90% Remedial Design

Volume III
Pre-Final (90%) Specifications

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SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.01 SUMMARY

A. This Section contains a summary of the Work included in this Contract.

1.02 DESCRIPTION OF WORK

A. The Work to be performed under this Contract includes furnishing all tools, equipment, materials, supplies, and manufactured articles; furnishing all labor, transportation, and services, including fuel, power, water, and essential communications; and performing all Work or other operations required for the fulfillment of the Contract, in strict accordance with the Contract Documents. Provide all Work, materials, and services not expressly indicated in the Contract Documents that may be necessary for the complete and proper construction of the Work and administration of the Contract.

B. The Owner requires contaminated sediment (with elevated concentrations of contaminants of concern [COCs]) to be remediated within the Lower Duwamish Waterway (LDW) upper reach (Work Site) as part of the LDW Superfund Site cleanup remedy of the upper reach (Project) and consistent with the U.S. Environmental Protection Agency (EPA) *Record of Decision* (EPA 2014). The Project Work is located at the upper reach of the LDW Superfund Site in King County, Washington, which is defined as that part of the waterway from Duwamish Waterway Park at river mile (RM) 3.0 to the South 102nd Street bridge at RM 5.0.

C. The Owner will designate a Project Representative to assist the Owner with technical review and decision-making during construction and coordinate and monitor this Work on its behalf.

1.03 WORK OF THIS CONTRACT

A. The Work for this Project is as shown on the Drawings and as described in the Specifications under this Contract. Work generally includes the following:
   1. Mobilization of construction equipment and materials to the Work Site as required to complete the Work
   2. Work Site preparation activities, including construction and setup of the Contractor Transload Facility(ies) and the Contractor-provided Staging and Stockpile Area(s) for the management, transport, and disposal of various contaminated materials (Dredge Material, Dredge Debris, Identified Debris, and Piling) and implementation of temporary erosion and sediment controls and water collection and treatment management practices. Work Site preparation also includes disconnecting all Work Site utilities that may be affected by the Work and making the Work Site ready, including any required clearing and grubbing, for all other construction activities.
   3. Dredging, excavation, potential Contingency Re-Dredging, barge dewatering, in-water transportation, transloading, upland transportation, and disposal of Dredge Material, Dredge Debris, Identified Debris, and Piling from the Work Site, as shown on the Drawings
      a. Potential Contingency Re-Dredging may be required to remove Dredge Material associated with Generated Residuals or Missed Inventory if the Owner-conducted post-dredge construction sediment sampling test results indicate the need for Contingency Re-Dredging.
   4. Removing, segregating, handling, and disposing of Identified Debris in the locations shown on the Drawings
   5. Placing Dredge Material, Dredge Debris, Identified Debris, and Piling in barges for dewatering and in-water transportation to the Contractor Transload Facility(ies)
   6. Dewatering of Dredge Material and dredge return water management
   7. At the Contractor Transload Facility(ies), the Dredge Material, Dredge Debris, Identified Debris, and Piling will be offloaded from the barge, dewatered (if applicable), rehandled, and loaded into trucks and/or railcars for transportation via approved haul routes to the approved upland Disposal Facility.

8. All Dredge Material, Dredge Debris, Identified Debris, and Piling are suitable for disposal as nonhazardous waste at an approved (Resource Conservation and Recovery Act [RCRA] Subtitle D) upland Disposal Facility.
9. Conduct practice placement (as described in Section 35 37 10 – Material Placement) prior to starting any in-water placement Work.
10. Placement of clean imported materials in and around Sediment Management Areas (SMAs) that require dredging, as shown on the Drawings, after the dredging Work is completed and accepted by the Project Representative, including the following:
    a. Backfill Material
    b. Required Residuals Management Cover (RMC) material
    c. Inner Perimeter RMC material
    d. Contingent Outer Perimeter RMC material, as directed by the Project Representative
    e. Additional Project Representative-directed RMC placement areas (outside the RMC placement areas shown on the Drawings)
    f. Engineered Cap A
    g. Engineered Cap B
11. Placement of Enhanced Natural Recovery (ENR) material, as depicted on the Drawings
12. Placement of Area-Specific Technology B – Amended Cover material, as depicted on the Drawings
13. Additional activities including structural Work as follows:
    a. Removal of Piling (timber piling) in the locations shown on the Drawings
    b. Bulkhead strengthening and reinforcement, as depicted on the Drawings
    c. Replacing of Piling with steel pipe piles in the locations shown on the Drawings
    d. Installation of outfall energy dissipation structures
14. Work Site restoration and cleanup, and demobilization from the Work Site after all Work is completed and accepted by the Project Representative as complete
15. Provision of required pre-, progress, and post-construction submittal and closeout documentation, as described in the Specifications
16. Additional Work is required to conduct the remediation and structural elements described above. Such additional Work includes, but is not limited to the following: quality control, project coordination, Work Site health and safety, environmental protection, surveys (Pre-Construction, Progress, and Post-Construction Surveys), equipment positioning control, and environmental law and regulation compliance, as described in the Specifications.

B. COCs were identified in the sediments, including four human-health risk drivers: polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), arsenic, and dioxins/furans. Refer to Section 01 13 00 (Reference Material) for reference documents that contain environmental data relevant to the Work Site.

C. The Work Site is an actively used waterway for commercial shipping, tribal fishing activities, and recreational usage, including two marinas. Upland businesses use the waterway for transfer of bulk materials, for boatyard operations (such as maintenance and repair), and for vessel storage. Commerce and businesses (upland owners and tenants) will remain open during the duration of the Construction Season and, through completion of the Work, shall have access through the Work Site and shall take priority over the Contractor's operations, unless otherwise described in project-specific Work Site access agreements. The Contractor shall adhere to the sequencing requirements described in these Specifications and seek to conduct its operations to accommodate ongoing use of the waterway.

D. Accomplishment of Work in the Contract Documents shall meet all requirements of the Contract, including In-Water Work Window, constraints, construction sequencing, completion times, hours of work, specified by Section 01 14 00 (Work Restrictions).
    1. The Contractor shall complete the Project within three Construction Seasons.

E. The above description is not intended to be complete. The Work to be completed is provided for in the Contract Documents. The summary in this Section is not intended to relieve the Contractor of the responsibility for reading and understanding the Contract Documents.

F. Federal, state, and local laws, statutes, and regulations are individually referenced in Section 01 41 00 (Environmental Regulatory Requirements). This provision incorporates by reference the latest version of laws, statutes, and regulations. In case of conflict between the requirements of the Specifications and requirements of

the statutes and regulations, the Contractor shall bring them to the attention of the Project Representative. Lacking a specific response, the more stringent shall control. In no case can this Contract be interpreted to override statutes and regulations of governing authorities.

1.04 DEFINITIONS

A. Definitions for terms provided in the Specifications and on the Drawings are provided here for reference. Additional terms may be used throughout the Specifications that are not defined here, and the Contractor shall be responsible for understanding the intention of all terms as they are used in the Contract Documents.
   1. Drawings: Drawings are defined as diagrams intended to indicate the scope, extent, and general arrangement of the Work to be conducted for the Project.
   2. Project: The Project is the implementation of the remedial actions (Work) to be conducted within the Work Site as part of the LDW Superfund Site cleanup remedy of the upper reach.
   3. Specifications: The Specifications ("Technical Specifications") are the written requirements established for the conduct of the Project Work.
   4. Work Site: The Work Site is defined as the area, as shown on the Drawings, where Work will be completed under this Contract. The Work Site encompasses the upper reach of the LDW Superfund Site (RMs 3.0 to 5.0), SMAs to be remediated, the Contractor Transload Facility(ies), and adjacent upland areas that may be utilized by the Contractor as upland access to the Work Site.

B. Refer to other individual Sections of these Specifications for additional definitions related to the Contract Documents.

C. Specification Language:
   1. Specifications are written mostly in imperative and streamlined form. Unless indicated otherwise, this imperative language is directed to the Contractor. Additionally, the words "shall be" shall be included by inference where a colon (:) is used within sentences or phrases.
   2. Examples:
      a. Aggregate: ASTM C33.
      b. Adhesive: spread with notched trowel.
   3. Individual Specification Sections may include a reference to other Sections. Sections referenced are intended only to assist in identifying associated Work and are not intended and shall not be considered to be all inclusive. The Contractor is responsible for performing all the Work in the Contract Documents whether referenced in the specific Specifications or not.
   4. Whenever there is wording stating that an item is "as specified," "as shown," or "as indicated," the reference is to all the Contract Documents. Stating "as specified," "as shown," or "as indicated" does not refer necessarily to a Drawing or Specification, but it refers to either.
   5. Furnish, Install, Perform, Provide:
      a. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Work Site (or some other specified location) ready for use or installation and in usable or operable condition.
      b. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
      c. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
      d. If the Contract Documents establish an obligation of the Contractor with respect to specific services, materials, or equipment but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then the Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
   6. Unless otherwise indicated, all materials and equipment incorporated into the Work shall be as specified and shall be new and free of defects.

1.05 ENGINEERING AND INSPECTION

A. Representatives of regulatory agencies and Owner representatives (e.g., inspectors, consultants, and others as identified by the Project Representative) shall be allowed on the Work Site and on Contractor equipment to inspect the Work at any time.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 REMEDIAL ACTION WORK PLAN

A. The Remedial Action Work Plan (RAWP) is a pre-construction submittal that shall include Contractor means and methods for the completion of the various elements of the Work, detailed construction approaches, procedures, layouts, a detailed Draft Project Schedule, and personnel to implement the Project Work, as required in these Specifications and Drawings. The Contractor shall demonstrate through the RAWP that the Contractor understands the scope of the Work and is capable of completing it on schedule and in accordance with the Contract Documents.

B. The RAWP will be reviewed and approved by the both the Owner and EPA prior to the start of any Work. Submittal requirements for the RAWP are specified in Section 01 33 00 (Submittals).

C. The RAWP shall cover all portions of the Work described in the Specifications, including but not limited to SMAs, equipment and material storage area, access to the Work Site, and all other areas that may be impacted by the Project. At a minimum, the RAWP shall contain the following elements:
   1. Project approach:
      a. Description of construction elements, including proposed means and methods
      b. Description of equipment types and modes of operation, a list of personnel and subcontractors, proposed facilities to be used for the Work, material suppliers, and other aspects necessary to describe how and when the Work will be performed
      c. Construction sequencing plan of activities for each anticipated Construction Season
   2. Project organization chart with responsibilities/reporting/communication structure and detailed staffing plan (showing staffing levels for each task and phase of Work, along with plans for shift work)
      a. The Contractor shall identify key personnel and associated resumes, and all subcontractors
      b. Emergency and afterhours points of contact and calling list, including Contractor, Project Representative, and appropriate key contacts
      c. Other key Contractor personnel for specific tasks and phases of Work
   3. Daily and weekly reporting procedures
   4. Detailed Draft Project Schedule (see Section 01 32 16 – Construction Progress Schedules)
   5. Draft Master Submittal List (see Section 01 33 00 – Submittals)
   6. Project Representative field office plan layout (see Section 01 52 01 – Project Representative Field Office)
   7. Dredging and Excavation Plan, as described in Section 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation)
   8. Transloading, Upland Transportation, and Disposal Plan, as described in Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal)
   9. Material Placement Plan, as described in Section 35 37 10 (Material Placement)
   10. Environmental Mitigation Binder, as described in Section 01 35 43 (Environmental Procedures), which includes the following elements:
      a. Water Quality Protection Plan
      b. Erosion and Sediment Control Plan, as described in Section 31 25 00 (Erosion and Sedimentation Control)
      c. Stormwater Pollution Prevention Plan
      d. Water Management Plan
      e. Spill Prevention, Control, and Countermeasure Plan
      f. Air Pollution and Odors Control Plan
      g. Noise Control Plan
      h. Light Control Plan

i. Personnel and Equipment Decontamination Plan
j. Traffic Control Plan, as described in Section 01 55 26 (Traffic Control)

11. Site-Specific Health and Safety Plan, as described in Section 01 35 29 (Health and Safety)
12. Emergency Response Plan, as described in Section 01 35 29 (Health and Safety)
13. Green Remediation Plan, as described in Section 01 35 44 (Green Remediation Requirements)
14. Construction Quality Control Plan, as described in Section 01 45 00 (Quality Control)
15. Temporary Facilities and Control Plan, as described in Section 01 52 00 (Construction Facilities)
16. Notification Plan, as described in Section 01 55 26 (Traffic Control)
17. Survey and Positioning Control Plan, as described in Section 02 21 00 (Site Surveys and Positioning Control)
18. Demolition Plan, as described in Section 02 41 00 (Demolition and Salvage)
19. Instrumentation and Monitoring Plan in Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections)
20. Site Clearing and Management Plan, as described in Section 31 11 00 (Clearing and Grubbing)
21. Vessel Management Plan, as described in Section 35 10 00 (Navigation Safety and Marine Traffic Control)
22. Examples of progress reporting forms
23. Change order forms and process

D. Draft and Final RAWP:
   1. The Draft RAWP shall be submitted by the Contractor to the Owner within 30 calendar days of the Notice to Proceed of Contract Award. The Draft RAWP will be reviewed by the Owner and its Project Representative, who will provide comments to the Contractor. If deemed necessary by the Project Representative, comments will be reviewed, discussed, or clarified in a Draft RAWP meeting. The Project Representative will notify the Contractor of the date and time of the meeting.
   2. The Contractor shall address the Project Representative comments and/or conclusion from the meeting and resubmit an updated Draft RAWP within 14 calendar days.
   3. The updated Draft RAWP will be submitted by the Owner to EPA for review and approval, in accordance with the Consent Decree.
   4. The Contractor shall coordinate with the Project Representative to revise and modify the Draft RAWP based on EPA comments and submit a Final RAWP to the Project Representative. If deemed necessary by the Project Representative, EPA comments will be reviewed, discussed, or clarified in a Final RAWP meeting. The Project Representative will notify the Contractor of the date and time of the meeting.
   5. The Final RAWP will be considered final once all EPA comments are appropriately addressed and approved by EPA. EPA will issue a written notification to begin construction activities. No in-water construction activities will begin until the Final RAWP has been approved by EPA and the Owner.

END OF SECTION

SECTION 01 13 00

REFERENCE MATERIAL

PART 1 GENERAL

1.01 SUMMARY

A. This Section lists reference materials relative to the Project. Reference materials are provided for informational purposes only and are not to be considered Contract Documents.

1.02 DESCRIPTION OF WORK

A. The documents are available on the Procurement Website for this Project at http://www.kingcounty.gov/procurement/.

B. For the Work related to the Contract, the following are available reference materials:
   1. Environmental Data Reports
      a. U.S. Environmental Protection Agency, 2014. *Record of Decision Lower Duwamish Waterway Superfund Site*. November 2014.
      b. Amec Foster Wheeler Environmental & Infrastructure, Inc; Dalton, Olmsted, & Fuglevand, Inc.; Ramboll Environ; Floyd|Snider; and Geosyntec Consultants, 2015. *Narrative Design Report – Enhanced Natural Recovery/Activated Carbon Pilot Study Lower Duwamish Waterway*. For submittal to U.S. Environmental Protection Agency Region 10. December 2015.
      c. Amec Foster Wheeler Environmental & Infrastructure, Inc; Dalton, Olmsted, & Fuglevand, Inc.; Ramboll Environ; Floyd|Snider; and Geosyntec Consultants, 2018.*Construction Report – Enhanced Natural Recovery/Activated Carbon Pilot Study Lower Duwamish Waterway*. For submittal to U.S. Environmental Protection Agency Region 10. June 2018.
      d. Windward Environmental, LLC, 2020. *Final Lower Duwamish Waterway Pre-Design Studies Data Evaluation Report (Task 6)*. Prepared for Lower Duwamish Waterway Group. For submittal to U.S. Environmental Protection Agency. June 26, 2020.
      e. U.S. Environmental Protection Agency, 2021. *Explanation of Significant Differences – Lower Duwamish Waterway Superfund Site*. September 2021.
      f. Anchor QEA, LLC, and Windward Environmental, LLC, 2022. *Final Pre-Design Investigation Data Evaluation Report for the Lower Duwamish Waterway – Upper Reach*. For submittal to U.S. Environmental Protection Agency. July 15, 2022.
      g. Anchor QEA, LLC, and Windward Environmental LLC, 2023. *Final Phase III Pre-Design Investigation Data Evaluation Report for the Lower Duwamish Waterway – Upper Reach*. For submittal to U.S. Environmental Protection Agency. Anchor QEA, LLC, and Windward Environmental LLC, 2023.
   2. Basis of Design Report
      a. Anchor QEA, LLC, and Windward Environmental, LLC, 2023. *Pre-Final (90%) Remedial Design – Basis of Design Report for the Lower Duwamish Waterway Upper Reach*. Prepared for Lower Duwamish Waterway Group. For submittal to U.S. Environmental Protection Agency.
   3. Full Design Dataset, including maps and tables, [forthcoming].
   4. Work Site Information
      a. References in Article 1.02(B)1(f-h) of this Section.
      b. Reference Structural Drawings and Assessments
         1) Integral Consulting, Inc.; Moffatt & Nichol; and Windward Environmental, Inc, 2018. *Water User Survey and Assessment of In-Water Structures – Data Report*. For submittal to U.S. Environmental Protection Agency. July 2, 2018.
         2) King County Engineer's Office. 1914. *South Park Bridge No. 1080.* December 1914.
         3) HNTB Corporation, 2010. *South Park Bridge #3179 (Structure ID 08433700) Replacement.* 2010.
      c. Utilities
         1) Electric Lightwave. South 102nd Street/Zayo Crossing. February 1998.
         2) HNTB Corporation, 2010. *South Park Bridge #3179 Replacement (Submarine Utility Lines)*. For submittal to King County. December 18, 2010.

5. Construction and Environmental Requirements
    a. EPA. *Clean Water Act Section 404 Applicable or Relevant and Appropriate Requirements Memorandum* [forthcoming].
    b. National Marine Fisheries Service, [forthcoming]. *Biological Opinion*.
    c. Anchor QEA, LLC, and Windward Environmental, LLC, 2023. *Preliminary Waste Determination*, 2023.
    d. Anchor QEA, LLC, and Windward Environmental, LLC, 2023*Construction Quality Assurance Plan* (CQAP), 2023. The CQAP includes the following appendix documents:
        1) Appendix A: Water Quality Monitoring Plan
        2) Appendix B: Construction Sediment Sampling Quality Assurance Project Plan
        3) Appendix C: Air, Noise, and Light Monitoring Plan
        4) Appendix D: Monitoring and Inadvertent Discovery Plan
        5) Appendix E: Independent Quality Assurance Team Health and Safety Plan
6. Other Requirements
    a. Anchor QEA, LLC, and Windward Environmental, LLC, 2023. *Community Outreach and Communications Plan*, 2023.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION [NOT USED]

END OF SECTION

SECTION 01 14 00

WORK RESTRICTIONS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies completion times, milestones, constraints, hours of work, and liquidated damages.

1.02 DESCRIPTION OF WORK

A. Schedule and conduct all Work in a manner consistent with the Contract, and comply with the construction scheduling requirements, Contract milestones, and constraints on the Work as specified.

1.03 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Construction Season: Construction Season is defined as the construction period in which Work defined in the Specifications and Drawings shall be conducted by the Contractor. The Construction Season includes in-water activities to be conducted within the In-Water Work Window, as well as other ancillary construction activities to be conducted before or after the In-Water Work Window (such as pre-construction submittals; mobilization/demobilization of construction equipment; Work Site preparation; setup/decommissioning of temporary construction facilities, Stockpile and Staging Area[s], and Contractor Transload Facility; post-construction submittals; closeout submittals; and preparation of Project Record Documents). The following timelines describe each Construction Season for the Project:
   1. Construction Season 1: The first Construction Season of the Contract, which starts upon the effective date of the Notice to Proceed and finishes 2 calendar months after the end of the In-Water Work Window of the same year in which construction begins
   2. Construction Season 2: The second Construction Season of the Contract, which will occur 2 calendar months prior to and 2 calendar months after the end of the In-Water Work Window of the next calendar year, after completion of Construction Season 1
   3. Construction Season 3: The third Construction Season of the Contract, which will occur 2 calendar months prior to and 2 calendar months after the end of the In-Water Work Window of the next calendar year, after completion of Construction Season 2

C. Inherent Delays: The Contractor shall anticipate and include an allowance for Inherent Delays, while conducting all construction activities as part of this Project. Inherent Delays include, but are not limited to, commercial shipping and tribal fishing activities within the Work Site; inclement weather, and high flow events during storms. Commercial shipping and tribal fishing activities shall have precedence over the Contractor's activities and will require the Contractor to stop, move, adjust, and/or slow down to accommodate vessel movement or fishing activities. Costs for Inherent Delays are not paid separately and shall be included in the Contractor's Bid prices for this Contract.

D. In-Water Work Window: The U.S. Environmental Protection Agency (EPA) identified the period of time when in-water Work is allowed (i.e., fisheries closure), from October 1 to February 15, referred to as the In-Water Work Window.

1.04 CONSTRUCTION SEASON

A. In-water construction Work described in this Contract shall be performed during the In-Water Work Window, as defined above, and set to protect threatened and endangered species in conformance with substantive requirements of the Endangered Species Act.
   1. The Contractor shall complete the Project within three Construction Seasons.

2. In the event the Contractor proposes to complete the Work for the Project faster than the established three Construction Seasons, the Contractor shall provide detailed rationale in the Remedial Action Work Plan (RAWP), including the detailed Draft Project Schedule (that describes the sequencing of Work, milestones, etc.) and areas of Work where multiple equipment sets would be used. Any alternate Project duration proposed by the Contractor will be subject to the Owner's review and approval, prior to the start of any Work.
3. The start date of each Construction Season will be determined by the Project Representative.
4. The Contractor may request an extension of each Construction Season to the Project Representative. The Project Representative will coordinate with EPA to determine whether an extension will be granted. There is no guarantee an extension will be granted.

B. The Contractor will be required to relocate its equipment outside of the Work Site after the Work for each Construction Season is completed, in compliance with Section 01 70 00 (Closeout Requirements).

1.05 COMPLETION TIMES

A. Achieve Substantial Completion of the Project on DATE TBD, within TBD calendar days after the effective date of the Notice to Proceed.

B. Achieve Final Acceptance of the Project on DATE TBD, within TBD calendar days after the effective date of the Notice to Proceed.

1.06 MILESTONES

A. The Contractor shall indicate in its construction sequencing approach (presented as part of the RAWP) the percentage of the Work to be completed for each of the three Construction Seasons and shall define specific milestones in each Construction Season in order to achieve those percentages.

B. Refer to Article 1.09 for general Project sequencing requirements which define the start of general Work activities and in-water Work activities.

C. Refer to closeout requirements for each Construction Season in Section 01 70 00 (Closeout Requirements).

1.07 CONSTRAINTS

A. Complete all in-water construction activities during the In-Water Work Window for each Construction Season by February 15.

B. Provide written notice to the Project Representative a minimum of 3 weeks prior to all planned shutdowns and/or outages necessary to complete the Work, unless noted otherwise.

C. All Work shall be completed within three Construction Seasons.
1. For each Sediment Management Area (SMA) the Contractor starts construction on in one Construction Season, the Contractor shall complete all Work related to that SMA within the same Construction Season and In-Water Work Window and obtain acceptance of completion from the Project Representative. This includes completing Required Dredging, Contingency Re-Dredging, and SMA-specific material placement (as shown on the Drawings for an SMA within one Construction Season.
2. The Contractor shall plan its construction sequencing approach and Draft Project schedule (as part of the RAWP) to fully complete all remedial activities for a discrete SMA within the same Construction Season.

D. Construction in Lower Duwamish Waterway (LDW) areas is subject to Treaty Fishing rights. Treaty Fishing activities may further constrain the dates available for in-water Work during the In-Water Work Window.
1. The Contractor shall coordinate with the Project Representative annually prior to the start of any of the three Construction Seasons and adjust the Baseline Project Schedule as needed for Treaty Fishing constraints.

2. Tribal fishing activities shall take precedence over the Contractor's activities and will require the Contractor to stop, move, adjust, and/or slow down to accommodate vessel movement from tribal fishing activities (refer to Section 35 10 00 – Navigation Safety and Marine Traffic Control).

E. Commerce and businesses (upland owners and tenants) will remain open during the duration of the Construction Season, and, through completion of the Work, shall have access through the Work Site and shall take priority over the Contractor's operations, unless otherwise described in project-specific Work Site access agreements (refer to Section 35 10 00 – Navigation Safety and Marine Traffic Control).
    1. The Contractor shall be required to stop, move, adjust, and/or slow down to accommodate commercial vessel movement.

F. The Contractor shall coordinate with the U.S. Coast Guard (USCG) in accordance with USCG regulations and in advance of each Construction Season so USCG can issue a Notice to Mariners prior to the start of each Construction Season (refer to Section 35 10 00 – Navigation Safety and Marine Traffic Control).

G. The Contractor's movement of materials into and out of the Work Site is subject to the use of approved haul routes as described in Section 01 55 26 (Traffic Control) and Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).

1.08 HOURS OF WORK

A. Hours of work are restricted for this Project as follows:
    1. Standard in-water work hours are 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 7:00 p.m. on Saturdays, for a 6-day-per-week work schedule.
    2. The Contractor may not work outside these normal work hours without prior written approval by the Project Representative.
        a. If the Contractor anticipates needing to conduct in-water construction work during the nighttime or on Sundays and legal holidays to conduct bank excavation activities due to the timing of low tides or to perform occasional work to meet the Baseline Project Schedule and support progress of activities within the In-Water Work Window, the Contractor shall obtain Project Representative approval.
        b. The Contractor shall notify the Project Representative in advance a minimum of 72 hours prior to the start of that Work) of any proposed after-hours work, including Sundays and holidays, to obtain written approval from the Project Representative prior to initiating such Work.
            1) EPA coordination and approval will also be required for these events. It is the sole discretion of the Project Representative and EPA to approve after-hours work outside the standard hours allowed by this Contract.
    3. If the Contractor works unscheduled hours and/or if the Contractor has not obtained the Project Representative's approval at least 72 hours prior to the start of unscheduled after-hours Work, the Contractor shall be liable for the costs of the Owner's overtime inspection at the rate of $200 for each hour for each person performing such inspection for the Owner.

B. Submit a Draft Project Schedule of working hours in accordance with Sections 00 72 00 (General Terms and Conditions) and 01 32 16 (Construction Progress Schedules).

1.09 CONSTRUCTION SEQUENCING

A. Prepare a construction sequencing approach as part of the RAWP submittal that describes the Contractor's implementation approach for all construction activities and how this approach will meet the sequencing requirements of these Specifications, including the Substantial Completion and Final Acceptance dates.

B. The Contractor shall perform the Work activities according to the following overall project Work Site sequencing requirements:
    1. Complete all required work at the Work Site in a continuous manner (i.e., do not leave gaps in time between in-water work activities unless directed by the Project Representative or between Construction Seasons).
    2. Start work activities from upstream to downstream, unless otherwise approved by the Project Representative.

3. The Contractor is allowed to temporarily relocate its equipment to perform Work activities in other parts of the Work Site (e.g., during the Contingency Re-Dredging Decision Duration period) to minimize equipment downtime to achieve the Substantial Completion date. The Contractor may also Work concurrently in multiple SMAs.
4. The Contractor shall minimize impacts to LDW navigation and vessel operations (refer to Section 35 10 00 – Navigation Safety and Marine Traffic Control).

C. The Contractor shall anticipate and make allowance for Inherent Delays (i.e., interruptions) due to vessel movement in the LDW, while conducting all construction activities as part of this Project. Commercial shipping traffic within the Work Site, inclement weather, and tribal fishing activities are anticipated to occur during construction.
   1. The Contractor shall make allowance in its Draft Project Schedule for Inherent Delays.
   2. Costs for Inherent Delays shall be included in the Contractor's Bid prices for this Contract.

