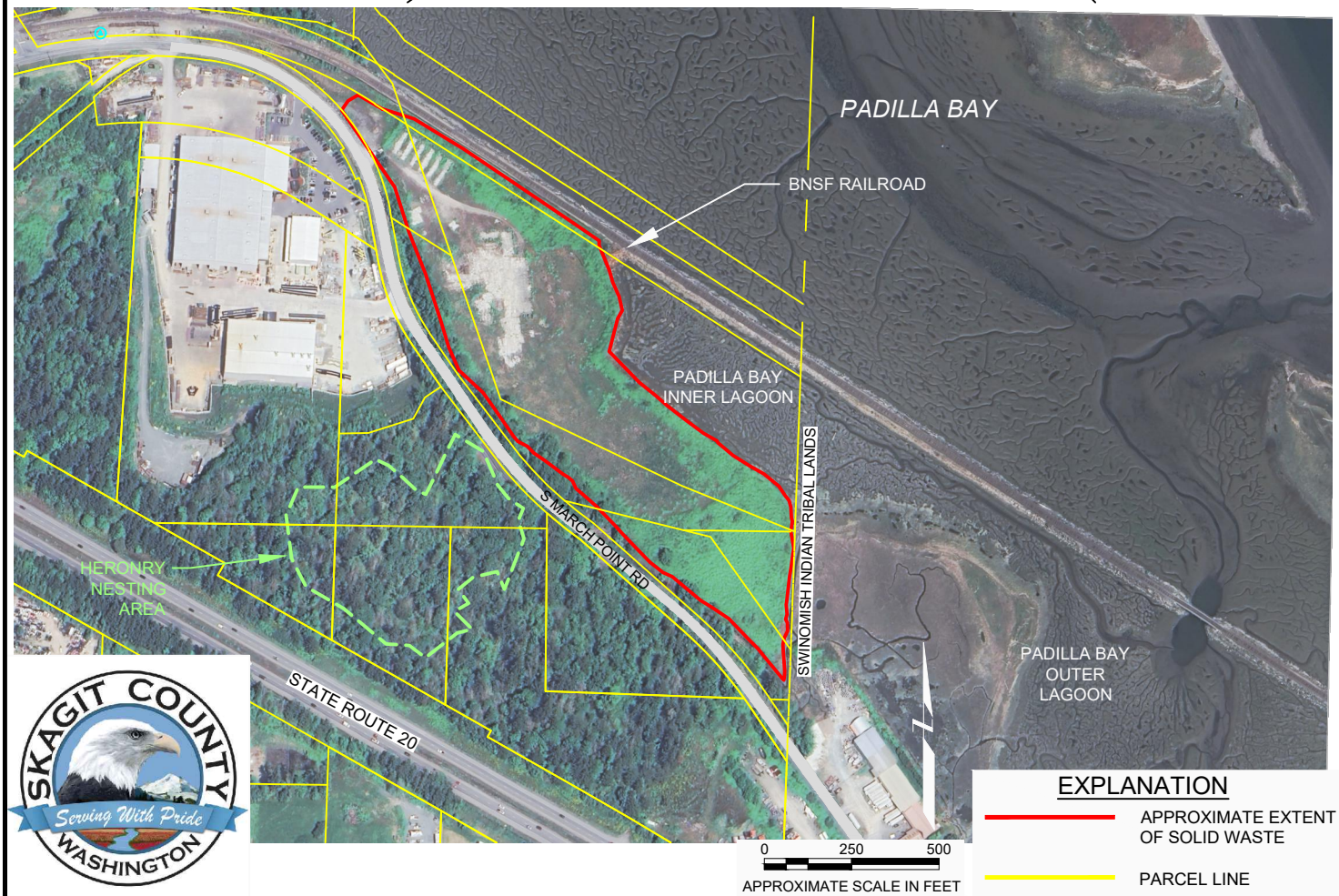
	Riparian Shrub Survival and Riparian Herbaceous Plants and Marsh Vegetation Areal Coverage [1]	Riparian Area Invasive Species Areal Coverage [2]	Riparian Vegetation Herbivory Control [3]
Description:	Percent survival of riparian shrubs should be ≥70%. Riparian herbaceous plant cover should be stable or increasing over time with percent bare ground ≤20%. These criteria apply only at Year 5.	The project should not contain more than 10% cover by area of invasive plant species identified on the 2024 Skagit County Noxious Weed List. This criterion applies only at Year 5.	Confirm herbivory does not affect plant survival.
Monitoring Tasks:	Conduct an as-built (Year 0) survey following initial plantings to serve as baseline of various cover classes using established photo points. The as-built survey will also be used to evaluate each planted shrub for survival and health/vigor. Permanent transects will be established within the planted riparian vegetation areas; the number of transects will be based on habitat area and shape to adequately define the entire project. The transects will encompass the planted portions of the project area. A general walking inspection of the full riparian vegetation area will be made to identify any specific areas of concern regarding vegetative health and any observations in changes (i.e., species composition and distribution) over time.	For riparian vegetation, permanent transects will be established relative to the shoreline and will encompass the planted portions of the project. The total number of transects will be based on habitat area and shape to adequately define the entire project. The transects will encompass the planted portions of the Site. Periodic general walking inspections of the entire project will be made to identify any specific areas of concern regarding noxious weed species and any observations in changes over time.	Riparian vegetation may need to be protected from herbivory if plant survival is significantly affected. Tree tubes or wire fencing may be installed and maintained if riparian plant survival is affected by herbivory. If herbivore exclusion devices are installed, periodic visual inspections will be made and if needed repairs made immediately. In addition, periodic general walking inspections of the entire project will be made to identify any specific areas of concern regarding herbivory. Riparian herbivory controls may be used until the plants have established.
Monitoring Methods:	Line intercept along permanent transects and established photo points will be used to record species composition and cover estimates. Permanent photo points will be established and photographs to adequately cover the Site will be collected each monitoring period. Photographs and inspections will be compared to previous monitoring events to determine change in and overall vegetative community health and survival.	Line intercept along permanent transects to record species composition and cover estimates of noxious weeds. Photographs and inspections will be compared to previous monitoring events to determine changes in noxious and invasive species presence, composition, and distribution.	Periodic visual inspections.

	Riparian Shrub Survival and Riparian Herbaceous Plants and Marsh Vegetation Areal Coverage [1]	Riparian Area Invasive Species Areal Coverage [2]	Riparian Vegetation Herbivory Control [3]
Schedule:	Years: 1, 3, and 5; see Table 1 for timing of monitoring.	Years: 1, 3, and 5; see Table 1 for timing of monitoring.	Years: 0, 1, 3, and 5; see Table 1 for timing and frequency of periodic Site inspections.
Contingency Measures:	Excessive failure rates (30% loss annually) for plant survival or >20% bare ground will be addressed by secondary planting if appropriate, and if causal factors of failure can be determined and corrected. Evidence of plant failure will trigger consideration of contingency measures. Depending on the hypothesized reason for failure, responses could include additional planting, soil amendments, herbivore exclusions, and/or focused stewardship efforts. Assumptions about appropriate plant species and other design factors will be reexamined and the project goals readjusted if new information suggests this path.	Any occurrence of total noxious species exceeding 10 percent coverage will be controlled primarily by physical means (pulling, mowing, burning). *Spartina* spp. that is found to colonize any portion of the Site (irrespective of the areal coverage) will be immediately controlled. Physical removal will occur as soon as invasive plants are identified and prior to seed set (see Table 1 for timing and frequency of maintenance/weeding). Chemical treatment (herbicides) will only be considered if physical removal fails.	Damage to herbivore exclusion devices if installed will be repaired as soon as practicable.

Notes:
[1] Section 4.5.1
[2] Section 4.5.2
[3] Section 4.5.3

FIGURES





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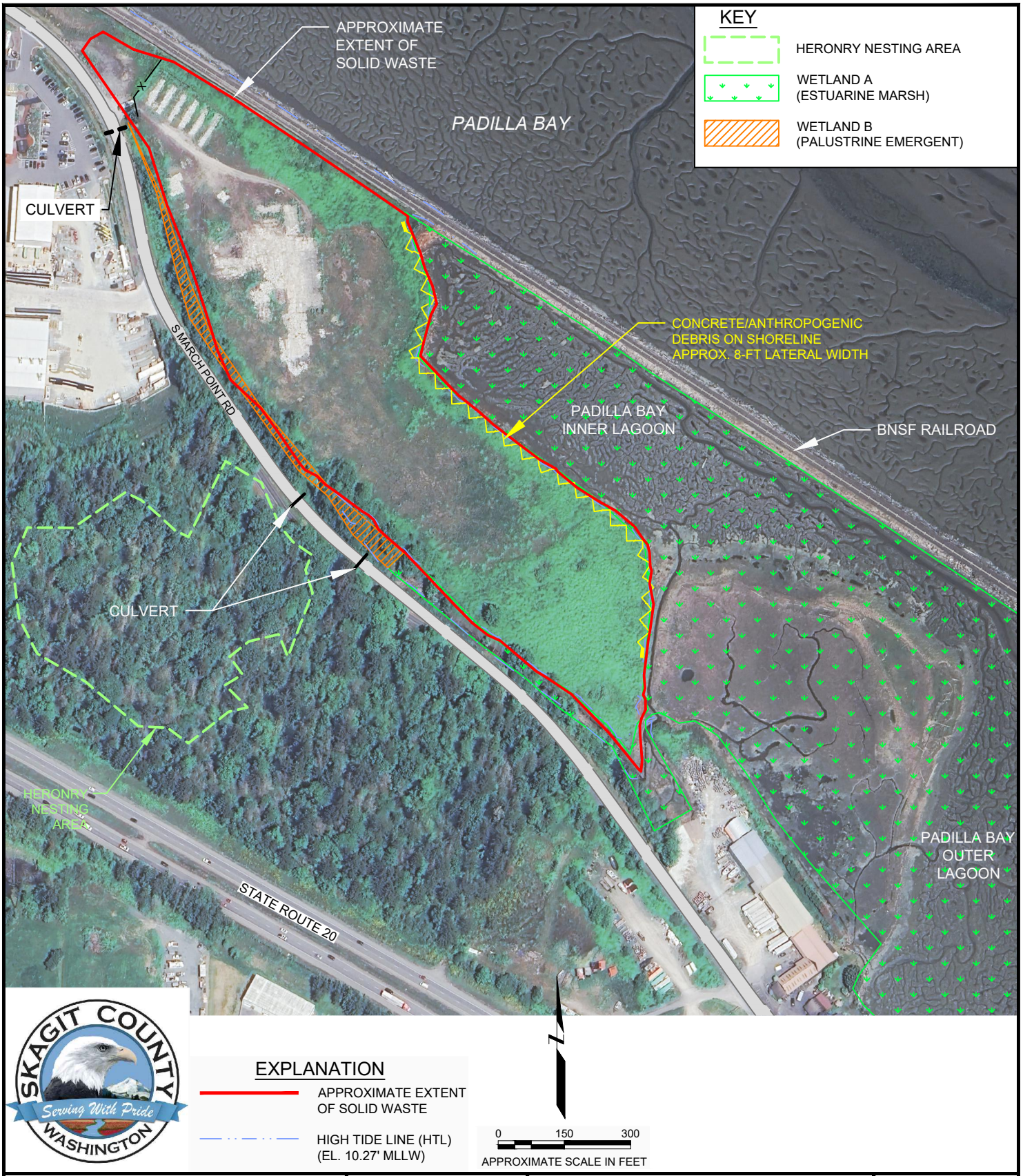
EXPLANATION

- APPROXIMATE EXTENT OF SOLID WASTE
- PARCEL LINE

SKAGIT COUNTY		PROJECT: WETLAND AND BUFFER MITIGATION PLAN MARCH POINT (WHITMARSH) LANDFILL
		DATE: NOVEMBER 2023
		SCALE: AS SHOWN
WSP USA Environment & Infrastructure Inc. 18300 Redmond Way, Ste 200 Redmond, Washington 98052		TITLE: VICINITY MAP
		PROJECT NO.: PS21204410
		FIGURE: 1

DRAWN BY: APS CHECKED BY: CW

C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh\Whitmarsh-MarchPoint_Design-CoverSheet_100523.dwg - Figure 1 M&M (2) - Nov, 08, 2023 8:04am - USAS719374



SKAGIT COUNTY

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Environment & Infrastructure Inc.
18300 Redmond Way, Ste 200
Redmond, Washington 98052

PROJECT
WETLAND AND BUFFER MITIGATION PLAN
MARCH POINT (WHITMARSH) LANDFILL

TITLE
ESTUARINE AND PALUSTRINE MARSH ADJACENT TO MARCH POINT LANDFILL

DATE
NOVEMBER 2023

SCALE
AS SHOWN

PROJECT NO.
PS21204410

FIGURE
2

DRAWN BY: APS CHECKED BY: TLP

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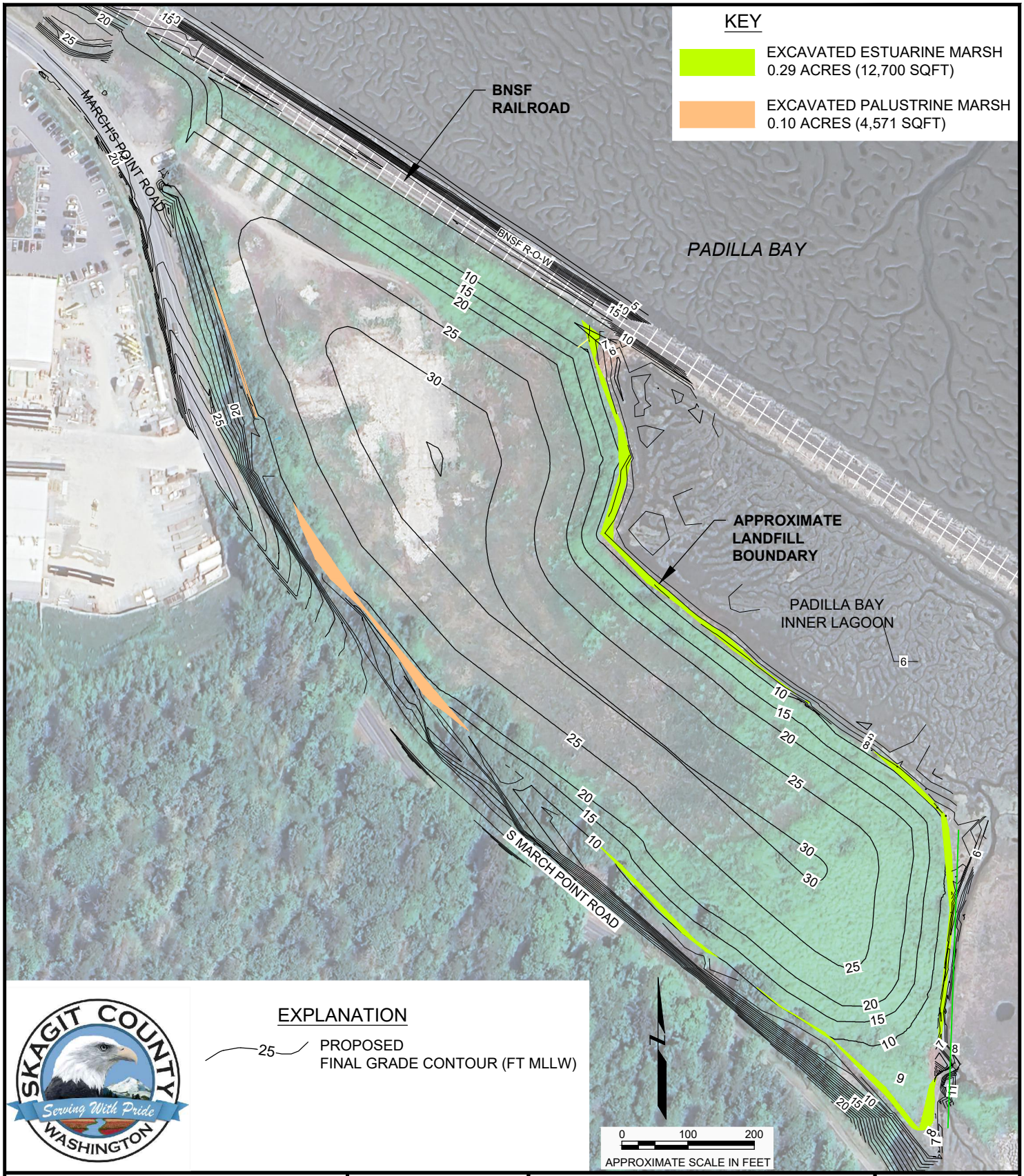

