Lower Duwamish Waterway Upper Reach Remedial Action

Erosion and Sediment Control Plan

Revision 4

August 28, 2024

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Quality information

Prepared by	Checked by	Verified by	Approved by	Contractor Approval
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Revision History

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Table of Contents

Abbreviations

BODR	Basis of Design Report
BMP	Best Management Practice
CESCL	Certified Erosion and Sediment Control Lead
EMB	Environmental Mitigation Binder
ESCP	Erosion and Sediment Control Plan
LDW	Lower Duwamish Waterway
MSDS	Material safety data sheet
PPM	Pacific Pile & Marine
RAWP	Remedial Action Work Plan
Site	Lower Duwamish Waterway Superfund Site
SMA	Sediment Management Area
SMMWW	Stormwater Management Manual for Western Washington
SWPPP	Stormwater Pollution Prevention Plan

1. Introduction

This Erosion and Sediment Control Plan (ESCP) has been prepared in accordance with Specification Section 31 25 00 (Erosion and Sediment Controls) for the Lower Duwamish Waterway (LDW) Upper Reach describes erosion and sediment controls to be implemented and monitoring of the controls during upland remedial construction activities at Sediment Management Area 5 (SMA5) for the upper reach of the Lower Duwamish Waterway Superfund Site (Site) in King County, Washington.

The general scope of work, as outlined in the project specific SWPPP, includes the following:

- Mobilization of construction equipment and materials;
- Site preparation activities, including construction and setup of the staging and stockpile area(s), temporary erosion and sediment controls, water collection and treatment management practices, utility disconnection, and clearing/grubbing;
- Excavation, upland transportation, and disposal of excavated material from the SMA5;
- Placement of Engineered Cap A material at SMA 5; and
- Site restoration, cleanup, and demobilization.

The ESCP covers upland Site area SMA 5 only. No other SMAs require an ESCP. Additional details on the Duwamish Reload Facility and the Pacific Pile & Marine (PPM) yard located at 700 S Riverside are provided in the Transloading, Upland Transportation, Waste Characterization, and Disposal Plan, Temporary Facilities and Control Plan, and the Water Quality Protection Plan.

1.1 Purpose

The purpose of this ESCP is to provide requirements of best management practices (BMPs) to be implemented during remedial construction activities conducted above the Ordinary High Water elevation that will control soil erosion, runoff, and discharge of sediment laden waters from SMA 5. The following Site documents were used to prepare aspects of this ESCP:

- Final (100%) Remedial Design Basis of Design Report (BODR) for Lower Duwamish Waterway Upper Reach (Anchor QEA, 2024);
- Specification Section 01 33 00 (Submittals);
- Specification Section 31 05 10 (SMA 5 Bank Construction);
- Specification Section 01 35 43 (Environmental Procedures); and
- Specification Section 31 25 00 (Erosion and Sedimentation Control).

Work for the Site will be performed in accordance with the plans and specifications as directed by the Project Representative to execute this ESCP. This ESCP references the Stormwater Pollution Prevention Plan (SWPPP) which is included in the Environmental Mitigation Binder (EMB) as **Appendix D**.

1.2 Project Organization and Communication

The Remedial Action Work Plan provides an organizational chart of key Site personnel, role, and a summary of responsibilities.

2. Best Management Practices

For upland construction activities, BMPs will be installed down-slope (turbidity curtains will be installed downgradient of the work area) and adjacent to disturbed areas, see Attachment V of the Remedial Action Work Plan (RAWP). BMPs will comply with the Contract Documents, this ESCP, and substantive

requirements of the Construction General Stormwater Permit, and requirements of the Seattle Standard Specification on Erosion Control, City of Tukwila Surface Water Design Manual, Tukwila Municipal Code (Chapters 14.30 and 16.54), Washington Department of Ecology construction stormwater management requirements, and guidance set forth in the Stormwater Management Manual for Western Washington (SMMWW) (Ecology, 2024) and King County Surface Water Design Manual (King County, 2021). BMPs will be implemented as described in the following sections to control soil erosion, sedimentation, and prevent the discharge of pollutants on and off-site and SMA 5 contact water off-site or to the LDW. The BMPs will also provide measures to prevent the addition of process water or domestic wastewater into the stormwater line to the north of SMA-5. BMPs will be selected, installed, and maintained in accordance with the Contract Documents and manufacturer recommendations. SMA 5 operations that are potential sources of pollutant discharge and/release include:

- Loading and unloading of impacted materials;
- Excavation;
- Exposed soil after clearing and grubbing activities are conducted;
- Material stockpile and management operations;
- Vehicle and equipment decontamination work;
- Off-site tracking of sediment;
- Waste and material storage areas; and
- Equipment and vehicle maintenance and fueling.

BMPs will be implemented for each work activity listed above. BMPs will be maintained, modified, and upgraded as needed to maintain compliance with the ESCP, Construction General Stormwater Permit, and the Contract Documents. BMPs proposed as part of this ESCP will be installed at locations specified on the drawings in **Attachment A,** Specification Section 31 25 00 (Erosion and Sedimentation Control), and the SMMWW.

2.1 Erosion and Sediment Control BMPs (SMA 5)

BMPs proposed for ESC use during excavation, exposed prior to excavation, and stockpiling at SMA 5 include, but are not limited to, and will meet the following requirements summarized below. Details provided for each BMP are summarized from Specification Section 31 25 00 (Erosion and Sedimentation Control), proposed BMPs will be updated and manufacturer data sheet will be provided prior to work being executed at SMA 5 which is expected to take place between December 2026 and March 2027.