D. The Contractor shall bid and perform the Work as described in the Contract under the following general sequencing requirements. The specified sequencing listed below does not identify all necessary Work elements and is only intended to provide an overview of the required sequence of construction and key Work elements. The Contractor may propose an alternate sequencing approach in its RAWP for Project Representative review and approval prior to a deviation from the following specified sequencing:
   1. Following review and approval by the Project Representative of the required pre-construction submittals, the Contractor shall commence Work at the Work Site.
      a. Construction activities conducted above the Mean Higher High Water elevation (such as mobilization of construction equipment, Work Site preparation, setup of temporary construction facilities, and setup of the Stockpile and Staging Area[s] and of the Contractor Transload Facility, and upland transport and disposal of dredged materials) may occur before or after each In-Water Work Window of each Construction Season.
      b. In-water construction activities shall start on October 1 or after (as directed by the Project Representative) each In-Water Work Window.
   2. The Contractor shall conduct the Project Pre-Construction Survey to document bathymetric conditions within the Work Site in advance of conducting any in-water Work, as required in Section 02 21 00 (Site Surveys and Positioning Control).
   3. The Contractor shall notify the Project Representative 10 working days in advance of anticipated Work at the Work Site or the Contractor Transload Facility(ies).
   4. The Contractor shall provide notifications to property owners that require notifications as required per site access agreements, Tribes, and USCG. All agency-required notifications shall be completed in accordance with Applicable or Relevant and Appropriate Requirements for the LDW Superfund Site cleanup remedy (refer to Section 01 41 00 – Environmental Regulatory Requirements) for applicable environmental laws, statutes, ordinances, and associated regulatory requirements.
   5. The Contractor shall procure and conduct testing of clean placement materials before any placement activities are conducted (refer to Section 35 37 10 – Material Placement).
   6. The Contractor shall conduct a Pre-Construction Structural Condition Inspection of existing structures and facilities within the Work Site (as described in Section 31 09 00 – Geotechnical Instrumentation and Condition Inspections), which shall include collecting pre-construction photographs and video (as described in Section 01 32 33 – Photographs and Videos). The Contractor shall provide documentation of the Pre-Construction Structural Condition Inspection and photographs/videos to the Project Representative for approval prior to commencing the in-water Work.
   7. The Project Representative reserves the right to inspect all Contractor quality control and environmental protection measures to confirm they are in place and working properly prior to initiating any construction activities (including in-water or upland). Construction activities may not begin until all Contractor quality control and environmental protection measures and components are in place and working properly, as accepted by the Project Representative.
   8. The Contractor shall conduct removal of Piling and Identified Debris of the associated SMA(s) in the locations shown on the Drawings. The Contractor shall describe the sequencing of removal Piling and Identified Debris relative to Required Dredging within or adjacent to a specific SMA.
   9. The Contractor shall conduct bulkhead strengthening and reinforcement in the location shown on the Drawings prior to any dredging activities in the associated SMAs.

10. The Contractor shall perform Required Dredging (including excavation), barge dewatering, and in-water transportation of Dredge Material and Dredge Debris to the Contractor Transload Facility, as described in Section 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation).
11. The Contractor shall conduct transloading, upland transportation, and off-site disposal of Dredge Material, Dredge Debris, Identified Debris, and Piling at an approved Disposal Facility, as described in Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).
12. The Contractor shall conduct Required Dredging Post-Construction surveys for review and approval by the Project Representative.
13. Post-dredge construction sediment sampling will be performed by the Owner.
14. The Contractor shall account for the Contingency Re-Dredge Decision Duration (15 working days), in which the Project Representative will review the post-dredge construction sediment sampling results of a specific SMA and will direct the Contractor as to whether Contingency Re-Dredging activities will be required. During this period, the Contractor shall not perform any Work within the associated SMA and shall perform Work in other SMAs. Contingency Re-Dredging may be directed by the Project Representative in specified location(s) of the SMA or perimeter areas, or limited locations outside the SMA perimeters, based on construction sediment sampling results.
15. The Contractor shall conduct Contingency Re-Dredging Post-Construction Surveys for review and approval by the Project Representative.
16. After completion of all dredging activities for an individual SMA, the Contractor shall conduct applicable material placement of Backfill Material, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, and Engineered Cap B, as shown on the Drawings and described in Section 35 37 10 (Material Placement) within the individual SMA.
    a. Dredging and placement activities conducted in an SMA shall be completed in the same Construction Season.
17. The Contractor shall conduct material placement of Enhanced Natural Recovery (ENR) and Amended Cover, as shown on the Drawings and described in Section 35 37 10 (Material Placement).
18. The Contractor shall conduct Placement Post-Construction Surveys for review and approval by the Project Representative.
19. The Contractor shall install outfall energy dissipation structures in the locations and sequencing as shown on the Drawings.
20. The Contractor shall install steel pipe piles in the locations shown on the Drawings,.
21. The Contractor shall conduct a Post-Construction Structural Condition Inspection of existing structures and facilities within the Work Site (as described in Section 31 09 00 – Geotechnical Instrumentation and Condition Inspections), which shall include collecting post-construction photographs and video (as described in Section 01 32 33 – Photographs and Videos). The Contractor shall provide documentation of the Post-Construction Structural Condition Inspection and photographs/videos to the Project Representative for approval after completion of all in-water work.
22. The Contractor shall conduct inspections (Contractor inspection and pre-final and final inspections with the Project Representative) and implement any necessary corrective measures to the Project Representative's satisfaction to obtain final approval.
23. The Contractor shall conduct demobilization and Work Site cleanup to the satisfaction of the Project Representative, as described in Section 01 74 23 (Final Cleaning).

E. The Contractor shall comply with closeout requirements for the Project and for each Construction Season as described in Section 01 70 00 (Closeout Requirements).

F. The Contractor shall comply with Record Document requirements for the Project and for each Construction Season as described in Section 01 78 39 (Project Record Documents).

1.10 LIQUIDATED DAMAGES

A. Liquidated damages for failure to achieve the _____ milestone: $_____ per day.

B. Liquidated damages for failure to achieve Substantial Completion: $_____ per day.

C. Liquidated damages for failure to achieve Final Acceptance: $_____ per day.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 COORDINATION WITH OTHERS

A. Coordinate all activities with the Project Representative so navigation interference will be minimized. In addition, the Contractor shall carry out Work in a manner that minimizes navigation interference and does not delay commercial operations (e.g., commercial vessels and businesses located adjacent to the Work Site) and tribal fishing activities (see Article 1.07 of this Section).

B. The Contractor shall coordinate all marine activity and vessel movements, frequency, and operations with USCG.

C. Adjacent tenants and other property owners will be using in-water portions and adjacent uplands of the Work Site for their operations, as shown on the Drawings. The Project Representative will coordinate with these parties on their operations to avoid and/or minimize impacts to their activities. The Project Representative will then coordinate with the Contractor for access and timing of this Project Work and operations. The Contractor shall comply with site access agreement requirements for Owner-obtained and Contractor-obtained agreements (if applicable) as described in Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).

D. Be responsible for coordinating Work Site construction activities with operational activities that occur on a regular basis within the LDW, and complete the Work in accordance with the sequencing requirements provided in Article 1.09 and in a manner that minimizes disruption to ongoing operational uses of the waterway and shoreline areas.
   1. Work Site access areas will be shared with tenants and property owners and other vessels that utilize the waterway for commercial operations.
   2. Coordinate Work Site upland construction activities, including Work Site access, parking, and lay down areas, with other operational activities, and keep disruptions to other activities to a minimum.

E. Coordinate work of sub-trades.
   1. The Project Representative is not responsible or accountable for extra costs incurred as a result of the Contractor's failure to coordinate work among trades and subcontractors.

F. All costs associated with coordination of the Work shall be considered incidental to the lump sum and unit prices set forth in the Bidding Schedule.

END OF SECTION

SECTION 01 19 50

PROTECTION AND MAINTENANCE OF PROPERTY AND WORK

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies protection and maintenance of underground and aboveground utilities, underwater power lines, structures, fences, parking strips, sidewalks, driveways, streets, and other improvements that may be affected by the work. This Section also specifies requirements for Contractor disposition of third-party claims in a timely manner.

1.02 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. Reference standards applicable to this Section are as follows:

REFERENCE	TITLE
RCW Chapter 19.122	Underground Utilities
WAC 296-155-657	Requirements for Protective Systems
WAC 296-24-960	Working on or Near Exposed Energy Parts

Notes:
RCW: Revised Code of Washington
WAC: Washington Administrative Code

1.03 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Construction submittals:
   1. Submit the following as part of the Weekly Construction Report:
      a. Listing and schedule of all potholing
      b. Listing of all utilities/facilities to be physically protected and relocated

1.04 LOCATION OF EXISTING UTILITIES

A. The Drawings indicate the existence of underground and underwater utilities known to the Owner within the proposed areas of excavation and dredging.

B. Coordinate efforts to locate existing underground utilities. Review with the Project Representative the locations of existing utilities in relation to the new construction and evaluate areas of conflict.

C. Obtain Project Representative written approval prior to removing or relocating existing utilities not identified or otherwise shown on the Drawings to be removed or relocated.

D. Abide by all the applicable requirements of Revised Code of Washington (RCW) Chapter 19.122.

E. Call Utility Underground Notification Center, phone number 811 for the location of underground utilities. Call a minimum of 5 working days in advance of excavation operations. Those utility owners who do not locate their utilities in accordance with RCW Chapter 19.122 are liable for costs incurred by the excavator. If the excavator discovers underground utilities that are not identified, the excavator shall immediately notify the owner and the Underground Notification Center of such utilities.

F. Be responsible to excavate and expose all major and minor existing utilities prior to new construction to determine utility elevations in relation to the new utilities.

G. Examine and repair all pipelines prior to pipelines being buried.

H. The following is a list of utilities that may serve the Work Site The listing is provided for the Contractor's convenience. The utility/facility owner or operator and the name and telephone number of a contact person are indicated for each utility listed. The list shall not be considered to be comprehensive or complete. There may be other utilities in the area that are not listed, and some of the names and telephone numbers in the listing may have changed since the information was compiled. The Owner assumes no responsibility for the accuracy or completeness of the information in the list.

UTILITY	OWNER OR AGENCY	CONTACT PERSON	CONTACT INFORMATION
Water	City Public Works Department	Tupou Fifita	(206) 684-3333
Water	Seattle Public Utilities		(206) 386-1849
Drainage and wastewater	Seattle Public Utilities		(206) 386-1800
Traffic	City Transportation		(206) 684-0353
Sewer	King County Metro Sewer		(206) 263-5722
Sewer	City utility		(206) 684-3000
Storm drainage	City utility		(206) 684-3000
Communications	Verizon/Zayo		(801) 364-1063
Communications	MCI		(800) 289-3427
Communications	Comcast Cable		(800) 934-6489
Gas pipeline	Washington Energy		(800) 398-4663
Gas pipeline	Olympic Pipeline	Spencer Rogerson	(206) 510-9303 Spencer.rogerson@bp.com
Fiber optics	ATT/Lumen	Suzi Renolds	(206) 678-6678
Fiber optics	Worldcom/Verizon		(800) 880-1077
Fiber optics	Zayo		(866) 364-6033
Fiber optics	Sprint/Wave Fiber		(866) 928-3123
Power	Puget Sound Energy Gas		(888) 728-9343
Power	Bonneville Power Administration		(800) 282-3713
Power	Seattle City Light		(206) 684-4239
Port	Port of Seattle		(206) 708-5089

I. Unless otherwise specified or approved by the Project Representative, protect, modify, and/or relocate all existing utilities required to complete the Work.

J. The locations of known existing major utilities, whether aboveground or underground, are indicated on the Drawings with the exception of overhead power or other aboveground utilities supported on power/telephone poles. This information has been obtained from utility maps and field surveys. The Owner does not guarantee the accuracy or completeness of this information, and it is to be understood that other aboveground or

underground utilities not shown on the Drawings may be encountered during the course of the Work. In the event that additional utilities are encountered during construction, the Contractor shall be responsible for protection and maintenance of the utility as prescribed in this Section.

K. Contact all utility owners or operators having underground utilities within the Work Site and request the marking of their utilities. Be responsible for damages resulting from any failure to contact utility owners for location, routing, and marking of a specific utility and its subsequent effects. Promptly notify the Project Representative prior to any work in the area of a utility where a utility owner fails to meet its obligations under RCW Chapter 19.122.

L. The Drawings may show underground utilities which are to be relocated. Unless otherwise specified, the Contractor shall be responsible for all these relocations prior to commencing work in the area.

M. Protect, modify, and relocate all existing utilities and utilities required to accommodate the Contractor's means and methods. Specific means and methods to be utilized by the Contractor are not known to the Owner. Therefore, the Owner will not be liable for utility protection, modification, and relocation not shown on the Drawings required by the Contractor due to its means and methods. It is the Contractor's responsibility to determine the requirements of the work required by the Contract Documents and make provision for protection, modification, and relocation required to perform the work. Coordinate all protection, modification, and relocation work through the affected utility. Work to be completed to the utility owners' requirements and standards.

N. Major underground utilities
   1. For the purpose of this Section, a major underground utility will be defined as a transmission, collection, or distribution line where it would be customary to expect drawings would exist for the line, and the utility owner would be aware of the line.
   2. An existing major underground utility is considered in conflict if it crosses or projects into the specified excavation at an elevation between the top and bottom of the proposed facility or when parallel to the new facility and projects into the specified excavation. If the new facility and existing major underground utility do not meet those requirements, then no conflict exists.
   3. Be responsible for all protection of, effects on, and damages to utilities not in conflict with the new facility.
   4. When not shown on the Drawings and in conflict with the new facility, meet and agree with the Project Representative on how to proceed. Reimbursement for additional work will be per Section 00 72 00 (General Terms and Conditions).
   5. When not shown on the Drawings and no conflict with the new facility exists, no additional payment will be considered.
   6. When in a substantially different location and not in conflict with the new facility, no additional payment will be considered.
   7. When in a substantially different location and in conflict with the new facility, reimbursement for additional work will be per Section 00 72 00 (General Terms and Conditions).

O. Minor underground utilities
   1. For the purpose of this Section, a minor underground utility will be defined as services from a collection or distribution line.
   2. Be responsible for all protection, effects, and damages on minor utilities not in conflict with the new pipeline or structure.
   3. The Owner is not responsible for costs resulting from conflicts in minor underground utilities.

P. Abandoned bridge cables shown on the Drawings in the vicinity of the South Park Bridge can be removed if encountered during dredging operations, as described in Section 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation).

Q. Coordinate efforts in locating existing underground utilities with field staking. Review the locations of existing utilities in relation to the new construction with the Project Representative and evaluate areas of conflict.

R. Temporary Support Systems: Submit detail drawings of proposed methods to support, protect, and buttress utilities affected by the work. Methods proposed are required to be reviewed and accepted by the affected utility prior to submittal per Section 01 33 00 (Submittals).

S. Storm and sanitary sewers:
   1. Existing live sewers shall remain in service. Adequate provision shall be made for disposal of existing sewage flow. Immediately repair construction damage to the existing sewer system and manholes to a condition equal to or better than that existing prior to the damage. Repair all damage that results from the disturbance of the existing sewer.
   2. Remove water accumulating during construction from the new sewers and prevent it from entering existing lines. Flush existing pipes affected by the construction to the point of the next upstream connection, and repair any pipelines or manholes damaged by gravel, rocks, or other debris that has entered the existing system during construction. The physical connection to an existing manhole or sewer line shall not be made until so authorized by the Project Representative.

T. Aboveground electrical, cable, and communication utilities
   1. Attention is called to all overhead items including, but not limited to, power and telephone lines, temporary traffic signals, traffic signal mast arms, overhead sign bridges, sign support span wires, signs, and streetlights.
   2. Observe the location of these overhead utilities, and plan and conduct work operations accordingly.
   3. Take precautions to protect and avoid damage to all overhead utilities.
   4. Relocate utilities as required to meet the means and methods to be utilized.
   5. Observe and investigate the presence of utilities that may be affected by the work. Consult with and rely on the information given by utility owners and operators to determine the extent of any hazards and measures required. Determine the extent of any hazard created by utilities in all areas, and follow approved safety procedures during the work.
   6. Support poles at risk of being undermined by the work.
   7. Follow the requirements of Washington Administrative Code (WAC) 296-24-960 for all energized primary conductors. For lines 50 kilovolts (kV) or less, at no time shall personnel or equipment approach closer than 10 feet to any energized primary conductors. For lines greater than 50 kV, meet the requirements of WAC 296-24-960.

U. Underground electrical, cable, communication, and gas utilities
   1. Determine the protection necessary to proceed safely to protect these underground utilities.
   2. Accuracy of maps provided for these utilities are semi-accurate, and consultation with providers prior to any spudding, dredging, digging, and excavation within 30 feet of crossing is required.
   3. Notify the Project Representative immediately of any such damage.
   4. Observe and investigate the presence of utilities that may be affected by the work. Consult with and rely on the information given by utility owners and operators to determine the extent of any hazards and measures required.
   5. On-site assistance/scheduling with 811 is required for any work near underground utility crossings.
   6. Completion notification of 811 tickets shall be required. As communication response time can take up to 2 weeks, do not proceed until notified specifically by the utility-locating contractor for each telecom provider.

V. Water
   1. As required by the appropriate utility, protect, maintain, support in place, or relocate all water pipelines affected by the work.
   2. Maintain water service along the alignment of work at all times.
   3. Thrust blocks are not shown on the Drawings and shall be assumed to be present at all water line deflections of 12.5º or greater.
   4. Notify the Project Representative immediately of any such damage. Begin repairs immediately, and work continuously until water service is restored.

W. Roadways
   1. Take adequate precautions to protect existing sidewalks, curbs, pavements, utilities, adjoining property, and structures, and to avoid damage thereto.
   2. Traffic signage, paint striping, and channelization shall be protected and replaced if necessary.
   3. Maintain the existing illumination pattern for signs and roads at all times unless otherwise specified.
   4. Install temporary roadway lighting as necessary.
   5. Access for emergency equipment shall be maintained at all times
   6. Repair any damage caused by the Contractor's activities.

1.05 SHORING AND BRACING

A. Shore up, brace, underpin, and protect as necessary the foundations and other parts of existing structures adjoining the Work Site that may be affected by the Work consistent with Section 32 32 10 (Bulkhead Wall Systems). Be responsible for any damages because of settlements or the loss of lateral or subjacent support of adjoining property and from all loss and damages to adjoining and adjacent structures and their premises.

B. Fully comply with the requirements of WAC 296-155-657 as applicable and Section 31 62 10 (Steel Pipe Piling) and Section 32 32 10 (Bulkhead Wall Systems).

1.06 PROTECTION OF PROPERTY

A. When conditions that may present a danger to the adjoining property or property in the immediate proximity of the work are present, notify the Project Representative and take all prudent actions.

1.07 PROTECTION OF TREES AND VEGETATION

A. Per Section 31 11 00 (Clearing and Grubbing).

1.08 PROTECTION AND RESTORATION OF THIRD-PARTY PROPERTY

A. The Contractor shall comply with the terms of Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements) and Section 01 70 00 (Closeout Requirements).

B. The Contractor shall comply with acceptable restoration criteria for third-party properties impacted by the Work as agreed upon in site access agreements.

C. The Contractor shall restore third-party properties to pre-construction conditions. Additional restoration requirements will be negotiated between the Contractor and appropriate third parties.

1.09 DISPOSITION OF THIRD-PARTY CLAIMS

A. The Contractor is responsible for all damage related to prosecution of the work. The Owner may receive notification of damages in writing from third parties as third-party claims as a result of the prosecution of the work. When these third-party claims are received by the Owner, they will be tendered to the Contractor. The Contractor is required to contact the claimant within 30 days of receipt of the claim from the Project Representative. The Contractor shall report to the Project Representative within 45 working days of receipt with the Contractor's proposed action on the claim. If the Contractor fails to contact the claimant within the time stipulated above or disposition the claim within 90 days of receipt, the Owner may disposition the claim with the third-party claimant and may withhold the amount of the settlement from the disposition from the next Application for Payment.

B. During all the procedural requirements listed above, the Contractor shall keep the Project Representative informed of the plan and actual progress.

PART 2 PRODUCT [NOT USED]

PART 3 EXECUTION

3.01 GENERAL

A. Contact Utility Underground Notification Service prior to an excavation per the requirements in Part 1, General.

B. Employ a licensed third-party utility locator to locate and expose all utility locations (upland and underwater) to be affected by the Work prior to new construction in the area of the utility. The Contractor shall adjust Work when location of utility is different than shown on the Drawings and materially impacts construction. If the utility

requires relocation not shown on the Drawings, and the Contractor incurs additional cost, then the Owner will consider additional costs.

1. Relocation of minor utilities such as irrigation lines with diameters less than 4 inches, water service lines, building drainage pipes, and direct burial cable will be considered incidental and not considered for additional costs.

C. If damage to a utility occurs, repair damage to the requirements of the utility owner prior to backfilling said utility.

END OF SECTION

SECTION 01 29 00

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SUMMARY

A. Measurement is described under each Bid Item in this Section.

B. Payment for the various items on the Bidding Schedule, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of Work being described, as necessary to complete the various items of the Work, all in accordance with the requirements of the Contract Documents, including all appurtenances thereto and including all costs of compliance with the regulations of public agencies having jurisdiction, including safety and health requirements of the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor.

1.02 ADMINISTRATIVE

A. No separate payment will be made for any Bid Item that is not specifically set forth in the Bidding Schedule, and all costs therefore shall be included in the prices named in the Bidding Schedule for the various appurtenant items of Work.

B. Payment for Work under one item will not be paid for under any other item.

C. Indirect costs, such as supervision and overheads, profit, and the general conditions specified in the Contract, all shall be allocated to each Bid Item as applicable for Work defined in the Bid Item. No separate payment will be made to the Contractor for these items.

D. The Owner reserves the right to make changes should unforeseen conditions necessitate such changes. Where Work is on a unit price basis, the actual quantities occasioned by such changes shall govern the compensation.

1.03 BID ITEM MEASUREMENT AND PAYMENT FOR BASE WORK

A. The Bidding Schedule A (Base Work) is divided into numerous Bid Items that are defined as follows. Bid Item Nos. A1 through A19 represent the entire scope of Work covered by the Contract Documents.

B. Bid Item No. A1.1 – Mobilization and Demobilization (Construction Season 1), Bid Item No. A1.2 – Mobilization and Demobilization (Construction Season 2), and Bid Item No. A1.3 – Mobilization and Demobilization (Construction Season 3):
   1. Mobilization shall include all Work required for each Construction Season to prepare and mobilize the Contractor's dredging equipment, material placement equipment, and all other required equipment, labor, supplies, and incidentals for transit to the Work Site; and making ready for Work. Demobilization shall include project closeout; all things necessary to remove all construction equipment and remaining materials from the Work Site; and the cleanup of the Work Site to a condition satisfactory to the Owner and Project Representative at completion of the Work. These Bid Items shall also include costs for each Construction Season related to development and implementation of all environmental protection measures, preparation of pre-construction (including the Remedial Action Work Plan [RAWP]) and post-construction submittals, closeout submittals, Project Record Documents (including Record Drawings), and maintaining bonds and insurance, as required.
      a. Items which are not to be included in these Bid Items are: any portion of the Work covered by a specific Bid Item or other incidental Work which is to be included in a Bid Item.
      b. Preparation and revisions of the RAWP shall be accounted by the Contractor in Construction Season 1 Work under Bid Item Bid Item No. A1.1 – Mobilization and Demobilization (Construction Season 1),

2. Mobilization and demobilization for each Construction Season will not be measured for payment.
3. Payment for these Bid Items shall be made as lump sum payments, as accrued for each Construction Season, based on the percent complete estimated by the Contractor and agreed to by the Owner, as part of each monthly progress payment.
4. The total prices for Bid Items No. A1.1, A1.2, and A1.3 shall reflect the actual mobilization and demobilization costs for each of the three Construction Seasons.
5. The sum of total prices for Bid Items No. A1.1, A1.2, and A1.3 (equivalent to the combined three Construction Seasons) shall not be greater than 10% of the Contract Price allocated for combined mobilization plus demobilization expenses for the Project.

C. Bid Item No. A2.1 – Work Site Preparation and Temporary Facilities Setup and Operations (Construction Season 1), Bid Item No. A2.2 – Work Site Preparation and Temporary Facilities Setup and (Construction Season 2), and Bid Item No. A2.3 – Work Site Preparation and Temporary Facilities Setup and Operations (Construction Season 3):
   1. The lump sum prices presented in the Bidding Schedule for these Bid Items shall include all materials, labor, and equipment needed to complete the following Work for each Construction Season:
      a. Contractor field location of the Staging and Stockpile Area(s) (as shown on the Drawings), Contractor Transload Facility(ies), existing utilities, and Work Site features in adjacent upland areas
      b. Setup, operation, maintenance, and deconstruction of the Staging and Stockpile Area(s) and the Contractor Transload Facility(ies) throughout the duration of each of the three Construction Seasons of the Project
      c. Establishment of Contractor offices, Project Representative's field office, and other facilities necessary for work on the Project, including provision for installation of temporary utilities, as described in Sections 01 52 00 (Construction Facilities) and 01 52 01 (Project Representative Field Office)
      d. Completion of all clearing and grubbing of vegetation, as described in Section 31 11 00 (Clearing and Grubbing)
      e. Electrical work including removal and relocation of existing electrical systems, equipment, and lighting, as well as new Work to support the relocation of existing items.
      f. Utility removal may include the following:
         1) Cut and cap storm drain line at limit of shoring wall excavation.
         2) Cut and cap abandoned water line at extents of excavation zone.
      g. Extension of existing storm drainage outfalls
   2. Site preparation and temporary facilities setup and operations for each Construction Season will not be measured for payment.
   3. Payment for these Bid Items will be made as lump sum payments, as accrued for each Construction Season, based on the percent complete estimated by the Contractor and agreed to by the Owner, as part of each monthly progress payment.
   4. The lump sum prices for these Bid Items shall include costs for furnishing all labor, materials, equipment, and incidentals required to complete the Work under these Bid Items.

D. Bid Item No. A3 – Surveying and Positioning Control:
   1. Surveying will be paid as monthly payments as accrued for each Construction Season, based on the percent complete estimated by the Contractor and agreed to by the Owner, as part of each monthly progress payment.
   2. Payment for this Bid Item will be made as monthly payments, as accrued for each Construction Season, as part of each monthly progress payment.
   3. The monthly price shall include all costs in connection with setup of Work Site survey control monuments, collection, processing, and reporting of all survey data (Pre-Construction, Progress, and Post Construction Surveys) that shall be used to calculate or verify progress and measurement and payment volumes, areas, limits, positions, and other aspects of the Work, and calculating quantities for progress reporting and measurement and payment purposes, as described in this Section.

E. Bid Item No. A4 – Identified Debris Removal, Upland Transportation, and Disposal:
   1. Measurement for this Bid Item shall be by the TON of Identified Debris (as shown on the Drawings) removed and segregated, as determined from certified scales, verified by disposal weight tickets, and as accepted by the Project Representative.

a. Failure to keep Identified Debris segregated from Dredge Debris will result in the combined Debris material to be considered Dredge Debris. Dredge Debris is incidental to the Work and not measured or paid for separately.

2. Payment for this Bid Item will be made by the TON at the quantity reported by the Disposal Facility to the maximum tonnage shown in the Bidding Schedule. Payment will be full compensation for removal and segregation of Identified Debris and transloading, upland transportation, and disposal. Payment for the Work will be made when the Contractor provides the Certificate of Disposal from the Disposal Facility. Certificates of Disposal will be reported as a tonnage measurement.

F. Bid Item No. A5 – Required Dredging and In-Water Transportation:
1. Measurement for this Bid Item (and inclusive of any barge dewatering) shall be by the in situ cubic yard (CY) of Dredge Material and Dredge Debris, based on comparison of the approved Project Pre-Construction Survey and Required Dredging Post-Construction Survey (following completion of Required Dredging), minus deductions for Excessive Dredging.
2. Payment for this Bid Item (and inclusive of any barge dewatering) will be made by the in situ CY of Dredge Material and Dredge Debris at the measured quantity.
   a. Final payment for this Bid Item will be based on the final measurement of Dredge Pay Volume, and final payment will be reconciled with monthly progress payments (submitted by the Contractor and accepted by the Project Representative) to determine the amount of final payment.
   b. No separate payment will be made for Work associated with removal, barge movement, and in-water transportation of Dredge Debris during Required Dredging. Activities associated with the removal, barge management, and in-water transportation of Dredge Debris during Required Dredging is considered incidental to Required Dredging Work and will be paid under this Bid Item.

G. Bid Item No. A6 – Contingency Re-Dredging and In-Water Transportation:
1. Measurement for this Bid Item (and inclusive of any barge dewatering) shall be by the in situ CY of Dredge Material, based on comparison of the Required Dredging Post-Construction Survey and Contingency Re-Dredging Post-Construction Survey (following completion of Contingency Re-Dredging), minus Excessive Dredging.
2. The Contractor shall assume a Contingency Re-Dredge Decision Duration of 15 working days (as described in Section 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation) and shall account for this time in this Bid Item.
3. Payment for this Bid Item (and inclusive of any barge dewatering) will be made by the in situ CY of Dredge Material at the actual measured quantity.
   a. Final payment for this Bid Item will be based on the final measurement of Contingency Re-Dredge Pay Volume, and final payment will be reconciled with monthly progress payments (submitted by the Contractor and accepted by the Project Representative) to determine the amount of final payment.
   b. No separate payment will be made for Work associated with removal, barge management, and in-water transportation of Dredge Debris during Contingency Re-Dredging. Activities associated with removal, barge management, and in-water transportation of Dredge Debris during Contingency Re-Dredging is considered incidental to the Contingency Re-Dredging Work and will be paid under this Bid Item.
   c. Bid unit price for Bid Item No. A6 shall be constant, regardless of the actual measured volume. No negotiation on the unit price for this Bid Item is allowed for variation on the Bid volume presented in the Bidding Schedule.