SKAGIT COUNTY

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Environment & Infrastructure Inc.
18300 Redmond Way, Ste 200
Redmond, Washington 98052

PROJECT
WETLAND AND BUFFER MITIGATION PLAN
MARCH POINT (WHITMARSH) LANDFILL

TITLE
APPROXIMATE AREA OF ESTUARINE AND PALUSTRINE MARSH TO BE EXCAVATED

DATE
NOVEMBER 2023

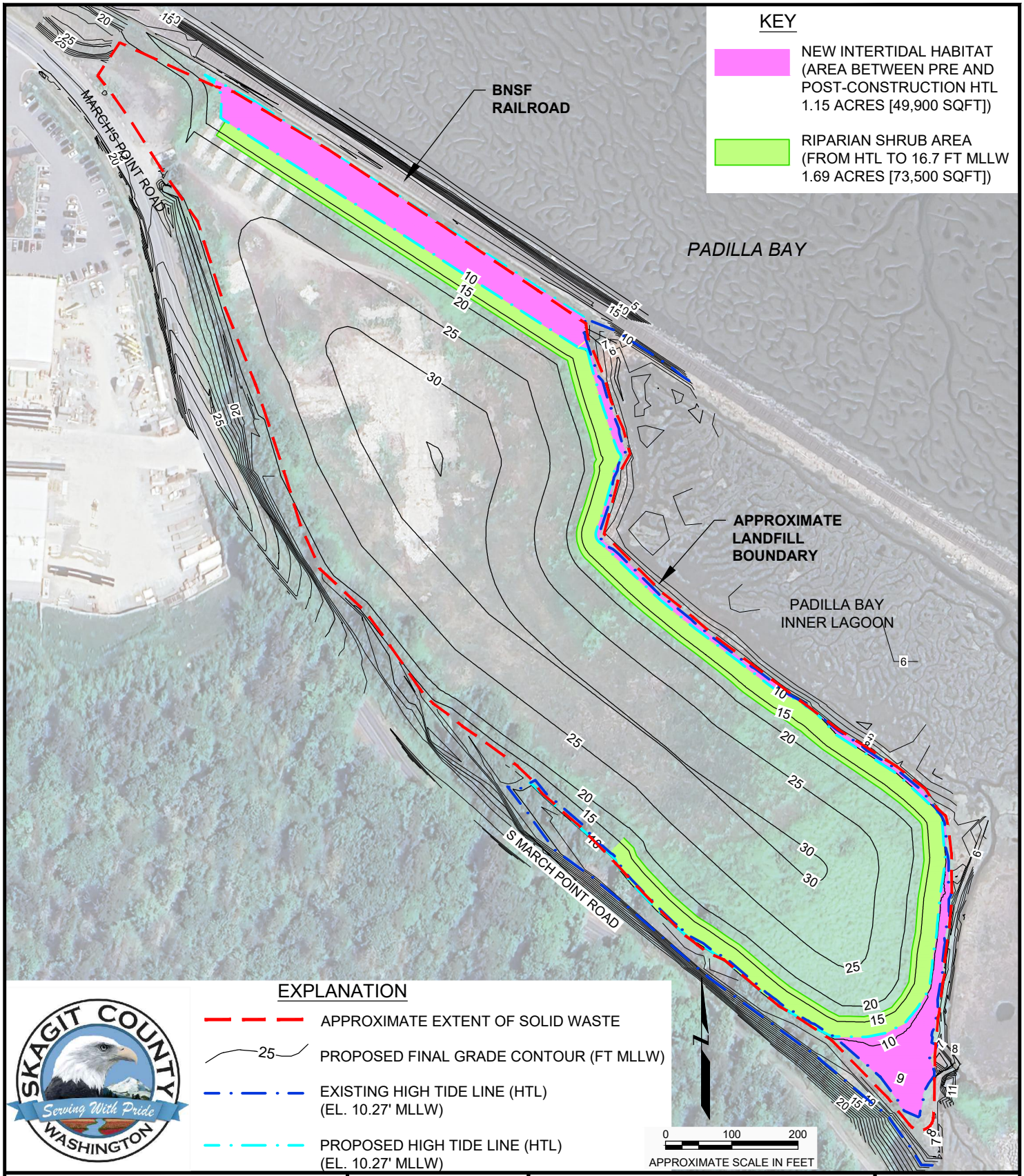
SCALE
AS SHOWN

PROJECT NO.
PS21204410

FIGURE
3

DRAWN BY: APS CHECKED BY: TLP

C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh\Whitmarsh-MarchPoint_DesignDRAFT_110323-MLLW.dwg - Figure 3-M&M - Nov. 08, 2023 8:59am - USAS719374



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PROJECT
WETLAND AND BUFFER MITIGATION PLAN
MARCH POINT (WHITMARSH) LANDFILL

TITLE
RIPARIAN SHRUB HABITAT AND NEW INTERTIDAL AREA

DATE
FEBRUARY 2024

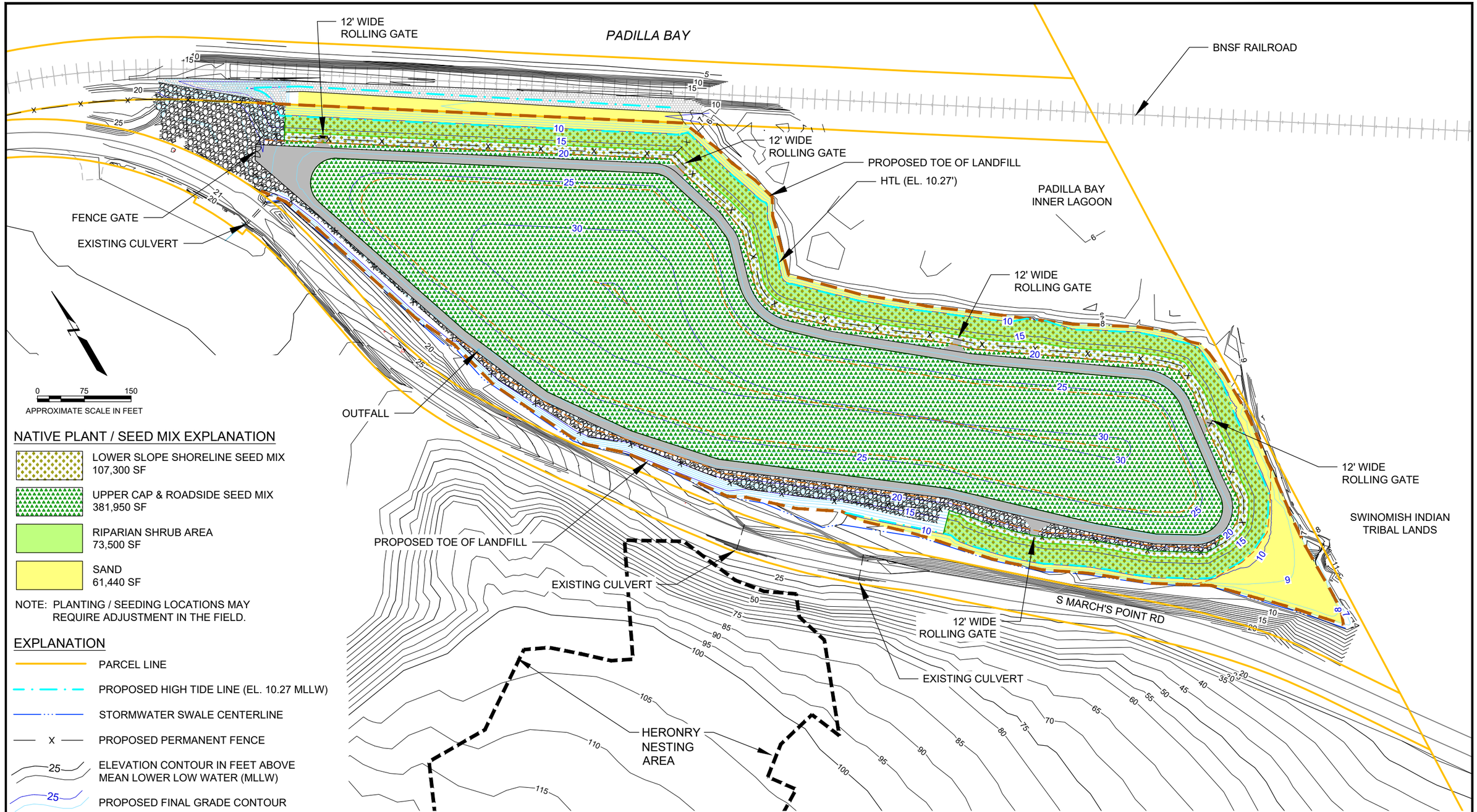
SCALE
AS SHOWN

PROJECT NO.
PS21204410

FIGURE
4

DRAWN BY: APS CHECKED BY: TLP

C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh\Whitmarsh-MarchPoint_DesignDRAFT_20240112-MLLW.dwg - Figure 4-M&M - Feb. 27, 2024 8:17am - USAS719374



NATIVE PLANT / SEED MIX EXPLANATION

- LOWER SLOPE SHORELINE SEED MIX 107,300 SF
- UPPER CAP & ROADSIDE SEED MIX 381,950 SF
- RIPARIAN SHRUB AREA 73,500 SF
- SAND 61,440 SF

NOTE: PLANTING / SEEDING LOCATIONS MAY REQUIRE ADJUSTMENT IN THE FIELD.

EXPLANATION

- PARCEL LINE
- PROPOSED HIGH TIDE LINE (EL. 10.27 MLLW)
- STORMWATER SWALE CENTERLINE
- PROPOSED PERMANENT FENCE
- ELEVATION CONTOUR IN FEET ABOVE MEAN LOWER LOW WATER (MLLW)
- PROPOSED FINAL GRADE CONTOUR
- PROPOSED GRADE BREAK
- PROPOSED TOE OF LANDFILL
- PROPOSED PERIMETER ACCESS ROAD
- CRUSHED ROCK SURFACING AREA
- RAILROAD BALLAST SURFACING AREA

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PROJECT
WETLAND AND BUFFER MITIGATION PLAN
MARCH POINT (WHITMARSH) LANDFILL

TITLE
PLAN VIEW OF PLANTING AREA

DATE
NOVEMBER 2023

SCALE
AS SHOWN

PROJECT NO.
PS21204410

FIGURE
5

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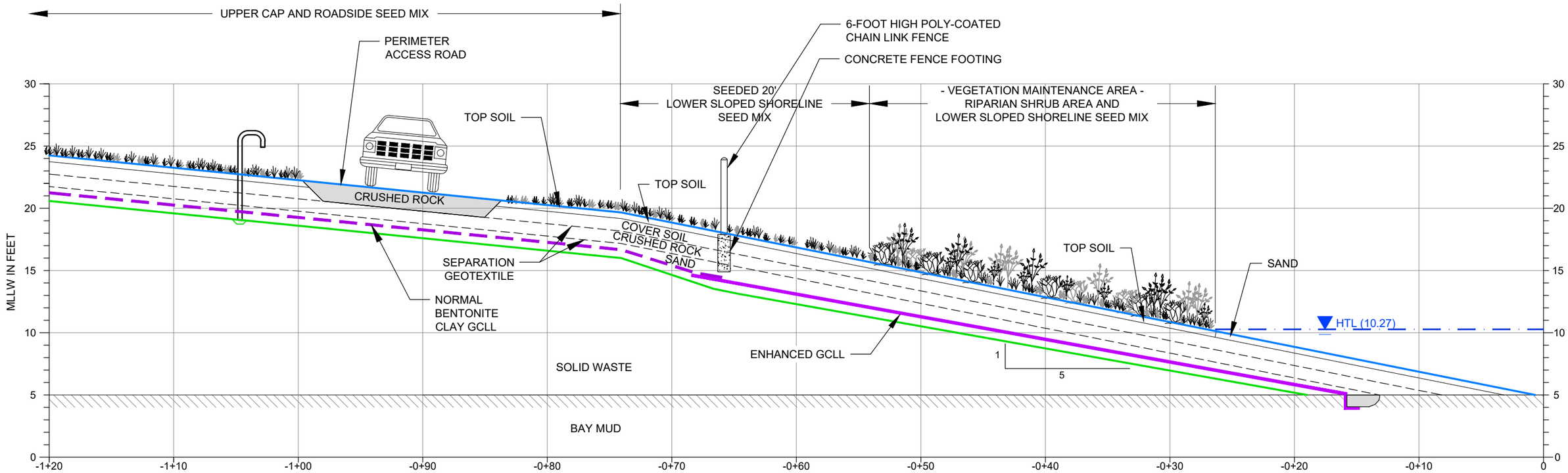

1 DETAIL ALONG INNER LAGOON

0 4 8
APPROXIMATE SCALE IN FEET

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C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh\Whitmarsh-MarchPoint_Design\DRAFT_110323-MLLW.dwg - Figure 6-M&M - Nov. 08, 2023 9:16am - USAS719374

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PROJECT
WETLAND AND BUFFER MITIGATION PLAN
MARCH POINT (WHITMARSH) LANDFILL

TITLE
TYPICAL SECTION IN PLANTING AREA

DATE
NOVEMBER 2023

SCALE
AS SHOWN

PROJECT NO.
PS21204410

FIGURE
6

APPENDIX A

PLANTING PLANS AND SPECIFICATIONS

20' X 20' SWALE DISCHARGE APRON

12' WIDE ROLLING GATE

PADILLA BAY

BNSF RAILROAD

12' WIDE ROLLING GATE

PROPOSED TOE OF LANDFILL

HTL (EL. 10.27')

PADILLA BAY INNER LAGOON

FENCE GATE

EXISTING CULVERT

12' WIDE ROLLING GATE

LOWER SLOPE SHORELINE SEED MIX

UPPER CAP AND ROADSIDE SEED MIX

RIPARIAN SHRUB AREA WITH LOWER SLOPE SHORELINE SEED MIX (SEE SAMPLE PLANTING PLAN ON DRAWING R-4 AND DETAILS AND PLANT SCHEDULE ON R-5)

12' WIDE ROLLING GATE

SWINOMISH INDIAN TRIBAL LANDS

FORMER OUTFALL

PROPOSED TOE OF LANDFILL

EXISTING CULVERT

S MARCH'S POINT RD

12' WIDE ROLLING GATE

EXISTING CULVERT

HERONRY NESTING AREA

NATIVE PLANT / SEED MIX EXPLANATION

- LOWER SLOPE SHORELINE SEED MIX 107,300 SF
- UPPER CAP & ROADSIDE SEED MIX 381,950 SF
- RIPARIAN SHRUB AREA 73,500 SF
- SAND 61,440 SF

NOTE: PLANTING / SEEDING LOCATIONS MAY REQUIRE ADJUSTMENT IN THE FIELD.