- Preserve natural vegetation;
- Clearly mark clearing limits with highly visible fencing;
- Provide tree protection;
- Catch basin and storm drain inlet protection;
    - Install at all locations indicated on the ESCP and associated drawings and where inspections performed by the Certified Erosion and Sediment Control Lead deems necessary.
    - Install in existing catch basins prior to any earth-disturbing activity uphill of the catch basin.
    - Install in new catch basins prior to allowing any water to flow into the catch basin.
- Construction of lined and bermed stockpile areas for impacted material management with sumps for collection of impacted waters and residuals. Impacted material will be stockpiled at SMA 5 (subject to client and landowner approval) in the event that excavated materials require dewatering and when work is performed at night and trucks are not available to be directly loaded;

- Plastic sheeting for covering clean fill and impacted stockpiles;
    - Edges to be embedded into soil at least 6 inches around the entire perimeter and joints overlapped at least 2 feet and seams taped.
    - Hold-downs to be installed and secured with anchored polypropylene rope at 10 feet on-center.
    - Stockpiles will not be covered with plastic sheeting for more than 30 days.
- Sandbag hold-downs;
    - To be secured with ¼ inch polypropylene rope at 10 feet on-center and anchored with 2 inch by 4 inch fir.
- Silt fence with wire backing;
    - Wire backing will be secured to the top, middle, and bottom of each post.
    - Steel fence post will be used spaced no more than 6 feet apart.
    - Bury wire and bottom 8 inches of silt fence fabric.
    - Temporary stabilization of disturbed soils, prior to final stabilization.
    - Excavation management, including dewatering.
- Ecology block will be used in combination with silt fences with wire backing, and sealed bins to contain stockpiles and control runoff;
- Seeding;
    - Seeding to be accomplished via hydroseeding or hand methods when hydroseeding is not practical.
    - Prior to each Wet Season (October 1st to April 30th) areas will be identified that can be seeded in preparation for the Wet Season.
    - Disturbed areas will be seeded and fertilized within 1 week of the start of the Wet Season.
    - Areas to be seeded will be cultivated via disking, raking, harrowing, or other acceptable means to meet the local agency and Ecology requirements.
    - Prior to seeded surface runoff control measures will be installed such as gradient terraces, interceptor dikes, or swales, level spreaders, and sediment basins.
    - Straw mulch 2 inches thick will be applied to areas that are seeded by hand.
- Sandbag check dams;
    - Sandbags will be at least 2 to 3 bags high and 1 to 2 bags thick.
    - Butt joints will be overlapped beneath each successive row.
    - A weir gap will be installed at the center of the check dam with sandbags placed as a splash pad on the downstream side of the weir opening.
- Slopes;
    - Exposed soils above the top of the bank that will not be disturbed for 2 days during the Wet Season or 7 days during the Dry Season will be sloped to direct runoff water away from the waterway to prevent water runoff into surface waters and covered with plastic sheeting.
- Stabilized construction entrance;
    - To be constructed with 4 to 8 inch quarry spalls, placed at least 12 inches thick.
    - Separation geotextile will be placed under the quarry spalls.
    - Driveway culverts will be installed if there is a roadside ditch present.

- Outlet protection at outfalls of surface water conveyance to provide energy dissipation and stabilization;
- Straw wattles;
    - Install as soon as construction allows.
    - Live stakes are allowed for permanent installations. Live stakes are not a replacement for wood stakes.
    - Install from the base of the slope uphill.
    - Spread evenly and lightly compact excavated material from trench on the uphill side of the wattle.
- Compost sock;
    - Install as shown on the ESC drawings.
    - Upon completion of the Project, cut open compost sock, spread soil, and remove and dispose of mesh sock.
- Rock check dams;
    - To be constructed with 4 to 8 inch quarry spalls.
- Wheel wash;
    - Haul trucks will be driven through the wheel wash as they exit the SMA 5.
    - A 20-foot length asphalt entrance and exit ramp with extruded asphalt curbs will be constructed on each side of the wheel wash.
- Berms or other approved containment methods will be used to control and prevent SMA 5 stormwater run-on or run-off of stormwater and contact water; and
- Upland Site activities will be constructed and executed in a way that redirects the flow of water generated from Site operations and Site contact water to be collected, and prevents Site generated or contact water from entering into the stormwater line, off-site, or discharged to surface waters.

2.2 Loading and Unloading of Impacted Materials

Excavated sediment will be unloaded directly into trucks for upland disposal or into a stockpile area for dewatering. BMPs to be implemented during loading and unloading operations at SMA 5 are:

- Impacted sediment and materials spilled during loading or unloading will be cleaned up immediately and placed into impacted material stockpile, the loadout vehicles;
- Loading and stockpiling will be conducted on contained impermeable surfaces, such as asphalt, concrete, asphalt, or plastic sheeting;
    - Stockpiling will be contained using a combination of ecology blocks, silt fences with wire backing, and sealed bins to control runoff as shown on drawings in **Attachment A**.
- Loading areas will be swept with skid steer sweeper daily and pressure washed as needed to reduce vehicles tracking material offsite;
    - Water generated from pressure washing will be contained and pumped to baker tanks.
- Truck, loading area, and access road will be inspected throughout each shift to confirm no material has been spilled or tracked onto public roads;
- Tires and truck bodies of each truck loaded with impacted material will be cleaned to remove sediment, soils, mud, and residuals and inspected before leaving SMA 5; and
- Containment areas will be installed in a manner that allows liquids to be collected, additional detailed will be provided prior to work being performed at SMA 5.