H. Bid Item No. A7 – Transloading, Upland Transportation, and Disposal:
1. Measurement for this Bid Item shall be the sum of the Dredge Pay Volume (associated with Required Dredging Work) and the potential Contingency Re-Dredge Pay Volume (associated with Contingency Re-Dredging Work), measured by the TON, as determined from certified scales, verified by disposal weight tickets, and as accepted by the Project Representative.
2. Payment for this Bid Item will be made by the TON at the quantity reported by the Disposal Facility to the maximum tonnage shown in the Bidding Schedule. Payment will be full compensation for transloading, upland transportation and disposal of the equivalent tonnage of the sum of the Dredge Pay Volume (associated with Required Dredging Work) and the potential Contingency Re-Dredge Pay Volume (associated with Contingency Re-Dredging Work).
   a. Payment for the Work will be made when the Contractor provides the Certificate of Disposal from the Disposal Facility. Certificates of Disposal will be reported as a tonnage measurement.

3. The unit price for this Bid Item will not be adjusted for any reason.

I. Bid Item No. A8 – Purchase and Placement of Backfill Material:
   1. Measurement for this Bid Item placed within the placement areas shown on the Drawings will be made by the in situ CY.
      a. Measurement will be based on comparison of the Pre-Construction Survey (as defined in Section 02 21 00 – Site Surveys and Positioning Control) and Placement Post-Construction Survey, with deductions made for Excessive Overplacement and deductions made for material placed above the Vertical Placement Tolerance.
   2. Payment for this Bid Item will be made by the in situ CY at the measured quantities.
      a. It is the Contractor's responsibility to calculate and plan for the actual volumes and/or tonnage of Backfill Material that are required to achieve either the Targeted Placement Thickness or Targeted Placement Elevation (as shown on the Drawings), taking into consideration material consolidation and overall material loss.

J. Bid Item No. A9 – Purchase and Placement of ENR Material, Bid Item No. A10 – Purchase and Placement of Amended Cover Material, Bid Item No. A11 – Purchase and Placement of Required RMC Material and Inner Perimeter RMC Material, Bid Item No. A12 – Purchase and Placement of Engineered Cap A Material, and Bid Item No. A13 – Purchase and Placement of Engineered Cap B Material:
   1. Measurement for these Bid Items for ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Engineered Cap A, and Engineered Cap B materials placed within the placement areas shown on the Drawings will be made by the square yard (SY). Measurements will be based on comparison of Pre-Construction Surveys (as defined in Section 02 21 00 – Site Surveys and Positioning Control) and Placement Post-Construction Surveys for ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Engineered Cap A, and Engineered Cap B materials placed above the Minimum Required Thicknesses and within the limits shown on the Drawings to determine the surface area to be accepted as complete by the Project Representative.
   2. The unit prices presented in the Bidding Schedule for Bid Item No. A9 – Purchase and Placement of ENR Material, Bid Item No. A10 – Purchase and Placement of Amended Cover Material, Bid Item No. A11 – Purchase and Placement of Required RMC Material and Inner Perimeter RMC Material, Bid Item No. A12 – Purchase and Placement of Engineered Cap A Material, and Bid Item No. A13 – Purchase and Placement of Engineered Cap B Material shall include all materials, labor, and equipment needed (including any incidentals) to complete ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Engineered Cap A, and Engineered Cap B placement Work:
      a. The Contractor shall be responsible for calculating the placement volumes of ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Engineered Cap A, and Engineered Cap B materials necessary to meet the requirements of the Work, as shown on the Drawings and as described in Section 35 37 10 (Material Placement).
   3. Payment for these Bid Items will be made by the SY at the quantities measured, to the maximum SY shown in the Bidding Schedule.

K. Bid Item No. A14 – Purchase and Placement of ENR Material for SMA-c1:
   1. Measurement for this Bid Item for ENR material placed within the SMA-c1 placement areas shown on the Drawings will be made by the SY. Measurements will be based on comparison of Project Pre-Construction Surveys and Placement Post-Construction Surveys for ENR material placed in SMA-c1 above the Minimum Required Thicknesses and within the limits shown on the Drawings to determine the surface area to be accepted as complete by the Project Representative.
   2. The unit price presented in the Bidding Schedule for Bid Item No. A14 – Purchase and Placement of ENR Material in SMA-c1 shall include all materials, labor, and equipment needed (including any incidentals) to complete ENR placement Work:
      a. The Contractor shall be responsible for calculating the placement volumes of ENR material necessary to meet the requirements of the Work, as shown on the Drawings and as described in Section 35 37 10 (Material Placement).
   3. Payment for this Bid Item will be made by the SY at the quantities measured, to the maximum SY shown in the Bidding Schedule.

L. Bid Item No. A15 – Piling Removal:
   1. Measurement for this Bid Item shall be by Piling unit. Dismantling, extraction, and removal of designated treated and untreated timber Pilings located in remedial areas, as shown on the Drawings and required by the Specifications, regardless of the method of extraction/removal and Piling material, will be measured individually per Piling removed.
   2. Payment for this Bid Item will be made by the pile unit (timber Pilings).
      a. Payment by the Piling unit includes all equipment, labor, methods, and materials necessary for Piling removal.

M. Bid Item No. A16 – Piling Transloading, Upland Transportation, and Disposal:
   1. Measurement for this Bid Item shall be by the TON of Pilings (as shown on the Drawings) transloaded, transported, and disposed, as determined from certified scales, verified by disposal weight tickets, and as accepted by the Project Representative.
   2. Payment for this Bid Item will be made by the TON at the quantity reported by the Disposal Facility to the maximum tonnage shown in the Bidding Schedule. Payment will be full compensation for transloading, upland transportation, and disposal of Pilings. Payment for the Work will be made when the Contractor provides the Certificate of Disposal from the Disposal Facility. Certificates of Disposal will be reported as a tonnage measurement.

N. Bid Item No. A17 – Piling Replacement:
   1. Measurement for steel Pilings for this Bid Item shall be by Piling unit.
   2. Payment for this Bid Item will be made by steel Piling installed.
      a. Payment for Pilings shall include all equipment, labor, and materials necessary to construct the Pilings, as indicated on the Drawings and required by the Specifications, including but not limited to coating and accessories, to complete the Work.

O. Bid Item No. A18 – Bulkhead Wall 1 (Bulkhead Strengthening and Reinforcing):
   1. Measurement for this Bid Item shall be by the SF for steel sheet pile reinforcing, measured from top of pile elevation to the bottom of pile elevation and beginning and end wall limits, as indicated on the Drawings, with no allowance for variable depth surface profiles.
   2. Payment for steel sheet pile reinforcing shall be per SF installed.
      a. Payment shall include all equipment, labor, and materials, as indicated on the Drawings and as described in the Specifications, including but not limited to void space end closure and backfill.

P. Bid Item No. A19 – Outfall Energy Dissipation Structure:
   1. This Bid Item will not be measured for payment of activities associated with outfall energy dissipation structure.
   2. Payment for this Bid Item will be made by lump sum.
      a. Payment for this Bid Item shall include all equipment, labor, and materials to construct the outfall energy dissipation structure, as indicated on the Drawings and described in the Specifications, including but not limited to excavation, installation of geotextile filter fabric, Gabions, Gabion Mattresses, stone fill, and removal and disposal of excess construction material.

Q. Payment will be based on the percentage of completion of each item in the Schedule of Values (see Section 01 32 16 – Construction Progress Schedules).

1.04 BID ITEM MEASUREMENT AND PAYMENT FOR OPTIONAL AND ADDITIVE WORK

A. The Bidding Schedule B (Optional and Additive Work) is divided into numerous Bid Items defined as follows. Bid Item Nos. B1 represent optional and additive scope of Work, potentially covered by the Contract Documents and to be completed as directed by the Project Representative.

B. Bid Item No. B1 – Purchase and Placement of Contingent Outer Perimeter RMC Material:
   1. Measurement for this Bid Item for Contingent Outer Perimeter RMC material placed within the placement areas shown on the Drawings will be made by the SY. Measurements will be based on comparison of Pre-Construction Surveys and Placement Post-Construction Surveys for Contingent Outer Perimeter RMC material placed (as directed by the Project Representative based on confirmatory sampling) above the

Minimum Required Thicknesses and within the limits shown on the Drawings to determine the surface area to be accepted as complete by the Project Representative.

2. The unit price presented in the Bidding Schedule for this Bid Item should be equal to the unit price in Bid Item No. A11 – Purchase and Placement of Required RMC Material and Inner Perimeter RMC Material
   a. The unit price for this Bid Item shall include all materials, labor, and equipment needed (including any incidentals) to complete the placement Work within the Contingent Outer Perimeter RMC.
   b. The Contractor shall be responsible for calculating the placement volume of the Contingent Outer Perimeter RMC material necessary to meet the requirements of the Work, as shown on the Drawings and as described in Section 35 37 10 (Material Placement).
3. Payment for this Bid Item will be made by the SY at the actual measured quantity.
4. Bid unit price for Bid Item No. B1 shall be constant, regardless of the actual measured area. No negotiation on the unit price for this Bid Item is allowed for variation on the Bid area presented in the Bidding Schedule.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION [NOT USED]

END OF SECTION

SECTION 01 31 19

CONTRACT MEETINGS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies Contract meetings prior to and during construction. Contract meetings include the Pre-Construction Meeting, Progress Meetings, Tailgate Meetings, construction sequencing coordination meetings, and other coordination meetings throughout the duration of the Project.

1.02 DESCRIPTION OF WORK

A. Attend all required meetings (including Pre-Construction Meetings and Progress Meetings) and provide required preparation and follow-up materials.

B. Complete the following activities regarding administration of meetings throughout the progress of the Work:
   1. Schedule and administer Tailgate Meetings and additional construction coordination meetings as required or at the request of the Project Representative.
   2. Provide physical space and make arrangements for Tailgate Meetings.
   3. Preside at Tailgate Meetings.

C. Representatives of the Contractor, subcontractors, and suppliers attending Progress Meetings will be qualified and authorized to act on behalf of the party each represents.

D. No separate payment will be made for effort associated with Work described in this Section. Work required to comply with this Section is considered incidental to all other activities described in the Contract Documents.

1.03 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Pre-Construction Meeting: The Pre-Construction Meeting is defined as the coordination meeting with the Owner, the Project Representative, and the Contractor prior to the start of Work. The Owner shall schedule a Pre-Construction Meeting for each Construction Season following the Notice to Proceed.

C. Progress Meetings: Progress Meetings are meetings between the Project Representative and Contractor that will occur at least once per week throughout the duration of the Project.

D. Tailgate Meetings: Tailgate Meetings are meetings between the Project Representative, Contractor, and others working on site (subcontractors) that will occur at the start of each work shift and throughout the duration of the Project. The Contractor shall be responsible for scheduling, at minimum, daily Tailgate Meetings.

1.04 PRE-CONSTRUCTION MEETING

A. Following the Notice to Proceed, the Owner shall notify the Contractor of the time, date, and location of the Pre-Construction Meeting.

B. Pre-Construction Meetings will be held prior to the start of each Construction Season.

C. The Project Representative will chair a meeting of representatives of the Contractor, Owner, and other affected agencies prior to beginning construction. The purpose of the meeting will be to do the following:
   1. Establish lines of authority and communication within the Contract team.
   2. Discuss the administrative requirements of the Contract.

3. Distribute forms to the Contractor to be utilized on the Contract. Specific forms (such as inspection report forms in Section 09 90 62 – Coating of Steel Piles) shall be provided by the Contractor (or designated coating inspector).
4. Address Project issues if needed.
5. Define the duties and responsibilities of all parties.

D. Attendance
   1. The following are required to attend the Pre-Construction Meeting:
      a. Owner representatives
         1) Project Manager
         2) Project Representative
         3) Contract Administrator
         4) Consultants
         5) Inspectors
         6) Other personnel designated by the Owner
      b. Contractor's representatives
         1) Project Manager
         2) Contractor Field Superintendent
         3) Contractor Quality Control Officer
         4) Contractor Site Health and Safety Officer
         5) Major subcontractors for the Projects activities (e.g., dredging, material placement, structural work, or surveys)
      c. Agency representatives
         1) U.S. Environmental Protection Agency (EPA) and EPA-designated representatives

E. Agenda for Pre-Construction Meeting:
   1. Be prepared to discuss and/or provide, at a minimum, the following information:
      a. The detailed Work: sequence, phasing, and occupancy
      b. The Draft Project Schedule
         1) The Contractor shall prepare a Draft Project Schedule for discussion at the Pre-Construction Meeting (see Section 01 32 16 – Construction Progress Schedules for Draft Project Schedule requirements).
      c. A schedule of submittals, including but not limited to the Remedial Action Work Plan and all its parts (see Section 01 33 00 – Submittals) and health and safety including but not limited to security, first aid, and decontamination procedures
      d. Environmental controls and protection
      e. Mobilization plans
      f. Job communications
      g. Equal employment regulations
      h. Contractor’s use of the premises
      i. A Progress Meeting schedule
      j. Administrative procedures of the Contract including but not limited to the following:
         1) Field decisions
         2) Proposal requests
         3) Submittals
         4) Change Orders
         5) Application for Payment
         6) Other
      k. Record Documents
      l. Permits (if applicable), easements, community relations, and response to community concerns
      m. Requirements for temporary facilities, Work Site sign, offices, storage sheds, utilities, and fences
      n. Surveys
      o. Security procedures
      p. Housekeeping procedures
      q. Other issues agreed between Contractor and Owner
   2. Present and distribute the following information:
      a. A list of major subcontractors and suppliers

b. The Draft Project Schedule
c. The Draft Schedule of Values

3. Pre-Construction Meeting minutes:
   a. The Project Representative will record the Pre-Construction Meeting minutes, including significant proceedings and decisions, and identify actions by parties. The Project Representative will distribute draft minutes within 3 working days to the meeting participants for review and comment. The Project Representative will provide a revised, final copy of Pre-Construction Meeting minutes to the meeting participants.

1.05 PROGRESS MEETINGS

A. General
   1. During the course of the Work, the Project Representative will schedule and host Progress Meetings at least once per week.
      a. The Project Representative will arrange and lead the Progress Meetings, prepare standard agenda with copies for participants, preside at meetings, record meetings, and distribute draft minutes within 3 working days to the meeting participants for review and comment. The Project Representative will provide a revised, final copy of Progress Meeting minutes to the meeting participants.
   2. The Contractor shall attend weekly Progress Meetings to discuss the issues and progress of the Project.
   3. The Contractor shall arrange for attendance of subcontractors as necessary to discuss Work progress.
   4. Meeting time is to be mutually agreed to between the Project Representative and Contractor.

B. Attendance at Progress Meetings
   1. Attendance may be required from the following, as appropriate to the agenda topics for each meeting:
      a. Project Representative and other Owner staff
      b. Contractor's Representative and other Contractor staff
      c. Other contractors
      d. Subcontractors
      e. Contractor Site Health and Safety Officer
      f. Contractor Field Superintendent
      g. Contractor Quality Control Officer
      h. Representatives of governmental agencies, other regulatory agencies, or utilities

C. Agenda for Progress Meetings
   1. In general, the agenda for each meeting is to be agreed to by the Contractor and Project Representative and may include items such as the following:
      a. Review of progress on action items from prior meetings
      b. Review of work progress since the last meeting compared to the look-ahead schedule.
      c. Three-Week Look-Ahead Schedule for the upcoming period
      d. Identification of problems that might impede planned progress
      e. Review and discussion of water quality monitoring results
      f. Updated Project Schedule
         1) Effect of proposed changes on progress schedule and coordination
      g. Development of corrective measures and procedures to regain planned schedule
      h. Construction deficiencies
      i. Contract administrative deficiencies, including the following:
         1) Request for information status
         2) Submittal status
         3) Field directive status
         4) Current or potential Change Orders
         5) As-built status
      j. Coordination of projected work with other contractors
      k. Coordination requirements with tenants and property owners
      l. Issues the Contractor considers additional scope, cost, or impact to the Contract
      m. Pay request (as required)
      n. Review of Project health and safety and identification and discussion of areas of concern
      o. Other items as required by the Project Representative, Owner, or Contractor

1.06 TAILGATE MEETINGS

A. During the course of the Work, the Contractor shall schedule Tailgate Meetings to occur at the start of each work shift. Multiple Tailgate Meetings shall be required if the Contractor intends to work multiple shifts within a 24-hour period.

B. Tailgate Meeting agendas shall include, at a minimum, the following:
   1. Signing in of all attendees
   2. Planned work activities and environmental considerations for that shift
   3. Hazards associated with these work activities, including environmental hazards (e.g., potential for hypothermia, heat exhaustion, or heat stroke)
   4. Appropriate job-specific safe work procedures
   5. Required personal protective equipment
   6. Appropriate emergency procedures

1.07 ADDITIONAL CONSTRUCTION COORDINATION MEETINGS

A. Attend additional construction coordination meetings. These meetings will be in addition to the regular weekly Progress Meetings specified in Article 1.05.

B. The construction coordination meetings will be scheduled as deemed necessary by the Project Representative and may be attended by the Contractor or subcontractors working on or scheduled to work on the Work Site.
   1. Depending on the circumstances, the meetings may be scheduled with as little as 24 hours of advance notice.
   2. The meeting will be attended by the Contractor or an authorized designee with the authority to direct or modify the Contractor's activities.
   3. Depending on the nature of the discussions, subcontractors may be required by the Project Representative to attend the meeting(s).
   4. Meetings may last up to 2 hours.

PART 2 PRODUCTS

2.01 MEETING RECORD

A. The Project Representative will record the following:
   1. A list of issues discussed
   2. Agreements
   3. Follow-on action items required by either the Contractor or Owner
   4. Construction deficiencies noted
   5. Contract administrative deficiencies noted
   6. Project safety issues

PART 3 EXECUTION [NOT USED]

END OF SECTION

SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULES

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies requirements and procedures for preparing Project Schedules, the Draft and Baseline Project Schedules, the Monthly Update Project Schedule, the Schedule of Values, and the Three-Week Look-Ahead Schedule, and reports.

1.02 DESCRIPTION OF WORK

A. Incorporate milestones and constraints including, but not limited to, those indicated on the Drawings and in Section 01 11 00 (Summary of Work), Section 01 14 00 (Work Restrictions), and Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).

B. No separate payment will be made for effort associated with work described in this Section. Work required to comply with this Section is considered inclusive to all other activities described in the Contract Documents.

C. Purpose
   1. Project Schedule
      a. To ensure planning to execute the work in the required Contract Time and avoid conflicts with other concurrent construction
      b. To establish and monitor the scheduling and progress of Contract work activities
      c. To assist the Project Representative in monitoring progress and for the assessment of Contract change impacts
      d. To assist the Project Representative and Contractor in determining the completed work for processing of the Application for Payment
   2. Schedule of Values
      a. To provide an allocation of the Contract Price for measurement of monthly progress and payment
   3. Reports
      a. To provide a qualitative and quantitative record of work progress, planned progress, Project Schedule changes, and monthly progress payment

D. Use the scheduling technique known as the Critical Path Method (CPM). Use the Precedence Diagramming Method in preparing the CPM diagrams and calculations.

E. Failure to comply with the requirements of this Section will be cause for delay in review and acceptance of the Application for Payment. See Section 00 72 00 (General Terms and Conditions).

F. Failure to properly schedule the project and provide the required reports as set forth in this Section will adversely impact the ability of the Owner to manage its responsibility regarding time and cost management.

G. Use the scheduling software Primavera P6.

1.03 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Draft Project Schedule
   1. As part of the Remedial Action Work Plan (RAWP), the Contractor shall initial the CPM schedule for the Contractor's detailed Work that includes the early start/finish and late start/finish dates for each Contract

activity, milestone, constraint, significant Contract activities, and procurement of critical materials specified in Divisions 1 through 35. See Draft Project Schedule detailed requirements in Article 1.07.

C. Baseline Project Schedule
   1. Includes revisions from the review comments of the Draft Project Schedule submittal.
   2. The Contractor shall prepare weekly updates of its Baseline Project Schedule, reflecting the progress of the Work. Weekly updates shall be submitted to the Project Representative at the Weekly Construction Meeting in the form of the Three-Week-Look-Ahead Schedule.
   3. A CPM cost-loaded schedule that includes the Contractor's complete plan and all the necessary activities to perform the Contract work within the Contract Time, including milestones and constraints defined in the Contract.

D. Schedule of Values
   1. Schedule of Values identifies the various activities of the Contract work and their values and quantities, including the overhead and profit of each activity.
   2. Cost information presented in a tabular Microsoft Excel 2013 or newer format to be used as a tool to track status of each activity monthly.

E. Monthly Update Project Schedule
   1. Updates to the Baseline Project Schedule show the current construction schedule that reflects actual progress to date, updating all changes to the Contract, and the schedule plan to complete the work within the Contract Time.

F. Three-Week Look-Ahead Schedule
   1. A 3-week detailed look at work activities planned for this period: scope of detail is to review the past week of progress and future 3 weeks of planned work activities.
   2. Provide this schedule with greater detail than the CPM and prepare it in a format that includes references to appropriate CPM schedule activity numbers and work breakdown.
   3. The Three-Week Look-Ahead Schedule shall coordinate with the Monthly Update Project Schedule.

G. Cost-Loaded Schedule
   1. The Baseline Project Schedule and Monthly Update Project Schedule, in which each individual schedule activity has appropriate cost information for development of the required cash flow reports and to coordinate with the monthly Schedule of Values for the Application for Payment

1.04 SUBMITTALS

A. See Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals
   1. Schedules
      a. Submit all schedules as accessible electronic data files in the software format in which it was created. At a minimum, the data files shall provide the CPM network diagram; tabular report listing of each activity sorted by Early Start and Total Float; logic tie report, providing the predecessor and successor for each activity; precedence diagram; and earned value projections.
      b. Draft Project Schedule:
         1) Submit as part of the RAWP and provide for the Pre-Construction Meeting (identified in Section 01 31 19 – Contract Meetings). This submittal will be reviewed by the Owner as required in Section 01 33 00 (Submittals) to verify the requirements in this Section have been met and may require more than one submission by the Contractor to attain a Review Action of "1" (No Exceptions Taken) or "2" (Note Markings). When the Draft Project Schedule receives a review status of "1" or "2," compile and note all comments and submit as the Baseline Project Schedule.
      c. Baseline Project Schedule:
         1) The Contractor is not entitled, nor is the Owner required to make any progress payments for work until the Baseline Project Schedule has received a Review Action of "1" or "2." No more than one progress billing will be paid without an approved Baseline Project Schedule.

d. Schedule of Values
    1) Submit the initial Schedule of Values with the submission of the Draft Project Schedule.
    2) Submit the final Schedule of Values with the submission of the Baseline Project Schedule.

2. Construction Submittals
    a. Monthly Update Project Schedule: Submit with each Application for Payment.
    b. Three-Week Look-Ahead Schedule:
        1) Submit during each Progress Meeting per Section 01 31 19 (Contract Meetings).

C. Reports
1. Monthly progress reports
    a. Submit with each Application for Payment.
    b. Include an updated construction bar chart, Schedule of Values, cash flow projection, and narrative summary.
    c. The narrative summary briefly describes the progress of the Project. The monthly progress report will describe how the Project is progressing toward its completion. It shall identify milestones completed, major equipment deliveries, and problems arising during the month. The monthly progress report should project the work anticipated during the coming month, including major deliveries and submittals.
2. Recovery Schedule Plan
    a. Submit as described in Article 3.03 when requested by the Project Representative.

1.05 QUALIFICATIONS

A. Submit names and qualifications of the personnel used for the preparation and maintenance of the schedule and reports. Demonstrate in the Statement of Qualifications that the individual(s) preparing the Baseline Project Schedule and Monthly Update Project Schedules are experienced and proficient in the use of the scheduling software. Changes in the person(s) named require submittal of the qualifications of the new person(s) to the Project Representative for acceptance.

1.06 SCHEDULES AND REPORT PREPARATION

A. The Project Representative may provide sample forms at the Pre-Construction Meeting for Contractor use.

B. Any schedule having an early completion date (less than the Contract Time) shall show the time between the early completion date and Contract Time date as “float.”

C. Schedule Format
1. The Baseline Project Schedule and each Monthly Update Project Schedule in CPM format clearly showing the Critical Path
2. Work breakdown structure
    a. Work breakdown structure is a project-oriented tree subdivision of the activities required to produce the end product.
    b. At a minimum, break the schedule down and band the activities together into the categories listed in the bid schedule and into the following categories:
        1) For each Section in Divisions 1 through 35
        2) Procurement of major materials, including buyout/issuance of purchase orders
        3) Required milestones, if any
        4) Listed constraints
        5) Shutdowns and/or outages
        6) Preparation and submittal of all material and equipment as shown in the Specifications
        7) Submittal and review per Section 01 33 00 (Submittals)
        8) Record drawing preparation and submission
        9) Report and schedule preparation per this Section
        10) Closeout activities
    c. Track fabrication and delivery activities of major items to be incorporated into the Work.
    d. Include all data files created by the software with the schedule. This shall include, but is not limited to, all required reports.

3. In preparing the schedule, allocate the Work into discrete activities such that the duration of each activity does not exceed 30 calendar days, and construction activity values do not exceed $50,000, unless approved otherwise by the Project Representative. Non-construction activities (e.g., submittals, procurement, fabrication, punch list, operations and maintenance manuals, training) may have durations in excess of 30 calendar days.
4. The activity master list includes the following information from each activity:
    a. Activity number
    b. Activity description
        1) Adequately describes the activity as if it were looked at by itself.
    c. Performing Organization
        1) Identification of company or firm performing the activity
    d. Activity value
        1) Rounded to nearest hundred dollar, with prorated overhead and profit applied to each activity
    e. Major activity identifier
        1) The code for activity relationship to the work breakdown structure
5. Activities related to submittals and procurement shall reflect subsets showing submittal preparation, submittal and review time for shop drawings, product data, samples, fabrication and delivery time, as-built drawings preparation, and preparation of submissions of operations and maintenance manuals.
6. Cost load for every activity
    a. Each activity should have cost load in its value as determined in the preparation of the activity.
    b. Certain activities have defined payment constraints in these Specifications.
        1) Progress schedule and reports: per this Section
        2) As-Built Record Drawings/Documents: per Section 01 78 39 (Project Record Documents).
7. Mobilization and demobilization
    a. Schedule shall include hours of work, identification of holidays and other non-workdays applicable to the schedule, constraints and milestones defined in Sections 01 14 00 (Work Restrictions) and 01 41 26 (Permits, Easements, and Right-of-Entry Agreements), and other Sections within the Contract Documents.
8. Prepare network diagrams on 11- × 17-inch or larger sheets. Network diagrams shall include the following contents for each activity:
    a. Number
    b. Description
    c. Duration
    d. Early start/late start
    e. Early finish/late finish
    f. Predecessors
    g. Successors
    h. Float
9. Contractor warrants that the value in the activity accurately reflects the value of that work activity.
10. Dates imposed on the schedule are not binding on the Owner and Project Representative unless specified in the Contract.
11. Failure to include any element of work required for the performance of the Contract does not excuse the Contractor from completing the work as described in the Contract.
12. Requests from the Project Representative
    a. When requested by the Project Representative, submit a written narrative of the Contractor's determination of durations for critical and near critical activities. Include in such explanation the number of crews, crew composition, number of shifts per day, number of hours in a shift, number of workdays per week, production curves for major commodities (e.g., Required Dredging, Contingency Re-Dredging, material placement of Enhanced Natural Recovery, Amended Cover, Residuals Management Cover, Backfill Material, and “Prospective” Engineered Cap Material), construction equipment, and supplier and delivery requirements.
    b. If required by the Project Representative, present documentation substantiating the cost allocations of those activities considered, in the opinion of the Project Representative, to be unbalanced.
13. Monthly Schedule updates shall include the following:
    a. Activity dates and earned value
        1) Last month percent complete
        2) Current percent complete

3) Earned value, rounded to the nearest dollar
4) Duration, in workdays
5) Actual start
6) Expected finish
7) Actual finish

b. Add or revise duration of activities and new activities so the Monthly Schedule Update(s) are consistent with executed change orders. Cost load the added activities. When revised or new activities change the Contract Price, add these activities to the Schedule of Values.

1.07 DRAFT PROJECT SCHEDULE

A. The Draft Project Schedule is the complete Contractor's plan to perform the Contract in accordance with milestones and constraints and within the Contract Time as defined in the Contract Documents. The Draft Project Schedule shall be prepared by the Contractor and submitted as part of the RAWP.