EXPLANATION

- PARCEL LINE
- PROPOSED HIGH TIDE LINE (EL. 10.27' MLLW)
- STORMWATER SWALE THALWEG
- X PROPOSED PERMANENT FENCE
- 25 ELEVATION CONTOUR IN FEET ABOVE MEAN LOWER LOW WATER (MLLW)
- 25 PROPOSED FINAL GRADE CONTOUR
- PROPOSED GRADE BREAK
- PROPOSED TOE OF LANDFILL
- PROPOSED PERIMETER ACCESS ROAD
- CRUSHED ROCK SURFACING AREA
- RAILROAD BALLAST SURFACING AREA

0 75 150

APPROXIMATE SCALE IN FEET

Plot Date: 03/04/24 - 10:14am, Plotted by: USAS719374
Drawing Path: C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh\ Drawing Name: Whitmarsh-MarchPoint_DesignDRAFT_20240112-MLLW.dwg

REFERENCES:
PLANS

DATUM
HORIZONTAL DATUM: WASP NAD83 NORTH USFT.
VERTICAL DATUM: MLLW FT.

NO.	REVISION	DATE	APRVD
1			

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DESIGNED KT
CHECKED KT
REVIEWED KT

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SITE PLANTING PLAN

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

DATE: 03/04/24
PROJECT NO.: PS21204410
DRAWING R-1

20' X 20' SWALE
DISCHARGE APRON

12' WIDE
ROLLING GATE

BNSF RAILROAD

12' WIDE
ROLLING GATE

PROPOSED TOE OF LANDFILL

HTL (EL. 10.27')

SWINOMISH INDIAN
TRIBAL LANDS

SEE SAMPLE PLANTING PLAN
SHOWN AT THIS AREA ON DRAWING R-4

LOWER SLOPE
SHORELINE SEED MIX

UPPER CAP AND
ROADSIDE SEED MIX

RIPARIAN SHRUB AREA
WITH LOWER SLOPE
SHORELINE SEED MIX
(SEE SAMPLE PLANTING
PLAN ON DRAWING R-4
AND DETAILS AND PLANT
SCHEDULE ON R-5)

PADILLA BAY
INNER LAGOON

12' WIDE
ROLLING GATE

0.3%
25%
10%
EL. 25.6-19.6
20%
6.5%
EL. 35.3-25.6
EL. 30-25.6

SEE DRAWING R-3

EXPLANATION

- PARCEL LINE
- HIGH TIDE LINE (HTL) (EL. 10.27' MLLW)
- PROPOSED PERMANENT FENCE
- PROPOSED FINAL GRADE CONTOUR
- PROPOSED GRADE BREAK LINE
- PROPOSED TOE OF LANDFILL
- LOWER SLOPE SHORELINE SEED MIX
- UPPER CAP & ROADSIDE SEED MIX
- RIPARIAN SHRUB AREA
- SAND
- PROPOSED COMPOST BERM
- PROPOSED SUBSURFACE LANDFILL GAS PIPE AND SURFACE VENT LOCATION
- PROPOSED PERIMETER ACCESS ROAD
- CRUSHED ROCK SURFACING AREA
- RAILROAD BALLAST SURFACING AREA

0 50 100
APPROXIMATE SCALE IN FEET

REFERENCES:
PLANS

DATUM
HORIZONTAL DATUM:
WASP NAD83 NORTH USFT.
VERTICAL DATUM:
MLLW FT.

NO.	REVISION	DATE	APRVD

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REVIEWED KT

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PLANTING PLAN
ALONG PADILLA BAY INNER LAGOON

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

DATE: 03/04/24
PROJECT NO.: PS21204410

DRAWING
R-2

Plot Date: 03/04/24 - 10:15am, Plotted by: USAS719374
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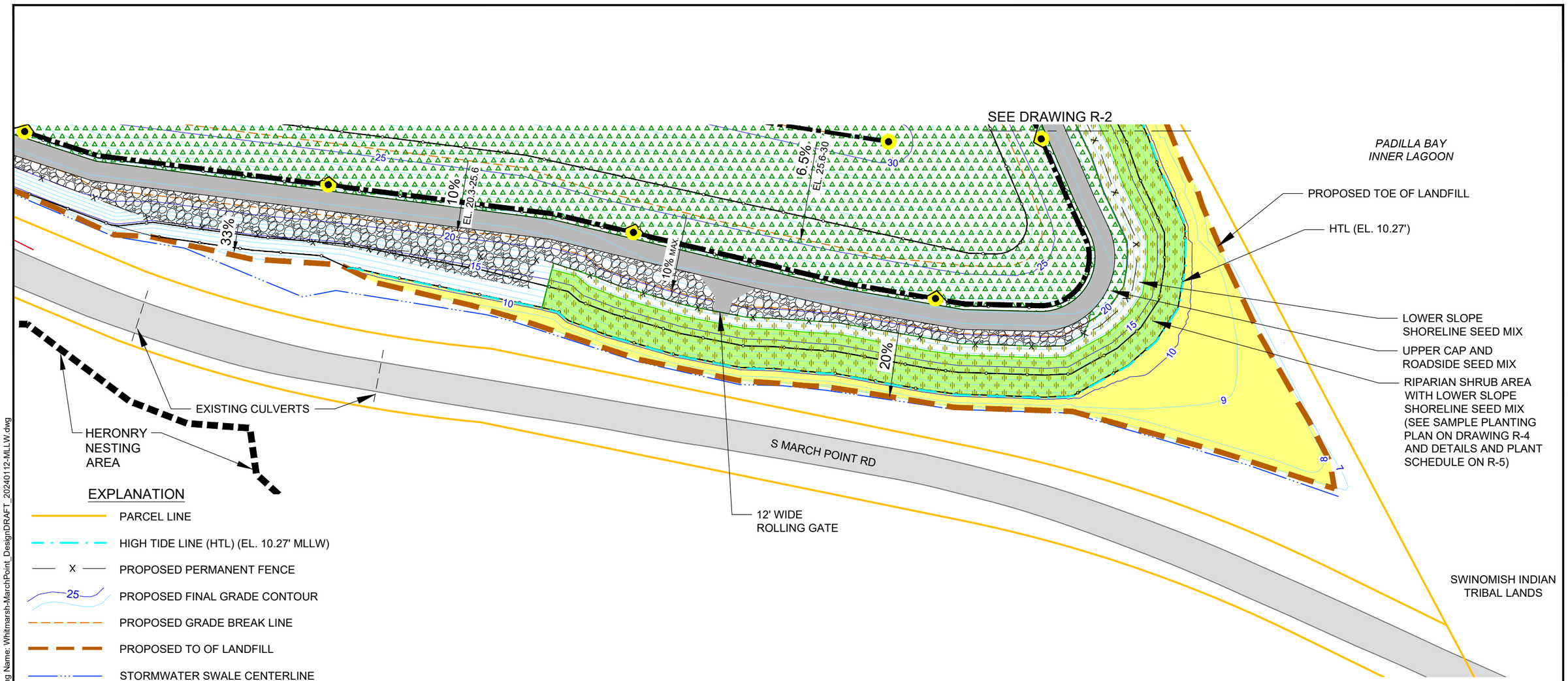

EXPLANATION

- PARCEL LINE
- HIGH TIDE LINE (HTL) (EL. 10.27' MLLW)
- PROPOSED PERMANENT FENCE
- PROPOSED FINAL GRADE CONTOUR
- PROPOSED GRADE BREAK LINE
- PROPOSED TO OF LANDFILL
- STORMWATER SWALE CENTERLINE
- LOWER SLOPE SHORELINE SEED MIX
- UPPER CAP & ROADSIDE SEED MIX
- RIPARIAN SHRUB AREA
- SAND
- PROPOSED COMPOST BERM
- PROPOSED SUBSURFACE LANDFILL GAS PIPE AND SURFACE VENT LOCATION
- PROPOSED PERIMETER ACCESS ROAD
- CRUSHED ROCK SURFACING AREA

REFERENCES:
PLANS

DATUM
HORIZONTAL DATUM:
WASP NAD83 NORTH USFT.
VERTICAL DATUM:
MLLW FT.

NO.	REVISION	DATE	APRVD

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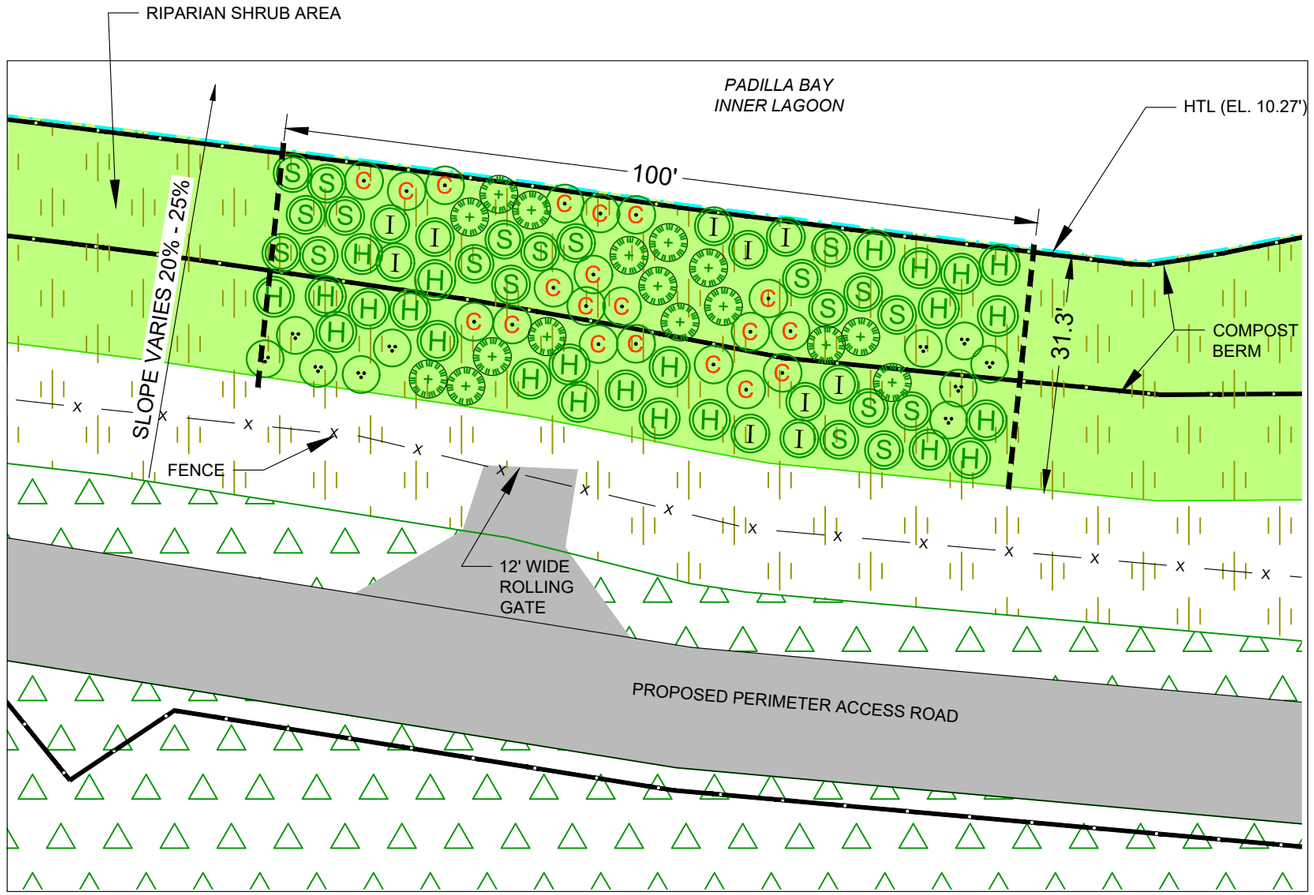
PLANTING PLAN ALONG SOUTHERN DITCH

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

DATE: 03/04/24
PROJECT NO.: PS21204410

DRAWING
R-3



1 SHORELINE RESTORATION - RIPARIAN SHRUB AREA

3,130 SF SAMPLE PLANTING PLAN (100' X 31.3')

RIPARIAN SHRUB AREA PLANT SYMBOL EXPLANATION

	SHRUBS	QUANTITIES
⁘	*AMELANCHIER ALNIFOLIA* SERVICEBERRY	*10*
+	*GAULTHERIA SHALLON* SALAL	*16*
I	*HOLODISCUS DISCOLOR* OCEANSPRAY	*10*
C	*RIBES SANGUINEUM* RED FLOWERING CURRANT	*20*
S	*SYMPHORICARPOS ALBUS* SNOWBERRY	*20*
H	*VACCINIUM OVATUM* EVERGREEN HUCKLEBERRY	*24*

100 TOTAL
(FOR 3,130 SF AREA)

SEED MIXES

LOWER SLOPE SHORELINE SEED MIX

UPPER CAP AND ROADSIDE SEED MIX

NOTES:
1. SEE DETAILS AND PLANT SCHEDULE ON DRAWING R-5 FOR SPECIES, SIZE AND SPACING INFORMATION.
2. PLANTING DENSITY AND LOCATIONS MAY REQUIRE ADJUSTMENT IN THE FIELD.

0 10 20
APPROXIMATE SCALE IN FEET

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Drawing Path: C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh\, Drawing Name: Whitmarsh-MarchPoint_DesignDRAFT_20240112-MLLW.dwg

REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS				
DATUM				
HORIZONTAL DATUM: WASP NAD83 NORTH USFT.				
VERTICAL DATUM: MLLW FT.				