Spills will be managed in accordance with the Spill Prevention, Control and Countermeasures Plan (Appendix Z of the RAWP) and the Transloading, Upland Transportation, Waste Characterization and Disposal Plan (Appendix K of the RAWP).

2.3 Excavation

BMPs to be implemented during excavation operations at SMA 5 are:

- Erosion and sediment control measures discussed in **Section 2.1** will be installed prior to performing excavation activities;
- Silt fence and a turbidity curtain will be installed as shown in the drawings (**Appendix A**) to restrict runoff;
- Geotextile fabric weighted down with sandbags will be placed on the ground within the swing radius of the excavator to contain any material spilt from the bucket while loading dump trucks;
- An excavation work schedule will be developed based on tide charts to identify optimal low tide windows for performing excavation operations; and
- Each excavation segment (small 15-25' wide swaths) will be completed from the top of cut to the bottom of cut;

Please see the Dredging and Excavation Plan for additional details on methods and procedures and BMPs to be utilized during excavation operations at SMA 5.

2.4 Exposed Soil

BMPs to be implemented to control erosion of exposed soils after clearing and grubbing activities are conducted are:

- Erosion and sediment control measures discussed in **Section 2.1** will be installed prior to performing clearing and grubbing activities;
- Barricades will be installed and maintained to prevent damage to existing utilities, landscaping, and other site features;
- Silt fence and a turbidity curtain will be installed as shown in the drawings (**Appendix A**) to restrict runoff;
- Exposed soils above the top of the bank that will not be disturbed for 2 days during the Wet Season or 7 days during the Dry Season will be sloped to direct runoff water away from the waterway to prevent water runoff into surface waters and covered with plastic sheeting.
    - If required plastic sheeting use will be limited to no more than 30 days.

Please see the Site Clearing and Management Plan for additional details on methods and procedures and BMPs to be utilized during clearing and grubbing operations at SMA 5.

2.5 Material Stockpile and Management Operations

Material stockpiles will be located at the material storage area shown in the drawings, **Appendix A**. The following BMPs will be implemented to manage stockpiles:

- Stockpiling will be conducted on impermeable surfaces, such as concrete, asphalt, or plastic sheeting;
- Stockpile areas will be contained using a combination of ecology blocks, silt fences with wire backing, and sealed bins to control runoff;
- Water will be applied directly to stockpiles as needed to suppress fugitive dust and odors or stockpiles will be covered with plastic sheeting (refer to the Air Pollution and Odors Control Plan for more detailed mitigation measures);

- Dredged sediment that will not be disturbed for 2 days during the Wet Season or 7 days during the Dry Season will be sloped to prevent water runoff into surface waters and covered with plastic sheeting;
- Stockpile containment areas will be installed in a manner that allows liquids to be collected separately from other site stormwater;
    - Liquids generated will be pumped to baker tanks to settle and will be tested for turbidity, total suspended soils, and pH prior to discharge to the LDW. This applies only to clean / non-contaminated sediment stockpile runoff.
- Stockpile sizes will be limited to reduce the risk of erosion, and maximum allowable stockpile size information will be provided prior to beginning of work in SMA 5; and
- Signs will be posted to clearly identify what material is in a stockpile.

Assessment of stockpile sizes and permits needed at SMA 5 will be completed prior to the execution of work which is expected to take place between December 2026 and March 2027. If additional permits are required the permits will be obtained prior to work being conducted at SMA 5.

2.6 Vehicle and Equipment Decontamination

Vehicles and equipment that come into contact with impacted materials will be decontaminated prior to leaving SMA 5 and/or handling clean material as described in the Personnel and Equipment Decontamination Plan (Appendix J of the EMB). Decontamination area(s) will be established as shown on the drawings in **Attachment A**.

- Prior to use at the Site, equipment will be inspected for impacted materials and decontaminated if contaminates are found;
- Tires and truck will be cleaned to removed sediment, if necessary, before leaving SMA 5;
- Vehicles and equipment will be dry-cleaned of materials using brushes or similar items prior to leaving SMA 5;
- If equipment handling contaminated material are to be used for non-contaminated Site operations then the equipment will be decontaminated first; and
- If wet decontamination is needed the liquids and solids generated will be contained, pumped to baker tanks to settle and water will be tested for turbidity, total suspended soils, and pH. Details regarding disposal of baker tank water will be submitted for approval prior to work being conducted at SMA 5. .

2.7 Offsite Tracking of Impacted Material

Offsite tracking of sediment, soil, and the generation of dust will be minimized to the extent practical. The following BMPs will be implemented to reduce tracking of sediment offsite:

- Loading areas will be cleaned frequently to reduce vehicles tracking material offsite;
- Truck, loading area, and access road will be inspected to confirm no material has been spilled or tracked onto public roads;
- Tires and truck will be cleaned to removed sediment, if necessary, before leaving SMA 5;
- Construction entrances will be installed according to Contract Documents, and King County pending access agreements with the Container Properties, located in and adjacent to SMAs 5 and 6, see the Remedial Action Work Plan for more details;
- Trucks and equipment carrying impacted materials will not be overloaded;

- If wet materials are to be transported the transport vehicle a plastic liner will be used to reduce the risk of sediment or water being released during transport, see the Transloading, Upland Transportation, and Waste Characterization and Disposal Plan (Appendix K of the RAWP); and
- When working dump trucks or other equipment on paved streets and roadways the streets will be cleaned with a vacuum sweeping truck at the end of each work day and as directed by the Project Representative.