B. The breakdown of Work activities in the Draft Project Schedule shall, at a minimum, show all items identified in the Bidding Schedule and significant design, manufacturing, construction, and installation activities.
   1. The Draft Project Schedule shall include a schedule for each of the three Construction Seasons.
   2. The relationship between the work items shall clearly show the starting and completion dates and include all details of the work within the time frame shown. Submittals and long lead items shall be included, and the relationship between a submittal and the work item shall be identified.
   3. The Draft Project Schedule shall also show activity sequencing, interdependencies, and duration estimates for each Construction Season and by Sediment Management Area.
   4. The Draft Project Schedule shall be presented as a Gantt chart and include a CPM schedule of anticipated stages of work.
   5. Should any activity not be completed by the stated scheduled date, the Project Representative will have the right to require the Contractor to expedite completion of the activity by whatever means appropriate and necessary, without additional compensation to the Contractor.

C. The Draft Project Schedule submittal shall include the electronic information on the data files of the software so the necessary reports can be printed for assistance in reviewing the submitted data.

D. The Draft Project Schedule shall include a printout of the cash flow forecast presented in the schedule.

1.08 BASELINE PROJECT SCHEDULE

A. Work is to be scheduled for completion within the amount of Contract Time specified. No claim for delay shall be allowed based on an early completion schedule.

B. Shows Contractor's complete plan for the work in the Contract. The Baseline Project Schedule shall include all the requirements of Article 1.06, including cash flow requirements. Include all data files in the software so necessary reports can be accessed.

C. Incorporate Project Representative requests for clarification or additional information from the review of the Draft Project Schedule into the Baseline Project Schedule. The Project Representative comments shall not be construed as establishing the Contractor's schedule.

D. Utilized as the initial schedule for the start of monitoring the progress of the Work.

1.09 MONTHLY UPDATE PROJECT SCHEDULE

A. The Monthly Update Project Schedule is the most current update and a requirement of the Application for Payment, defined in Section 00 72 00 (General Terms and Conditions). Monthly Update Project Schedule(s) shall comply with the following:
   1. Include a status of all activities through the last day of the month being progressed.
   2. Include all executed change order work to date.

3. Include all the requirements and information, as required in Article 1.06.
4. The latest agreed-upon Monthly Update Project Schedule and accepted Baseline Project Schedule will be used by the Project Representative to review requests for changes in the Contract.

1.10 SCHEDULE OF VALUES

A. Submit the Schedule of Values in a tabular Microsoft Excel 2013 or newer format, including the following:
   1. Contract Price allocated as specified in this Section (This is the activity value determined in Subparagraph 1.05 C.6.)
   2. Dollars earned and percent complete for prior month
   3. Dollars earned and percent complete for current month
   4. Dollars earned and percent complete to date
   5. Balance remaining

B. The Schedule of Values breakdown shall be taken from the task activities in the cost-loaded schedule.

C. Include these costs on the Schedule of Values and the Progress Schedule breakdown.

ITEM	SPECIFICATION
Construction Progress Schedules	01 32 16
Project Record Documents	01 78 39

D. The total value of the activities shall be equal to the Contract Price.

E. Monthly Update Cost
   1. Submit with the Application for Payment as a condition precedent to receiving payment for work accomplished each month.
   2. Update cost loading to reflect added activities in the new Monthly Update Project Schedule.

1.11 THREE-WEEK LOOK-AHEAD SCHEDULE

A. Prepare the Three-Week Look-Ahead Schedule to show the previous week's progress and the work plan for the next 3 weeks. The Three-Week Look-Ahead Schedule shall have a direct tie to the current accepted Monthly Update Project Schedule.

B. Distribute the Three-Week Look-Ahead Schedule to the Project Representative at each weekly Progress Meeting.

1.12 APPLICATION FOR PAYMENT AND MONTHLY REPORTS

A. Application for Payment is the Contractor's notice of the progress performed since the previous payment application. Cost of major materials or equipment may be included in the Application for Payment as described in Section 00 72 00 (General Terms and Conditions). The progress on each activity performed since the last request is submitted to the Project Representative for review. The Application for Payment will be processed as specified in Section 00 72 00 (General Terms and Conditions).

B. Include an updated network diagram, cash flow projection, narrative monthly summary, and schedule data files. The update shall be as of the last day of the month being progressed (see Article 1.04 C).

C. Narrative summary: Briefly describe the progress of the work. Describe how the work is progressing toward its completion. Identify schedule activities and milestones completed, major equipment deliveries, problems arising during the month, changes to the total project float, and any anticipated impacts on the schedule. If the updated schedule is showing that the Contract Time requirements will not be met, describe the Contractor's action plan to return the project to a timely completion. Describe the work anticipated during the upcoming month, including major equipment deliveries and submittals.

D. Identify any changes in logic ties to the CPM schedule, explain why the changes are needed, and describe the impacts resulting from these changes.

E. Cash Flow Reports
   1. Cumulative (S curve)
      a. This cash flow chart provides cumulative cash flow over the duration of the Project and will show comparisons between the Baseline Project and Updated Project Schedules. The comparison curves illustrate the Baseline early and late starts cash flows in comparison to the actual progress and updated revised early and late starts.
   2. Monthly histogram (column type)
      a. This cash flow chart provides monthly cash flow projections over the duration of the project and shows comparison columns for each month on the chart. The comparison histogram illustrates the Baseline early and late starts cash flow in comparison to the actual progress and updated revised early and late starts.
   3. Monthly data report showing each scheduled activity with previous progress, progress this period, and cost remaining for each activity

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 GENERAL

A. Submit the Draft Project Schedule, Baseline Project Schedule, and Monthly Update Project Schedule(s), as required. Include schedule data files. Work shall be completed by the Scheduler.

B. Submit schedule, reports, and updates in hard copy and electronic formats.

C. Failure to comply with the requirements of this Section could be a cause for delay in the processing of the Application for Payment.

3.02 MONTHLY UPDATES

A. Prepare and submit a Monthly Update Project Schedule and graphic network diagram, including cash flow reports, with the monthly Application for Payment. When work is behind schedule, submit a written plan for completing the work within the milestones and Contract Time.

B. Include revisions in the Project Schedule's logic, along with a written statement and rationale. Use the same form and method employed in the Baseline Project Schedule.

C. Reflect the executed change order in both time and value in the next submission of the Application for Payment, Schedule of Values, and schedule updates following the execution of the change order. Incorporate executed Contract Time changes and schedule revisions into the Monthly Update Project Schedule and Schedule of Values for each work change executed in the change order.

D. Submit the various reports specified above in the required time frame.

3.03 SCHEDULE ADJUSTMENTS

A. If, in the opinion of the Project Representative, the Contractor's progress is not in alignment with the Project Schedule, the Project Representative may ask the Contractor to make appropriate adjustments as required independently of the next Monthly Update Project Schedule and/or at the time of the next monthly update.

B. If, in the opinion of the Project Representative, the Contractor's progress shows that the Contract completion will be later than the current date of a milestone, Substantial Completion and/or Final Acceptance, the Project Representative may request that the Contractor provide the following:

1. The Contractor shall determine the cause of this slippage and inform the Owner in the current month's narrative the cause for the delay.
2. Once the Contractor identifies the cause for the delay and informs the Project Representative, the Contractor prepares a written Recovery Schedule Plan proposing actions to correct the delay and demonstrating how the corrective actions will complete the Contract work within the required Contract Time. This plan and its initial results shall be included in the Contractor's next Monthly Update Project Schedule. The actions could include an increase in the number of shifts, overtime operations, and/or days of work, both on and off site.
3. Corrective actions, along with their effect on bringing the Project back to timely completion of the Work, will be shown on the following Monthly Update Project Schedule. The schedule and narrative shall describe these actions and the projected results.
4. If the Contractor fails to make necessary effort and does not demonstrate returning the Project to completion within the Contract Time, other actions, as defined in Section 00 72 00 (General Terms and Conditions), may be taken.

C. When the Contractor is preparing a change to the Contract and, within the request for change, asks for additional time, the Contractor shall support this request as defined in Section 00 72 00 (General Terms and Conditions), along with the following information:
   1. Include any request for a change in the Contract Time in its Notice of Intent to submit a Request for Change Order and Request for Change Proposal.
   2. Demonstrate that the Contract Time to extend the time of performance is not due to the fault, act, or omission of the Contractor, or anyone for whose acts or omissions the Contractor is responsible.
   3. Demonstrate that entitlement is due to a change in Contract Time because the progress of the Work on the Critical Path and completion of the Contract Work within Contract Time are delayed.
   4. Demonstrate that the delay is not a concurrent delay. When delays are concurrent, the Contractor shall only be entitled to a change in Contract Time. No change to the Contract Price shall be allowed as a result of such concurrent delay. Concurrent delays are defined in Section 00 72 00 (General Terms and Conditions) and are delays that impact the Critical Path caused by the following:
      a. The Owner and Contractor
      b. The Owner and an act of force majeure
      c. The Contractor and an act of force majeure

D. A Request for Change Order and a Request for Change Proposal that includes a request for an adjustment in the Contract Time shall:
   1. Be in writing and delivered to the Project Representative within the time period required in the Contract Documents
   2. Include a clear explanation of how the event or conditions specifically impact the Critical Path and overall Project Schedule and the amount of the adjustment in Contract Time requested
   3. Be limited to the change in the Critical Path of a Contractor's Project Schedule and any updates attributable to the event or conditions that caused the request for adjustment. (No extension of time or compensation for damages resulting from a delay will be granted unless the delay affects the timely completion of all Work under the Contract or timely completion of a portion of the work for which time of completion is specific.)
   4. The Contractor shall be responsible for showing clearly on the Baseline Project Schedule and any updates that the event or conditions:
      a. Had a specific impact on the Critical Path and was the sole cause of such impact
      b. Could not have been avoided by resequencing of the Work or other reasonable alternatives
      c. Prevent the Contractor from completing the Project within the current Contract completion date.
   5. Demonstrate that all reasonable efforts were made to prevent and mitigate the effects of this delay, whether occasioned by an act of force majeure or otherwise

END OF SECTION

SECTION 01 32 33

PHOTOGRAPHS AND VIDEOS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies requirements, such as format, resolution, and timeline for submittal, for photographs and videos to be provided prior to, during, and after construction.

1.02 DESCRIPTION OF WORK

A. Collect photographs and videos to document conditions of the Work Site and existing structures and facilities prior, during, and after, and provide documentation of those to the Project Representative for review and approval.

B. The photographs and videos are intended for use as indisputable evidence in ascertaining the extent of any damage that may occur as a result of the construction operations and are for the protection of the property owner(s), Contractor, and Owner and will be a means of determining whether and to what extent damage, resulting from the Contractor's operations, occurred during the Contract work and requires immediate corrective measures.

C. Maintain copies of Work Site examination documentation for the duration of the Work.

D. No separate payment will be made for effort associated with Work described in this Section. Work required to comply with this Section is considered incidental to all other activities described in the Contract Documents.

1.03 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals
   1. Collect pre-construction photographs and videos of the existing structures and facilities within the Work Site. Construction activities shall not begin until the pre-construction photographs and videos have been reviewed and approved by the Project Representative.

C. Construction Submittals
   1. Submit any construction progress photographs and videos collected during construction to the Project Representative as a part of the Daily Construction Report.

D. Post-Construction Submittals
   1. Collect final post-construction photographs and videos of the existing structures and facilities within the Work Site and submit to the Project Representative for review and approval.

PART 2 PRODUCTS

A. The photographs and videos are intended for use as indisputable evidence in ascertaining the extent of any damage that may occur as a result of the construction operations and are for the protection of the property owner, Contractor, and Owner and will be a means of determining whether and to what extent damage, resulting from the demolition operations, occurred during the Contract work and requires immediate corrective measures.

B. The Contractor shall maintain copies of Work Site examination documentation for the duration of the Work.

2.02 PHOTOGRAPHS

A. Color photographs shall be digital with a minimum resolution of 8 megapixels.

B. Submit the following:
   1. The digital data for each photograph
   2. Any copies of digital photographs necessary to meet Project requirements

C. Photographs shall have the date, name of work, and location noted on each image.

2.03 VIDEOS

A. Color video shall be high density in MP4 file format with a 16:9 aspect ratio, stored at a resolution of 1920 × 1080 (NTSC format) at 29.97 frames per second with sound.

B. Submit one copy of each video.

C. The videos shall contain an audio track narrating the content and construction activities in the video, date, time, and location.

D. All DVDs shall display index counter and date and time of recording.

E. Both the disks and cases shall be indelibly labeled with the date, the name of the Contract, and the location where the video was recorded.

PART 3 EXECUTION

3.01 GENERAL

A. The photographer and videographer shall be qualified and equipped to record both interior and exterior scenes, with lenses ranging from wide-angle to telephoto. Supplemental lighting may be required.

B. No construction shall start until the pre-construction photographs and videos have been completed and submitted to the Project Representative for review and approval.

C. Final payment will not be made to the Contractor until the Project Representative receives copies of the photographs and videos that reflect the final conditions.

3.02 PRE-CONSTRUCTION

A. Provide pre-construction photographs and videos prior to commencement of Work, including but not limited to clearing, grubbing, grading, demolishing, and Required Dredging at the Work Site. Photographs and videos shall be taken at locations disturbed or likely to be disturbed by construction or at locations designated by the Project Representative.

B. Do not take pre-construction photographs prior to the Notice to Proceed and prior to commencing Work in any area unless approved by the Project Representative.

3.03 CONSTRUCTION

A. Provide construction photographs and videos during the progress of the Work. Take monthly exposures starting 1 month after the date of the pre-construction photographs and continuing as long as the Work is in progress.

3.04 POST-CONSTRUCTION

A. Take the number of exposures specified until final acceptance of the Work by the Project Representative.

B. Take the exposures from the same points in the same direction as the pre-construction photographs.

C. Take video recordings from the same locations and in the same direction as the pre-construction video recordings after the acceptance of the Project by the Project Representative.

3.05 REQUIRED NUMBER OF PHOTOGRAPHS AND VIDEOS

A. For the work of this Contract, the minimum number of photographs and videos shall be provided as follows:

ITEM	IMAGES	VIDEO
Pre-Construction Structural Condition Inspection (documentation of existing structures and facilities)	5–10 per structure (more as applicable)	As needed
Daily Construction Report (daily documentation)	5–10 (more as applicable)	As needed
Post-Construction Structural Condition Inspection (documentation of existing structures and facilities)	No fewer than the number obtained during the Pre-Construction Structural Condition Inspection	No fewer than the number obtained during the Pre-Construction Structural Condition Inspection

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies procedures and requirements for all pre-construction, construction, and post-construction submittals, substitutions, and deviations, as required by the Specifications. It also contains the Contractor submittal tracking requirements, such as the Master Submittal List (Standard Form 01 33 00-D, provided in Section 01 33 10A [Standard Forms, Attachment A]).

1.02 DESCRIPTION OF WORK

A. The Contractor shall be required to provide submittals to the Project Representative in advance of, and throughout, the duration of the Work.

B. Submittals shall be accompanied by a Submittal/Transmittal Form (Standard Form 01 33 00-A, provided in Section 01 33 10A [Standard Forms, Attachment A]) as directed by the Project Representative. An electronic blank copy of this form will be provided by the Project Representative.

C. No fabrication or construction work shall occur on a specific submittal item without a submittal Review Action of "1" NO EXCEPTIONS TAKEN or "2" NOTE MARKINGS. Any procurement or construction activity undertaken by the Contractor absent such a submittal Review Action will not be considered progress on the Project Schedule or Schedule of Values.

D. No separate payment will be made for effort associated with Work described in this Section. Work required to comply with this Section is considered incidental to all other activities described in the Contract Documents.

E. Review of submittals shall not relieve the Contractor of its responsibility for errors or omission therein and shall not be regarded as an assumption of risks or liability by the Owner.

1.03 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Daily Construction Report: The Daily Construction Report shall be submitted by the Contractor to the Project Representative daily and will document all activities associated with the Work that are completed each day. Specific submittal requirements for the Daily Construction Report are described in Article 1.07.

C. Master Submittal List: The Master Submittal List is defined as the Contractor tracking form to ensure all submittals required in the Specifications are submitted according to their specific submittal schedule.

D. Summary List/Schedule of Contractor Submittals: The Summary List/Schedule of Contractor Submittals is a summary list of pre-construction, construction, and post-construction submittals and associated individual submittal schedules. This Summary List/Schedule of Contractor Submittals is presented for the Contractor's convenience only.

E. Weekly Construction Report: The Weekly Construction Report shall be submitted by the Contractor to the Project Representative each week and shall provide a summary of the week's construction activities that were completed as part of the Contract. Specific submittal requirements for the Weekly Construction Report are described in Article 1.07.

1.04 SUBMITTALS

A. Pre-Construction Submittal:
   1. Submit the Draft Master Submittal List for Contractor submittal tracking purposes, as part of the Remedial Action Work Plan, as described in Article 1.05.

B. Construction Submittals:
   1. Submit a monthly update to the Master Submittal List.
   2. Submit a Daily Construction Report that documents all activities associated with the Work that are completed each day, as described in Article 1.07.
   3. Submit a Weekly Construction Report that provides a summary of the week's construction activities that were completed as part of the Contract and anticipated Work to be completed in the following week, as described in Article 1.07.
   4. Submit a Cash Flow Report that includes a forecast, by month, based on the current schedule, of cash requirements to complete the Contract.

C. Post-Construction Submittal:
   1. Submit the final Master Submittal List.

1.05 MASTER SUBMITTAL LIST

A. Prepare and submit a Draft Master Submittal List (Standard Form 01 33 00-D, provided in Section 01 33 10A [Standard Forms, Attachment A]) for Contractor submittal tracking purposes listing all items for which submittals are required by the Specifications.

B. A draft Master Submittal List is provided in Excel format by the Project Representative as Standard Form 01 33 00-D, in Attachment A of Section 01 33 10A (Standard Forms).
   1. Update the draft Master Submittal List to match the submittal requirements of the Contract and submit the list.
   2. The Contractor shall not change the format of the list or remove columns.
   3. The Contractor may add columns for Contractor use in tracking and organizing the submittals.

C. Provide a monthly updated Master Submittal List.

D. Provide a final and fully completed Master Submittal List prior to Substantial Completion.

1.06 SUMMARY LIST/SCHEDULE OF CONTRACTOR SUBMITTALS

A. Individual pre-construction, construction, and post-construction submittals are required in accordance with the pertinent Sections. Other submittals may be required during the Project and are considered part of the normal Work to be completed under the Contract.

B. The Summary List/Schedule of Contractor Submittals is a summary list of pre-construction, construction, and post-construction submittals and associated individual submittal schedules (see Attachment A to this Section).

C. The Summary List/Schedule of Contractor Submittals is presented for timeline guiding purposes and for the Contractor's convenience only.

1.07 REPORTING REQUIREMENTS

A. Daily Construction Report
   1. Daily Construction Reports shall be submitted the morning following completion of the Work for that day. Daily Construction Reports shall include, as a minimum, the day of the week, date, weather conditions, number and type of personnel working on the Contract (including subcontractor personnel) by trade, major equipment on site, materials delivered, materials installed for each of the Baseline Schedule activities worked on by personnel, and progress for the day.

2. Daily Construction Reports shall be signed as a certification of the information by the Contractor Field Superintendent and Contractor Quality Control Officer.
3. The Daily Construction Report template is provided for the Contractor's convenience only as Standard Form 01 33 00-E, provided in Attachment B of Section 01 33 10A (Standard Forms).
4. At a minimum, the Daily Construction Report shall contain the following information:
    a. Construction progress photographs per Section 01 32 33 (Photographs and Videos)
    b. A daily record of minutes and attendees of the daily safety Tailgate Meeting, safety infractions, near misses, and accidents per Section 01 35 29 (Health and Safety)
    c. A daily record of compliance with air pollution requirements, including construction equipment used, Work activities performed, tier engine, and hours of operation per Section 01 35 44 (Green Remediation Requirements)
    d. A daily record of air, noise, and light criteria compliance and associated issues and complaints, and any implemented measures, controls, and actions to address light, noise, and odor issues during construction, per Section 01 35 43 (Environmental Procedures)
    e. A daily record of water quality protection, stormwater pollution prevention, and water management, and spills and any implemented measures, controls, and actions to address these issues during construction, per Section 01 35 43 (Environmental Procedures)
    f. A daily record of the quality control activities for the construction work completed per Section 01 45 00 (Quality Control)
    g. Progress Surveys, field notes, survey calculations, and field verification (e.g., bucket maps) per Section 02 21 00 (Site Surveys and Positioning Control).
    h. A daily record summarizing the area(s) cleared and grubbed, a log of quantities derived from clearing and grubbing, and copies of all Certificates of Disposal to account for and demonstrate the disposal of all Cleared and Grubbed Material, per Section 31 11 00 (Clearing and Grubbing).
    i. A daily record of vessel management coordination including tracking of movement of Project vessels, tracking regular communications with Project and non-Project vessels (commercial and tribal fishing vessels), Muckleshoot Tribal Fishing interactions and communications, and emergency communications (including times, identification location, and activities). Include the following requirements per Section 35 10 00 (Navigation Safety and Marine Traffic Control).
        1) The Contractor shall include documentation to certify that barges are properly loaded, are seaworthy, and have no observable stability issues, such as evidenced by barge listing.
        2) The Contractor shall include a checkbox within the Daily Construction Report to confirm that equipment and barges have been adequately secured overnight. The vessel captain shall be responsible for daily signing and approving equipment and barge securement.
            a) The vessel captain shall be responsible for daily signing and approving equipment and barge securement.
        3) Daily record of the area(s) dredged, the estimated Dredge Pay Volume removed (including Payable Overdredge Allowance volume), estimated Excessive Dredge volume removed (if applicable), estimated Contingency Re-Dredging volume removed (as necessary), completed barge dewatering, number of haul barge trips to the Contractor Transload Facility(ies), Progress Surveys, calculated quantities, supplemental documentation such as electronic dredging records (i.e., "bucket maps"), estimated volume and tonnage of Dredge Material, Dredge Debris, and Identified Debris removed, and a summary of other details of the Work completed per Section 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation).
        4) Daily record of transloading, upland transportation, and disposal activities, including the estimated quantity of Dredge Material, and Dredge Debris, Identified Debris, and Piling offloaded at each Contractor Transload Facility(ies) per Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).
            a) The Contractor shall submit empty barge displacement measurements of full and empty barges and truck or rail car weight measurements following transload of each barge with Dredge Material, Dredge Debris, Identified Debris, and Piling and corresponding tonnage of material removed from the Contractor Transload Facility(ies).
            b) The documentation shall carefully track the material specifically for this Project, from the point of leaving the Contractor Transload Facility(ies) to final disposal at the Disposal Facility, so that this Project material is not mixed with other materials sourcing from different projects at the Contractor Transload Facility(ies).

5) Daily record of Enhanced Natural Recovery (ENR), Amended Cover, Required Residuals Management Cover (RMC), Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, Engineered Cap B, and Backfill Material delivered to the Work Site including placement materials delivered, quantity, date/time of delivery, and placement material source. Summarize the inspection of placement materials and note any deficiencies per Section 35 37 10 (Material Placement).
6) Daily record of the area(s) where ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, Engineered Cap B, and Backfill Material have been placed, the estimated quantity of material placed (including barge displacement measurements), approximate material overplacement quantity (if applicable), Progress Surveys, and calculated quantities, certified weight tickets from the supplier, and a summary of other details of the Work completed per Section 35 37 10 (Material Placement).

B. Weekly Construction Report
1. Weekly Construction Reports shall be submitted to the Project Representative the Monday morning following completion of the Work.
2. The Weekly Construction Report shall be signed as a certification of the information by the Contractor Field Superintendent and the Contractor Quality Control Officer.
3. The Weekly Construction Report template is provided for Contractor's convenience only as Standard Form 01 33 00-F, provided in Attachment B of Section 01 33 10A (Standard Forms).
4. At a minimum, the Weekly Construction Report shall contain the following information:
   a. Listing and schedule of all potholing and listing of all utilities/facilities to be physically protected and relocated in the upcoming week per Section 01 19 50 (Protection and Maintenance of Property and Work).
   b. Summary of the week's safety infractions, near miss, and accidents, and anticipated safety measures to be required in the following week per Section 01 35 29 (Health and Safety).
   c. Contractor's environmental inspection and monitoring report per Section 01 35 43 (Environmental Procedures) including the following:
      1) Description of construction activities undertaken during the reporting period
      2) Description of Work Site inspections and monitoring activities undertaken
      3) Summary of the week's compliance with water quality standards
      4) Description of environmental issues and corresponding mitigation measures implemented, and communication steps taken
      5) Tracking of emerging and outstanding environmental issues
      6) Photographs documenting construction activities, environmental issues, and corresponding mitigation measures
      7) Reporting on environmental incidents (e.g., spills) and corrective action taken
   d. Summary of the week's compliance with air pollution requirements including construction equipment used, Work activities performed, tier engine, and hours used per Section 01 35 44 (Green Remediation Requirements).
   e. Summary of the week's quality control activities per Section 01 45 00 (Quality Control).
   f. Post-Construction Surveys and calculated quantities per Section 02 21 00 (Site Surveys and Positioning Control).
   g. Summary of the week's clearing and grubbing activities including Work completed to date and anticipated Work to be completed in the following week per Section 31 11 00 (Clearing and Grubbing).
   h. Summary of the week's inspection activities of the erosion and sedimentation control facilities, (through the Construction Stormwater Site Inspection Checklist) per Section 31 25 00 (Erosion and Sedimentation Control).
   i. Summary of the previous week's vessel management activities and the following week's planned vessel movements per Section 35 10 00 (Navigation Safety and Marine Traffic Control) including the following:
      1) Summarize Work completed to date, anticipated Work to be completed in the present week (including anticipated schedule and specific areas identified for proposed vessel traffic, estimated arrival and departure times of each barge to/from the Work Site, and duration and number of barges requiring temporary mooring).
   j. Summary of the week's dredging activities, including Work completed to date, anticipated Work to be completed in the following week (including specific areas identified for dredging), and submit the latest Progress Surveys and Post-Construction Surveys and calculated quantities for Required Dredging and

Contingency Re-Dredging (if applicable) per Section 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation).

k. The Contractor shall submit to the Project Representative copies of Certificates of Disposal (or waste manifests), weight tickets, and other documentation to demonstrate and track the final disposition of the Dredge Material, Dredge Debris, Identified Debris, and Piling at the Disposal Facility no later than 30 calendar days after the material has been delivered to the Disposal Facility. The Contractor shall provide a summary of the week's Work for transloading, upland transportation, and disposal activities including Work completed to date, anticipated Work to be completed in the following week, and submit the latest barge displacement measurements and estimated weight tonnages for Dredge Material, Dredge Debris, Identified Debris, and Piling sent for disposal at the Disposal Facility per Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).

l. Summary of the week's material placement activities including Work completed to date, anticipated Work to be completed in the following week (including specific areas identified for placement) and submit the latest Progress Surveys and Placement Post-Construction Surveys and calculated quantities for ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, Engineered Cap B, and Backfill Material per Section 35 37 10 (Material Placement).

1.08 CONTRACTOR RESPONSIBILITIES

A. Submit to the Project Representative all submittals required for review as described in these Specifications. Submit promptly and in an orderly sequence so as to not cause a delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract duration and no claim for extension by reason of such default will be allowed.

B. The Contractor shall plan for necessary time for the following:
   1. Review of product and sample data
   2. Review of resubmissions as necessary
   3. Ordering of accepted materials and/or products

C. The Contractor shall plan for a minimum of 7 calendar days for Project Representative review of each submittal and an additional 7 calendar days for Project Representative review of resubmittals. Unless stated otherwise in the Specifications, the Contractor shall be allowed 7 calendar days for revising initial submittals and providing resubmittals to the Project Representative. The Contract time shall not be extended on the basis that the Contractor experienced delays due to rejection of submittals.

D. Do not proceed with Work affected by a submittal until Project Representative review and approval, if appropriate, is complete.

E. Review submittals prior to submission to the Project Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals with content that does not meet the requirements of the Specifications, not signed, dated, and identified as to specific project, will be returned without being examined and will be considered rejected. Project Representative review time starts only when a complete submittal is received.

F. The Contractor shall revise all submittals determined by the Project Representative to be inadequate or noncompliant with the Contract Documents.

G. Resubmittals are the responsibility of the Contractor and shall be compensated at no additional cost to the Owner. Submittals shall be completed to the satisfaction of the Project Representative.

H. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly and for performing all Work in a safe manner. Unless noted otherwise in the submittal, the Contractor certifies to having reviewed the submittal for completeness and accuracy, verified field measurements, and reviewed for compliance with Contract Documents.