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REVIEWED KT

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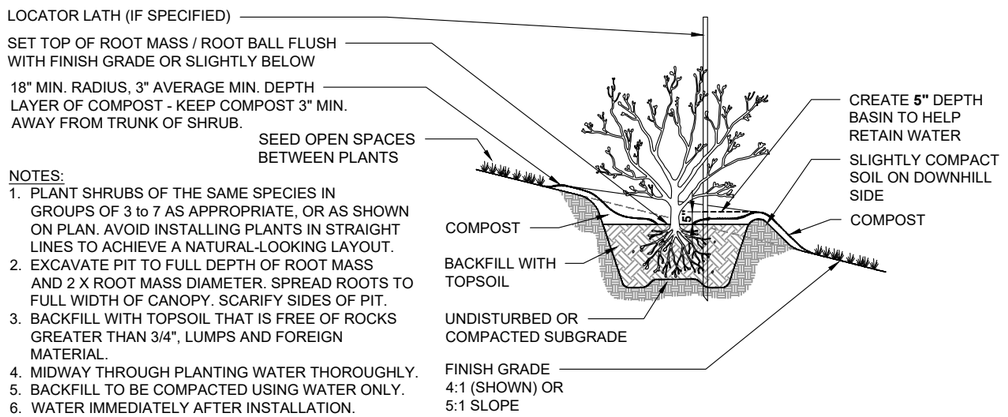
SAMPLE PLANTING PLAN

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

DATE: 03/04/24
PROJECT NO.: PS21204410

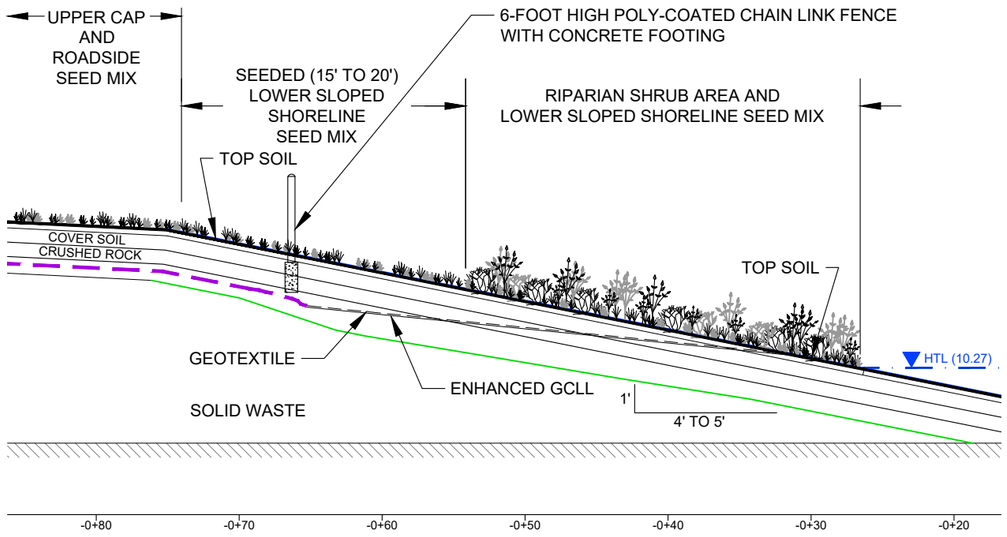
DRAWING
R-4



NOTES:
1. PLANT SHRUBS OF THE SAME SPECIES IN GROUPS OF 3 to 7 AS APPROPRIATE, OR AS SHOWN ON PLAN. AVOID INSTALLING PLANTS IN STRAIGHT LINES TO ACHIEVE A NATURAL-LOOKING LAYOUT.
2. EXCAVATE PIT TO FULL DEPTH OF ROOT MASS AND 2 X ROOT MASS DIAMETER. SPREAD ROOTS TO FULL WIDTH OF CANOPY. SCARIFY SIDES OF PIT.
3. BACKFILL WITH TOPSOIL THAT IS FREE OF ROCKS GREATER THAN 3/4", LUMPS AND FOREIGN MATERIAL.
4. MIDWAY THROUGH PLANTING WATER THOROUGHLY.
5. BACKFILL TO BE COMPACTED USING WATER ONLY.
6. WATER IMMEDIATELY AFTER INSTALLATION.

1 SHRUB PLANTING ON SLOPE

NOT TO SCALE



2 PLANTING DETAIL ALONG INNER LAGOON

NOT TO SCALE

NATIVE PLANT SCHEDULE

Plant Name *Scientific*	Common		USDA Plant Wetland Status	LAGOON PLANTING AREA	DITCH PLANTING AREA	TOTALS	Spacing	Size	Condition	Planting Area
Shrubs - Lower Slope Shoreline			SF Area:	51,874	21,626	73,500				
			Acres	1.19	0.50	1.69				
Amelanchier alnifolia	Serviceberry		FACU	200	83	283	**6 ft o.c.**	**1 gal.**	**Container**	**Dry to Moist**
Gaultheria shallon	Salal		FACU	283	118	401	**6 ft o.c.**	**1 gal.**	**Container**	**Dry - Upland**
Holodiscus discolor	Oceanspray		FACU	200	83	283	**6 ft o.c.**	**1 gal.**	**Container**	**Dry - Upland**
Ribes sanguineum	Red-flowering currant		FACU	283	118	401	**6 ft o.c.**	**1 gal.**	**Container**	**Moist to Wet**
Symphoricarpos albus	Snowberry		FACU	283	118	401	**6 ft o.c.**	**1 gal.**	**Container**	**Dry to Moist**
Vaccinium ovatum	Evergreen huckleberry		FACU	416	175	591	**6 ft o.c**	**1 gal.**	**Container**	**Dry to Moist**
Total			**Quan:**	**1,665**	**695**	**2360**				

Plant Name *Scientific*	Common		USDA Plant Wetland Status	LAGOON PLANTING AREA	DITCH PLANTING AREA	TOTALS
Seed Mix - Lower Slope Shoreline (applied at 10 lbs. per acre)			SF Area:	78,520	28,780	107,300
		%	Acres	1.80	0.66	2.46
Agrostis stolonifera	Creeping bentgrass	15%	FAC	2.7	1.0	3.7
Aster subspicatus	Douglas aster	5%	NR	0.9	0.3	1.2
Atriplex patula	Saltweed	10%	FACW	1.8	0.7	2.5
Elymus mollis	Dunegrass	15%	NR	2.7	1.0	3.7
Fragaria chiloensis	Coastal strawberry	5%	FACU	0.9	0.3	1.2
Grindelia integrifolia	Pacific gumweed	10%	FACW	1.8	0.7	2.5
Hordeum brachyantherum	Meadow barley	30%	FACW	5.4	2.0	7.4
Lathyrus japonicus	Beach pea	10%	FACU	1.8	0.7	2.5
Total		*100%*	**Pounds:**	**18.0**	**6.6**	**24.6**

Plant Name *Scientific*	Common		USDA Plant Wetland Status	AREA BETWEEN ROAD AND SLOPED PERIMETER	AREA WITHIN ROADWAY	TOTALS
Seed Mix - Upper Cap and Roadside (applied at 18 lbs. per acre)			SF Area:	15,192	366,758	381,950
		%	Acres	0.35	8.42	8.77
Deschampsia cespitosa	Tufted hairgrass	20%	FACW	1.3	30.3	31.6
Elymus glaucus	Blue wildrye	20%	FACU	1.3	30.3	31.6
Festuca rubra	Creeping red fescue	10%	FAC	0.6	15.2	15.8
Fragaria chiloensis	Coastal strawberry	5%	FACU	0.3	7.6	7.9
Hordeum brachyantherum	Meadow barley	40%	FACW	2.5	60.6	63.1
Lupinus littoralis / rivulairs	Coastal lupine	5%	FAC	0.3	7.6	7.9
Total		*100%*	**Pounds:**	**6.3**	**151.6**	**157.8**

Notes:
1 - Scientific names and species identification taken from *Flora of the Pacific Northwest, 2nd Edition (Hitchcock and Cronquist, Ed. by Giblin, Ledger, Zika, and Olmstead, 2018).*
2 - Over-sized and/or container plants are suitable for replacement pending project engineer's or landscape architect's approval.
3 - Native plant species may be substituted or added with project engineer's or landscape architect's approval. Preference for substitutions is to select plant that shares the same USDA Plant Wetland Status Rating (see column 3 - USDA Plant Wetland Status).
4 - Planting density and locations may require adjustment in the field.

DEFINITION OF ACRONYMS:
USDA – United States Department of Agriculture
FACW (Facultative Wetland Plants)—Usually occur in wetlands, but may occur in non-wetlands.
FAC (Facultative Plants)—Occur in wetlands and non-wetlands.
FACU (Facultative Upland Plants)—Usually occur in non-wetlands, but may occur in wetlands.

2 NATIVE PLANT SCHEDULE

REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS				
DATUM				
HORIZONTAL DATUM: WASP NAD83 NORTH USFT.				
VERTICAL DATUM: MLLW FT.				

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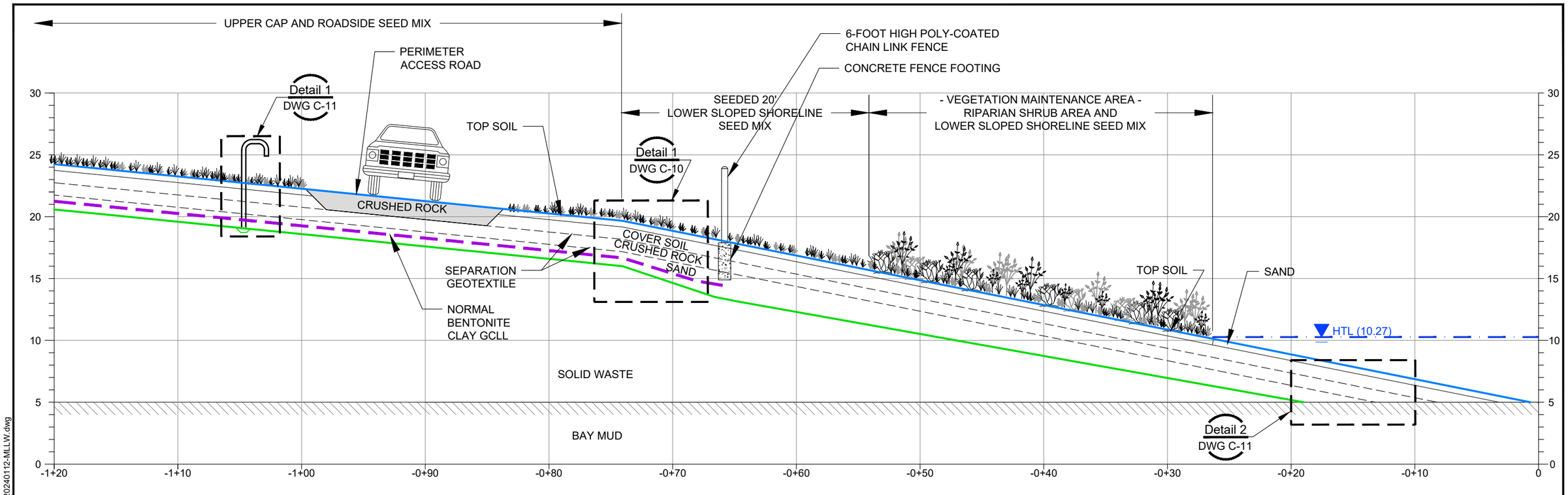
PLANTING DETAILS AND NATIVE PLANT SCHEDULE

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

DATE: 03/04/24
PROJECT NO.: PS21204410
DRAWING R-5



1 DETAIL ALONG INNER LAGOON

0 4 8
APPROXIMATE SCALE IN FEET

Plot Date: 03/04/24 - 10:15am, Plotted by: USAS719374
Drawing Path: C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh_Drawing Name: Whitmarsh-MarchPoint_DesignDRAFT_20240112-MLLW.dwg

REFERENCES:
PLANS
DATUM
HORIZONTAL DATUM: WASP NAD83 NORTH USFT.
VERTICAL DATUM: MLLW FT.

NO.	REVISION	DATE	APRVD
1			

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REVIEWED KT

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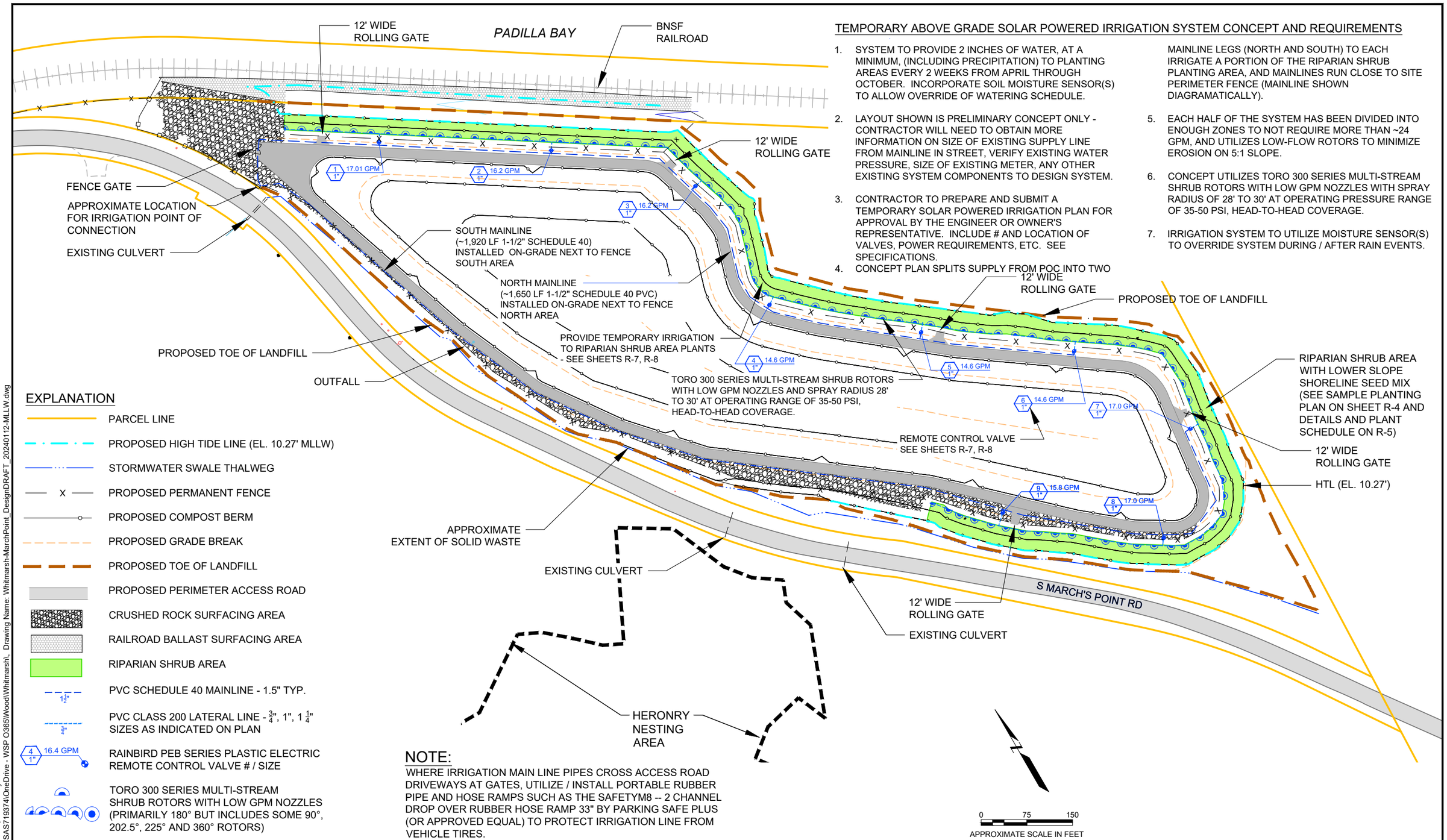
SHORELINE RESTORATION DETAILS