2.8 Waste and Material Storage Areas

Waste generated from Site operations, sanitary facilities, and materials needed for construction activities will be stored and disposed of to prevent entry of contaminants into Site waters. This does not include sediment, soil or debris; management of this material is described in the Dredging and Excavation Plan and the Transload and Disposal Plan. The following BMPs will be implemented:

- Waste and materials will be stored, managed, and disposed of in accordance with appliable federal, state, and local regulations, laws, codes, rules and ordinances, see the Transloading, Upland Transportation, Waste Characterization, and Disposal Plan for additional details;
- Petroleum products will be stored with secondary containment in properly labeled containers compatible with the material stored;
- Vehicle maintenance liquids will be stored within job trailers, conex boxes, or within bermed areas in properly labeled containers compatible with the material stored;
- Material safety data sheet (MSDS) will be available for each material stored on Site;
- Materials that are chemically incompatible will be stored separately;
- Materials will be returned to the designated storage area after use;
- If spills occur waste materials from spill cleanup will be temporarily stored in drums or other leak-proof containers after cleanup and during transport for disposal;
- Housekeeping will be conducted on a regular basis to minimize litter at the Site;
- Trash receptables will be provided in various locations within the Site away from streets, gutters, waterways, and storm drains;
- Solid waste will be segregated when practical and properly recycled or disposed of;
- Sanitary waste will be store in sanitary facilities which will be routinely cleaned or hauled off by a sanitary facilities company hired; and
- In areas susceptible to strong winds, temporary sanitary facilities will be secured to prevent overturning.

2.9 Equipment and Vehicle Maintenance and Fueling

The following BMPs will be implemented during equipment and vehicle fueling and maintenance activities:

- Secondary containment or spill prevention measures, such as drip pans, will be utilized when maintenance and repair of vehicles or equipment is performed;
- Fueling of land-based equipment will occur by mobile trucks in a staging area or over pavement, and the location will be inspected after fueling (250 feet upgradient from the work area);
- Leaking connections, pipes, hoses, valves, etc. will be promptly repaired or replaced;
- Emergency spill containment and cleanup kits will be maintained within 100 feet of fueling areas;
- Incoming vehicles, parts and equipment will be inspected for leaks;

- Empty containers will be promptly removed from the Site and disposed at an appropriate disposal facility;
- PPM's Health and Safety Officer will be designated to keep a running inventory of on-site chemical substances and MSDS's;
- Daily inspections will be performed on equipment prior to use;
- When possible, the use of toxic or hazardous solvents will be eliminated or reduced; and
- Catch basin protection will be installed near planned maintenance, fueling, and servicing areas.

3. Inspection and Maintenance

Maintenance of BMPs will follow the requirements outlined in this ESCP, the SMMWW, and the Specification Section 31 25 00 (Erosion and Sedimentation Control). The CESCL will perform inspections once a week during work at SMA 5 that is a potential source of pollutant discharge (see **Section 2**) and within 24 hours of any stormwater discharge from SMA 5 and complete a Construction Stormwater Site Inspection Checklist (Ecology, 2007). If the CESCL identifies in the Construction Stormwater Site Inspections that a BMPs require repair or maintenance, corrective actions must be implemented within 10 working days of the date of the inspection.

BMPs proposed for erosion and sediment control at SMA 5 will meet the following maintenance requirements:

- Catch basin protection and storm drain inlet protection;
    - Remove sediment and replace inserts when inserts are no longer providing filtration according to manufacturer's recommendations.
    - Remove and replace if the insert has reached the average life of product according to the manufacturer's recommendations.
- Plastic sheeting for covering stockpiles;
    - Repair open seams and replace torn sheet immediately.
    - Remove plastic sheet and dispose of when no longer needed.
- Sandbag hold-downs;
    - Replace if damaged.
- Silt fence;
    - Remove sediment when it accumulated to a depth of 6 inches or greater.
    - Remove or repair filter fabric where damaged.
- Ecology block;
    - Repair or replace if damaged.
- Sandbag check dams;
    - Remove sediment when it accumulates to a depth of 6 inches or ¾ of the height of the dam, whichever is first.
    - Take precautions to prevent sediment from being flushed downstream during cleaning.
- Slopes;
    - Maintain slopes in a manner that prevents water runoff into surface waters and storm drains.
- Stabilized construction entrance;
    - Keep clean and free of debris to ensure Site materials are not tracked offsite.
- Outlet protection;
    - Remove sediment build up and debris if flow is no longer adequate.
- Straw wattles;
    - Repair or replace split, torn, unraveling, dislodged, or slumping wattles.
- Compost sock;
    - Repair or replace if damaged.

- Rock check dams;
  - Remove sediment when it accumulates to a depth of 6 inches or ¾ of the height of the dam, whichever is first.
  - Take precautions to prevent sediment from being flushed downstream during cleaning.
- Wheel Wash;
  - Limit vehicle speed to provide adequate time to clean tires and undercarriages.
  - Hand-spray tires when wheel wash does not provide adequate cleaning.
  - Relace turbid water in storage tanks to prevent tracking onto public roads.
  - Properly dispose of process wash.