I. In addition to submittals required by individual Section specifications:
   1. Submit information on items shown on the Drawings but not specified; and include proof of Professional Liability insurance for Work, which requires, either by Law or by Contract, with the submittal to be stamped by a licensed professional.
   2. Submit information on all repair and corrective work required of or generated by the Contractor such that the acceptability of the quality of the repair or correction can be assessed before it is performed.
   3. Submit descriptive information that will enable the Project Representative to assess whether the proposed materials, equipment, or methods of work are in general conformance with the Work and in compliance with the Contract.
   4. Specifically identify and annotate any deviation or substitutions in the Submittal/Transmittal Form (Standard Form 01 33 00-A, provided in Section 01 33 10A [Standard Forms, Attachment A]). If deviations or substitutions are not clearly identified or annotated, the original Contract provisions shall prevail; if the item has been installed without specific acceptance of the deviation or substitution, it shall be removed, and the Contract-required item installed in its place.
   5. Coordinate and integrate all submittal dates with the Baseline Schedule and Master Submittal List (Standard Form 01 33 00-D, provided in Section 01 33 10A [Standard Forms, Attachment A]).
   6. Ensure coordination of submittals among the suppliers, related crafts, subcontractors, and with the planned Work. The Contractor will be held responsible for any cost or schedule impact caused by a submittal coordination failure.
   7. Submit a request for all substitutions using the Substitution Request Form (Standard Form 01 33 00-B, provided in Section 01 33 10A [Standard Forms, Attachment A]) received from the Project Representative.
   8. Document all deviations from the Contract on the Submittal/Transmittal Form (Standard Form 01 33 00-A, provided in Section 01 33 10A [Standard Forms, Attachment A]) transmitted to the Project Representative, and note where applicable in the body of the submittal. Deviations are defined in Article 1.09.

J. Keep one reviewed and approved, if appropriate, copy of each submission at the Work Site.

1.09 SUBMITTALS ON ITEMS DIFFERING FROM THAT REQUIRED BY THE CONTRACT DOCUMENTS

A. Approved Equal:
   1. Definition: An item of material or equipment proposed by the Contractor that has the same function, quality, durability, appearance, strength, and design characteristics equal to that named that meets the requirements of the Specification and is sufficiently similar so that no change in related Work is required. The item of material or equipment shall reliably perform at least equally well for the function imposed by the design concept of the completed Work as a functioning whole. In general, approved equal applies to manufactured items.
   2. Clearly note on the Submittal/Transmittal Form (Standard Form 01 33 00-A, provided in Section 01 33 10A [Standard Forms, Attachment A]) if any items are submitted as an equal.
   3. Acceptance is at the Project Representative's sole discretion, and the decision regarding acceptance or rejection shall be final. If the Contractor disagrees, a Request for a Change Order shall be filed in accordance with Contract provisions. Do not assume acceptance at any time prior to the rendering of decision by the Project Representative.

B. Substitution:
   1. Definition: An item of difference in materials, equipment, means, method, technique, dimension, sequence, or procedure that functionally meets the Contract requirements but does not meet the Specification(s) and is equal to or better than the specified item
   2. Substitutions requested by the Contractor shall conform to the requirements of Section 00 72 00 (General Terms and Conditions). A submittal shall be provided for each substitution request, shall be submitted using Substitution Request Form (Standard Form 01 33 00-B, provided in Section 01 33 10A [Standard Forms, Attachment A]), and shall address all items on the form. The request shall include complete specifications or means and methods for the item, including procurement and operational and maintenance cost data. Substitution Request Forms (Standard Form 01 33 00-B, provided in Section 01 33 10A [Standard Forms, Attachment A]) shall be numbered sequentially, beginning with No. 1.
   3. Any Substitution not identified on a submittal is not accepted or approved, regardless of any action taken on the submittal by the Owner. Action taken by the Owner on the submittal shall not relieve the Contractor from complying with the original Contract requirements.

4. Acceptance is at the Project Representative's sole discretion, and the decision regarding acceptance or rejection of the substitution shall be final. If the substitution is rejected, proceed with the Contract specifications without delay. Do not assume acceptance at any time prior to the rendering of a written decision by the Project Representative.

C. Deviations:
   1. Definition: A minor change or omission to a specified material, procedure, or product proposed by the Contractor that does not fully conform to the requirements specified, but conforms to dimensional, operational, and maintenance requirements and can be shown to accomplish the functional and operational and maintenance performance of the specified item.
   2. Annotate in the submittal all deviations from stated requirements in the Contract. Any deviation not identified on the submittal is not accepted or approved, regardless of any subsequent action on the submittal by the Owner. Failure of the Owner to comment on the deviation shall not relieve the Contractor from complying with the original Contract requirements.
   3. Acceptance is at the Project Representative's sole discretion, and the decision regarding acceptance or rejection shall be final. Do not assume acceptance at any time prior to the rendering of a decision by the Project Representative.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 TRANSMITTAL PROCEDURE

A. General:
   1. Submittals shall be transmitted via the Contract SharePoint Site in accordance with Section 00 73 00 (Supplemental Terms and Conditions). The Contract SharePoint Site is a Microsoft Office web application platform developed and managed by the Owner for this Contract. The Project Representative will provide instructions to the Contractor's representative on the use of the Contract SharePoint Site for Contract document file storage, including submittals. See Section 00 73 00 (Supplemental Terms and Conditions) for further details.
   2. Submittals shall be accompanied by a Submittal/Transmittal Form (Standard Form 01 33 00-A, provided in Section 01 33 10A [Standard Forms, Attachment A]) and include all submittal materials.
   3. Asset numbers shall be listed on the Submittal/Transmittal Form (Standard Form 01 33 00-A, provided in Section 01 33 10A [Standard Forms, Attachment A]) for items being submitted. A separate form shall be used for each specific item, class of material, equipment, and items specified in separate, discrete Sections for which a submittal is required.
   4. Submittals for various items shall be made with a single form when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review the group or package as a whole.
   5. No multiple-Section submittals will be allowed, except where previously approved by the Project Representative and as indicated on the Master Submittal List (Standard Form 01 33 00-D, provided in Section 01 33 10A [Standard Forms, Attachment A]).
   6. A unique number, sequentially assigned, shall be noted on the transmittal form accompanying each item submitted. Original submittal numbers shall have the following format: "XXX," where "XXX" is the sequential number assigned by the Contractor. Resubmittals shall have the following format: "XXXY," where "XXX" is the originally assigned submittal number, and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd, and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of Submittal 25.
   7. Submit all proposed approved equals as a part of the submittal process.

B. Submittal Format:
   1. PDF shall be the default submittal format. PDF documents shall be bookmarked and searchable PDF files.
   2. When other native files are required, such as Excel, AutoCAD, or other specialty program formats, these shall be transferred electronically in the same manner as the PDFs.
   3. Links to online documents or websites shall not be allowed.

C. Samples: Submit the number requested in the Section with the Submittal/Transmittal Form (Standard Form 01 33 00-A, provided in Section 01 33 10A [Standard Forms, Attachment A]). Product samples and color samples shall not be transmitted electronically. Samples will not be returned.

D. Certificates: Will be considered as information. No copy will be returned.

E. “Submit for information only”: No copy will be returned.

3.02 REVIEW PROCEDURE

A. Within the review and response time frame specified in Section 00 72 00 (General Terms and Conditions), the Owner’s identified Review Action and any review comments will be transmitted to the Contractor on the Submittal Review Comment Tracking Form (Standard Form 01 33 00-C, provided in Section 01 33 10A [Standard Forms, Attachment A]).

B. Resubmittals and cost of review shall be according to Section 00 72 00 (General Terms and Conditions).

C. Do not proceed with Work affected by a submittal until Project Representative review and approval, if appropriate, is complete.

D. The returned submittal will indicate one of the following actions:
   1. If the review indicates the submittal is in general conformance with the Contract, the submittal copies shall be marked "No Exceptions Taken" and given a Review Action of "1." In this case, implement the Work covered in the submittal.
   2. If the review indicates the submittal requires limited corrections, the submittal copies will be marked "Note Markings" and given a Review Action of "2." In this case, begin to implement the Work covered in the submittal in accordance with the markings noted. Where submittal information is to be incorporated in operations and maintenance data, a corrected copy shall be resubmitted; otherwise, no further action is required.
   3. If the review reveals the submittal is insufficient and contains incorrect data, and the comments are of a nature that can be confirmed, the submittal copies shall be marked "Comments Attached --Confirm" and given a Review Action of "3". A Review Action of “3” does not allow implementation of the Work covered by the submittal until the information requested to be confirmed in the submittal has been revised, submitted, and returned to the Contractor with a Review Action of either “1” or “2.”
   4. If the review reveals the submittal is insufficient or contains incorrect data, and the comments require that the submittal be revised and resubmitted, the submittal copies shall be marked “Comments Attached -- Resubmit” and given a Review Action of “4”. A Review Action of “4” does not allow implementation of the Work covered by the submittal until the information in the submittal has been revised, resubmitted, and returned to the Contractor with a Review Action of either "1" or "2.”
   5. If the review reveals the submittal is not in general conformance with the Contract, or if the submittal is incomplete, the submittal copies shall be marked "Rejected" and given a Review Action of "5." Submittals containing deviations or substitutions from the Contract that have not been clearly identified by the Contractor fall into this category. A Review Action of “5” does not allow implementation of the Work covered by the submittal until the information in the submittal has been revised, resubmitted, and returned with a Review Action of either "1" or "2.”

END OF SECTION

SECTION 01 33 00A – SUBMITTALS
ATTACHMENT A: SUMMARY LIST/SCHEDULE

Pre-Construction Submittals		
Section	Submittal	Submittal Schedule
01 11 00	Remedial Action Work Plan (RAWP; see additional specific RAWP elements and pre-construction submittal requirements in this Attachment A)	Draft RAWP within 30 calendar days after the effective date of the Notice to Proceed of Contract Award Updated Draft RAWP within 14 calendar days after receiving comments from the Project Representative Final RAWP when all comments received from the U.S. Environmental Protection Agency have been addressed
01 31 19	Pre-Construction Meeting minutes	Distribute draft copies within 3 working days to the meeting participants Final copy within 2 working days after receipt of comments from the meeting participants
01 32 16	Draft Project Schedule as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award and to be distributed at the Pre-Construction Meeting
01 32 16	Baseline Project Schedule	No later than 10 days after the dated return of the review comments from the Owner on the Draft Project Schedule
01 32 16	Initial Schedule of Values	With the submission of the Draft Project Schedule
01 32 16	Final Schedule of Values	With the submission of the Baseline Project Schedule
01 32 33 31 09 00	Pre-construction photographs and videos of existing structures and facilities as part of the Pre-Construction Structural Condition Inspection	No sooner than 14 calendar days prior to the start of any dredging Work
01 33 00 01 33 10	Draft Master Submittal List (Standard Form 01 33 00-D, Attachment A) as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
01 35 29	Site-Specific Health and Safety Plan (HASP) as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
01 35 29	Emergency Response Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
01 35 43	Environmental Mitigation Binder (including Water Quality Protection Plan; Erosion and Sediment Control Plan; Stormwater Pollution Prevention Plan; Water Management Plan; Spill Prevention, Control, and Countermeasure Plan; Air Pollution and Odors Control Plan; Noise Control Plan; Light Control Plan; Personnel and Equipment Decontamination Plan; Traffic Control Plan) as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
01 35 44	Green Remediation Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
01 41 26	Identification of permits, easements, and right-of-entry agreements to be obtained by the Contractor, as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
01 41 26	Permits, easements, and right-of-entry agreements obtained by the Contractor	TBD
01 45 00	Construction Quality Control Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
01 52 00	Temporary Facilities and Control Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
01 52 01	Field office plan layout as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award

Pre-Construction Submittals		
Section	Submittal	Submittal Schedule
01 55 26	Initial Notification Plan and Notification Schedule as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
02 21 00	Survey and Positioning Control Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
02 21 00	Project Pre-Construction Survey	At least 21 calendar days prior to the start of Work (prior to mobilization and establishment of temporary construction facilities)
02 41 00	Demolition Plan as part of the RAWP	Within 30 calendar days of the Notice to Proceed of Contract Award
31 09 00	Qualifications for Monitoring Superintendent, Monitoring Surveyor, and Condition Inspection Engineer	TBD
31 09 00	Instrumentation and Monitoring Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
31 09 00	Monitoring data, including baseline readings	By the end of the shift immediately following that during which the readings were taken
31 09 00 35 20 23	Pre-Construction Structural Condition Inspection	No sooner than 14 calendar days prior to the start of any dredging Work
31 11 00	Site Clearing and Management Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
31 25 00	Shop drawings and product data	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
31 25 00	Qualifications of the Certified Erosion and Sediment Control Lead	TBD
32 32 10	Shop drawings for all structural steel components as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
32 32 10	Cement grout mix design and procedures for tremie placement as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
32 32 10	Reinforcing steel as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
32 32 10	Qualifications of installer	Prior to starting the Work
33 05 25	Shop drawings and material test reports as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
35 10 00	Vessel Management Plan (including the Safety Management System and list of key personnel and qualifications assigned to vessel navigation Work) as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
35 20 23.01	Transloading, Upland Transportation, and Disposal Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
35 20 23	Dredging and Excavation Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award
35 37 10	Material Placement Plan as part of the RAWP	Within 30 calendar days after the effective date of the Notice to Proceed of Contract Award

Construction Submittals		
Section	Submittal	Submittal Schedule
01 32 16	Monthly Update Project Schedule	With each Application for Payment
01 32 16	Three-Week Look-Ahead Schedule	During each Progress Meeting
01 32 33 01 35 29 01 33 00 01 35 43 01 35 44 01 45 00 02 21 00 31 11 00 35 10 00 35 20 23.01 35 20 23 35 37 10	Daily Construction Reports (including but not limited to construction photographs and videos; quantity calculations; Progress Surveys; safety concerns; green remediation metrics; air/noise/light issues, concerns, and mitigation measures; and environmental measures, inspections, and monitoring)	The morning following completion of the Work for that day
01 19 50 01 33 00 01 35 29 01 35 43 01 35 44 01 45 00 02 21 00 31 11 00 31 25 00 35 10 00 35 20 23.01 35 20 23 35 37 10	Weekly Construction Reports (including but not limited to quantity calculations; Post-Construction Surveys; listing of all utilities/facilities to be physically protected; listing and schedule of all potholing; safety concerns; green remediation metrics; air/noise/light issues, concerns, and mitigation measures; environmental measures, inspections and monitoring, and Construction Stormwater Site Inspection Checklist)	Monday morning following completion of the Work
01 31 19	Progress Meeting minutes	Distribute draft copies within 3 working days to the meeting participants Final copy within 2 working days after receipt of comments from the meeting participants
01 32 16	Monthly Progress Reports (including but not limited to updated construction bar chart, Schedule of Values, cash flow projection, and narrative summary)	With each Application for Payment
01 32 16	Recovery Schedule Plan	When requested by the Project Representative
01 33 00 01 33 10	Updated Master Submittal List (Standard Form 01 33 00-D, Attachment A)	Monthly
01 33 00	Cash Flow Report	With each Application for Payment
01 35 29	Revised Site-Specific HASP (related to changes in the Work)	Prior to starting the related Work
01 35 29	Accident/Incident Report(s)	Within 24 hours of the event
01 35 29	Minutes and list of attendees of the pre-construction safety meeting	Within 3 working days of the meeting
01 35 29	Minutes and list of attendees of the safety daily Tailgate Meeting	Within 3 working days of the meeting
01 33 10 01 35 29	Monthly Contractor Injury Summary Report (Standard Form 01 35 29-A, Attachment A)	Within 10 working days of the end of each month
01 35 29	Weekly summary of the daily Work Site safety walk-through	Each week on the day of the weekly Progress Meeting

Construction Submittals		
Section	Submittal	Submittal Schedule
01 35 29	Notice and listing of flammable liquids and liquefied petroleum gases	When they are planned to be used on the Work Site
01 35 44	Monthly Air Pollution Compliance Summary Report	Within 8 working days after end of month
01 41 26	All permit, easement, or right-of-entry agreement compliance reports	TBD
01 41 26	Written construction restoration acceptance form (Standard Form 01 41 26 – A, Attachment A)	TBD
01 55 26	Updated Notification Plan(s) and Notification Schedule(s)	Update as necessary for Progress Meetings
01 70 00	Request for Project Representative pre-final inspection	At least 3 working days prior to the requested date of pre-final inspection
01 70 00	Request for Project Representative final inspection	At least 3 working days prior to the requested date of final inspection
01 78 39	Request for Project Representative's acceptance of the working As-Built Drawings as currently maintained	Prior to submitting each request for progress payment
02 21 00 35 20 23 35 37 10	Progress Surveys for dredging and material placement	Within 1 working day after conducting the Progress Survey
02 21 00 35 20 23 35 37 10	Post=-Construction Surveys for dredging and material placement	Within 1 working day after conducting the Post-Construction Survey
09 90 62	Product Data and Material Safety Data Sheets	TBD
09 90 62	Certificates and Qualifications	TBD
09 90 62	Inspection Reports	TBD
09 90 62	Waste Disposal Report	TBD
31 09 00	Site-Specific Corrective Action Plan	24 hours immediately after Trigger or Maximum Levels are exceeded
31 62 10	Product Data	TBD
31 62 10	Welding certificates for assigned personnel	Prior to starting welding Work
31 62 10	Shop Drawings	TBD
31 62 10 32 32 10	Reports: Driving of pile, pile location plumbness, and welding	TBD
31 62 10	List, description, and capacities of proposed equipment	TBD
31 25 00	Updated shop drawings and product data	TBD
35 37 10	Material samples	A minimum of 15 working days prior to the start of material placement at the Work Site
35 37 10	Material laboratory test reports	A minimum of 15 working days prior to start of material placement activities

Post-Construction Submittals		
Section	Submittal	Submittal Schedule
01 32 33 31 09 00	Post-construction photographs and videos of existing structures and facilities as part of the Pre-Construction Structural Condition Inspection	After all dredging and placement Work has been completed
01 33 00 01 33 10	Final Master Submittal List (Standard Form 01 33 00-D, Attachment A)	Prior to Substantial Completion
01 35 43	Environmental Completion Report	Following completion of the Project
01 41 26	Easement releases	TBD
01 45 00	Quality Control Records	Following completion of the Project
01 45 00	Document control	TBD
02 21 00	Final Project Post-Construction Survey	Following completion of the in-water Work
02 21 00	Quantity calculations	Following completion of the in-water Work
31 09 00 35 20 23 35 37 10	Post-Construction Structural Condition Inspection	After all proximate dredging and placement Work has been completed for each structure
31 09 00	Post-Construction Structural Condition Report	Within 8 working days after completing the Post-Construction Structural Condition Inspection or within 30 calendar days of dredging and placement Work completion, whichever is sooner
31 62 00	Survey of completed piling Work	TBD
35 20 23.01	Certificates of Disposal, copies of all manifests, weight tickets, and other documentation to track final disposition	Within 30 calendar days after the material has been delivered to the Disposal Facility
01 78 39 02 21 00 32 32 10	As-Built Record Documents, Record Drawings, Annual Construction Season Summary Report (for each Construction Season), and additional Record information	At least 14 calendar days prior to Substantial Completion of the Work

SECTION 01 33 10

STANDARD FORMS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies requirements for completing the documentation forms for tests and evaluations required for the Contract.

1.02 DESCRIPTION OF WORK

A. Contractor-generated forms as otherwise required to document the Work shall follow the format established in Section 01 33 10A (Standard Forms, Attachments A and B).

B. Electronic versions of some forms will be provided during construction.

1.03 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. The Contractor shall complete forms in Article 2.01 as required.

PART 2 PRODUCTS

2.01 FORMS

A. The forms listed below are reference from other Sections of the Contract Documents and shall be used by the Contractor to document the Contract Work. Forms not included in this Section can be obtained from the Project Representative upon request at or after the Pre-Construction Meeting.

B. The following forms are included at the end of this Section (see Section 01 33 10A – Standard Forms, Attachments A and B).

SECTION 01 33 10A ATTACHMENT	FORM NO.	TITLE
A	01 33 00-A	Submittal/Transmittal Form
A	01 33 00-B	Substitution Request Form
A	01 33 00-C	Submittal Review Comment Tracking Form
A	01 33 00-D	Master Submittal List
B	01 33 00-E	Daily Construction Report Template
B	01 33 00-F	Weekly Construction Report Template
A	01 33 10-A	Standard Form Format
A	01 35 29-A	Monthly Contractor Injury Summary Report
A	01 41 26-A	Construction Restoration Acceptance Form

PART 3 EXECUTION [NOT USED]

END OF SECTION

01 33 00-A SUBMITTAL/TRANSMITTAL FORM

CONTRACT TITLE

Submittal Matrix ID (this submittal):	XXX
Specification Section:	
Submittal No.:	
Submittal Title:	
Date:	
Submitted by:	
Does Submittal contain deviations (Per 00 72 00 Section 4.4) from the Specifications (Yes/No). If yes, explain the deviation(s)	

Paragraph	Submittal Item	Submittal Matrix ID	Notes
	EXAMPLES		
	Include the entire list of submittals from the specification with each transmittal. Highlight what is included in this transmittal and note what has previously been provided and what will be provided later, including applicable submittal matrix ID number.		
1.05A	Procedure: 01 33 00	N/A	Acknowledged
1.05B	Provide the submittals from this Section with the submittals for Section 26 29 23, Section 43 05 50, and Section 40 05 93 for evaluation together as a submittal package.	N/A	Acknowledged
1.05C1	*Certificate of Unit Responsibility*	*123*	*Previously provided*
1.05C2	*Predicted pump performance curves*	*124*	*Previously provided*
1.05C3	**Pump factory test**	**XXX**	**Attached/included**
1.05C4	O&M Manual: 01 78 23	456	Will be submitted later

01 33 00-B SUBSTITUTION REQUEST FORM

TO:_____

CONTRACT NO. KC_____: CONTRACT NAME: _____

We hereby submit for your consideration the following item instead of the specified item or procedure:

Section	Paragraph	Specified Item
_____	_____	_____

Proposed Substitution:

_____

_____

_____

_____

Attach complete data, including laboratory tests, if applicable. Include complete information on changes to Contract Drawings and/or Specifications that proposed substitution would require for its proper installation.

Fill in blanks below:

A. How will substitution affect dimensions shown on Drawings?

_____

_____

B. What effect does the substitution have on the Baseline or Update Schedule?

_____

_____

C. State quality and performance differences between proposed substitution and specified item or procedure.

_____

_____

_____

D. List the cost differences between proposed substitution and specified item or procedure. (Attach estimate/quote and indicate net change).

_____

_____

E. List manufacturer's name and address, trade name of product, and model or catalog number.

_____

_____

_____

F. Other information as required by the Project Representative.

_____

_____

_____

G. The undersigned states that the function, appearance, and quality of the proposed substitution are equivalent or superior to those of the specified item and authorizes the payment to the County for all design changes including Project Representative, detailing, and County processing costs.

_____

_____

H. The undersigned states that there is a waiver of all claims for additional costs related to the substitution which may subsequently arise during the Work.

_____

I. Manufacturer's guarantees the proposed and specified items are:

_____ Same _____ Different (explain on attachment)

Submitted by:

_____
Contractor Signature

_____
Firm

_____
Address

_____

Date: _____

For use by Project Representative

____ Accepted ____ Accepted as Noted

____ Not Accepted ____ Received Too Late

By: _____

Date:_____

Remarks: _____

NOTE: WHEN REQUIRED BY THE PROJECT REPRESENTATIVE, ALL SUBSTITUTIONS SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WASHINGTON.

01 33 00-C SUBMITTAL REVIEW COMMENT TRACKING FORM

The image below is an example of the form. The form is in Microsoft Excel and will be provided by the Project Representative per Section 01 33 00 (Submittals).

To:	[Project Representative]	[Project Name]	KC
From:	[Project Engineer]	Contract [KC######]	DNRP
Submittal:	###	Submittal Review Comments	WTD
Section:	## ## ##		

Submittal Review Action	
1 – No Exceptions Taken	
2 – Note Markings	
3 – Comments Attached – Confirm	
4 – Comments Attached – Resubmit	
5 – Rejected	

Comment	Reviewer (initiials)	Reference	Sub ### Comment and Response	Sub ### Review Action
1				
Response:				
2				
Response:				
3				
Response:				
4				
Response:				
5				
Response:				
6				
Response:				
7				
Response:				
8				
Response:				
9				
Response:				
10				
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11				
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16				
Response:				
17				
Response:				
18				
Response:				
19				
Response:				
20				
Response:				
21				
Response:				
22				
Response:				
23				
Response:				
24				
Response:				

01 33 00-D MASTER SUBMITTAL LIST

The image below is an example of the form (first page). The form is in Microsoft Excel and will be provided by the Project Representative per Section 01 33 00 (Submittals).

01 33 00-D_Master Submittal List

Matrix ID No.	Submittal No.	Specification	Specification Title	Submittal Item	Detailed Description of Submittals Required	Originating from (Contractor or Responsible Sub)	Submittal Frequency (One-time, as needed, monthly, weekly, daily (or other)	Substitution or Deviation from Spec (Y/N)	Jurisdictional Approval (List AHJ or N/A)	Planned Submittal Date	Date Submitted	Date Returned	Review Action	Status (Open/Closed)	Notes
1		00 72 00	GENERAL TERMS AND CONDITIONS												
2		00 72 00	GENERAL TERMS AND CONDITIONS	Schedule of Working Hours											
3		00 72 00	GENERAL TERMS AND CONDITIONS	Safety Program											
4		00 72 00	GENERAL TERMS AND CONDITIONS	Schedule of Values											
5		00 72 00	GENERAL TERMS AND CONDITIONS	Project Schedule											
6		00 72 00	GENERAL TERMS AND CONDITIONS	Application for Payment											
7		00 72 00	GENERAL TERMS AND CONDITIONS	Substantial Completion Procedure											
8		00 72 00	GENERAL TERMS AND CONDITIONS	Final Application for Payment											
9		00 72 00	GENERAL TERMS AND CONDITIONS	Retainage – Claims or Liens											
10		01 11 00	SUMMARY OF WORK												
11		01 11 00	SUMMARY OF WORK	Remedial Action Work Plan and associated plans											
12		01 19 50	PROTECTION AND MAINTENANCE OF PROPERTY AND WORK												
13		01 19 50	PROTECTION AND MAINTENANCE OF PROPERTY AND WORK	Listing and schedule of all potholing and listing of all utilities/facilities to be physically protected and relocated as part of the Weekly Construction Report											
14		01 32 16	CONSTRUCTION PROGRESS SCHEDULES												
15		01 32 16	CONSTRUCTION PROGRESS SCHEDULES	Draft Project Schedule											
16		01 32 16	CONSTRUCTION PROGRESS SCHEDULES	Baseline Project Schedule											
17		01 32 16	CONSTRUCTION PROGRESS SCHEDULES	Monthly Update Project Schedule											
18		01 32 16	CONSTRUCTION PROGRESS SCHEDULES	Three-Week Look-Ahead Schedule											
19		01 32 16	CONSTRUCTION PROGRESS SCHEDULES	Monthly progress reports											
20		01 32 16	CONSTRUCTION PROGRESS SCHEDULES	Schedule of Values											
21		01 32 16	CONSTRUCTION PROGRESS SCHEDULES	Recovery Schedule Plan											
22		01 32 33	PHOTOGRAPHS AND VIDEOS												
23		01 32 33	PHOTOGRAPHS AND VIDEOS	Pre-construction photographs and videos											
24		01 32 33	PHOTOGRAPHS AND VIDEOS	Construction progress photographs and videos											
25		01 32 33	PHOTOGRAPHS AND VIDEOS	Final post-construction photographs and videos											
26		01 33 00	SUBMITTALS												
27		01 33 00	SUBMITTALS	Draft Master Submittal List											
28		01 33 00	SUBMITTALS	Monthly Update to the Master Submittal List											
29		01 33 00	SUBMITTALS	Final Master Submittal List											
30		01 33 00	SUBMITTALS	Cash Flow Report											
31		01 33 00	SUBMITTALS	Daily Construction Report											
32		01 33 00	SUBMITTALS	Weekly Construction Report											
33		01 33 10	STANDARD FORMS												
34		01 33 10	STANDARD FORMS	Completed forms as required											
35		01 35 29	HEALTH AND SAFETY												
36		01 35 29	HEALTH AND SAFETY	Site-Specific Health and Safety Plan (HASP)											
37		01 35 29	HEALTH AND SAFETY	Emergency Response Plan (ERP)											
38		01 35 29	HEALTH AND SAFETY	Accident/Incident Report(s)											
39		01 35 29	HEALTH AND SAFETY	Revised Site-Specific HASP that addresses changes in the Work											
40		01 35 29	HEALTH AND SAFETY	Minutes and list of attendees of the pre-construction safety meeting											
41		01 35 29	HEALTH AND SAFETY	Minutes and list of attendees of the daily safety Tailgate Meeting											
42		01 35 29	HEALTH AND SAFETY	Monthly Contractor Injury Summary Report: provide each month on Form 01 35 29-A											
43		01 35 29	HEALTH AND SAFETY	Weekly summary of the daily Work Site safety walk-through											
44		01 35 29	HEALTH AND SAFETY	Notice and listing of flammable liquid and liquefied petroleum gases when they are planned to be used on the Site											
45		01 35 29	HEALTH AND SAFETY	Daily safety concerns as part of the Daily Construction Report											
46		01 35 29	HEALTH AND SAFETY	Weekly safety concerns and anticipated safety measures to be completed in the following week as part of the Weekly Construction Report											
47		01 35 43	ENVIRONMENTAL PROCEDURES												
48		01 35 43	ENVIRONMENTAL PROCEDURES	Daily record of compliance with air, noise, and light criteria requirements as part of the Daily Construction Reports											
49		01 35 43	ENVIRONMENTAL PROCEDURES	Environmental inspection and monitoring report as part of the Weekly Construction Reports											
50		01 35 43	ENVIRONMENTAL PROCEDURES	Contractor's Annual Construction Season Summary Report to summarize environmental activities											
51		01 35 43	ENVIRONMENTAL PROCEDURES	Environmental Mitigation Binder (EMB) and its revisions											
52		01 35 44	GREEN REMEDIATION REQUIREMENTS												
53		01 35 44	GREEN REMEDIATION REQUIREMENTS	Green Remediation Plan											
54		01 35 44	GREEN REMEDIATION REQUIREMENTS	Demonstration of compliance with air pollution requirements as part of the Daily Construction Report and Weekly Construction Report											
55		01 35 44	GREEN REMEDIATION REQUIREMENTS	Monthly Air Pollution Compliance Summary Report											
56		01 41 26	PERMITS, EASEMENTS AND RIGHT-OF-ENTRY AGREEMENTS												
57		01 41 26	PERMITS, EASEMENTS AND RIGHT-OF-ENTRY AGREEMENTS	Identification of permits, easements, and right-of-entry agreements to be obtained by the Contractor as part of the BAWP											
58		01 41 26	PERMITS, EASEMENTS AND RIGHT-OF-ENTRY AGREEMENTS	A copy of each permits, easements, and right-of-entry agreements obtained by the Contractor											
59		01 41 26	PERMITS, EASEMENTS AND RIGHT-OF-ENTRY AGREEMENTS	Permits, easement or right-of-entry agreement compliance reports											
60		01 41 26	PERMITS, EASEMENTS AND RIGHT-OF-ENTRY AGREEMENTS	Written construction restoration acceptance form on Standard Form 01 41 26-A											
61		01 41 26	PERMITS, EASEMENTS AND RIGHT-OF-ENTRY AGREEMENTS	Easement releases											
62		01 45 00	QUALITY CONTROL												
63		01 45 00	QUALITY CONTROL	Contractor Quality Control Plan											
64		01 45 00	QUALITY CONTROL	Daily Construction Report recording daily quality control activities											
65		01 45 00	QUALITY CONTROL	Weekly Construction Report summarizing the week's quality control activities											
66		01 45 00	QUALITY CONTROL	Quality Control Records											

Contract Name: _____

Contract No: _____ Date: _____

Form Title: _____

NOTE TO CONTRACTOR:

USE THE FOLLOWING SIGNATURE FORMATS AS APPROPRIATE

OR AS REQUIRED BY THE SPECIFICATION OR THE PROJECT REPRESENTATIVE.