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

DATE: 03/04/24
PROJECT NO.: PS21204410
DRAWING R-6



TEMPORARY ABOVE GRADE SOLAR POWERED IRRIGATION SYSTEM CONCEPT AND REQUIREMENTS

1. SYSTEM TO PROVIDE 2 INCHES OF WATER, AT A MINIMUM, (INCLUDING PRECIPITATION) TO PLANTING AREAS EVERY 2 WEEKS FROM APRIL THROUGH OCTOBER. INCORPORATE SOIL MOISTURE SENSOR(S) TO ALLOW OVERRIDE OF WATERING SCHEDULE.
2. LAYOUT SHOWN IS PRELIMINARY CONCEPT ONLY - CONTRACTOR WILL NEED TO OBTAIN MORE INFORMATION ON SIZE OF EXISTING SUPPLY LINE FROM MAINLINE IN STREET, VERIFY EXISTING WATER PRESSURE, SIZE OF EXISTING METER, ANY OTHER EXISTING SYSTEM COMPONENTS TO DESIGN SYSTEM.
3. CONTRACTOR TO PREPARE AND SUBMIT A TEMPORARY SOLAR POWERED IRRIGATION PLAN FOR APPROVAL BY THE ENGINEER OR OWNER'S REPRESENTATIVE. INCLUDE # AND LOCATION OF VALVES, POWER REQUIREMENTS, ETC. SEE SPECIFICATIONS.
4. CONCEPT PLAN SPLITS SUPPLY FROM POC INTO TWO MAINLINE LEGS (NORTH AND SOUTH) TO EACH IRRIGATE A PORTION OF THE RIPARIAN SHRUB PLANTING AREA, AND MAINLINES RUN CLOSE TO SITE PERIMETER FENCE (MAINLINE SHOWN DIAGRAMATICALLY).
5. EACH HALF OF THE SYSTEM HAS BEEN DIVIDED INTO ENOUGH ZONES TO NOT REQUIRE MORE THAN ~24 GPM, AND UTILIZES LOW-FLOW ROTORS TO MINIMIZE EROSION ON 5:1 SLOPE.
6. CONCEPT UTILIZES TORO 300 SERIES MULTI-STREAM SHRUB ROTORS WITH LOW GPM NOZZLES WITH SPRAY RADIUS OF 28' TO 30' AT OPERATING PRESSURE RANGE OF 35-50 PSI, HEAD-TO-HEAD COVERAGE.
7. IRRIGATION SYSTEM TO UTILIZE MOISTURE SENSOR(S) TO OVERRIDE SYSTEM DURING / AFTER RAIN EVENTS.

EXPLANATION

- PARCEL LINE
- PROPOSED HIGH TIDE LINE (EL. 10.27' MLLW)
- STORMWATER SWALE THALWEG
- PROPOSED PERMANENT FENCE
- PROPOSED COMPOST BERM
- PROPOSED GRADE BREAK
- PROPOSED TOE OF LANDFILL
- PROPOSED PERIMETER ACCESS ROAD
- CRUSHED ROCK SURFACING AREA
- RAILROAD BALLAST SURFACING AREA
- RIPARIAN SHRUB AREA
- PVC SCHEDULE 40 MAINLINE - 1.5" TYP.
- PVC CLASS 200 LATERAL LINE - $\frac{3}{4}$", 1", 1 $\frac{1}{4}$" SIZES AS INDICATED ON PLAN
- 4 1" 16.4 GPM — RAINBIRD PEB SERIES PLASTIC ELECTRIC REMOTE CONTROL VALVE # / SIZE
- TORO 300 SERIES MULTI-STREAM SHRUB ROTORS WITH LOW GPM NOZZLES (PRIMARILY 180° BUT INCLUDES SOME 90°, 202.5°, 225° AND 360° ROTORS)

NOTE:

WHERE IRRIGATION MAIN LINE PIPES CROSS ACCESS ROAD DRIVEWAYS AT GATES, UTILIZE / INSTALL PORTABLE RUBBER PIPE AND HOSE RAMPS SUCH AS THE SAFETYM8 -- 2 CHANNEL DROP OVER RUBBER HOSE RAMP 33" BY PARKING SAFE PLUS (OR APPROVED EQUAL) TO PROTECT IRRIGATION LINE FROM VEHICLE TIRES.

REFERENCES:
PLANS
DATUM
HORIZONTAL DATUM: WASP NAD83 NORTH USFT.
VERTICAL DATUM: MLLW FT.

NO.	REVISION	DATE	APRVD
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TEMPORARY IRRIGATION CONCEPT PLAN

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

DATE: 03/04/24
PROJECT NO.: PS21204410
DRAWING R-6

Plot Date: 03/04/24 - 10:15am, Plotted by: USAS719374
Drawing Path: C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh\, Drawing Name: Whitmarsh-MarchPoint_DesignDRAFT_20240112-MLLW.dwg

20' X 20' SWALE
DISCHARGE APRON

BNSF RAILROAD

0.3%

12' WIDE
ROLLING GATE

PROPOSED TOE OF LANDFILL

HTL (EL. 10.27')

SWINOMISH INDIAN
TRIBAL LANDS

PADILLA BAY
INNER LAGOON

RIPARIAN SHRUB AREA
WITH LOWER SLOPE
SHORELINE SEED MIX
(SEE SAMPLE PLANTING
PLAN ON DRAWING R-4
AND DETAILS AND PLANT
SCHEDULE ON R-5)

1 1" 17.01 GPM

2 1" 16.2 GPM

3 1" 16.2 GPM

4 1" 14.6 GPM

5 1" 14.6 GPM

6 1" 14.6 GPM

7 1" 17.0 GPM

25%
EL. 25.6-19.6

10%
EL. 25.6-19.6

6.5%
EL. 35.3-25.6

6.5%
EL. 30-25.6

20%

20%

20%

1.5" IRRIGATION MAINLINE
CONTINUES TO POINT OF CONNECTION

12' WIDE
ROLLING GATE

225° ROTOR

SEE DRAWING R-8

EXPLANATION

- PARCEL LINE
- PROPOSED HIGH TIDE LINE (EL. 10.27' MLLW)
- STORMWATER SWALE THALWEG
- X — PROPOSED PERMANENT FENCE
- PROPOSED COMPOST BERM
- PROPOSED GRADE BREAK
- PROPOSED TOE OF LANDFILL
- PROPOSED PERIMETER ACCESS ROAD
- CRUSHED ROCK SURFACING AREA
- RAILROAD BALLAST SURFACING AREA
- RIPARIAN SHRUB AREA
- 1½" PVC SCHEDULE 40 MAINLINE - 1.5" TYP.
- ¾" PVC CLASS 200 LATERAL LINE - ¾", 1", 1 ¼" SIZES AS INDICATED ON PLAN
- 4 1" 16.4 GPM RAINBIRD PEB SERIES PLASTIC ELECTRIC REMOTE CONTROL VALVE # / SIZE
- TORO 300 SERIES MULTI-STREAM SHRUB ROTORS WITH LOW GPM NOZZLES (PRIMARILY 180° BUT INCLUDES SOME 90°, 202.5°, 225° AND 360° ROTORS)

0 50 100
APPROXIMATE SCALE IN FEET

Plot Date: 03/04/24 - 10:16am, Plotted by: USAS719374
Drawing Path: C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh\ Drawing Name: Whitmarsh-MarchPoint_DesignDRAFT_20240112-MLLW.dwg

REFERENCES:
PLANS
DATUM
HORIZONTAL DATUM: WASP NAD83 NORTH USFT.
VERTICAL DATUM: MLLW FT.

NO.	REVISION	DATE	APRVD

DRAWN APS
DESIGNED KT
CHECKED KT
REVIEWED KT

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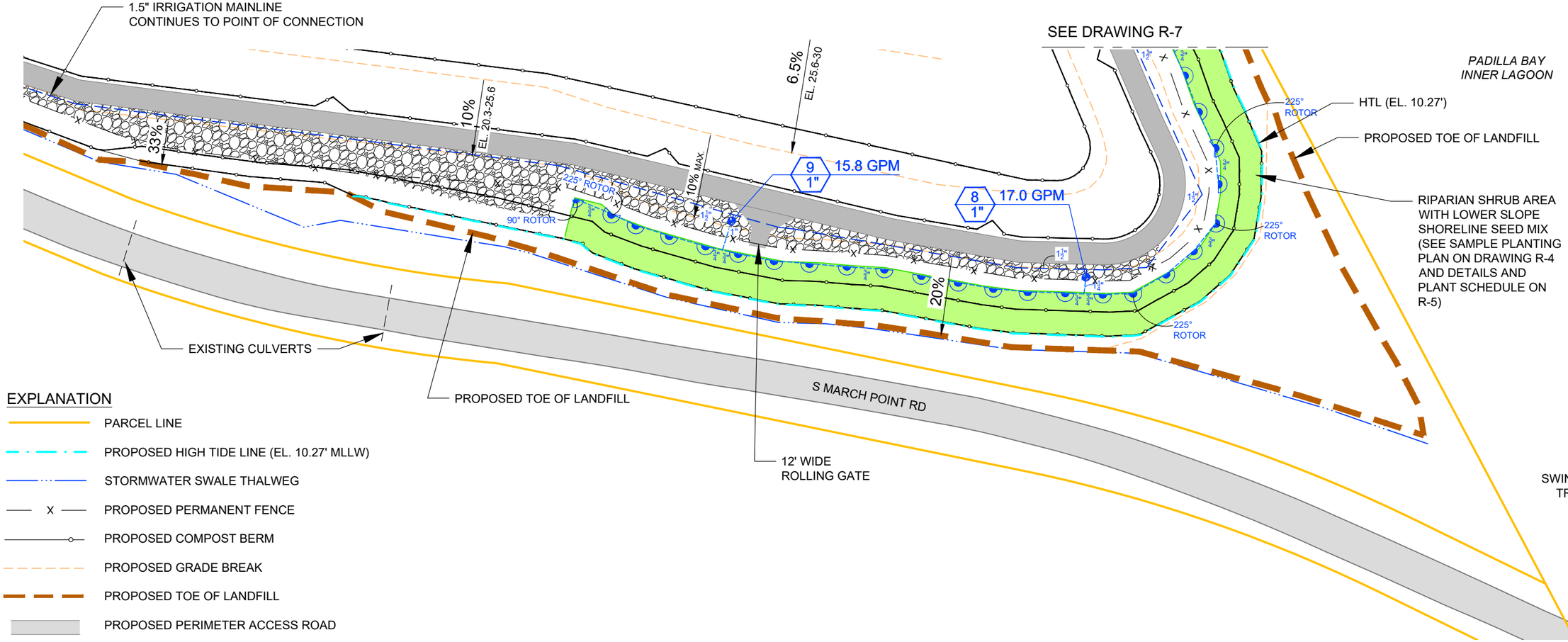
TEMPORARY IRRIGATION CONCEPT ALONG PADILLA BAY INNER LAGOON

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

DATE: 03/04/24
PROJECT NO.: PS21204410
DRAWING R-7



EXPLANATION

- PARCEL LINE
- PROPOSED HIGH TIDE LINE (EL. 10.27' MLLW)
- STORMWATER SWALE THALWEG
- PROPOSED PERMANENT FENCE
- PROPOSED COMPOST BERM
- PROPOSED GRADE BREAK
- PROPOSED TOE OF LANDFILL
- PROPOSED PERIMETER ACCESS ROAD
- CRUSHED ROCK SURFACING AREA
- RIPARIAN SHRUB AREA
- PVC SCHEDULE 40 MAINLINE - 1.5" TYP.
- PVC CLASS 200 LATERAL LINE - $\frac{3}{4}$", 1", 1 $\frac{1}{4}$" SIZES AS INDICATED ON PLAN
- 4 / 1" 16.4 GPM — RAINBIRD PEB SERIES PLASTIC ELECTRIC REMOTE CONTROL VALVE # / SIZE
- TORO 300 SERIES MULTI-STREAM SHRUB ROTORS WITH LOW GPM NOZZLES (PRIMARILY 180° BUT INCLUDES SOME 90°, 202.5°, 225° AND 360° ROTORS)

0 40 80
APPROXIMATE SCALE IN FEET

Plot Date: 03/04/24 - 10:18am, Plotted by: USAS719374
Drawing Path: C:\Users\USAS719374\OneDrive - WSP O365\Wood\Whitmarsh_Drawing Name: Whitmarsh-MarchPoint_DesignDRAFT_20240112-MLLW.dwg

REFERENCES:
PLANS
DATUM
HORIZONTAL DATUM: WASP NAD83 NORTH USFT.
VERTICAL DATUM: MLLW FT.

NO.	REVISION	DATE	APRVD

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REVIEWED KT

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TEMPORARY IRRIGATION CONCEPT ALONG SOUTHERN DITCH

MARCH POINT (WHITMARSH) LANDFILL
SKAGIT COUNTY, WASHINGTON

DATE: 03/04/24
PROJECT NO.: PS21204410
DRAWING R-8

INTRODUCTION TO THE SPECIAL PROVISIONS

12/27/2023

Division 8

8.01 – Erosion Control and Water Pollution Control
8.02 – Roadside Restoration
8.03 – Irrigation Systems

The work on this project shall be accomplished in accordance with the *Standard Specifications for Road, Bridge and Municipal Construction*, 2024 edition, as issued by the Washington State Department of Transportation (WSDOT). The Standard Specifications, as modified or supplemented by the Amendments to the Standard Specifications and these Special Provisions, all of which are made a part of the Contract Documents, shall govern all of the Work.

These Special Provisions are made up of both General Special Provisions, which may have project-specific fill-ins; and project-specific Special Provisions. Each Provision either supplements, modifies, or replaces the comparable Standard Specification, or is a new Provision. The deletion, amendment, alteration, or addition to any subsection or portion of the Standard Specifications is meant to pertain only to that particular portion of the section, and in no way should it be interpreted that the balance of the section does not apply.

Also incorporated into the Contract Documents by reference are:

- *Manual on Uniform Traffic Control Devices for Streets and Highways*, currently adopted edition, with Washington State modifications, if any
- *Standard Plans for Road, Bridge and Municipal Construction*, WSDOT/APWA, current edition

Contractor shall obtain copies of these publications, at Contractor's own expense.