4. Construction Schedule and Sequence for ESC Installation, Inspection, Maintenance, Removal, and Restoration

SMA 5 activities are scheduled to occur between December 28th, 2026 and March 9th, 2027. Site preparation will include establishment of temporary and permanent sediment and erosion controls applicable for SMA 5. BMPs will be installed prior to land disturbing activities and maintained for the duration of the project. Temporary stabilization will be conducted immediately following final earthwork. Final stabilization measures will be completed and BMPs will be removed within 30 working days after SMA 5 has achieved final stabilization.

5. CESCL Requirements and Documentation

Erosion and sediment control inspections for SMA 5 will be conducted by the CESCL (see the Remedial Action Work Plan for more details) as described in **Section 3**. The CESCL (Marty Locke, CESCL specifically for SMA 5 operations will be assigned and qualification provided prior to June of 2026) will be responsible for the following (King County, 2020):

- Maintaining and updating this ESCP, the SWPPP, and any associated permits and plans;
- Directing BMP installation, inspection, maintenance, modification, and removal;
- Coordination with PPM to ensure BMP repairs or maintenance required is completed within 10 days of the inspection that reported the repair or maintenance needs.
- Updating project drawings with changes made;
- Maintaining daily logs and inspection reports;
- Conduct inspections once a week during work at SMA 5 that is a potential source of pollutant discharge (see **Section 2**) and within 24 hours of any stormwater discharge from SMA 5 and complete a Construction Stormwater Site Inspection Checklist (Ecology, 2007); and
- Conduct turbidity testing once a week when there is discharge occurring at SMA 5.

Documentation of each inspection will include at a minimum:

- Date/time;
- Weather information;
- Amount of precipitation since the last inspection;
- A summary list of ESC BMPs implemented, conditions of each BMP at the time of inspection, and location of BMPs that require repair or maintenance;
- Visual monitoring results, including description of stormwater discharge (presence of suspended solids, turbid water, discoloration, and oil sheens);
- Water quality monitoring performed during inspection; and
- Brief description of any BMP repairs, maintenance or installations made as a result of the inspection.

If a BMPs require repair or maintenance, corrective actions must be implemented within 10 working days of the date of the inspection.

6. References

Anchor, 2023. Final (100%) Remedial Design Basis of Design Report For Lower Duwamish Waterway Upper Reach. Anchor QEA. January 2024.

Ecology, 2007. How to do Stormwater Monitoring: A guide for Construction Sites. Washington State Department of Ecology. Publication # 06-10-020. Revised November 2007.

Ecology, 2024. 2024 Draft Stormwater Management Manual for Western Washington. Water Quality Program Washington State Department of Ecology. July 2024.

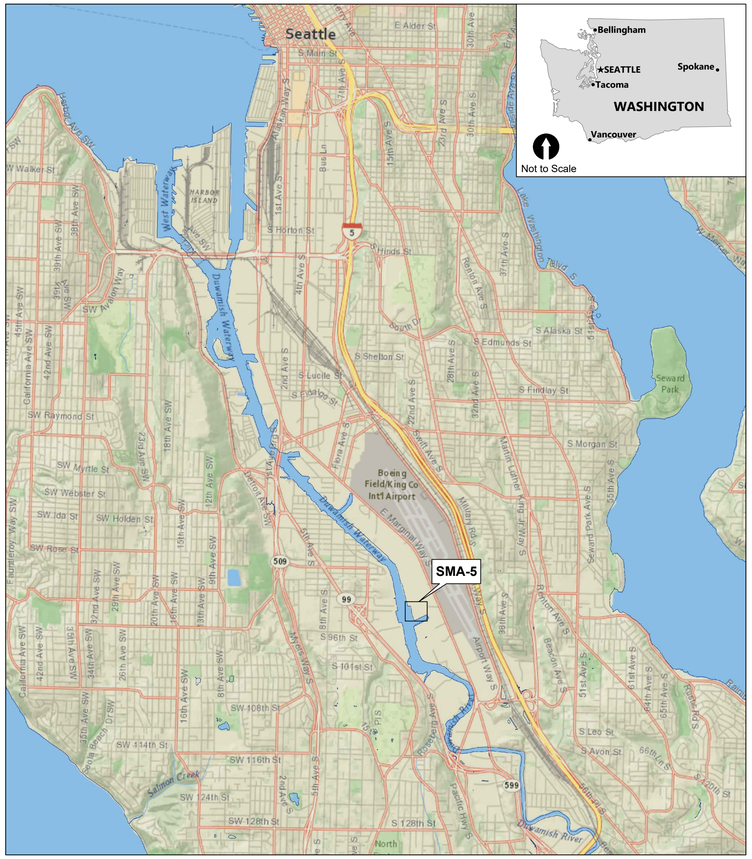
King County, 2020. Erosion and Sediment Control Requirements. King County Department of Local Services, Permitting Division. July 2020.

King County, 2021. 2021 Surface Water Design Manual. King County Department of Natural Resources and Parks. July 23.