SIGNATURE FORMAT A:

_____ _____
Signature of Manufacturer's Representative Date

_____ _____
Signature of Contractor Representative Date

_____ _____
Signature of Project Representative Date

SIGNATURE FORMAT B:

CERTIFIED _____ _____
Signature of Contractor Representative Date

WITNESSED _____ _____
Signature of Project Representative Date

01 35 29-A MONTHLY CONTRACTOR INJURY SUMMARY REPORT

Contract Name: _____
Contract No: _____ Month: _____
Contractor: _____

OSHA RECORDABLE CASES

WORK GROUP	NUMBER OF CASES	
	Reporting Month	Year-to-Date
Hourly Employees		
Supervisory Personnel		
TOTAL		

LOST TIME ACCIDENTS

WORK GROUP	NUMBER OF CASES		LOST WORKDAYS	
	Reporting Month	Year-to-Date	Reporting Month	Year-to-Date
Hourly Employees				
Supervisory Personnel				
TOTAL				

TOTAL HOURS WORKED AT CONTRACT SITE

Reporting Month	
Year-to-Date	

INCIDENT AND SEVERITY RATE

Date of last lost-time accident: _____
Number of hours worked since last lost-time accident: _____

$$\text{Incident Rate} = \frac{\text{Total Number of OSHA Recordable Cases x 200,000}}{\text{Total Hours Worked at King County Project Site}}$$

$$\text{Severity Rate} = \frac{\text{Total Number of Lost Workdays x 200,000}}{\text{Total Hours Worked at King County Project Site}}$$

RATES	Reporting Month	Year-to-Date
Incident Rate		
Severity Rate		

Monthly Incident Summary

DATE	NAME	TRADE	COMPANY	INCIDENT	Contributors and Preventive Measures

01 41 26-A CONSTRUCTION RESTORATION ACCEPTANCE FORM

CONSTRUCTION CONTRACT NO. C_____C

EASEMENT NAME _____
(Easement Name as identified in the Contract Documents)

EASEMENT GRANTOR: _____

EASEMENT AUTHORIZED REPRESENTATIVE: _____

DATE CONTRACTOR ON SITE: _____

DATE CONTRACTOR OFF SITE: _____

EASEMENT REPRESENTATIVE'S APPROVAL OF RESTORATION

I/We, the undersigned Owner(s) or Representatives of property identified as

_____
(Address or Property Description)

_____

_____

accept as complete the restoration work pursuant to the Easement requirements.

BY REPRESENTATIVE: _____ DATE _____

BY REPRESENTATIVE: _____ DATE _____

CONTRACTOR SIGNATURE:_____ DATE: _____

Project Name:	Lower Duwamish Waterway – Upper Reach		
Project No:	180067-02.04	**Report No:**	
Report Day and Date:		**Period of Work**	
Weather:		**From Time:**	
Temperature (High/Low):		**To Time:**	
This Daily Construction Report template is provided for Contractor convenience only. The Daily Construction Report shall be submitted in accordance with the requirements of Section 01 33 00 (Submittals).			

Work Force: Contractor		
Personnel	Crew Size	Description of Work Performed

Work Force: Subcontractor/Guests on Site		
Firm	Crew Size	Description of Work Performed

Construction Equipment Summary			
Equipment Type	Activity Description	Tier Engine	Hours Used
Additional Notes: Summarize the daily equipment on site and note extra work, delays, or changes.			

Clearing and Grubbing Summary		
Area(s) Cleared/Grubbed	Quantity of Material Removed	Description of Work Performed
Additional Notes: Summarize the daily work performed. Provide copies of all Certificates of Disposal (as an attachment).		

Vessel Management and Safety		
Date, Time, and Location	Vessel Coordination/Movement	Emergency Communications/Movement
Additional Notes: Summarize Project vessel movement and vessel management coordination (tracking of regular communications with Project and non-Project vessels, including Muckleshoot Tribal Fishing interactions and communications). Provide documentation to certify that barges are properly loaded (as an attachment).		

☐	Confirm that equipment and barges have been adequately secured overnight	**Vessel Captain Signature:**	

Daily Dredging/Excavation Summary						
Sediment Management Area(s) (SMA[s]) Dredged	Estimated Dredge Pay Volume	Estimated Payable Overdredge Allowance Volume	Estimated Excessive Dredge Volume	Estimated Contingency Re-Dredging Volume	Estimated Dredge Debris Volume	Estimated Identified Debris (TON)

Dredging Operation Log					
Schedule Hours:		Dredge Hours:		Idle Hours:	
Downtime Hours:		Move Hours:		Vessel Delay Hours:	

Additional Notes: Summarize the daily work performed, including the number of haul barge trips to the Contractor Transload Facility. Summarize barge dewatering activities. Include the Progress Survey(s) (including, field notes, survey calculations, and field verification [e.g., bucket maps]) (as an attachment).

Daily Transloading Summary				
Material	SMA(s) Included in Barge Load	Empty Barge Weight (TON)	Full Barge Weight (TON)	Truck/Railcar Weight (TON)
Dredge Material				
Dredge Debris				
Identified Debris				
Piling				
Additional Notes: Summarize the daily work performed. Include Certified Weight Tickets, barge displacement measurements, truck or rail car weight measurements, waste manifests, or other documentation from the Contractor Transload Facility(ies) to track Dredge Material, Dredge Debris, Identified Debris, and Piling (as an attachment).				

Material Delivery Summary			
Material Delivered	Quantity	Date/Time of Delivery	Material Source
Additional Notes: Summarize the inspection placement materials delivered to the Site. Note and deficiencies of materials per Section 35 37 10 (Material Placement).			

Daily Material Placement			
Material Placement	Area(s) Placed	Approximate Volume Placed (CY)	Approximate Overplacement Volume (CY)
Required Residuals Management Cover (RMC)			
Inner Perimeter RMC			
Contingent Outer Perimeter RMC			
Enhanced Natural Recovery			
Amended Cover			
Backfill			
Outfall Riprap			
“Prospective” Engineered Cap A			
Engineered Cap B			
Additional Notes: Summarize the daily work performed. Include barge displacement measurements, Certified Weight Tickets from the supplier, and Progress Surveys (including field notes, survey calculations, and field verification [e.g., bucket maps]) (as an attachment).			

Structural Work Summary		
Area(s) Worked	Work Performed	Estimated Piling Removed (TON)

Additional Notes: Summarize the daily work performed. Include Certified Weight Tickets from the Disposal Facility(ies) (as an attachment).

Water Quality and Management

Summarize activities for water quality protection, stormwater pollution prevention, water management and spills, and any implemented measures, controls, and actions to address these issues.

Quality of Life
Summarize daily best management practices to control light, noise, and odor, as well as any complaints and contingency actions implemented.

Air Pollution Compliance
Summarize daily record of compliance with air pollution requirements, including construction equipment used, work activities performed, tier engine, and hours of operation.

Contractor Quality Control Activities
Additional Notes: Summarize Contractor Quality Control Activities in accordance with the Quality Control Plan. Summarize inspections and testing activities performed. Provide documentation as applicable (as an attachment).

Health and Safety
Include minutes and list of attendees of the daily safety Tailgate Meeting (as an attachment).
Additional Notes: Summarize the daily safety concerns and contingency actions implemented. Provide any accident/incident report as applicable (as an attachment).

Problems Encountered and Contingency Actions Implemented

Prepared by:		**Contact Information:**	
Cc:			
Contractor Field Superintendent Signature:		**Date:**	
Contractor Quality Control Officer Signature:		**Date:**	
Attachments:			
Attach daily photographs with descriptions below.			

Lower Duwamish Waterway – Upper Reach Photograph Log

Description: Date:

Description: Date:

Description:

Date:

Description:

Date:

Description:

Date:

Description:

Date:

Project Name:	Lower Duwamish Waterway – Upper Reach		
Project No:	180067-02.04	**Report Date:**	
Week of:		**Report No:**	
This Weekly Construction Report template is provided for Contractor convenience only. The Weekly Construction Report shall be submitted in accordance with the requirements of Section 01 33 00 (Submittals).			

Construction Equipment Summary			
Equipment Type	Activity Description	Tier Engine	Hours Used

Additional Notes: Summarize the weekly equipment on site and note extra work, delays, or changes that occurred.

Weekly Vessel Management and Safety
Additional Notes: Summarize the week's work, including vessel management activities.

Anticipated Vessel Management and Safety		
Anticipated Date, Time, and Location	Anticipated Work Schedule	Anticipated Vessel Coordination

Additional Notes: Identify anticipated work to be completed in the following week, including anticipated schedule and specific areas identified for proposed vessel traffic, duration and number of barges requiring temporary mooring, and estimated arrival and departure times of each barge.

Weekly Dredging/Excavation Summary			
Item	Area	Approximate Production This Week	Approximate Total Cumulative Production

Additional Notes: Summarize the week's dredging and excavation activities completed each day of the week. Include the latest Progress Surveys and Post-Construction Surveys for Required Dredging and Contingency Re-Dredging, as required (as an attachment).

Anticipated Dredging/Excavation Summary		
Item	Area	Anticipated Production in the Upcoming Week
Additional Notes: Summarize the anticipated dredging and excavation activities anticipated to be completed in the upcoming week.		

Weekly Transloading, Upland Transportation, and Disposal Summary
Summarize the week's work for transloading, upland transportation, and disposal activities completed each day of the week. Include the latest barge displacement measurements and certified weight tickets from the Disposal Facility (when available and no later than 30 calendar days after the material has been delivered to the Disposal Facility) (as an attachment).
Summarize the anticipated work to be completed in the following week.

Weekly Material Placement Summary		
Material	Area	Approximate Volume Placed (CY) Approximate Total Cumulative Production
Additional Notes: Summarize the week's material placement activities. Include the latest Progress Surveys and Placement Post-Construction Surveys (as an attachment).		

Anticipated Material Placement Summary		
Material	Area	Anticipated Production in the Upcoming Week
Additional Notes: Summarize the anticipated work to be completed in the following week, including specific areas identified for placement.		

Weekly Structural Work Summary
Summarize the week's structural work activities completed each day of the week.
Summarize the anticipated work to be completed in the following week.

Environmental Inspection and Monitoring Report
Provide the environmental inspection and monitoring report per Section 01 35 43 (Environmental Procedures) (as an attachment).

Quality of Life
Summarize the week's best management practices to control light, noise, and odor, as well as any complaints and contingency actions implemented.

Air Pollution Compliance
Summarize the week's compliance with air pollution requirements, including construction equipment used, work activities performed, tier engine, and hours of operation.

Contractor Quality Control Activities
Summarize the week's Contractor Quality Control Activities in accordance with the Quality Control Plan.

Clearing and Grubbing Summary		
Area(s) Cleared/Grubbed to date	Quantity of Material Removed	Work Anticipated for Next Week
Additional Notes:		

Erosion Control Activities
Provide the Construction Stormwater Site Inspection Checklist (as an attachment).

Protection and Maintenance of Property and Work
Provide a summary of all the potholing and utilities/facilities to be physically protected and relocated in the upcoming week.

Other Scheduled Construction Work This Week (Next Reporting Week)

Health and Safety
Provide weekly summary of the daily Work Site safety walkthrough. Summarize weekly safety concerns and note additional safety measures anticipated to be required in the following week's work.

Problems Encountered and Contingency Actions Implemented

Prepared by:		**Contact Information:**	
Cc:			
Contractor Field Superintendent Signature:		**Date:**	
Contractor Quality Control Officer Signature:		**Date:**	
Attachments:			

SECTION 01 35 29

HEALTH AND SAFETY

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for health and safety provisions necessary for all Work at the Work Site for this Project and procedures for complying with applicable laws and regulations related to worker safety and health. The Contractor shall adhere to applicable federal, state, and local safety and health standards. For in-water work health and safety requirements, the Contractor shall also refer to Section 35 10 00 (Navigation Safety and Marine Traffic Control).

1.02 DESCRIPTION OF WORK

A. It is not the intent of the Owner to develop, manage, direct, and administer the health and safety programs of contractors or in any way assume the responsibility for the health and safety of their employees. It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the Work.

B. It is not the intent of the Owner to list and identify applicable safety codes, standards, and regulations requiring compliance by the Contractor and subcontractor groups. The Contractor shall be solely responsible for identifying and determining all safety codes, standards, and regulations that are applicable to the Work.

C. This Section describes the requirements for submittal of the Contractor's Site-Specific Health and Safety Plan (HASP). A Site-Specific HASP is a supplement to a Contractor's Accident Prevention Program (APP); however, it need not duplicate material in the APP. The Site-Specific HASP identifies all real and potential hazards during each phase of execution of the Work and provides a specific plan to deal with each hazard. The Site-Specific HASP shall clearly define responsibilities for Contractor and subcontractor employees per Chapter 296-155 Washington Administrative Code (WAC) and Washington Industrial Safety and Health Act Regional Directive 27.00.

D. The Work of the Contractor is described elsewhere in these Specifications. Precautions to prevent all anticipated physical and other hazards, including heavy equipment and vessels, shall be addressed in the Site-Specific HASP.

E. No separate payment will be made for effort associated with Work described in this Section. Work required to comply with this Section is considered incidental to all other activities described in the Contract Documents.

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. This Section incorporates by reference the latest revisions of the embedded health and safety standard referenced herein.

REFERENCE	TITLE
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
29 CFR 1910.146	Permit Required Confined Spaces
29 CFR 1910.147	Control of Hazardous Energy (lockout/tagout)
29 CFR 1926	Safety and Health Regulations for Construction (OSHA)
29 CFR 1915, 1917, and 1918	Maritime Industry Standards (OSHA)
29 CFR 1919	Gear Certification Standards (OSHA)
Chapter 49.17 RCW	Washington Industrial Safety and Health Act (WISHA)
Chapter 296-24 WAC	DOSH/WISHA General Safety and Health Standards
Chapter 296-37 WAC	DOSH/WISHA Safety Standards for Commercial Diving
Chapter 296-62-095 WAC	DOSH/WISHA General Occupational Health Standards
Chapter 296-62-085 – 8580 (with Appendices A and B)	DOSH/WISHA General Occupational Health Standards – Wildfire Smoke
Chapter 296-62-095 – 9560 WAC	DOSH/WISHA General Occupational Health Standards – Outdoor Heat Exposure
Chapter 296-62-600 WAC	Public Health Emergency Reporting and Notification Requirements for Infectious and Contagious Diseases
Chapter 296-65 WAC	DOSH/WISHA Asbestos Removal & Encapsulation
Chapter 296-67 WAC	DOSH/WISHA Process Safety Management Standards
Chapter 296-155 WAC	DOSH/WISHA Construction Safety
Chapter 296-800 WAC	DOSH/WISHA Safety and Health Core Rules
Chapter 296-803 WAC	DOSH/WISHA Lockout Tagout (Hazardous Energy Control)
Chapter 296-809 WAC	DOSH/WISHA Permit Required Confined Spaces
Chapter 296-823 WAC	DOSH/WISHA Bloodborne Pathogens
Chapter 296-843 WAC	DOSH Safety Standards for Hazardous Waste
Chapter 296-876 WAC	DOSH/WISHA Ladders, Portable and Fixed
Chapter 296-880 WAC	DOSH/WISHA Unified Safety Standards for Fall Protection
DD 11.80	DOSH Directive – Temporary Enforcement Guidance: Annual Fit-Testing, Respiratory Protection, and Face Covering during COVID-19 Pandemic
DD 27.00	DOSH Directive – General or Upper-Tier Contractor (*Stute*) Responsibility
NFPA 70E	Standards for Electrical Safety in the Workplace
NFPA 820	Fire Protection in Wastewater Treatment and Collection Facilities
NFPA 51B	Standard for Fire Prevention during Welding, Cutting, and Other Hot Work
RCW 39.04.180	Trench Safety Systems, Safety Systems Required

Notes:
CFR: Code of Federal Regulations
DOSH: Department of Safety and Health
NFPA: National Fire Protection Association
OSHA: Occupational Safety and Health Administration
RCW: Revised Code of Washington
WAC: Washington Administrative Code
WISHA: Washington Industrial Safety and Health Act

1.04 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals
   1. Site-Specific HASP: The Contractor shall submit, as part of the Remedial Action Work Plan (RAWP), a detailed, written Site-Specific HASP. Construction activities for the Project shall not begin until the Site-Specific HASP has been reviewed and accepted by the Project Representative.
      a. Submittal requirements for the Site-Specific HASP are listed in Articles 1.06 and 1.08 of this Section.
   2. Emergency Response Plan (ERP): The Contractor shall submit, as part of the RAWP, a detailed, written ERP. Construction activities for the Project shall not begin until the ERP has been reviewed and accepted by the Owner.
   3. At a minimum, the ERP shall contain the following information:
      a. Describe pre-emergency planning and preparation activities, such as recognition of potential hazards; minimum required emergency equipment; protocols for minimizing risks and ensuring all field personnel are aware of the ERP; plan for ERP review by all field personnel, as part of the overall training program for Work Site operations; and plans for meetings with the Project Representative, EPA, and local emergency responders.
      b. Include personnel roles and responsibilities (i.e., responsible parties and chain of command in the case of an emergency) and emergency contacts (i.e., names/telephone numbers) of the following:
         1) Designated personnel from own company
         2) Local emergency resources
         3) Project Representative and other Owner representatives, as required
      c. List standard operating procedures and response measures to be taken in emergency situations, such as recognition of emergency situations and emergency alerting; preliminary response procedures for personal accidents (with victims[s]) and non-personal incidents (e.g., fire, explosion, property damage, or environmental releases/spills); and hazard communication strategy to Contractor employees and subcontractors.
      d. Provide safe distances and places of refuge; Work Site security and control; emergency evacuation routes (including to nearest hospital); rescue and decontamination procedures; and emergency medical treatment and first aid. Provide written rescue/evacuation procedures as required for, but not limited to, the following:
         1) Work in confined spaces or where there is a risk of entrapment
            a) Underground or underpier work
            b) Structures removal
            c) Work on, over, under, and adjacent to water
      e. Describe notification procedures in case of an emergency to specific parties and their contact information.
      f. Describe procedures for reporting and documentation, to be completed following an emergency.
      g. Describe the procedure for revisions to ERP during construction (revisions and updates to the emergency procedures, as required and necessary [i.e., new or changing Work Site conditions or information], and resubmittal procedure to the Project Representative for additional review.
      h. Submission of the Site-Specific HASP and ERP, and any revised version, to the Project Representative is for information and reference purposes only. It shall not:
         1) Be construed to imply approval by the Project Representative
         2) Be interpreted as a warranty of being complete, accurate, and legislatively compliant
         3) Relieve the Contractor of its legal obligations for the provision of health and safety on the Project

C. Construction Submittals
   1. The Contractor shall provide the following construction submittals:
      a. Revised Site-Specific HASP that addresses changes in the Work
      b. Accident/Incident Report(s)
      c. Minutes and list of attendees of the pre-construction safety meeting
      d. Minutes and list of attendees of the daily safety Tailgate Meeting
      e. Monthly Contractor Injury Summary Report on Form 01 35 29 A (see Section 01 33 10A – Standard Forms, Attachment A)

f. Weekly summary of the daily Work Site safety walk-through
g. Notice and listing of flammable liquids and liquefied petroleum gases
h. The daily report of safety concerns as a part of the Daily Construction Report (see Section 01 33 00 – Submittals)
i. Summary of weekly safety concerns and anticipated safety measures to be completed in the following week as a part of the Weekly Construction Report (see Section 01 3 00 – Submittals)

1.05 QUALITY ASSURANCE

A. Qualifications for the Contractor's personnel shall be as follows:
   1. Contractor Site Health and Safety Officer:
      a. Possess a minimum of 5 years of progressive safety experience on projects similar in nature to the Work to be done on this Contract.
      b. Be knowledgeable concerning all federal and state regulations applicable to safety.
      c. Possess current 40-Hour HAZWOPER training.
      d. Possess completed 8-Hour HAZWOPER Supervisor training.
      e. Possess competent person certification in construction safety disciplines related to the Work to be performed and be able to identify competent persons required by federal and state safety standards for which they are not certified.
      f. Possess training and current certification for CPR and First Aid.
      g. Possess training and be capable of performing accident investigations and developing a concise report.
      h. Possess training in the development and presentation of safety training meetings.
   2. Shift Safety Officers:
      a. Possess a minimum of 3 years of progressive safety experience on projects similar in nature to the Work to be done on this Contract.
      b. Be knowledgeable concerning all federal and state regulations applicable to safety.
      c. Possess current 40-Hour HAZWOPER training.
      d. Possess completed 8-Hour HAZWOPER Supervisor training.
      e. Possess competent person certification in construction safety disciplines related to the Work to be performed and be able to identify competent persons required by federal and state safety standards for which they are not certified.
      f. Possess training and current certification for CPR and First Aid.
   3. Although not required, the following qualifications may be considered as contributing to the relevant experience required:
      a. Certified Safety Professional (CSP) certification from the American Society of Safety Engineers
      b. Degree from an institution of higher learning in Occupational Safety and Health
      c. ASSE Certified Safety Technician (CST)
      d. Qualification as an instructor in CPR/First Aid or the OSHA 30-hour program

B. Work shall meet the requirements of the following:
   1. 29 Code of Federal Regulations (CFR) 1926
   2. Chapter 49.17 Revised Code of Washington (RCW)

1.06 SITE-SPECIFIC HEALTH AND SAFETY PLAN

A. A comprehensive Site-Specific HASP covers all aspects of the Contractor's Work activities related specifically and distinctly to the Work and Work Site conditions. The Site-Specific HASP shall be based on a site-specific hazard analysis and shall explain how the site-specific safety procedures shall be applied to the identified hazards in the Work. Additionally, the Site-Specific HASP shall meet the requirements of WAC 296-843-120 at a minimum.

B. At a minimum, the Site-Specific HASP shall contain the following information:
   1. Detail of the safe work procedures and the safety preventive measures to be taken to provide an appropriate work environment for its employees, as well as Owner and EPA oversight staff at the Work Site.
   2. The Site-Specific HASP shall be descriptive in nature, to provide the appropriate level of understanding for the potential chemical and/or physical hazards associated with the Work to be performed at all stages and phases.

a. Provide a map of the Work Site illustrating the location of the anticipated hazards and areas of control for those hazards.

3. Identify personnel and alternates responsible for Work Site safety and health.
   a. Provide name and qualifications of the Contractor's proposed Contractor Site Health and Safety Officer. The Project Representative has the right to reject the Contractor's proposed Contractor Site Health and Safety Officer and require the Contractor to provide an alternate at no additional cost to the Owner.
   b. Provide organization chart identifying the Contractor's Health and Safety lines of reporting internal to the Contractor's team and externally, including the U.S. Coast Guard and other regulatory agencies as appropriate.
   c. Provide a 24-hour, 7-day contact and alternate personnel with on-call availability to return to the Work Site to mitigate problems overnight, weekends, holidays, during, and after the period where Work is performed.
4. Description of the following:
   a. Hazardous material inventory and material Safety Data Sheets (SDS) for all chemicals that will be brought to the Work Site
   b. Engineering and administrative control measures to be implemented at the Work Site for managing identified risks and hazards
   c. Signage to warn Work Site personnel and visitors of anticipated Work Site hazards
   d. Contractor-provided monitoring to be used to evaluate actual hazards compared with anticipated conditions, as follows:
      1) Access procedures for floating equipment
      2) Work Site housekeeping procedures and personal hygiene practices
      3) Personnel and Equipment Decontamination Plan (as described in Section 01 35 43 – Environmental Procedures)
      4) Medical surveillance program for Work Site personnel before, during, and after completion of Work, if required
   e. Record keeping including the following:
      1) Documentation of appropriate employee training
      2) Respirator fit testing (if appropriate)
      3) Copies of incident and accident reports
      4) Signatory page for Work Site personnel to acknowledge receipt, understanding, and agreement to comply with the Site-Specific HASP
5. Safety procedures for maritime navigation and vessel operation in accordance with Section 35 10 00 (Navigation Safety and Marine Traffic Control)
6. Provide an appropriate work environment for all persons on site including Contractor and subcontractor employees, Owner staff, and authorized individuals.
7. Address all necessary personal protective equipment (PPE), and clothing (including head, foot, skin, eye, and respiratory protection and personal flotation device [PFD] as applicable), safety equipment and tools, and safety planning and coordination necessary to perform the Work safely.
8. During the Work, update as an addendum to the Site-Specific HASP, changes in conditions or scope of Work before continuing Work.
9. Before beginning the Work addressed in the Site-Specific HASP, meet the requirements of Section 01 33 00 (Submittals) that indicate a Review Action marking of a "1" or a "2" indicating "No Exceptions Taken" or "Note Markings," respectively.
10. Site-Specific HASP organization shall be as follows:
    a. Organized and bound to readily accept revisions and additions
    b. Outline form
    c. Table of contents
    d. Numbered pages
11. Additional Site-Specific HASP content is described in Article 1.08 of this Section.
12. The Contractor and subcontractors are encouraged to use the consulting services of the State of Washington's Department of Labor and Industries: Division of Safety & Health (DOSH/WISHA). The Seattle Field Office's location and contact information is as follows:
    a. 315 5th Avenue South, Suite 200
       Seattle, WA 98104-2607
       (206) 515-2800

http://www.lni.wa.gov/wisha/
Call or write for assistance with the requirements of this Section.

1.07 CONTRACTOR SAFETY QUALITY ASSURANCE

A. Review the entire scope of Work and applicable Contract requirements.

B. Inspect the Work Site location and adjacent structures and systems to ensure that all safety considerations and requirements are addressed and planned prior to the start of Work.