Division 8 Miscellaneous Construction

8-01 Erosion Control and Water Pollution Control

8-01.3(9)B Gravel Filter, Wood Chip, or Compost Berm
8-01.3(9)B is supplemented by the following:

Compost Berms shall be constructed in accordance with the detail in the Plans. Compost shall be Medium Compost. The Compost Berms shall be installed parallel to the final contours, as shown in the plans, using pneumatic equipment.

8-02 Roadside Restoration

8-02.3(1) Responsibility During Construction
8-02.3(1) is supplemented by the following:

The term 'Contractor' as used in this specification section shall refer to the contractor selected by owner. Contractor may elect to subcontract all or part of the landscape work described in this section.

Provide protection for all property, persons, work in progress, structures, existing landscape work to remain, utilities, walls, walks, paved surfaces, drainage materials, water-proofing and other membranes, and all survey markers and monuments from damages incurred arising from this contract. Contractor shall pay for any such damage at no additional cost to owner.

Verify locations of all underground utilities prior to commencement of work. Approximate locations of existing known utilities have been shown on architectural / engineering or survey drawings. Contractor shall be responsible for verifying locations of utilities and for the protection of said utilities. Promptly notify the owner's representative of any conflict between proposed work and obstructions.

General - Verify field conditions and that necessary preceding work has been completed and is satisfactory to receive work in this section. Commencement of work constitutes acceptance of conditions as satisfactory. Do not seed when the temperature is below 55 degrees f. Under no circumstances will seeding during freezing weather or in frozen ground be permitted. Remove all plant tags and flags prior to final inspection. Ensure that debris, such as plant containers left over from work, is removed from work areas. Containers and other construction debris shall be removed from the project site by the contractor and disposed of at an appropriate refuse center. Confine operations including material and equipment storage, to working areas allotted by owner for operations. The work site shall be progressively cleaned of debris and rubbish as work proceeds. Take necessary precautions to protect work in progress, property, persons, walks, curbs, pavement, fences, and buildings from any damage that might be incurred arising from this contract. Do not mix planting soil directly on paved surfaces. Damage incurred or arising from this contract shall be paid by the contractor.

Landscape Grading and Soil Preparation - Subgrade treatment and placement of topsoil work shall have been performed prior to beginning landscape work. Finish grading and finish elevation shall have been achieved prior to plant installation.

Permits, Codes and Ordinances - Obtain and pay for all necessary permits and fees required by

applicable codes and ordinances for this work that have not been procured by the owner. Comply with all applicable codes, regulations, and ordinances that pertain to this work. Consult with owner if there are questions regarding these requirements.

Clean all paved surfaces and planted areas of soil and debris on a daily basis. Clean all paved surfaces affected by landscape work prior to final acceptance.

8-02.3(2)C Plant Establishment Plan
8-02.3(2)C is supplemented by the following:

Submittals – Maintenance Schedule: Contractor shall submit to owner's representative a schedule of watering and maintenance activities to be performed by contractor during the construction of the contract, up to the point of final acceptance of planting and irrigation. The schedule shall delineate specific activities and their frequency during the period between time of initial planting and final acceptance and shall be submitted to the engineer prior to provisional acceptance.

8-02.3(3)B Roadside Seeding, Planting and Lawn Area Weed Control
Section 8-02.3(3)B is supplemented by the following:

Summary – Furnish all labor, materials, equipment, and related items necessary to complete the work shown on the drawings and or specifications for both the lagoon, ditch, and interior site areas. The items of work to be performed include but are not limited to: Treatment of finish grade; seeding and planting of specific plant materials; installation of plants, wood mulch, fertilizer, amendments; guarantee maintenance and protection; coordination with separate contractors; and all other related items required to complete the work in the best accepted trade practices.

Hand Clearing of Invasive Plants **that colonize the site post grading activities**, prior to plant installation - Confirm limits of non-native invasive plants per field verification with engineer before proceeding with clearing in these areas. Notify engineer one week prior to removal date. Remove the following non-native invasive plants manually using hand tools and by hand pulling: Himalayan blackberry (rubus armeniacus), Japanese knotweed (polygonum cuspidatum), reed canary grass (phalaris arundinacea), English ivy (hedera helix), black locust (robinia pseudoacacia), and all other invasive species that have not been specifically listed. Remove all above ground plant material and remove below ground rhizomes and roots. Transport plant, root, and rhizome materials carefully to avoid contamination of adjacent areas and travel corridors. Remove and dispose of all invasive plant debris at an approved composting facility.

Pesticides and herbicides shall not be used without written authorization from engineer. At a minimum contractor shall notify engineer for approval 30 workdays prior to use. Approval by local and federal agencies may also be required prior to use. Spraying shall be conducted only by those with a Washington State applicator's license with an "aquatics" endorsement and an aquatics pest management permit from the Washington State Department of Ecology.

8-02.3(4)A Topsoil Type A
8-02.3(4)A is supplemented by the following:

Topsoil Type A – The Contractor shall submit a certification by the supplier that the contents of

the Topsoil meet the requirements in these Special Provisions. Submit a one-half-cubic-foot sample of material and test results for topsoil proposed for the project. The contractor shall submit and pay for all material testing.

The Contractor will submit results of chemical analysis for analytes shown in Table 1 (below) for topsoil that is proposed for use at the site. The results must be submitted to the owner for approval at least three weeks prior to the purchase of the material.

These topsoil special provisions apply only to topsoil and amendments, and do not apply to the landfill cap layer of cover soil.

8-02.3(5)A Seeding Area Preparation
8-02.3(5)A is supplemented by the following:

Hydroseeding - Hydroseed areas as shown on the drawings. Contractor shall give the engineer notice of seeding operation 48 hours prior to seeding. Apply fertilizer, seed, and mulch in one operation using approved hydraulic equipment at the following rates: recycled paper/wood fiber mulch combination: 50 pounds per 1,000 square feet. Seed: use rates provided for seed mixes in native plant schedule. Fertilizer: 10 pounds per 1,000 square feet or as recommended by supplier. Soil binding agent: 1 pound per 1,000 square feet or as recommended by supplier.

Do not hydroseed during windy weather or when temperatures are below 55 degrees f. Seeding season is March 1 to October 31, when supplemented with water. Do not hydroseed before or after these dates without written approval by the engineer. Under no circumstances will seeding be permitted when ground is frozen, excessively wet, or otherwise un-tillable. Utilize water as carrying agent for equipment that has a continuous built-in agitation system. Equipment with a gear pump is not acceptable. Pump a continuous, nonfluctuating supply of homogenous slurry to provide a uniform distribution of material over designated areas. Promptly re-seed any areas which do not germinate within 14 days.

8-02.3(6)A Compost
8-02.3(6)A is supplemented by the following:

Submit a 1-cubic-foot sample of material and test results for compost proposed for the project. The contractor shall submit and pay for all material testing.

The Contractor will submit results of chemical analysis for analytes shown in Table 1 (below) for compost that is proposed for use at the site. The results must be submitted to the owner for approval at least three weeks prior to the purchase of the material.

Install compost to the average minimum depth of 3 inches within planting area for riparian shrubs. Provide an 18-inch-radius seed-free ring covered with a 3” average minimum depth of compost. Keep compost 3” min. away from trunk of shrub. See landscape restoration planting plans and details for additional information.

Table 1 - Soil Chemical Analytes

Analyte	AETs Marine Sediment Sediment Cleanup Objective (SCO) [1]	Potential Analytical Method [2]
Metals	**mg/kg dw**	
Arsenic	57	EPA 6010/6020
Cadmium	5.1	EPA 6010/6020
Chromium	260	EPA 6010/6020
Copper	390	EPA 6010/6020
Lead	450	EPA 6010/6020
Mercury	0.41	EPA 7471A
Silver	6.1	EPA 6010/6020
Zinc	410	EPA 6010/6020
Organic and Chlorinated Organic Chemicals	**µg/kg dw**	
2,4-Dimethylphenol	29	EPA 8270
2-Methylphenol	63	EPA 8270
4-Methylphenol	670	EPA 8270
Benzoic acid	650	EPA 8270
Benzyl alcohol	57	EPA 8270
Pentachlorophenol	360	EPA 8270
Phenol	420	EPA 8270
1,2,4-Trichlorobenzene	31	EPA 8260/8270
1,2-Dichlorobenzene	35	EPA 8260/8270
1,4-Dichlorobenzene	110	EPA 8260/8270
Dibenzofuran	540	EPA 8270
Hexachlorobenzene	22	EPA 8270
Hexachlorobutadiene	11	EPA 8270/8081
N-nitrosodiphenylamine	28	EPA 8270
Phthalates	**µg/kg dw**	
Bis(2-Ethylhexyl)phthalate	1300	EPA 8270
Butylbenzyl phthalate	63	EPA 8270
Diethyl phthalate	200	EPA 8270
Dimethyl phthalate	71	EPA 8270
Di-n-butyl phthalate	1400	EPA 8270
Di-n-octyl phthalate	6200	EPA 8270
PCBs	**µg/kg dw**	
Total Aroclors	130	EPA 8082
Polycyclic Aromatic Hydrocarbons	**µg/kg dw**	
2-Methylnaphthalene	670	EPA 8270
Acenaphthene	500	EPA 8270
Acenaphthylene	1300	EPA 8270
Anthracene	960	EPA 8270
Fluorene	540	EPA 8270
Naphthalene	2100	EPA 8270
Phenanthrene	1500	EPA 8270
Benz[a]anthracene	1300	EPA 8270
Benzo[a]pyrene	1600	EPA 8270
Benzo[g,h,i]perylene	670	EPA 8270
Chrysene	1400	EPA 8270
Dibenzo[a,h]anthracene	230	EPA 8270
Fluoranthene	1700	EPA 8270
Indeno[1,2,3-c,d]pyrene	600	EPA 8270
Pyrene	2600	EPA 8270
Total benzofluoranthenes	3200	EPA 8270

[1] From Table 8-1 in in Sediment Cleanup User's Manual (SCUM; Ecology 2021).

[2] Potential analytical method that may be used for the constituent analysis. Contractor may used other analytical methods that have reporting limits less than or equal to the SCO. From Appendix D: Table D-1 in Sediment Cleanup User's Manual (SCUM; Ecology 2021).

Notes:
AETs = Apparent effects threshold
mg/kg dw = milligrams per kilogram dry weight
PCBs = polychlorinated biphenyls
µg/kg dw = micrograms per kilogram dry weight

Washngton Department of Ecology (Ecology). 2021. Sediment Cleanup User's Manual (SCUM), Guidance for Implementing the Cleanup Provisions of the Sediment Management Standards, Chapter 173-204 WAC. Toxics Cleanup Program, Olympia, WA. Publication No. 12-09-057.

8-02.3(6)B Fertilizers
8-02.3(6)B is supplemented by the following:

Planting fertilizers shall be phosphate-free and organic, with 50 percent nitrogen in slow-release form. Fertilizer shall be selected based upon the test data analysis. Furnish fertilizer in standard unopened containers with weight, name of intended plant targets, nutrient content, and manufacturer's guaranteed statement of analysis clearly marked, in accordance with state and federal laws. Fertilizer shall be applied at the rate recommended by supplier.

Fertilizer Application - Shrubs and seeded areas: apply fertilizers to shrubs, and seeded areas at rates recommended by the manufacturer. Fertilizer shall be placed in planting pits at time of planting and shall not be broadcast on to soil surface. Efforts shall be taken to avoid fertilizers from coming into contact with waters of the state.

8-02.3(8) Planting
8-02.3(8)A Dates and Conditions for Planting
8-02.3(8)A is supplemented by the following:

Plant Procurement - Within 30 days of award of contract, submit documentation to the owner's representative that all specified plant materials have been ordered and secured. List supplier names, addresses, phone numbers, and the storage/growing location of the materials.

Plant Materials - Plants are to be nursery grown (no collected plants) in climatic conditions similar to the project site and be of a size at least equal to size specified, measured with branches in normal growing position. Measurements, caliper, branching, grading, quality, balling, and burlap are to follow code of standards of American Association of Nurserymen, unless otherwise specified. Washington native plants are to be propagated from western Washington genetic stock. All plant material shall be of accepted size standards as specified in American Standard for Nursery Stock - latest edition. All plants shall be of normal habit of growth, and shall be healthy, vigorous, and free of disease, insect eggs, and larvae. Scientific nomenclature shall conform to standard plant names. Names not present in this listing shall conform to accepted scientific nomenclature in the nursery trade. For shrubs, no less than 10 percent of each variety or species of plant shall be accurately labeled. Plant material labels shall be durable, legible labels stating the correct scientific plant name. All plants shall be at least equal to size specified on plant legends. Oversize plants are acceptable, but without increase in contract price. Shrubs cut back from larger sizes will not be permitted.

Plant Material Installation - Protect plant materials stored on site from weather damage, construction activity, and the public. Protect roots by covering with moist soil and mulch. Water as required to keep roots moist. Plant shrubs per the planting details on the design drawings.

Plant Inspection - The owner's representative must inspect all plant materials at the job site prior to planting. The owner's representative reserves the right to refuse any/all plant material that does not meet the requirements of the drawings and specifications at any time prior to final acceptance. Remove rejected plant material immediately from the site.

Shrubs shall exhibit overall form typical of the species, be uniformly branched with a symmetrical crown, and be sound, vigorous, healthy, and free from disease. Plants with damaged leaders, damaged bark, sunscalds, windburn, disfiguring knots, circling or ground roots, or broken and cut limbs will be rejected.

Container-grown plants shall have been grown in the containers in which they are delivered for at least 6 months, but not over 2 years. Samples must prove no root-bound conditions exist. Root-bound plants and container plants that have cracked or broken balls of earth when taken from container will be rejected except upon written approval by the engineer.

Plant Layout - Verify the locations of all elements of the landscape installation prior to installation. Owner's representative reserves the right to adjust the locations of landscape elements during the installation period as appropriate.

Riparian Shrub Area Plantings - Orient plants for best natural upright appearance and exposure. Completely remove all container materials, including wire baskets, peat pots, ties, and labels, from root balls. Notify the owner's representative of any conditions detrimental to plant growth (such as rubble fill, stones, adverse drainage conditions, or obstructions) before planting.

Notify the owner's representative if underground utilities, solid rock ledges, membranes, fabrics, or other subsurface obstructions are encountered during planting so that alternative planting locations may be selected. Avoid over-excavation of planting pits. Over-excavated pits shall not be used for planting, but rather shall be backfilled and a new planting prepared within close proximity. Add granules of fertilizer to planting pits according to manufacturer's directions.

Planting pits shall be dug to produce vertical sides and flat, uncompacted bottoms. If the sides become glazed, the glazed surface shall be scarified. The size of plant pits shall be as shown on plans. Set plants in center of planting pits, on uncompacted backfill consisting of imported topsoil that has been amended with compost (25 percent compost by weight). Prune broken roots and stems.

Plants shall have the same relationship with finish grade after settlement as they bore at natural grade. Hold firmly in position and place backfill mixture carefully, avoiding root damage and filling voids. When planting pit is approximately two-thirds full, compact fill by watering to avoid air pockets. Water to settle.