Attachment A: Erosion and Sediment Control Plan Drawings

LOWER DUWAMISH WATERWAY UPPER REACH SMA-5

Erosion and Sediment Control Plan

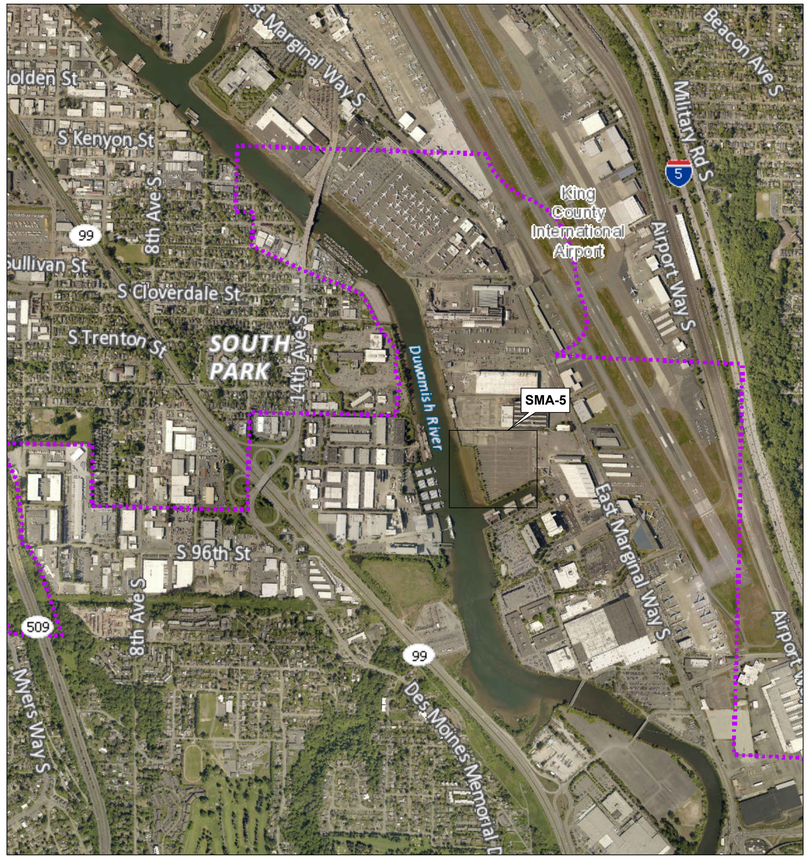


SOURCE: NATIONAL GEOGRAPHIC WORLD MAP - NATIONAL GEOGRAPHIC, ESRI, GARMIN, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, INCREMENT P CORP.

VICINITY MAP

0 4000 8000

SCALE IN FEET



SOURCE: AERIAL PHOTOGRAPH FROM ©MICROSOFT, BING MAPS

LOCATION MAP

0 1000 2000

SCALE IN FEET

SHEET NUMBER	TITLE	REVISION
1	COVER	1
2	EROSION AND SEDIMENT CONTROL PLAN - PROPOSED CONDITIONS	1
3	NOTES AND DETAILS	1

AECOM

SHEET 1

EROSION & SEDIMENT CONTROL PLAN
COVER SHEET

LOWER DUWAMISH WATERWAY UPPER REACH
REMEDIAL ACTION

Contract KC001065 Date: 2024-07-09

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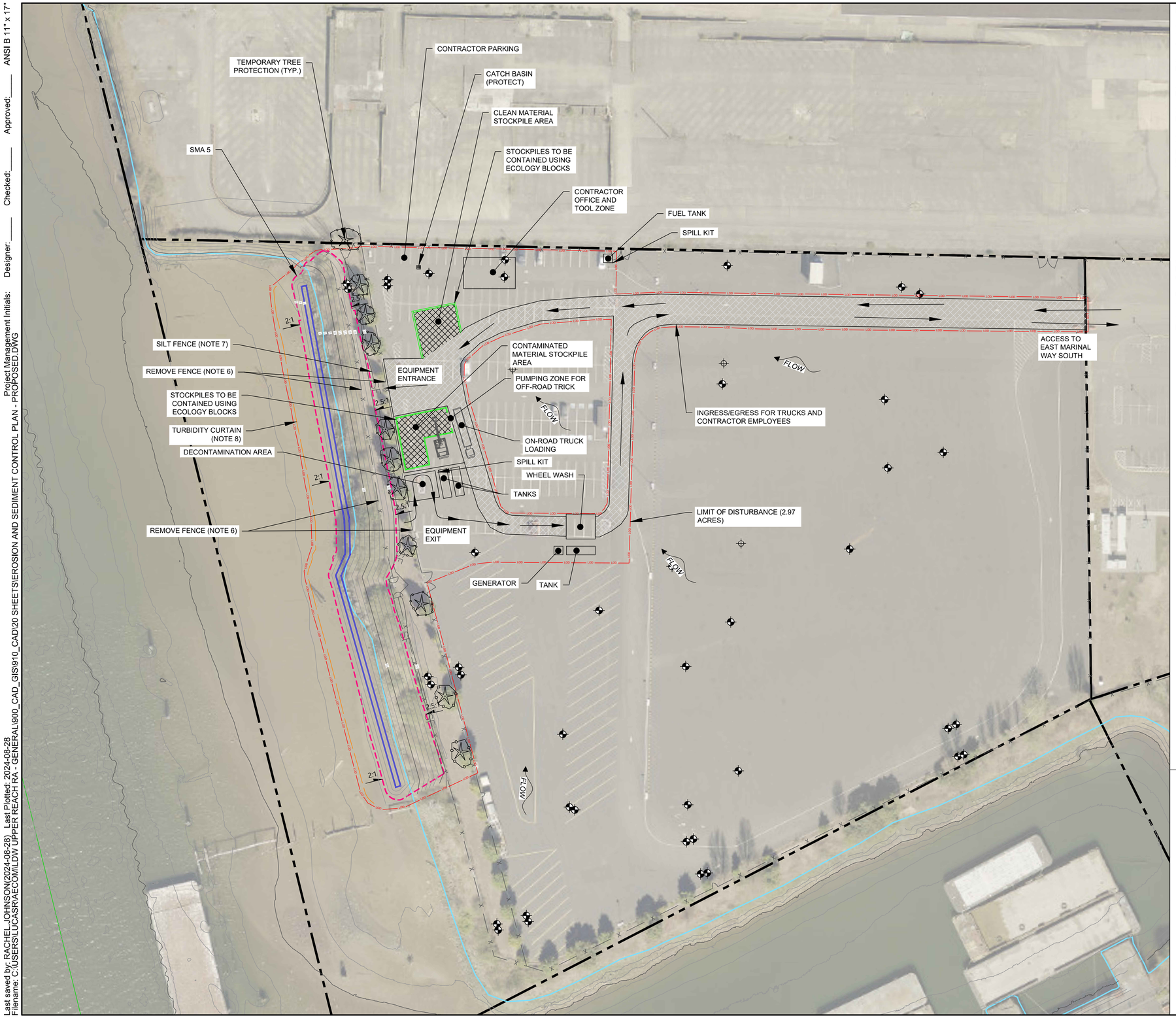