C. Ensure that all Contractor and subcontractor employees comply with the Site-Specific HASP.

D. Designate a Contractor Site Health and Safety Officer on site with appropriate training, responsibility, and full authority to coordinate, implement, and enforce the Contractor's Site-Specific HASP for the duration of the Work.

E. In the APP and Site-Specific HASP, provide the name and telephone number of the Contractor Site Health and Safety Officer and the resume reflecting experience and training for the position. If there will be an alternate or additional staff with safety responsibilities, provide name and telephone number and qualifications in the Site-Specific HASP.

F. Ensure that safe work principles and practices are followed in completing Work tasks.

G. Document a daily Work Site safety walk-through noting observations and corrective actions.

H. If the Contractor Site Health and Safety Officer is to be changed during the Contract, submit Qualifications per this Section of the proposed officer prior to implementation on the Contract.

I. Be responsible to correct hazardous conditions and practices. When more than one contractor is working within a given area, identify which personnel have the authority to take action to prevent physical harm and property damage.

1.08 ADDITIONAL CONSIDERATIONS FOR SITE-SPECIFIC HASP CONTENT

A. The following describes certain minimum precautions for consideration in developing a Site-Specific HASP. Include in the Site-Specific HASP all of the items which may apply to the Work. There may be other items not indicated below that shall be addressed in the Site-Specific HASP. The items indicated below do not cover every possible situation or hazard. Items that are not needed shall be noted in the Site-Specific HASP as not applicable (N/A).

B. Hazard Communication (Chapter 296-800 WAC):
   1. Contaminant gases that may be encountered include, but are not limited to, hydrogen sulfide, methane, carbon monoxide, and carbon dioxide.
   2. Provide a written Hazard Communication Program and emergency management plan addressing these and other potential hazardous substances that may exist and be brought on site during the Work.
   3. For Work requiring use of hazardous materials and chemicals, provide a list and corresponding SDS for hazardous chemicals to be used on site. If no hazardous chemicals are to be used, provide statement to that effect.

C. Confined Space (Chapter 296-809 WAC):
   1. “Confined space” refers to all confined spaces, which may include dewatering storage tanks or manholes and are designated and classified as Permit-Required Confined Spaces (PRCS).
   2. The nature of the Work may expose workers to permit required confined spaces having possible explosive, toxic, and oxygen deficient atmospheric conditions.
   3. Provide a written PRCS Safety Program that meets the requirements of Chapter 296-809 WAC (February 5, 2018 version).

4. Identify the trained and certified PRCS Program Administrator by name and title.
5. Identify the trained and certified PRCS Program Competent Person(s) by name and title.
6. Identify the trained and certified PRCS Program Qualified Person(s) by name and title.
7. Identify the trained and certified PRCS Program Authorized Entrants, Authorized Attendants, and Authorized Entry Supervisors by name and title.
8. Identify the trained and certified PRCS Rescue Team or Rescue Service to be utilized for Entry Rescue when Non-Entry Rescue is not feasible.
9. The Contractor shall coordinate all necessary PRCS entry with Wastewater Treatment Division (WTD) staff through the Project Representative.

D. Lockout Tagout (Hazardous Energy Control) (Chapter 296-803 WAC):
   1. The nature of the Work may expose workers to hazardous energy sources that include, but are not limited to, electrical, mechanical, pneumatic, hydraulic, thermal, and computerized systems.
   2. Provide a written plan outlining safe work practices addressing hazardous energy control procedures that meet the requirements of 29 CFR 1910.147 and Chapter 296-803 WAC.
   3. The Contractor shall coordinate all necessary Lockout Tagout Hazardous Energy Control with WTD staff through the Project Representative.

E. Fall Prevention and Protection (Chapter 296-876 WAC and Chapter 296-880 WAC):
   1. The nature of the Work may expose workers to fall hazards.
   2. Provide a written Fall Prevention and Protection Plan outlining safe work practices, training, and equipment addressing fall hazards that meet the requirements of Chapter 296-876 WAC and Chapter 296-880 WAC.

F. Personal Protective Equipment (PPE) (Chapter 296-800 WAC):
   1. The nature of the Work may expose workers to miscellaneous injury hazards that include, but are not limited to, head, hands, feet, body, eyes, and ears. PPE shall include respiratory protection and PFD as applicable.
   2. Provide a written PPE plan outlining safe Work practices addressing the use of PPE and clothing that meet the requirements of Chapter 296-800 WAC.

G. Biological Hazards and Bloodborne Pathogens (Chapter 296-823 WAC):
   1. Wastewater systems carry a wide spectrum of disease-producing organisms. Provide a written hazard communication and biological/bloodborne pathogen program detailing the preventive measures to be taken to provide an appropriate work environment for all Work Site employees as well as Owner staff on site. These may include, but are not limited to, the following:
      a. Instruction in appropriate measures to avoid contamination
      b. A preventative inoculation program (tetanus/diphtheria, etc.) available to all employees
      c. PPE and clothing to protect against infection, including rubber boots with full sole and heel steel insert-liners, safety glasses or goggles, and gloves
      d. Facilities for workers to clean up, wash, and maintain good personal hygiene practices

H. Fire Protection – Hot Work and Hot Work Permits (HWP):
   1. National Fire Protection Association (NFPA) 51B – Standard for Fire Prevention During Welding, Cutting, and Other Hot Work shall be followed unless it does not meet the requirements of this Section.
   2. A HWP shall be utilized in all WTD facilities and on construction sites where the potential for the ignition of explosive gases, liquids and flammable/combustible materials, and oxygen-enriched atmospheres may potentially exist.
   3. Identify any type of Work that produces a possible source of ignition in the presence of a fuel and oxygen (Fire Triangle) including, but not limited to, the following: sparks, static electricity, welding, torch cutting, flame heating, brazing, grinding, sanding, and drilling. These activities are considered extremely dangerous in areas where the potential for a Lower Explosive Limit above 10% or oxygen-enriched atmosphere above 23% could be encountered.
   4. A HWP is required for areas that are classified per the WAC or NFPA 820, as applicable.
      a. PRCS
      b. Process Safety Management (PSM) system areas
      c. Class 1 Division 1/Division 2 hazardous locations
      d. All other areas where the hot work would be in close proximity to combustibles or flammables

e. All sites under Contractor control
5. Document how Contractor HWP is established.
6. Employ a system for issuing and monitoring HWP use.
7. A HWP is valid only for the following:
   a. The parties performing the Work
   b. The work shift when the Work is conducted
   c. Only for the conditions observed and evaluated when the permit is issued
8. If the local Fire Department/Fire Marshall authority having jurisdiction require a HWP, the Contractor shall be required to obtain a HWP. If not required by the local authority having jurisdiction, the Contractor shall use its own corporate HWP.
9. Torch applied roofing requires a HWP and a fire watch.
   a. Regular fire-watch inspections should be done throughout the day by a competent person and for a minimum of 2 hours starting when the last torch is extinguished on a roof. Inspections should include the roof's entire field, flashings, and the underside of the roof deck.

I. Commercial Diving Operations (Chapter 296-37 WAC):
1. Due to the hazards associated with commercial diving operations, specific safety protocols and procedures are required to ensure worker and diver safety.
2. Provide a comprehensive Safe Practices Manual for Diving Operations that complies with Chapter 296-37 WAC.

J. Flammable Liquids and Liquefied Petroleum Gases:
1. No propane, propylene, butane, isobutane, and butylenes shall be stored inside buildings.
2. Provide a written list of any of these materials that will be used on site.

K. Excavation, Trenching and Shoring (Chapter 296-155 WAC Part N):
1. Due to the hazards associated with excavation, trenching, and shoring, specific safety protocols and procedures are required to ensure worker safety.
2. Each worker in a trench shall be protected from a cave-in by an adequate protective system.
3. A trench that is 4 feet or more in depth shall have a safe means for workers to get in and out of the trench. A means of egress is required to be within 25 feet of lateral travel.
4. When excavation operations approach the location of underground installations, the exact location of the installations shall be determined by safe and acceptable means.
5. Follow the requirements in Chapter 296-155 WAC Part N in developing an excavation, trenching, and shoring plan.

L. Heavy Equipment Operations, Staging:
1. All vehicles shall have a service brake system, an emergency brake system, and a parking brake system. These systems shall be maintained in operable condition and may use common components.
2. Before leaving a motor vehicle unattended, the motor shall be stopped. The parking brake shall be engaged and the wheels turned into curb or berm when parked on an incline. If parking on an incline and there is no curb or berm, the wheels shall be chocked or otherwise secured.

M. Suspect Material:
1. The Contractor is responsible for reviewing the materials to be encountered at the Work Site to inform the Contractor's Work. All information is provided in these Specifications (included in Section 01 13 00 – Reference Material) and other Contract Documents. Should material not identified in these Specifications be encountered, immediately notify the Project Representative of unusual conditions so that the proper actions are implemented.

N. Traffic Control Plan:
1. The needs and control of all road users (motorists, bicyclists, and pedestrians) within the highway, or on private roads open to public travel, including persons with disabilities, through a temporary Traffic Control zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents.

2. When the Work requires the occupation of traffic lanes, parking lanes, parkways, or other public right-of way closures, it shall be per the local authority having jurisdiction. See Section 01 55 26 (Traffic Control) for specific traffic control requirements.

O. A Personnel and Equipment Decontamination Plan (see Section 01 35 43 – Environmental Procedures) shall be implemented for specific personnel and equipment decontamination requirements.

P. A medical surveillance program shall be conducted for Work Site personnel before, during, and after completion of Work, if required in accordance with WAC 296-843-210.

Q. Electrical Safety:
1. Use either ground-fault circuit interrupters or an assured equipment grounding conductor program to protect employees on construction sites covering all cord sets, receptacles that are not a part of the building or structure, and equipment connected by cord and plug that are available for use or used by employees. These requirements are in addition to any other requirements for equipment grounding conductors per WAC 296-155-447.
2. In work areas where the exact location of underground electric power lines is unknown, no activity that may bring employees into contact with those power lines shall begin until the power lines have been positively and unmistakably de-energized and grounded.

R. Wildfire and Smoke: Comply with WAC Chapter 296-62-085 through 8580 (with Appendices A and B).

S. Outdoor Heat Exposure: Comply with WAC Chapter 296-62-095 through 9560.

T. Public Health Emergency Reporting and Notification Requirements for Infectious and Contagious Diseases: Comply with WAC Chapter 296-62-600 to WAC 296-62-609.

U. In-water Work shall comply with requirements of this Section and Section 35 10 00 (Navigation Safety and Marine Traffic Control).

1.09 EMERGENCY RESPONSE PROCEDURES

A. List standard operating procedures and measures to be taken in emergency situations. The Contractor shall include an emergency response and emergency evacuation plan and emergency contacts (i.e., names/telephone numbers) of the following:
1. Designated personnel from own company
2. Regulatory agencies applicable to the Work and as per legislated regulations
3. Local emergency resources
4. Project Representative
5. A route map with written directions to the nearest hospital or medical clinic

B. The Contractor shall include the following provisions in the emergency procedures, such as the following:
1. Notify workers and the first aid attendant of the nature and location of the emergency.
2. Evacuate all workers safely.
3. Check and confirm the safe evacuation of all workers.
4. Notify the fire department or other emergency responders.
5. Notify adjacent workplaces or residences that may be affected if the risk extends beyond the Work Site.
6. Notify the Project Representative.

C. The Contractor shall provide written rescue and evacuation procedures as required for, but not limited to, the following:
1. Work at high angles.
2. Work in confined spaces or where there is a risk of entrapment.
3. Work with hazardous substances.
4. Underground work.
5. Work on, over, under and adjacent to water.

6. Workplaces where there are persons who require physical assistance to be moved.

D. The Contractor shall design and mark emergency exit routes to provide quick and unimpeded exit.

E. The Contractor shall revise and update emergency procedures as required and resubmit to the Project Representative.

F. The Contractor shall not rely solely upon 911 for emergency rescue in a confined space, working at heights, etc.

1.10 UTILITIES

A. The Contractor shall not rely upon Drawings or other information provided with utility locations.

B. Call the Utilities Underground Location Center before you dig, phone number 811.

C. During the performance of the Work, take appropriate precautions when working near, around, and with utilities, in order to protect the health and safety of the worker, the public, property, and the environment.

D. The Contractor is solely responsible for utility clearance. Provide a flagged warning line for all Work conducted in proximity to power lines. Coordinate and meet the requirements of the utility owner for this Work.

E. Coordinate and meet the requirements of the utility owner and the Project Representative to obtain approval to disconnect or reconnect utilities.

PART 2 PRODUCTS

2.01 PRODUCTS SPECIFIED FOR HEALTH AND SAFETY

A. Provide the equipment and supplies necessary to support the Work as described in the Site-Specific HASP. Equipment and supplies may include, but are not limited to, the following:
   1. Chemicals to be used on site, including dust suppressants/wetting agents, cleaning, degreasing, and/or welding or cutting supplies
   2. Hazardous materials inventory and SDS for the chemicals brought to the Work Site
   3. Enclosure equipment
   4. Fencing and barriers
   5. Warning signs and labels
   6. Trenching equipment
   7. Fire extinguishers
   8. Equipment to support "hot” work
   9. Equipment to support lockout/tagout procedures
   10. Scaffolding and fall protection equipment
   11. PPE (e.g., hard hats; foot gear; and skin, eye, and respiratory protection) and PFDs
   12. Area and personnel exposure monitoring equipment
   13. Odor control materials if necessary for sediment stockpiles
   14. Removal equipment and supplies
   15. Decontamination equipment and supplies
   16. First Aid equipment
   17. Release prevention equipment
   18. Field documentation logs and supplies

PART 3 EXECUTION

3.01 SAFETY AND HEALTH COMPLIANCE

A. The Project Representative reserves the right to implement the Site-Specific HASP.

B. Ongoing Work and hazardous situations that are considered a health and safety risk by the Project Representative shall be corrected immediately.

C. Be responsible to stop that portion of the Work that is determined to be an imminent or immediate threat to worker health and safety.

D. Ensure that necessary air monitoring, ventilation equipment; protective clothing, hazardous energy control devices, fall prevention, and other specified supplies and equipment are made readily available to employees to facilitate implementation of the Site-Specific HASP.

E. Incidents:
   1. Notify the Project Representative immediately of all near miss incidents and all accidents involving personal injury and property damage.
   2. Provide a written report known as the Incident Report within 24 hours of any incident. Report for each incident occurrence shall include the following:
      a. Description of the event
      b. Names of personnel involved
      c. Description of injuries and treatment required (short term and long term)
      d. Description of property damage
      e. Work Site visits and inspections of other agencies as a result of an incident. Include names of the persons, purpose of the visit, and any other pertinent information.

F. Conduct a pre-construction safety meeting with Contractor staff and with all subcontractor staff at the beginning of each Construction Season. Submit list of attendees and minutes of pre-construction safety meeting.

G. Conduct all Tailgate Meetings including job safety at the beginning of each Work shift. Submit list of attendees and minutes of daily safety Tailgate Meetings.

H. Submit a Monthly Contractor Injury Report on Form 01 35 29-A in Section 01 33 10 (Standard Forms). consisting of a summary of the current month's injury accidents.

I. Use of intoxicants or of illegal or debilitating drugs while working on this Contract is prohibited.

J. No Contractor Site Health and Safety Officer shall be assigned that does not meet the requirements of this Section.

K. Submit all safety related citations received for Contract Work immediately upon receipt. If appealed to the State of Washington, notify the Project Representative a minimum of every month updating the status of the appeal until resolved. Submit documentation of the findings when resolved.

3.02 SITE-SPECIFIC HEALTH AND SAFETY PLAN REVISIONS

A. In the event that the Project Representative, regulatory agencies, or jurisdictions determine the Site-Specific HASP, associated documents, or organizational structure to be inadequate to protect employees and the public, the Contractor shall do the following:
   1. Modify the Site-Specific HASP to meet the requirements of said regulatory agencies, jurisdictions, and the Project Representative.
   2. Provide submittal for revisions to the Site-Specific HASP within 7 days of the notice of a required modification.

3.03 POSTING

A. Provide and maintain a copy of the most up-to-date Site-Specific HASP at the Contractor's Work Site office and at each of the subcontractors' offices. If the Contractor or subcontractor does not have an on-site office, the Site-Specific HASP will be maintained on site each workday in a vehicle or other suitable location. The

Contractor shall maintain a current copy of the Site-Specific HASP on vessels where Contract Work is performed.

3.04 CORRECTION OF NON-COMPLIANCE

A. Failure to comply with this Section will result in Work suspension until adequate health and safety measures are implemented.

B. Immediately address health and safety non-compliance issues identified by the Project Representative.

C. Provide the Project Representative with a written report of action taken to correct non-compliance with health and safety issues identified.

D. The Project Representative may issue a “stop work order” if non-compliance of health and safety regulations is not corrected immediately or within posted time. The Contractor/subcontractors will be responsible for any costs arising from such a “stop work order.”

3.05 TECHNICAL ASSISTANCE

A. Technical assistance is available from the following:
Wastewater Treatment Division
Safety and Hazardous Materials Program Office
201 South Jackson St.
Mail Stop: KSC-NR-0515
Seattle WA 98104
   1. Contacts:
      a. Jim Faccone
         1) WTD Safety and Hazardous Materials Program Manager
         2) Phone (206) 477-5379
      b. Dan Brittenham
         1) WTD Construction Safety Coordinator
         2) Phone (206) 477-9809

END OF SECTION

SECTION 01 35 43

ENVIRONMENTAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies environmental controls and requires plans that describe how the Contractor will manage environmental protection and controls during the Work. The Contractor shall be responsible for adhering to these environmental procedures while completing all Work elements under this Contract.

1.02 DESCRIPTION OF WORK

A. Environmental degradation arising from construction activities for this Project shall be prevented, abated, controlled, and minimized by the Contractor by complying with all applicable federal, state, and local laws and regulations concerning environmental pollution control and abatement, as well as any specific requirements in the Contractor's approved Environmental Mitigation Binder (EMB).

B. The Contractor is responsible for environmental protection during all construction activities at all locations the Contractor performs Work. Work locations include, but are not limited to, the Work Site, Contractor Transload Facility, Staging and Stockpile Area(s), Disposal Facility, and during barge transport over water and land-based transportation of Dredge Material, Dredge Debris, Identified Debris, and Piling. This Section primarily addresses Work conducted at the Work Site, but the Contractor is responsible for complying with environmental protection regulations at all locations that are used.

C. This Section assumes that Dredge Material, Dredge Debris, Identified Debris, and Piling will be dewatered (if applicable), amended (if applicable), directly transported from the Work Site via haul barge or truck to the Contractor Transload Facility, rehandled, and loaded into trucks or railcars for upland transportation to an approved Disposal Facility in accordance with the Specifications and applicable regulations.

D. No separate payment will be made for effort associated with Work described in this Section. Work required to comply with this Section is considered incidental to the Work described in the Contract Documents.

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway (LDW) Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

1.04 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals

1. Submit a detailed, written EMB, as part of the Remedial Action Work Plan, in conformance with the Specifications. Construction activities shall not begin until the EMB has been reviewed and approved by the Project Representative.
2. Specific requirements for the EMB are detailed in Article 1.05.

C. Construction Submittals
1. Submit a daily record of compliance with air, noise, and light criteria requirements and any implemented measures, controls, and actions to address light, noise, and odor issues during construction as part of the Daily Construction Reports (see Section 01 33 00 – Submittals).
2. Submit a daily record of activities for water quality protection, stormwater pollution prevention, and water management and spills and any implemented measures, controls, and actions to address these issues during construction as part of the Daily Construction Reports (see Section 01 33 00 – Submittals)
3. Submit the Contractor's environmental inspection and monitoring report on a weekly basis, as part of the Weekly Construction Reports (see Section 01 33 00 – Submittals).

D. Post-Construction Submittals
1. Submit the Contractor's Annual Construction Season Summary Report, as described in Section 01 78 39 (Project Record Documents). As part of environmental compliance with the Project, the Contractor's Annual Construction Season Summary Report shall summarize the environmental activities completed during the Construction Season, including representative Work Site photographs, a summary of environmental inspections and monitoring data collected by the Contractor, environmental management and issues during construction and how these issues were managed, a summary of the effectiveness of protection and mitigation measures, and a summary of environmental lessons learned during construction.

1.05 ENVIRONMENTAL MITIGATION BINDER (EMB)

A. Develop and maintain for the duration of the Contract an EMB that comprehensively incorporates plans and procedures for implementing all required environmental controls (including but not limited to the requirements of this Section and other referenced Sections), maintains environmental quality and protection during all construction activities, and complies with all applicable federal, state, and local statutes, ordinances, and regulations and all Project approval conditions. The EMB shall also present a comprehensive overview of known or potential environmental issues and address topics at a level of detail commensurate with those environmental issues and required construction tasks.

B. The EMB specified in this Section shall constitute the "Environmental Mitigation Plan" required in Section 00 72 00 (General Terms and Conditions), Article 3.26.

C. At a minimum, the EMB shall contain the following information:
1. Organization chart and names of persons responsible for EMB compliance:
   a. Names and qualifications of person(s) responsible for providing Certificates of Disposal (or waste manifests) for material to be removed from the Work Site
   b. A list of key personnel, including phone numbers (home and office), qualified for EMB compliance
   c. Name, qualification, and affiliation of person (including 24-hour-access phone number) who will act as the emergency coordinator and will be available 24 hours per day to supervise and enforce compliance with the EMB (The Contractor shall coordinate with the Project Representative to designate a temporary substitute, if required.)
2. The following plans and subsequent revisions shall be submitted as a part of the EMB:
   a. Water Quality Protection Plan
   b. Erosion and Sediment Control (ESC) Plan (refer to Section 31 25 00 – Erosion and Sedimentation Control)
   c. Stormwater Pollution Prevention Plan (SWPPP)
   d. Water Management Plan
   e. Spill Prevention, Control, and Countermeasure Plan (Spill Plan)
   f. Air Pollution and Odors Control Plan
   g. Noise Control Plan
   h. Light Control Plan
   i. Personnel and Equipment Decontamination Plan

j. Traffic Control Plan (refer to Section 01 55 26 – Traffic Control)

D. In the event that the Project Representative, EPA, or jurisdictions determine any of the plans in the EMB or the Contractor's activities to be inadequate to protect the environment:
   1. Stop the Work in progress until adequate environmental protection measures are implemented.
   2. Modify the plans and/or EMB to meet the requirements of EPA, jurisdictions, and the Project Representative.
   3. Submit and receive acceptance of modifications to the plans and/or EMB prior to restarting the Work.

1.06 WATER QUALITY PROTECTION PLAN

A. Prepare and submit a Water Quality Protection Plan, to be included in the EMB, to be used for the duration of the Work.

B. Describe the best management practices (BMPs), including operational controls and equipment controls; specialized equipment (e.g., environmental buckets, silt curtains); means, methods, and procedures; and construction sequencing used to prevent water quality criteria exceedances during completion of dredging, material placement, and other in-water construction activities.
   1. The Contractor shall provide the following information for silt curtains (if used):
      a. The type and make of the silt curtain system
      b. Silt curtain layout, dimensions, and how the system will operate with the Contractor’s equipment
      c. Silt curtain anchoring plan
      d. Methods and procedures for Contractor inspection, maintenance, and repair of silt curtain system during construction

C. Describe the Contractor’s contingency actions that will be taken to restore compliance with water quality criteria should water quality exceedances occur during any in-water activities.

D. Delays caused by complying with water quality criteria will not be cause for additional compensation to the Contractor.

E. The Contractor shall detail the methods that it will use to monitor its haul barges for leakage during dredging and transport of Dredged Material to the Contractor Transload Facility(ies). If leakage is observed, however minor, the barge transport operations shall be halted and not restarted until repairs, satisfactory to the Project Representative, are made.

1.07 EROSION AND SEDIMENT CONTROL PLAN

A. Prepare and submit an ESC Plan, as required per Section 31 25 00 (Erosion and Sedimentation Control), and subsequent revisions, to be included in the EMB.

1.08 STORMWATER POLLUTION PREVENTION PLAN

A. An SWPPP may be required for laydown or construction disturbance areas via a Clean Water Act Section 402 Individual Permit or Construction Stormwater General Permit if required by the Washington State Department of Ecology (Ecology). Instances where an SWPPP may be required are limited to locations or off-site facilities outside the Work Site (if proposed by the Contractor), which may include the following: 1) proposed land disturbance exceeding 1 acre in size for upland staging ; 2) off-site facilities determined to be a significant contributor of pollutants to nearby surface waters; 3) off-site facilities reasonably expected to cause a violation of water quality standards; or, 3) off-site facilities where stormwater could run off or enter a conveyance system that leads to surface waters.

B. If an SWPPP is required, submit the SWPPP to the Project Representative for review and to Ecology or the local jurisdiction having authority for approval prior to commencing ground-disturbing activities.

C. Use the SWPPP template published on the Ecology website at https://ecology.wa.gov/Asset-Collections/Doc-Assets/Water-quality/Water-Quality-Permits/Stormwater-General-Permits/Construction-Stormwater-General-Permit/CSWGP_SWPPP_Template.

D. Include the following in in the SWPPP:
   1. Narrative: Include each of the 13 Elements listed in the National Pollutant Discharge Elimination System Special Condition S9 and provide a list of BMPs to be used to comply with the Element or clearly justify in the narrative what conditions render the Element unnecessary:
      a. Element 1: Preserve Vegetation/Mark Clearing Limits
      b. Element 2: Establish Construction Access
      c. Element 3: Control Flow Rates
      d. Element 4: Install Sediment Controls
      e. Element 5: Stabilize Soils
      f. Element 6: Protect Slopes
      g. Element 7: Protect Drain Inlets
      h. Element 8: Stabilize Channels and Outlets
      i. Element 9: Control Pollutants
      j. Element 10: Control Dewatering
      k. Element 11: Maintain BMPs
      l. Element 12: Manage the Project
      m. Element 13: Protect Low Impact Development (LID) BMPs

1.09 WATER MANAGEMENT PLAN

A. Prepare and submit a Water Management Plan, to be included in the EMB, to be used for the duration of the Work. The Water Management Plan shall specify management, controls, and treatment for drainage water, stormwater, and wastewater within the Contractor Transload Facility and associated stockpile area(s).

B. The system is expected to be operated intermittently throughout the Project. Water collection and treatment will be required for stormwater, including water collected within stockpile areas, from other disturbed areas within the Contractor Transload Facility where stormwater contacts Dredge Material, Dredge Debris, Identified Debris, and Piling or other potentially contaminated material, and from paved areas.

C. At a minimum, the Water Management Plan shall include the following:
   1. Work Site layout, including locations of stockpile area(s) for clean material and contaminated materials
   2. Methods to contain, collect, and treat all effluent drainage water, stormwater, or other form of discharges from stockpiled materials
   3. Identification of potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharge from the Work Site
   4. Methods to manage discharge including stormwater discharge at the Work Site and Contractor Transload Facility, and associated stockpile area(s) to comply with all applicable laws and regulations
   5. Methods to direct surface waters that have not contacted potentially contaminated materials to existing surface drainage systems
   6. Identify methods and procedures for managing wastewaters that are directly derived from construction activities, such as cleanup water and personnel and equipment decontamination facilities
   7. Provide, operate, and maintain wastewater storage tanks to store wastewaters

1.10 SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN (SPILL PLAN)

A. Prepare and submit a Spill Plan as a part of the EMB, to be used for the duration of the Work. The Spill Plan shall contain, at a minimum, the following information and address the following requirements:
   1. Spill Prevention:
      a. Identify personnel responsible for managing and implementing the Spill Plan, any containment of spills, and cleanup for both in-water and upland work activities.
      b. Identify any potentially hazardous substances to be used on the Work Site; identify intended actions to prevent introduction of such materials into air, water, or ground; and detail provisions for compliance

with federal, state, and local ordinances, laws, and regulations for storage and handling of these materials.
    c. Identify spill prevention and containment methods to be used.
    d. Identify security measures, inspection procedures, and personnel training procedures as they relate to spill prevention, containment, response, management, and cleanup.
    e. Detailed procedures for in-water refueling of marine equipment within the Work Site and within the LDW.
    f. Address equipment maintenance, refueling, and cleaning activities and on-site storage areas for hazardous materials.
2. Spill Response:
    a. Outline spill response procedures, including assessment of the hazard; securing of spill response and personal protective equipment; containment and elimination of the spill source; and mitigation, removal, and disposal of the material.
    b. Include the following:
        1) Methods for immediately containing all visible floating oils with booms, dikes, or other appropriate means
        2) Methods for immediately containing all visible oils on land using dikes, straw bales, or other appropriate means
        3) Identification of the equipment and materials to be maintained at the Work Site to carry out the responsive measures
        4) Location of disposal of waste materials at a legal site that accepts the waste
        5) List of 24-hour response numbers for agency notification in the event or imminent risk of any unforeseen oil, substance, or other product discharges into public water, or onto land with a potential for entry into public waters.