As-built Plan Set - Provide owner's representative with a set of clearly marked prints showing the actual location of all landscape elements prior to the final acceptance of the work. Keep a set of prints on the job site for “red-lining” record information and update said information as needed. Owner's representative reserves the right to review or request copies of such plans at any time during construction.

Coordination - Schedule and coordinate all work with others to avoid interference with the work of others as well as owner's employees.

The dates for planting shall be October 1 through December 15.

8-02.3(9)C Seeding with Fertilizers and Mulches
8-02.3(9)C is supplemented by the following:

Hydroseeding - See design drawings for seed mix composition. Seed furnished for installation shall be the following: at least 90 percent pure and 100 percent free from noxious weed seeds; at least 80 percent pure live seed, grade a, recent crop; treated with appropriate fungicide at time of mixing; stored in a manner to prevent wetting and deterioration; and delivered to the

project site in sealed containers with dealer's guaranteed analysis.

Hydroseeding fertilizer shall be phosphate free and organic, with 50 percent nitrogen in slow-release form, as described in 8-02.3(6)B.

Mulch for hydroseeding shall consist of 50 percent specially processed cellulose fiber (100 percent recycled, post-consumer paper content) and 50 percent wood fiber mulch. Mulch product shall contain no growth or germination-inhibiting factors. Mulch shall be manufactured in such a manner that after addition and agitation in slurry tanks with water, the fibers in the material become uniformly suspended to form a homogeneous slurry. When sprayed on the ground, the material shall allow absorption and percolation of moisture. Each package of the cellulose fiber shall be marked by the manufacturer to show the air-dry weight content. Mulch shall be chemically inert and nontoxic to plants, humans, and animals.

Soil binding agent shall consist of nontoxic, biodegradable materials that are environmentally safe. Percentage of soil-binding agent shall not be less than 2 percent or greater than 10 percent by weight when mixed with wood fiber mulch.

8-02.3(12) Inspection and Completion of Initial Planting
8-02.3(12) is supplemented by the following:

Final Acceptance - Final acceptance of the landscape work in this section will be made by the owner's representative after an inspection to determine 100 percent completion of the contract work and all punch list items.

8-02.3(13) Plant Establishment
8-02.3(13) is supplemented by the following:

Maintenance – Provide landscape maintenance beginning at the first installation of plant material and continuing up to final acceptance of the landscape and irrigation installation, including watering, weeding, spraying, fertilizing, resetting of plants, removal of dead or damaged plants, replanting and adjustment of staking.

8-02.3(14) Plant Replacement
8-02.3(14) is supplemented by the following:

Guarantee and Replacement - All materials and workmanship shall be guaranteed up to the time of final acceptance. Re-grade and add or remove topsoil as required to any finished landscape surfaces that have settled or become uneven during the guarantee period. Identify plants to be replaced with flagging and leave plants in place until approved by owner. Perform guarantee inspections a minimum of once a month during guarantee period and furnish the owner with monthly written documentation of all materials flagged, removed, or replaced, as well as their locations, species type, and quantities. Contractor shall replace any dead, damaged, diseased, dying, or missing plant materials at no cost to the owner during the guarantee period. Replacement plants shall be as specified and guaranteed until completion of the guarantee period. Reposition plant material that settles or shifts from upright position during the guarantee period. Guarantee does not apply to plant materials or other work damaged or destroyed by vandalism, vehicular damage by others, or acts of God during the guarantee period. It is the

responsibility of the contractor to assure that the site is receiving proper maintenance during the guarantee period. Owner shall be given 30 days written notice by the contractor to rectify substandard maintenance prior to the contractor rejecting any guarantee claims. Guarantee claims may only be voided due to substandard maintenance if the owner takes no action to correct the identified substandard practices during the 30-day notice period.

Replace rejected or damaged plants at no additional expense to the owner.

Substitutions - Substitutions of plant materials will not be permitted, unless authorized in writing by the owner 30 days prior to scheduled start date of installation. If proof is submitted that a specified plant is not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with corresponding adjustment of contract price.

(END OF SECTION)

8-03 Irrigation Systems

8-03.3 Construction Requirements
8-03.3(1) General Requirement
8-03.3(1) is supplemented by the following:

Summary - Furnish all labor, materials, equipment, and related items necessary to complete the work shown on the design drawings and/or specifications to provide solar powered temporary irrigation within the planting zones for lagoon and ditch areas. Work to be performed includes, but is not limited to, the following: provide and install irrigation heads, pipes, quick couplers, fittings, valves, valve boxes, strainer system, backflow device, valve control wire and solar powered controller. Guarantee maintenance and protection and coordinate with separate contractors. Provide all other related items required to complete the work following the best accepted trade practices.

Obtain and pay for all necessary permits and fees required by applicable codes and ordinances for this work that have not been procured by the owner. Comply with all applicable codes, regulations, and ordinances which pertain to this work. Consult with owner or owner's representative if there are questions regarding these requirements.

General Requirements - The irrigation system shall be temporary and solar powered; piping shall be on-grade and secured to grade, located next to the permanent fence. The system shall operate for a period sufficient to establish plant and seeded material and to provide sufficient coverage to prevent soil erosion. No elements of system shall penetrate finish grade elevation more than 1 foot to ensure integrity of landfill cap. The system shall be designed to operate correctly at the lowest available operational pressure expected during the year and shall withstand system surges.

During establishment a minimum 2 inches of water, including precipitation, shall be provided to planting areas every 2 weeks from June 1 through September 15. Ensure adequate watering for 100% of the plants to be alive, healthy, established and vigorously growing. Contractor to measure and ensure 2 inches of watering needs are fulfilled and to adjust per weather and site conditions. Watering will be controlled by timers to allow for separate water schedules for each zone. Moisture sensor(s) will be installed that allow for override of the watering schedule. Temporary irrigation shall be winterized in October and de-winterized in April during the first-year warrantee period.

Provide protection of all property, persons, work in progress, structures, existing landscape, and irrigation work to remain, utilities, walls, walks, curbs, paved surfaces, drainage materials, water proofing membrane, and all survey markers and monuments from damages incurred arising from this contract. The contractor shall pay for any such damage at no additional cost to owner. Verify locations of all underground utilities prior to commencement of work. Locations of existing known utilities shown on design drawings are approximate locations. The contractor shall be responsible for the protection of said utilities. Promptly notify the owner's representative of any conflict between proposed work and obstructions.

Where irrigation mainlines cross access roads / driveways, utilize portable rubber pipe and hose ramps (such as SAFETYM8 – 2 Channel Drop Over Rubber Hose Ramp 33” by Parking Safe Plus or approved equal), to protect pipes from damage from vehicle tires and equipment.

Coordination - During the entire construction period, schedule and coordinate all work to avoid interference with work of others. Schedule work hours, staging areas, access routes, parking, utility connections, and similar items under the direction of the engineer or owner's representative.

Submit a temporary solar powered irrigation plan, including power assumption calculations, for approval by the engineer or owner's representative at least 10 working days prior to ordering the materials for the irrigation system. The plan shall describe the methods, materials, and manufactures list for construction both graphically and in writing. The plan shall show diagrammatic layout based on the irrigation concept plan provided. Actual layout will be adjusted per actual field conditions.

Submit to owner's representative a schedule of watering and maintenance activities to be performed by contractor during the construction and maintenance period of the contract. The schedule shall delineate specific activities and their frequency during the period between time of initial work and final acceptance and shall be submitted to the engineer prior to provisional acceptance.

8-03.3(2) Submittals
8-03.3(2) is supplemented by the following:

Final Acceptance - Complete all punch list items and submit signed and approved sprinkler/plumbing/health/electrical permits as applicable for final acceptance.

8-03.2 Materials
8-03.2 is supplemented by the following:

Backflow Prevention Assembly (BPA) - All water services shall have a county-approved BPA. Installation shall comply with applicable health and safety codes and contractor shall contact Skagit Public Utilities District for inspection after BPA is installed and tested. Install a “Y”-strainer to protect the BPA and install schedule 40 PVC ball valves at inlet and outlet to drain BPA for winterizing. Pipe upstream of the BPA shall be schedule 40 PVC and pipe immediately downstream of the BPA shall be schedule 40 PVC.

Plastic Pipe - PVC class 200 shall be used for all lateral piping (downstream from valves) and schedule 40 for pressure lines. Pipe to be marked with manufacturer's name, class of pipe, National Sanitation Foundation (NSF) seal, and date and shift of manufacturing run. Pipe to bear no evidence of interior or exterior extrusion marks. Pipe walls to be uniform, smooth, and glossy. Pipe may be pre-belled or with individual solvent-weld couplings. Fittings: schedule 40, full size. Sleeving: PVC schedule 40 or better.

Control Valves - Control valves shall be manifold where feasible, group together in valve boxes or individually installed in single valve box. Valves shall be slow closing design, and automatically close in the event of power failure. Valves shall be sized to provide adequate pressure differential for proper operation. Valves may be battery operated. PVC pipe upstream of the control valves shall be schedule 40. PVC pipe immediately downstream of the valves shall be class 200.

Sprinkler Heads - Heads of different manufacturers or of different basic types (bubbler, stream,

standard, low flow rate, impact, etc.) shall have consistent operating characteristics on any single lateral circuit. Heads on same lateral circuit shall be balanced for matched precipitation rates within five percent from the average for any different arcs of coverage or operating radii. Sprinkler heads shall be designed so that spray adjustments can be made by either an adjustment screw or interchangeable nozzles (such as the TORO 300 Series Multi-stream shrub rotators with low gpm nozzles [shown in concept plan] or approved equal).

Controllers - Controllers shall be compatible with solar power and installed in weather-proof enclosures. Controllers will be installed "freestanding" unless otherwise approved in writing. They shall be located at a prime observation area with good access and be free from irrigation overspray. Controllers will not be required when battery-operated valves with built-in timers are used.

Isolation Valve - Provide up to two mainline isolation valves to be located upstream from the backflow preventer. Valve shall be schedule 40 PVC. Provide valves to divide the irrigation system into controllable units, and to avoid draining long runs of piping for system repairs.

Control Wire - Wire shall be #14 UF direct burial wire. The common wire shall be white, the valve impulse wire shall be red, the master valve wire shall be yellow, with a fourth color of wire provided as a spare. Wire shall not be required with use of battery-operated valves.

Risers shall be fixed schedule 40 and firmly staked.

Quick Coupling Valves - Provide a quick coupler with lid for blow out.

Valve Boxes - Provide standard 12-inch valve box for all valves; 6-inch valve box for quick couplers and gate valves.

Drain Valves - Provide inlet and outlet drain valves to sufficiently winterize system. Other drainage features may be added as necessary to winterize system.

Soil Moisture Sensor – Utilize Rainbird SMRT-Y Soil Moisture Sensor, or approved equal, to allow for override of the watering schedule.

Pipe and Hose Ramps – Where irrigation main line pipes cross access road driveways utilize or install portable rubber pipe and hose ramps such as the SAFETYM8 – 2 Channel Drop Over Rubber Hose Ramp 33” by Parking Safe Plus (or approved equal) to protect irrigation line from vehicle tires.

8-03.3(3) Layout of Irrigation System
8-03.3(3) is supplemented by the following:

Layout - Verify the locations of all elements of the landscape installation prior to installation. The owner's representative reserves the right to adjust the locations of landscape elements during the installation period as appropriate.

8-03.3(4) Irrigation Water Service
8-03.3(4) is supplemented by the following:

Water Supply – The point of connection (POC) shall be furnished by the owner. Test the point of connection to determine the available pressure and gallons per minute prior to installation of the irrigation system. Water supply shall be clean and free of suspended particles, algae, or chemicals that may form insoluble precipitates in the equipment or may be detrimental to plantings.

Verify in writing to the engineer that adequate water flow volume and pressure are available to properly operate the irrigation system prior to installation of the irrigation system.

8-03.3(7)B Irrigation Sleeves
8-03.3(7)B is supplemented by the following:

Sleeving - No sleeves shall be installed under paved surfaces above the landfill cap. If sleeves are necessary under paved surfaces, notify project engineer and obtain approval prior to trenching, boring or installation. If sleeves are necessary, they shall be a minimum of twice the insert pipe diameter. Wire sleeves shall be a minimum of 2 inches in diameter.

8-03.3(9) Irrigation System Installation
8-03.3(9)A General
8-03.3(9)A is supplemented by the following:

Substitutions - Upon acceptance by engineer of the temporary solar powered irrigation plan prepared by the contractor, no material substitutions shall be made without written approval of the engineer or owner's representative.

Cleanup - Clean all paved surfaces and planted areas of soil and debris on a daily basis. Clean all paved surfaces affected by irrigation work prior to final acceptance. Clean up spills of glues and solvents immediately and report them immediately to the project engineer.

Maintenance - Provide maintenance of the irrigation system until 30 days beyond final acceptance. Maintenance shall include head and nozzle adjustment, setting and adjusting controller times, and replacing defective materials.

Guarantee and Replacement - All materials and workmanship shall be guaranteed for a period of one year. Guarantee period shall commence at the time of final acceptance of the irrigation installation. This guarantee period does not apply to work or damage done to the system by others after final acceptance.

Pipe Fittings - Transport and store pipe on a flat even surface. Seal all threaded joints with Teflon tape. No PVC shall be threaded or connected to a threaded fitting without an adapter. Keep pipe free from dirt or debris at all times. Cover ends of pipe when not in progress of installation. Connect pipe using two-step solvent weld process. Do not move or handle pipe for a minimum of 15 minutes while solvent welds are curing. No water shall be permitted in pipe until a period of at least 10 hours has elapsed for solvent welds to sit and cure. The joints shall be allowed to cure at least 24 hours before pressure is applied to the system.

8-03.3(9)B Irrigation Heads
8-03.3(9)B is supplemented by the following:

Sprinklers - Install sprinklers aboveground and secure to prevent from leaning or falling over. Install sprinkler heads perpendicular to finish elevation.

Risers shall be set a minimum of 18 inches above finish grade. Secure each riser to prevent movement; riser shall be plumb to adjacent grade. Avoid using stakes. If stakes are required obtain approval from project engineer prior to installation and ensure no elements penetrate finish grade elevation more than 1 foot to ensure integrity of landfill cap.

8-03.3(9)C Valve, Valve Boxes, Hose Bibs
8-03.3(9)C is supplemented by the following:

Backflow Prevention Assembly (BPA) and Strainer - Install BPA and strainer system per local code requirements. BPA shall be plumbed with unions on each side to facilitate removal during winter months. Flush lines prior to installation of BPA, set BPA with a minimum clearance of 12 inches, and install strainer upstream of the BPA. Install BPA in a location where it will be accessible for periodic testing and maintenance and provide inlet and outlet drain valve on each side of BPA for winterizing. Place BPA between the water meter and irrigation system. BPA assembly shall be kept away from pedestrian and vehicular travel ways and housed within an enclosure.

Quick Coupling Valves - Install fitting between water meter and backflow preventer and secure as necessary. Avoid using stakes. If stakes are required obtain approval from project engineer prior to installation and ensure no elements penetrate finish grade elevation more than 1 foot to ensure integrity of landfill cap.