NOTES:

1. CONDUCT PUBLIC ROAD SWEEPING WITH A VACUUM SWEEPER AT THE END OF EACH WORKDAY (OR MORE FREQUENTLY AS NEEDED) IF SEDIMENT TRACKING BEYOND WHEEL WASH OCCURS ON ROADWAY.

STOCKPILE LOCATIONS MUST BE FIELD VERIFIED. THEY MAY BE MOVED TO ALTERNATIVE LOCATIONS WITHIN THE LIMIT OF DISTURBANCE, AS NEEDED.

2. ANY WASTE NOT APPROVED FOR REUSE ON SITE WILL BE TRANSPORTED TO AND DISPOSED OF AT AN APPROVED WASTE FACILITY.

3. SOIL DISTURBANCE ACTIVITIES WILL BE LIMITED TO THE EXTENTS OF THE LIMIT OF DISTURBANCE.

4. DEWATERING IS NECESSARY FOR SITE STOCKPILES. ALL DEWATERING WATER WILL BE TREATED WITH APPROPRIATE BMPS. ALL WATER WILL BE PUMPED THROUGH A PUMPED WATER FILTER BAG BEFORE BEING DISCHARGED THROUGH COMPOST FILTER SOCK AND ULTIMATELY FLOWING OFF SITE. INSTALL COMPOST FILTER SOCK ON THE DOWNSLOPE SIDE OF THE PUMPED WATER FILTER BAG.
   - 4.1. STOCKPILING WILL BE CONDUCTED ON CONTAINED IMPERMEABLE SURFACES, SUCH AS ASPHALT, CONCRETE, OR PLASTIC SHEETING TO PREVENT WATER GENERATED FROM INFILTRATING THE GROUND SURFACE.
   - 4.2. STOCKPILE AREAS WILL BE CONTAINED USING A COMBINATION OF ECOLOGY BLOCKS, SILT FENCES WITH WIRE BACKING, AND SEALED BINS TO CONTROL RUNOFF.
   - 4.3. WATER GENERATED DURING DEWATERING WILL BE PUMPED TO BAKER TANKS TO SETTLE AND WATER WILL BE TESTED FOR TURBIDITY, TOTAL SUSPENDED SOILS, AND pH. DETAILS REGARDING DISPOSAL OF BAKER TANK WATER WILL BE SUBMITTED FOR APPROVAL PRIOR TO WORK BEING CONDUCTED AT SMA 5.

5. LANDWARD FENCE SHALL BE PROTECTED. ONLY REMOVE SECTION OF LANDWARD FENCE REQUIRED FOR CONSTRUCTION VEHICLE ENTRANCE/EXIT. REPLACE LANDWARD FENCE AFTER COMPLETION OF WORK. WATERWARD FENCE SHALL BE REMOVED.

6. SILT FENCE SHALL BE PLACED AT TOP OF EXCAVATION SLOPE AND DOWNGRADIENT FROM STOCKPILE AREAS.

7. SEE THE WATER QUALITY PROTECTION PLAN (APPENDIX V OF THE RAWP) FOR A TYPE 2 DOT CURTAIN SPECIFICATION AND DIAGRAM

0 100 200 Feet

N

LEGEND

- TOP OF REMOVAL AREA
- BOTTOM OF REMOVAL AREA
- EDGE OF SHORELINE
- PROPERTY LINE
- LIMIT OF DISTURBANCE
- SILT FENCE
- TEMPORARY TREE PROTECTION
- TURBIDITY CURTAIN
- TRUCK ROUTE
- PROPOSED STOCKPILE
- EXISTING MONITORING WELL
- EXISTING EXTRACTION WELL
- ECOLOGY BLOCK
- CATCH BASIN (PROTECTION)

AECOM

SHEET 2

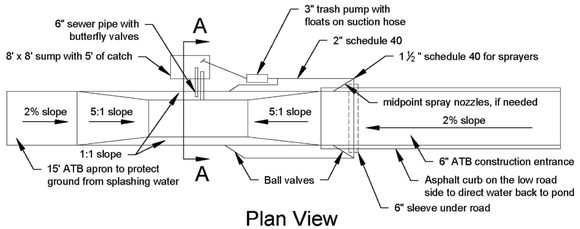
EROSION & SEDIMENT CONTROL PLAN PROPOSED CONDITIONS

LOWER DUWAMISH WATERWAY UPPER REACH
REMEDIAL ACTION

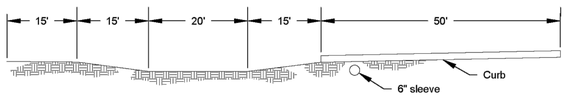
Contract KC001065 Date: 2024-08-28

Project Management Initials: Designer: Checked: Approved: ANSI B 11" x 17"