8-03.3(9)E Controller
8-03.3(9)E is supplemented by the following:

Controller - Provide power to the irrigation controller utilizing a solar panel to recharge internal rechargeable battery. Provide all other electrical work necessary to make the equipment operate properly. Mount controller per the manufacturer's specifications in location approved by the owner. Controller will be exterior mounted on a treated 4x4 wooden post, or as directed by project engineer. Assure that no elements penetrate the finish grade elevation more than 1 foot to ensure integrity of landfill cap. Sequence the valves per the number system on the plans. Affix a weatherproof copy of sequence diagram to the inside of the controller cabinet door. Provide copy of valve sequence in the operations manual.

8-03.3(9)G Electrical Wire Installation
8-03.3(9)G is supplemented by the following:

Control Wiring - Install control wires in continuous runs and tape wires in bundles at 10-foot intervals. Tape bundles to the bottom of mainline at 10-foot intervals. Provide a 24-inch loop of excess control wire at each valve box. All wire splices shall be made with a waterproof, direct-bury connector. Provide a separate color-coded common wire and control wire from the master valve to the satellite controller. If more than one satellite controller is assigned to the same master valve, provide a separate color-coded common control wire from each additional satellite controller to the master satellite.

8-03.3(10) Flushing and Testing
8-03.3(10)A General Testing Requirements
8-03.3(10)A is supplemented by the following:

Inspections - Provide 48-hour notice for inspection of head layout, pressure tests, and performance tests.

8-03.3(10)B Mainline or Lateral Flushing
8-03.3(10)B is supplemented by the following:

Flushing - Flush all mainlines once prior to the installation of the valves, and again after the installation of the valves and prior to pressure testing. Flush all lateral lines prior to installation of sprinkler nozzles.

8-03.3(10)C Mainline or Lateral Hydrostatic Pressure Testing
8-03.3(10)C is supplemented by the following:

Pressure Test - Leave all joints and connections exposed until after completion and acceptance of pressure test. Entire mainline shall be capped and pressurized to 100 psi for a period of 2 hours. Visually check all joints and connections for leaks. Repair any visible leaks.

Performance Tests - Operate the system in the presence of the engineer or owner's representative. Owner's representative or engineer may request that up to 5 percent of total nozzles be replaced, as appropriate to site conditions, at no additional cost to owner.

8-03.3(13) As-Built Plans, M&O Manuals, and Operating Tools
8-03.3(13)A As-Builts
8-03.3(13)A is supplemented by the following:

Owner Inspection - Prior to final acceptance of the work, provide the owner with all keys, tools, and maintenance manuals necessary to operate / deactivate the irrigation system. The contractor shall train and instruct owner as to the operation and maintenance of the irrigation system.

As-Built Plan Set - Prior to the final acceptance of the work, provide the owner's representative with a set of clearly marked plans showing actual locations of irrigation elements. Keep a set of plans on job site for “red-lining” record information and update said information as needed. Owner's representative reserves the right to review or request copies of such plans at any time during construction.

8-03.3(13)B Maintenance & Operations Manuals
8-03.3(13)B is supplemented by the following:

Supply engineer with four sets of irrigation system operating and maintenance instructions (in three-ring binders). The manual shall include as-built drawing of the temporary irrigation

system, control settings, a valve sequence operation diagram, list of installed parts, and recommended spare parts list for all equipment installed at the facility prior to the start of the system checkout. The four copies shall be neat, clean copies and include catalogs and shop drawings where applicable. Information for other models or equipment not supplied shall be omitted or crossed out.

8-03.3(14)B Irrigation System Orientation Meeting
8-03.3(14)B is supplemented by the following:

Training - Provide control system programming and operations training to the engineer and/or owner's representative prior to final acceptance.

(END OF SECTION)

APPENDIX B

SKAGIT COUNTY NOXIOUS WEED LIST

Classes of Noxious Weeds

Class A

Class A Noxious Weeds are non-native species whose distribution in Washington State is still limited.

- Eradicating existing infestations and preventing new infestations are the highest priority.

Eradication of all Class A plants is required by law.

Class B

Class B noxious weeds are nonnative species whose distribution is limited to portions of Washington State.

- Species are designated for control in state regions where they are not yet widespread. Prevention of new infestations in these areas is the primary goal.
- In regions where a Class B species is already abundant, control is decided at the local level. Containment of these weeds is the primary goal so that they do not spread into un-infested regions.
- **The Washington State Noxious Weed Board or a County Noxious Weed Board can designate a Class B noxious weed for mandatory control.**

Class B designations at the state level are listed in WAC 16-750-011 and are based on our designation region map.

Class C

Class C noxious weeds are either already widespread in Washington or are of special interest to the agricultural industry.

- The Class C status allows a county to enforce control if it is beneficial to that county (*for example*: to protect crops).

Other counties may choose to provide education or technical support for the removal or control of these weeds.

The Laws

RCW 17.10

RCW 17.10 (Revised Code of Washington) is the state's basic weed law.
The Washington Administrative Code (WAC) contains the rules and regulations needed to carry out state law.

WAC Chapter 16-750

WAC Chapter 16-750 includes the state Noxious Weed List, definitions and descriptions of region boundaries for Class B weeds, and the schedule of monetary penalties.

WAC Chapter 16-752

WAC Chapter 16-752 describes the quarantine list maintained by the state Department of Agriculture. (The state law that calls for the creation and maintenance of the quarantine list is RCW 17.24.)

Quarantine List

The Washington State Department of Agriculture (WSDA) maintains a quarantine list of plants, also called the prohibited plants list, whose sale or distribution is prohibited in the state. All Class A Noxious Weeds are on this list. There are also plants on the list to prevent them from being imported and spread in our state.

Skagit County Noxious Weed Control Board

1800 Continental Place
Mount Vernon, WA 98273
Phone: 360-416-1467
Fax: 360-770-2694
Webpage: https://www.skagitcounty.net/Departments/Noxiousweeds/main.htm

E-mail: mloy@co.skagit.wa.us

The Washington State Noxious Weed List is updated annually. Everyone is encouraged to participate in the process. For additional information, contact:

Washington State Noxious Weed Control Board
PO BOX 42560 Olympia, WA 98504-2560
(360) 902-2053
Website: www.nwcb.wa.gov

2024

SKAGIT COUNTY NOXIOUS WEED LIST

Region 2

List arranged alphabetically by: COMMON NAME

Class A Weeds (Eradication is required)	
Common Name	**Scientific Name**
broom, French	*Genista monspessulana*
broom, Spanish	*Spartium junceum*
common crupina	*Crupina vulgaris*
cordgrass, common	*Spartina anglica*
cordgrass, dense-flowered	*Spartina densiflora*
cordgrass, salt meadow	*Spartina patens*
cordgrass, smooth	*Spartina alterniflora*
dyer's woad	*Isatis tinctoria*
eggleaf spurge	*Euphorbia oblongata*
false brome	*Brachypodium sylvaticum*
floating primrose-willow	*Ludwigia peploides*
flowering rush	*Butomus umbellatus*
garlic mustard	*Alliaria petiolata*
giant hogweed	*Heracleum mantegazzianum*
goatsrue	*Galega officinalis*
hydrilla	*Hydrilla verticillata*
Johnsongrass	*Sorghum halepense*
knapweed, bighead	*Centaurea macrocephala*
knapweed, Vochin	*Centaurea nigrescens*
kudzu	*Pueraria montana var. lobata*
meadow clary	*Salvia pratensis*
oriental clematis	*Clematis orientalis*
Palmer amaranth	*Amaranthus palmeri*
purple starthistle	*Centaurea calcitrapa*
reed sweetgrass	*Glyceria maxima*
ricefield bulrush	*Schoenoplectus mucronatus*
sage, clary	*Salvia sclarea*
sage, Mediterranean	*Salvia aethiopis*
silverleaf nightshade	*Solanum elaeagnifolium*
small-flowered jewelweed	*Impatiens parviflora*
South American spongeplant	*Limnobium laevigatum*
Syrian bean-caper	*Zygophyllum fabago*
Texas blueweed	*Helianthus ciliaris*
thistle, Italian	*Carduus pycnocephalus*
thistle, milk	*Silybum marianum*
thistle, slenderflower	*Carduus tenuiflorus*
thistle, Turkish	*Carduus cinereus*
variable-leaf milfoil and hybrids	*Myriophyllum heterophyllum*
Class B (Control is required)	
Common Name	**Scientific Name**
blueweed	*Echium vulgare*
Brazilian elodea	*Egeria densa*
bugloss, annual	*Lycopsis arvensis*
bugloss, common	*Anchusa officinalis*
camelthorn	*Alhagi maurorum*
common reed (nonnative genotypes only)	*Phragmites australis*
Dalmatian toadflax	*Linaria dalmatica ssp. dalmatica*
European coltsfoot	*Tussilago farfara*
fanwort	*Cabomba caroliniana*
gorse	*Ulex europaeus*
grass-leaved arrowhead	*Sagittaria graminea*
hairy willowherb	*Epilobium hirsutum*
hanging sedge	*Carex pendula, Carex pendula*
hawkweed oxtongue	*Picris hieracioides*
hawkweed, orange	*Hieracium aurantiacum*
hawkweeds: All nonnative species & hybrids of the meadow subgenus	*Hieracium, subgenus Pilosella*
hoary alyssum	*Berteroa incana*
houndstongue	*Cynoglossum officinale*
indigobush	*Amorpha fruticosa*
knapweed, black	*Centaurea nigra*
knapweed, brown	*Centaurea jacea*
knapweed, diffuse	*Centaurea diffusa*
knapweed, meadow	*Centaurea × gerstlaueri*
knapweed, Russian	*Rhaponticum repens*
knapweed, spotted	*Centaurea stoebe*
knotweed, Bohemian	*Fallopia × bohemica*
knotweed, giant	*Fallopia sachalinensis*
knotweed, Himalayan	*Persicaria wallichii*
knotweed, Japanese	*Fallopia japonica*
kochia	*Bassia scoparia*
loosestrife, garden	*Lysimachia vulgaris*
Malta starthistle	*Centaurea melitensis*
parrotfeather	*Myriophyllum aquaticum*
perennial pepperweed	*Lepidium latifolium*
poison hemlock	*Conium maculatum*
policeman's helmet	*Impatiens glandulifera*
puncturevine	*Tribulus terrestris*
rough chervil	*Chaerophyllum temulum*
rush skeletonweed	*Chondrilla juncea*
saltcedar	*Tamarix ramosissima*
Scotch broom	*Cytisus scoparius*
shiny geranium	*Geranium lucidum*
spurge laurel	*Daphne laureola*
spurge, leafy	*Euphorbia virgata*
spurge, myrtle	*Euphorbia myrsinites*
sulfur cinquefoil	*Potentilla recta*
tansy ragwort	*Jacobaea vulgaris*
thistle, musk	*Carduus nutans*
thistle, plumeless	*Carduus acanthoides*
thistle, Scotch	*Onopordum acanthium*
velvetleaf	*Abutilon theophrasti*
water primrose	*Ludwigia hexapetala*
white bryony	*Bryonia alba*
wild basil	*Clinopodium vulgare*
wild chervil	*Anthriscus sylvestris*
yellow archangel	*Lamiastrum galeobdolon*
yellow floating heart	*Nymphoides peltata*
yellow starthistle	*Centaurea solstitialis*
Class B (Control is not required)	
Common Name	**Scientific Name**
butterfly bush	*Buddleja davidii*
common fennel, (except bulbing fennel)	*Foeniculum vulgare except F. vulgare var. azoricum)*
common tansy	*Tanacetum vulgare*
Eurasian watermilfoil	*Myriophyllum spicatum*
herb-Robert	*Geranium robertianum*
lesser celandine	*Ficaria verna*
loosestrife, purple	*Lythrum salicaria*
loosestrife, wand	*Lythrum virgatum*
Ravenna grass	*Tripidium ravennae*
hawkweeds: All nonnative species & hybrids of the wall subgenus	*Hieracium, subgenus Hieracium*
spurge flax	*Thymelaea passerina*
yellow nutsedge	*Cyperus esculentus*
Class C (Control is required)	
Common Name	**Scientific Name**
common teasel	*Dipsacus fullonum*
Italian arum	*Arum italicum*
thistle, bull	*Cirsium vulgare*
thistle, Canada	*Cirsium arvense*
Class C (Control is not required)	
Common Name	**Scientific Name**
absinth wormwood	*Artemisia absinthium*
Austrian fieldcress	*Rorippa austriaca*
babysbreath	*Gypsophila paniculata*
beach grass, European, American, and hybrids	*Ammophila arenaria, A. breviligulata, and A. arenaria x*
black henbane	*Hyoscyamus niger*
blackberry, evergreen	*Rubus laciniatus*
blackberry, Himalayan	*Rubus bifrons*
blackgrass	*Alopecurus myosuroides*
buffalobur	*Solanum rostratum*
cereal rye	*Secale cereale*
common barberry	*Berberis vulgaris*
common catsear	*Hypochaeris radicata*
common groundsel	*Senecio vulgaris*
common St. Johnswort	*Hypericum perforatum*
curly-leaf pondweed	*Potamogeton crispus*
English hawthorn	*Crataegus monogyna*
English ivy 4 cultivars only:	*Hedera hibernica 'Hibernica', Hedera helix 'Baltica', Hedera*
Eurasian watermilfoil hybrid	*Myriophyllum spicatum x M.*
field bindweed	*Convolvulus arvensis*
fragrant water lily	*Nymphaea odorata*
green alkanet	*Pentaglottis sempervirens*
hairy whitetop	*Lepidium appelianum*
hoary cress	*Lepidium draba*
Japanese eelgrass	*Nanozostera japonica*
jointed goatgrass	*Aegilops cylindrica*
jubata grass	*Cortaderia jubata*
lawnweed	*Soliva sessilis*
longspine sandbur	*Cenchrus longispinus*
Medusahead	*Taeniatherum caput-medusae*
nonnative cattail species and hybrids	*Including, but not limited to, Typha angustifolia, T.*
old man's beard	*Clematis vitalba*
oxeye daisy	*Leucanthemum vulgare*
pampas grass	*Cortaderia selloana*
perennial sowthistle	*Sonchus arvensis ssp. arvensis*
reed canarygrass	*Phalaris arundinacea*
Russian olive	*Elaeagnus angustifolia*
scentless mayweed	*Tripleurospermum inodorum*
smoothseed alfalfa dodder	*Cuscuta approximata*
spikeweed	*Centromadia pungens*
spiny cocklebur	*Xanthium spinosum*
spotted jewelweed	*Impatiens capensis*
Swainsonpea	*Sphaerophysa salsula*
tree-of-heaven	*Ailanthus altissima*
ventenata	*Ventenata dubia*
white cockle	*Silene latifolia*
wild carrot (except subs. sativus where grown commercially or for food)	*Daucus carota*
yellow flag iris	*Iris pseudacorus*
yellow toadflax	*Linaria vulgaris*