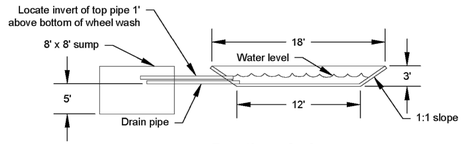
Last saved by: RACHEL.JOHNSON(2024-08-28) Last Plotted: 2024-08-28
Filename: C:\USERS\LUCASR\AECOM\LDW UPPER REACH RA - GENERAL\900_CAD_GIS\910_CAD\20 SHEETS\EROSION AND SEDIMENT CONTROL PLAN - PROPOSED.DWG



Plan View



Elevation View

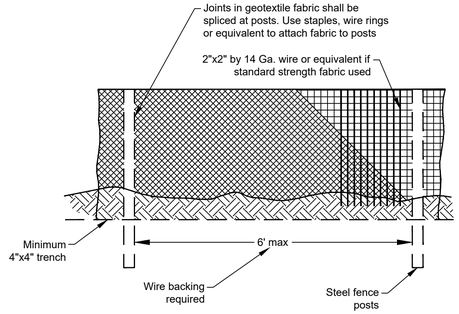


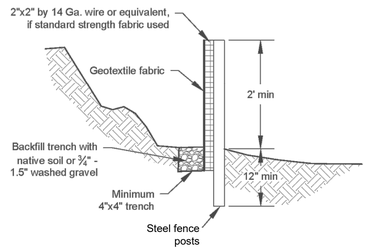
Section A-A

Notes:
1. Build 8' x 8' sump to accomodate cleaning by trackhoe.

NOT TO SCALE

WHEEL WASH
N.T.S





SILT FENCE
N.T.S

STANDARD E&S NOTES:

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE DRAWINGS MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
2. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS.
3. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPs SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
4. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND/OR FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
5. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
6. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE PPM SHALL IMPLEMENT APPROPRIATE BMPs TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE PROJECT REPRESENTATIVE.
7. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL.
8. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY AS STATED IN THE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON
9. A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
10. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
11. ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF AT AN APPROPRIATE FACILITY IN ACCORDANCE WITH APPLICABLE REGULATIONS.
12. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE, OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
13. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
14. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
15. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
16. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 75% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
17. E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED.
18. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTE.

TEMPORARY AND PERMANENT SEEDING TO CONFORM WITH THE SEEDING STANDARDS IN 2024 STORMWATER SMMWW.

NAME	% WEIGHT	% PURITY	% GERMINATION
Turf type perennial rye (blend of three approved varieties from the Seattle Standard Specification 9-14.2(1)	50	98	90
Creeping red fescue	20	98	90
Chewings fescue	20	98	90
Hard fescue	20	98	90

TEMPORARY AND PERMANENT SEEDING NOTES:

USE SEEDING THROUGHOUT THE PROJECT ON DISTURBED AREAS THAT HAVE REACHED FINAL GRADE OR THAT WILL REMAIN UNWORKED FOR MORE THAN 30 DAYS.

THE OPTIMUM SEEDING WINDOWS FOR WESTERN WASHINGTON ARE APRIL 1 THROUGH JUNE 30 AND SEPTEMBER 1 THROUGH OCTOBER 1.

BETWEEN JULY 1 AND AUGUST 30 SEEDING REQUIRES IRRIGATION UNTIL 75 PERCENT GRASS COVER IS ESTABLISHED.

BETWEEN OCTOBER 1 AND MARCH 30 SEEDING REQUIRES A COVER OF MULCH OR AN EROSION CONTROL BLANKET UNTIL 75 PERCENT GRASS COVER IS ESTABLISHED.

REVIEW ALL DISTURBED AREAS IN LATE AUGUST TO EARLY SEPTEMBER AND COMPLETE ALL SEEDING BY THE END OF SEPTEMBER. OTHERWISE, VEGETATION WILL NOT ESTABLISH ITSELF ENOUGH TO PROVIDE MORE THAN AVERAGE PROTECTION.

MULCH IS REQUIRED AT ALL TIMES FOR SEEDING BECAUSE IT PROTECTS SEEDS FROM HEAR, MOISTURE LOSS, AND TRANSPORT DUE TO RUNOFF. MULCH CAN BE APPLIED ON TOP OF THE SEED OR SIMULTANEOUSLY BY HYDROSEEDING.

SEED AND MULCH ALL DISTURBED AREAS NOT OTHERWISE VEGETATED AT FINAL SITE STABILIZATION. FINAL STABILIZATION MEANS THE COMPLETION OF ALL SOIL DISTURBING ACTIVITIES AT THE SITE AND THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER, OR EQUIVALENT PERMANENT STABILIZATION MEASURES (SUCH AS PAVEMENT, RIPRAP, GABIONS, OR GEOTEXTILES) WHICH WILL PREVENT EROSION.

AECOM

SHEET 3

EROSION & SEDIMENT CONTROL PLAN
NOTES AND DETAILS

LOWER DUWAMISH WATERWAY UPPER REACH
REMEDIAL ACTION

Contract KC001065 Date: 2024-08-28

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