1.11 AIR POLLUTION AND ODORS CONTROL PLAN

A. To address air pollution criteria during Project construction, the Contractor shall prepare and submit an Air Pollution and Odors Control Plan, as part of the EMB, to identify the measures to mitigate air pollution and odors generated by the construction activities. The Air Pollution and Odors Control Plan shall be used for the duration of the Work.

B. At a minimum, the Air Pollution and Odors Control Plan shall include the following information:
    1. Identification of potential air pollution and odor-generating sources (equipment, activities, stockpiles, etc.)
    2. Location of potential generating sources
    3. Methods, procedures, equipment, and materials to be used for air pollution and odor prevention and mitigation for each source to minimize air pollution and odors at the Work Site
    4. Description of dust minimization practices

C. The Air Pollution and Odors Control Plan shall meet applicable federal, state, and local air quality codes and standards in the areas of Work, as follows:
    1. Hours of work at the Work Site: refer to Section 01 14 00 (Work Restrictions)
    2. Refer to Section 01 41 00 (Environmental Regulatory Requirements)
        a. Clean Air Act (42 United States Code 7401-7671q; 40 Code of Federal Regulations 50)
        b. Washington Clean Air Act (Revised Code of Washington 70.94; Washington Administrative Code 173-400)
        c. Puget Sound Clean Air Agency (Sections 9 and 15)

D. Comply with additional air pollution equipment tier requirements and usage (number of hours) for each construction activity of the Project, as described in Section 01 35 44 (Green Remediation Requirements).

1.12 NOISE CONTROL PLAN

A. To address noise criteria during Project construction, the Contractor shall prepare and submit a Noise Control Plan, as part of the EMB, to identify the measures to mitigate noise generated by the construction activities. The Noise Control Plan shall be used for the duration of the Work.

B. At a minimum, the Noise Control Plan shall include the following information:
   1. Methods, procedures, and equipment to be used for noise mitigation and control
   2. Hours of Work operation, including daytime and nighttime hours
   3. Identification of noise-generating equipment and associated sound levels during their operation
   4. Layout of equipment, including anticipated changes in layout
   5. Hours of operation of each piece of equipment
   6. Noise prevention and mitigation measures for each piece of equipment to minimize noise pollution at and beyond the Work Site
   7. Any additional preventive and mitigation measures for noise not related to a specific piece of equipment

C. Description of the baseline noise monitoring approach at the beginning of in-water construction activities. The Contractor shall update and modify identified mitigation measures whenever major activity changes or different noise-generating equipment is mobilized to the Work Site from the equipment previously submitted.

D. List mitigation measures for each location and for each change in major activities to be performed at the Work Site.

E. The Noise Control Plan shall meet applicable local noise codes and standards in the areas of Work:
   1. Hours of work at the Work Site: refer to Section 01 14 00 (Work Restrictions)
   2. Refer to Section 01 41 00 (Environmental Regulatory Requirements):
      a. Seattle Municipal Code (SMC) Chapter 25.08, Tukwila Municipal Code Chapter 8.22, and King County Title 12.86 establish equivalent maximum permissible sound levels for industrial sound sources measured at or within the boundary of the receiving properties (urban residential, commercial, and industrial areas).
      b. SMC 25.08.410 sets a 60 A-weighted decibel (dB[A]) limit for industrial to residential noise generation.
      c. If the Contractor proposes Work outside of the approved work hours, noise variance will apply per SMC 25.08.590, to be approved at the discretion of the Director of the Department of the Seattle Department of Construction and Inspections.
      d. SMC 25.08.425 allows a 25 dB(A) addition for construction activities by heavy equipment, making the maximum permissible sound level at the receiving residential property 85 dB(A) between the hours of 7:00 a.m. and 10:00 p.m. on weekdays and between 9:00 a.m. and 10:00 p.m. on weekends and legal holidays.

1.13 LIGHT CONTROL PLAN

A. To address light criteria during Project construction, the Contractor shall prepare and submit a Light Control Plan, as part of the EMB, to identify the measures to mitigate excess light generated from construction equipment at the Work Site. The Light Control Plan shall be used for the duration of the Work.

B. At a minimum, the Light Control Plan shall include the following information:
   1. Methods, procedures, and equipment to be used for light mitigation and control
   2. Hours of Work operation, including daytime and nighttime hours
   3. Hours during which lights will be used to illuminate the Work, including seasonal changes
   4. Layout of existing and temporary lights to be used
   5. Preventive and mitigation measures to minimize light pollution at the Work Site
   6. Light monitoring approach on an as-needed basis if community nuisance feedback has been received

C. Update and modify identified light control measures to address deficiencies, to adjust for seasonal changes, and as appropriate when there are major changes in the Work.

D. The Light Control Plan shall meet applicable local light control codes and standards in the areas of Work:
   1. Hours of Work at the Work Site: refer to Section 01 14 00 (Work Restrictions)
   2. Comply with Section 01 41 00 (Environmental Regulatory Requirements):
      a. SMC 23.50.046 establishes the acceptable light emissions for the receiving properties (urban residential, commercial, and industrial areas).
      b. Tukwila Municipal Code Chapter 18.044.050 establishes development standards, including lighting standards.

1.14 PERSONNEL AND EQUIPMENT DECONTAMINATION PLAN

A. Prepare and submit a Personnel and Equipment Decontamination Plan, as part of the EMB, to identify the procedures to decontaminate personnel and the equipment used in construction activities after Work is completed. The Personnel and Equipment Decontamination Plan shall be used for the duration of the Work.

B. The Personnel and Equipment Decontamination Plan shall comply with the requirements in Section 01 35 29 (Health and Safety).

C. At a minimum, the Personnel and Equipment Decontamination Plan shall include the following information:
   1. Location(s) where decontamination will be performed
   2. Procedures to perform decontamination of equipment
   3. Procedures for collection and disposal of wastewaters or sediment that accumulate on equipment decontamination pad
   4. List of equipment for personnel engaged in equipment decontamination (PPE, including suitable disposable clothing, respiratory protection, and face shields)

1.15 TRAFFIC CONTROL PLAN

A. Prepare and submit a Traffic Control Plan, as required per Section 01 55 26 (Traffic Control), and subsequent revisions, in the EMB.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 PERSON RESPONSIBLE

A. The person responsible for implementation of the plans in the EMB shall be given the authority to take appropriate actions to safeguard the environment during the Work. The materials, equipment, and supplies necessary to implement the plans shall be readily available at all times.

3.02 WORK SITE MAINTENANCE

A. In addition to the requirements of this Section, comply with the requirements of Section 00 72 00 (General Terms and Conditions) regarding Work Site maintenance, Work Site cleanup, the lawful handling of Hazardous Materials, and Contractor responsibilities.

B. Maintain lids on all refuse containers.

C. Handle paints, solvents, fuel, oil, and other construction materials with care to prevent entry of contaminants into storm drains, surface waters, or soils.

D. Remove materials and equipment from the Work Site when they are no longer necessary. Do not allow waste material to remain on or adjacent to the Work Site. The Contractor shall collect, carry off the Work Site, and legally dispose of such materials as specified in Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).

E. Unless otherwise indicated, restore ground surface to its pre-construction condition. The Contractor shall restore disturbed areas by replanting or repaving as soon as practical after construction.

3.03 STREET CLEANING

A. Use sealed trucks for the removal of contaminated or saturated or undrained Dredge Materials from the Contractor Transload Facility(ies).

B. Prevent dirt and dust from escaping trucks and/or rail cars by covering dusty loads, washing truck tires before leaving the Contractor Transload Facility(ies), using crushed rock at entrances, or other reasonable methods.

C. When working dump trucks and other equipment on paved streets and roadways, the Contractor shall clean the streets no later than at the end of each day's operations and at such additional interim periods as required. The Contractor shall clean the area using a vacuum sweeping truck. Cleaning equipment shall be available 24 hours per day while haul routes are in use.

D. The Contractor may use power washing trucks to clean street surfaces only after receiving approval from the Project Representative and only if following the BMPs to prevent exceedance of state or local water quality standards.

E. All streets in the construction area used by the Contractor's trucks or any other equipment hauling material to and from the area, whether within the Contract limits or adjacent thereto, shall be kept clean and shall be continuously serviced by the Contractor's use of sprinkling trucks to control dust.

F. Violations of the above requirements are sufficient grounds for the Project Representative to order the streets in question to be cleaned by others with all cost withheld from the Application for Payment.

G. Do not flush untreated solid material or soils or water containing solid material or soils into receiving LDW waters.

3.04 EROSION AND SEDIMENT CONTROL

A. Comply with requirements of Section 31 25 00 (Erosion and Sedimentation Control).

B. Implement the ESC Plan, and other construction stormwater management plans if required by the Contract, as accepted. The Contractor shall modify as necessary to meet changing conditions.

C. Applicable erosion control measures shall be installed prior to excavation, clearing, grubbing, or grading activities.

D. Do not allow Work Site erosion to cause a violation of the state or local water quality standards.

3.05 WATER QUALITY CONTROLS

A. The Contractor shall be responsible for meeting water quality criteria for in-water construction activities as defined by applicable federal, state, and local standards.

B. The Contractor shall procure, design, install, operate, inspect and maintain BMPs and control measures as necessary to comply with water quality criteria and prevent/minimize to the extent practicable sediment recontamination within the Work Site.

C. The Contractor shall use an environmental bucket during in-water construction activities as the primary technology to be used for dredging (see Section 35 20 23 – Remedial Dredging, Barge Dewatering, and In-Water Transportation). Other buckets will be allowed to achieve both the Required Dredge Elevation and Required Dredge Thickness, subject to approval by the Project Representative.

D. The Contractor is not required to use a silt curtain during in-water construction activities. However, the Contractor shall be required to be able to procure and implement this water quality environmental control method within 1 calendar week if directed by the Project Representative.

E. The Contractor shall comply with the following water quality performance standards during its dredging and barge dewatering operations as listed in Table 01 35 43-1.

Table 01 35 43-1
WATER QUALITY CRITERIA FOR CONVENTIONAL PARAMETERS

PARAMETER	CRITERIA	UNITS
Turbidity	If background is <50 NTU, the criteria is background +5 NTU. If background is >50 NTU, the criteria is background +10%.	NTU
DO	>6.0 mg/L[1]	mg/L
Temperature	Water body temperature <16°C (60.8°F): incremental temperature increases must not exceed 12°/(T - 2)[2]	°C
pH	7 to 8.5 pH units	pH units

Notes:
1. If background DO is less than 6.0 mg/L and due to natural conditions, then dredging cannot reduce the background DO by more than 0.2 mg/L.
2. If the water body temperature is greater than 16°C (60.8°F), the incremental increase due to dredging cannot exceed 0.3°C.
DO: dissolved oxygen
mg/L: milligram per liter
NTU: nephelometric turbidity unit
T: highest ambient background temperature

F. The Contractor shall review and comply with conditions in the agency-approved Water Quality Monitoring Plan (WQMP). The WQMP is available as a reference document in Section 01 13 00 (Reference Material).

G. The Owner will conduct water quality monitoring during the Project to assess the Contractor's compliance of water quality criteria. In the event of a water quality exceedance, the Contractor will be required to modify its procedures, methods, or equipment appropriately so as to remedy the exceedances, at no additional expense to the Owner.

3.06 CONTROLS DURING TRANSLOADING, TEMPORARY STOCKPILING, AND TRANSPORTATION TO DISPOSAL

A. The Contractor shall be responsible for controls at the Contractor Transload Facility reduce the potential loss of material during transfer of Dredge Material, Dredge Debris, Identified Debris and Piling off the barge (while transloading materials) or from a temporary upland stockpile area (if intertidal sediment and shoreline bank soil excavation occurs, requiring an onshore management area). Such required BMPs include the following:
   1. To prevent dredged material spillage when transloading materials between the haul barge and transload facility, spill aprons shall be set up and used to direct bucket spillage back into the barges or onto the uplands and not into the LDW.
   2. Inside the Contractor Transload Facility, Dredge Material captured by spill aprons will be required to land on secondary containment areas outside the area typically traveled by trucks or railcars to avoid tracking material on tires or wheels.
   3. The bucket swing path from the haul barge to the Contractor Transload Facility will not be allowed to occur over open water. The Contractor is required to swing the offloading bucket over either the derrick barge or a "spanning" barge that will capture any spillage from the offloading bucket.
   4. No direct discharge of untreated effluent from the temporary stockpile area(s) to the receiving waters is allowed.
   5. All effluent from the temporary stockpile area(s) shall be collected, treated, and discharged in accordance with federal, state, and local laws and regulations.
   6. The Contractor may elect to construct a water treatment system at the Work Site and shall demonstrate in the EMB methods for compliance with water quality requirements to discharge treated effluent back to the LDW waters or other approved discharge locations.
   7. Visual monitoring shall be performed by the Contractor to determine if the transport of dry Dredge Materials creates a dust concern, and if so, dust suppression controls shall be employed (e.g., covering the haul trucks or containers).
   8. When wet materials are transported over land, haul trucks or railcar containers shall be lined or sealed and the load covered to reduce the chance of sediment or water release during transport.

9. For Dredge Material transfer from a temporary upland stockpile area, truck loading shall occur within the transfer area, and the trucks shall be decontaminated and inspected within a designated contained footprint before they leave the transfer area.
10. Trucks or railcars will not be overloaded to prevent loss due to spilling (minimum freeboard height of 6 or 36 inches, respectively, shall be maintained).
11. Truck loading areas will be swept frequently to reduce the probability of truck tires tracking Dredge Material outside the loading areas.
12. The trucks, truck loading area, and access route shall be visually inspected to confirm there is no loss of material or leakage from the trucks prior to releasing the truck from the Contractor Transload Facility to public roads.
13. Tires and truck or railcar bodies shall be cleaned to remove any Dredge Material, if necessary, before leaving the Work Site (e.g., dry brushing and tire/wheel washing).
14. Containment areas will be designed so that fluids from the transloading operations are collected separately from other site stormwater.
15. The fluid collected from transloading operations shall be disposed of with the other waste generated from the Work Site (included with the Dredge Material for disposal); sampled, treated, and discharged in accordance with approved permits of the Contractor Transload Facility; or disposed at a permitted Disposal Facility.

3.07 WATER MANAGEMENT CONTROLS

A. Stockpile and Equipment Decontamination Areas Wastewater Control Measures:
   1. Fully contain all stockpile and equipment decontamination area(s) located within the Staging and Stockpile Area(s) to prevent release of unfiltered effluent and suspended sediments, or other potentially contaminated materials from the stockpile area.
   2. Provide impermeable barriers (e.g., impermeable liner) to prevent effluent from infiltrating into groundwater or escaping through containment barriers (e.g., Jersey barriers).
   3. Cover exposed stockpiles when runoff from rain is, or would be likely to, cause turbid waters to enter the LDW at all times except when working the pile. Suspend Work in the rain if such Work cannot be performed without causing turbid runoff as defined in the associated SWPP for any off-site facility (Contractor Transload Facility and Staging and Stockpile Area(s)).
   4. There will be no discharge of excavation groundwater to the sanitary sewer, storm drains, or to the waterway without prior specific authorization of the applicable agency (Ecology, King County, other) in writing.
   5. Water management control requirements for transloading and temporary stockpiling of Dredge Material, Dredge Debris, Identified Debris, and Pilings, and all associated effluents, at the Contractor Transload Facility are described in Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).

B. Drainage and Surface Water Management:
   1. Conform to the regulations and requirements of legally authorized surface water management agencies.
   2. Divert stormwater runoff from upslope areas away from contaminated stockpile and/or excavation areas. Implement structural practices to divert flows from exposed soils or temporary storage flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the Work Site.
   3. Use methods of dewatering, excavating, or stockpiling Dredge Material that include prevention measures to control silting and erosion and intercept and settle any runoff of soil- or sediment-laden wastewaters.
   4. Before construction begins, establish appropriate perimeter barriers to prevent excess surface water flows from causing erosion. Work areas shall be kept free of surface water run-on from adjacent upland areas. Unless otherwise specified, all temporary facilities, equipment, and structures for care and diversion of water shall be removed upon completion of the Work, except the permanent drainage features of the Project.
   5. To avoid solids or turbid runoff from entering the LDW, cover, secure, and/or berm stockpiles and employ other methods as necessary such as straw bale around storm drains or around excavated areas; use of cut and cover construction method; or use of sedimentation basins.
   6. Prevent Work Site runoff from directly entering any storm drain or the waterway; use straw bales or other filtration method suitable to the Project Representative.

3.08 WATER QUALITY PROTECTION

A. The Contractor shall conform to the regulations and requirements of legally authorized surface water management agencies. The Contractor shall not allow water discharges to exceed the state or local water quality standards.

B. If water quality standards or permit conditions are violated, the Contractor shall shut down work causing the violation until protection and remediation is completed. The Contractor is responsible for all associated impacts.

C. The Contractor is responsible for the overflow of any storm drains resulting from the addition of flow from Contractor's activities and any damages associated with such overflow.

D. The Contractor shall conduct operations in such a manner as to prevent sediment, construction equipment decontamination water, and other pollutants from reaching existing sewers, storm drains, wetlands, and surface waters.

E. The Contractor shall prevent additional construction wastes such as paper, wood, garbage, sanitary wastes, and fertilizer from leaving the Work Site and entering waterways. The Contractor shall dispose of all debris on land in such a manner that it cannot enter the LDW or cause water quality degradation.

3.09 AIR POLLUTION AND ODOR CONTROL

A. Implement the Air Pollution and Odors Control Plan as accepted and modify as required.

B. Because Contractor means and methods are not known to the Owner, the following represents a list of potential air pollution and odors mitigation measures and BMPs that shall be described by the Contractor in its Air Pollution and Odors Control Plan, if proposed:
   1. Do not discharge smoke, dust, and other contaminants into the atmosphere that violate the regulations of the authorities having jurisdiction. The Contractor shall prevent smoke, dust, engine exhaust fumes, and other contaminants from entering building spaces by directing them away from building intake plenums, building doors, or openings.
   2. Provide preventative vehicle maintenance to ensure peak operating efficiency. When exhaust emissions are determined to be excessive by the Project Representative, the Contractor shall repair or replace equipment.
   3. Employ effective fleet management by planning to minimize fuel consumption through efficient transportation routes, transfer of only full loads when feasible, selection of appropriately sized vehicles, and encouragement of low-carbon commuting and travel by workers.
   4. Encourage use of clean diesel technologies (e.g., diesel oxidation catalysts, diesel particulate filters, partial diesel particulate filters, and selective catalytic reduction), alternative fuels (e.g., biofuels and biodiesel blends), and fuel additives (e.g., emulsified diesel).
   5. Consider optimizing fuel efficiency by replacing aging vehicles with newer ones with more fuel efficient engines, deploying vehicles with high fuel efficiency for on-site and off-site activities, and utilizing alternative vehicles that use electric, hybrid gasoline/electric, or compressed natural gas fuel systems.
   6. Limit engine idling time of vehicles, including delivery and haul trucks, to 5 minutes maximum.
   7. Adjust traffic haul routes or vessel positioning, as needed.
   8. Use electrically powered equipment where practical.
   9. Minimize dust nuisance by wetting of excavation areas, unpaved traffic lanes, and soil stockpiles. The use of water in amounts resulting in mud on public streets is not acceptable as a substitute for sweeping or other methods. Make equipment for this operation available at all times.
   10. Protect existing facilities and equipment from dust generated from the Contractor’s activities.
   11. Transport soils emitting odors off site as soon as possible.
   12. Cover truck loads to prevent the escape of dust-bearing materials.
   13. Covering stockpiles with plastic sheeting when loading and stockpiling activities are not occurring (i.e., inactive for a specified period of time) or if nuisance odors are encountered prior to transportation off site.
   14. Use Work Site controls such as ceasing abovewater excavation during high winds or limiting the number and size of excavations open at one time.

3.10 SPILL PREVENTION, CONTROL, AND COUNTERMEASURE RESPONSE

A. Implement the Spill Plan as accepted and modify as required.

B. The Contractor shall have a marine spill response contractor on call during all on-water construction activities.

C. The Contractor shall immediately contain and assess the spill, provide appropriate notifications, and take the necessary steps to prevent further discharge. The Contractor is responsible for immediate cleanup of the spill and restoration of the area to the satisfaction of the Project Representative and other regulatory agencies, where involved.

D. The Contractor shall, at a minimum, take the following measures regarding oil spill prevention, containment, and cleanup:
   1. Fuel hoses, lubrication equipment, hydraulically operated equipment, oil drums, and other equipment and facilities shall be inspected regularly for drips, leaks, or signs of damage and shall be maintained and stored properly to prevent spills. Proper security shall be maintained to discourage vandalism.
   2. All land-based oil and products storage tanks shall be diked or located so as to prevent spills from escaping to the water. Diking and sub-soils shall be lined with impervious material to prevent oil from seeping through the ground and dikes.
   3. All visible floating oils shall be immediately contained with booms, dikes, or other appropriate means and removed from the water prior to discharge into state waters. All visible oils on land shall be immediately contained using dikes, straw bales, or other appropriate means and removed using sand, ground clay, sawdust, or other absorbent material, which shall be properly disposed of by the Contractor. Waste materials shall be temporarily stored in drums or other leak-proof containers after cleanup and during transport to disposal. Waste materials shall be disposed off-property at an approved and permitted Disposal Facility.
   4. The Contractor shall use environmentally sensitive hydraulic fluids that are non-toxic to aquatic life and that are readily or inherently biodegradable.
   5. In the event of any oil or product discharges into public waters, or onto land with a potential for entry into public waters, the Contractor shall immediately notify the Project Representative and other required reporting agencies at their listed 24-hour response numbers, including but not limited to the following:
      a. National Response Center: (800) 424-8802
      b. Washington Emergency Management Division: (800) 258-5990 or (800) OILS-911
      c. Washington State Department of Ecology, Northwest Regional Office: (425) 649-7000
      d. U.S. Coast Guard: (206) 217-6002
   6. The Contractor shall maintain on the Work Site the following equipment and materials in sufficient quantities to address potential spills from Contractor's floating and land-based equipment:
      a. Oil-absorbent booms
      b. Oil-absorbent pads or bulk material
      c. Oil-skimming system
      d. Straw bales
      e. Oil dry-all, gloves, and plastic bags
      f. Contractor employee PPE for emergency spill response
      g. Concentrated odor neutralizer

E. All workers shall be fully aware of the spill prevention and response procedures including notification of the Project Representative.

F. Take due care to ensure that no deleterious materials, including sediment-laden runoff, leave the Work Site or any upland facility used for the Contract during performance of the Work or enter any surface water, stormwater, or sanitary sewers at or near the Work Site or any upland facility used for the Contract during performance of the Work.

G. Protect roadways at any upland facility used for the Contract during performance of the Work from tracking of mud, soil, sediment, and debris throughout the Work. All pollutants that occur on site during construction shall be handled and disposed of in a manner that does not cause contamination of stormwater or groundwater.

H. Prevent, contain, and be responsible for spill cleanup of pollutants. Pollutant discharge into state waters or onto adjacent land is not permitted and violates state water quality standards.

I. Store solid chemicals, liquid chemicals, paints, petroleum products, caustic solutions, and waste materials, including batteries and electronic components, to prevent entry of contaminants into all LDW waters.

J. Spill prevention:
   1. Store liquid and solid Hazardous Materials and other pollutants on durable impervious surfaces and within manufactured secondary containment vessels capable of containing 110% of the largest single container stored in the containment vessel. Plastic sheeting is not an acceptable product for use in a containment system for long-term storage of chemicals or equipment with fuel tanks.
   2. Store waste liquids under cover, such as tarpaulins or roofed structures, to prevent entry of rainwater into the containment vessel.
   3. Place equipment with fuel tanks in secondary containment vessels, or if the equipment is moved often, attach spill pads under the fuel tank.
   4. Segregate non-compatible or reactive chemicals to prevent possibility of mixing.
   5. Clearly designate all waste storage areas, whether for waste oil or hazardous waste, as such and keep segregated from new product storage.
   6. Label all containers with the type of material being stored and post Safety Data Sheets (SDS) near the storage areas.
   7. Store all “empty” containers not cleaned in an upright secure manner. Label the containers: “Empty.”
   8. Locate materials, refueling locations, and equipment away from drainage pathways, waterways, and other sensitive areas to the maximum extent possible.
   9. Identify and implement reasonable steps to be taken to prevent releases of liquid products from malicious tampering or vandalism.
   10. Inspect secondary containment vessels, fuel hoses, lubrication equipment, hydraulically operated equipment, oil drums, and other equipment and facilities regularly for drips, leaks, or signs of damage and maintain and store properly to prevent spills.
   11. Any land-based equipment remaining on site overnight shall have appropriately placed drip pans.
   12. During the purging of tanks and associated lines, procedures shall prevent the release of any fuels to the surface, surface water, catch basins, or soils within or surrounding the Work Site or any upland facility used for the Contract during performance of the Work.
   13. Prevent discharges containing asphalt, grout, concrete, or other waste materials from reaching storm drains or the marine environment. This includes, but is not limited to, the following:
      a. Minimizing the washing of sand or gravel from new asphalt, debris from drilling or cutting, or other materials into storm drains and the marine environment by sweeping.
      b. Application of fog seals, tack coats, or other coatings, if required, during periods when rainfall is unlikely to occur during application.
      c. Cleaning equipment off site.
      d. Protection of drainage structures with filter fences, if required.
   14. Temporarily store waste materials in drums or other leak-proof containers after cleanup and during transport to disposal.
   15. Dispose of waste materials at an approved and permitted Disposal Facility and obtain certificates of disposal.
   16. Inspect fuel hoses, oil or fuel transfer valves and fittings, lubrication equipment, hydraulically operated equipment, and oil drums on a regular basis for drips, leaks, or signs of damage.

K. Spill response:
   1. Maintain at each Work Site during the duration of the Work for all Project phases, and restock as necessary to ensure an adequate and continuous supply, a spill kit containing the following materials at a minimum:
      a. Oil-absorbent booms: Four each, 5 feet long
      b. Oil-absorbent pads or bulk material, adequate for coverage of 200 square feet of surface area
      c. Oil-skimming system, if appropriate
      d. Sand bags
      e. Oil absorbent material, such as cat litter or sawdust, for material spills on land
      f. Oil dry-all gloves for use when performing the Work
      g. Plastic bags to collect the used material

h. Place spill kits near locations of chemical storage, fuel tanks, and fuel refilling stations. Identify the locations of spill kits on the ESC Plan.
i. In the event of a spill: Immediately contain all visible pollutants on the water with booms, dikes, oil absorbent pads, or other appropriate means.
j. In the event of a spill: Immediately contain all visible pollutants on land using dikes, straw bales, sand bags, or other appropriate means and remove using sand, ground clay, cat litter, sawdust, or other absorbent material.
k. Remove oil sheens from water in secondary containment vessels prior to discharge into state waters.
l. Temporarily store cleaned up waste materials in drums or other leak-proof containers after cleanup and during transport to disposal. Dispose of waste materials properly at a legal site.
m. In the event of any oil or other chemical discharges into public waters, or onto land with a potential for entry into public waters, immediately notify the following agencies at their listed 24-hour response numbers:
    1) U.S. Coast Guard Sector Puget Sound: (206)-217-6002
    2) Washington Department of Emergency Management: (800) 645-7911
    3) U.S. Coast Guard National Response Center: (800) 424-8802

3.11 NOISE CONTROL

A. Implement the Noise Control Plan as accepted and modify as required.

B. Unless otherwise indicated through a noise variance, the Contractor shall comply with local controls and noise maximum permissible sound level rules, regulations, and ordinances, which apply to Work performed.

C. Schedule noisy activities to minimize their duration, to the extent possible.

D. Noise-generating construction activities, excluding at the Contractor Transload Facility, will be limited to standard working hours as defined in Section 01 14 00 (Work Restrictions) (between the hours of 7:00 a.m. and 7:00 p.m. for weekdays and 9:00 a.m. and 7:00 p.m. for weekends and legal holidays) to the extent possible, to reduce potential noise impacts to the community. Notify residents and businesses near active construction areas of upcoming noisy construction activities.

E. Provide notification of special circumstances or emergency conditions that require Work beyond the hours specified as follows:
    1. Notify the Project Representative and local authority in advance of any proposed extended Work hours for preauthorization. Include a written request for authorization per Section 01 14 00 (Work Restrictions) to perform Work specified and the circumstances that warrant this request. The Contractor shall include any additional measures to mitigate noise generated by this construction activity if deemed necessary by the Project Representative.
    2. If an emergency situation occurs that warrants extended hours, the Contractor shall notify the Project Representative immediately upon determining the need for this Work.
    3. Comply with SMC, Tukwila Municipal Code, and King County Title 12 noise ordinances for lower sound levels allowed for any Work conducted outside of normal working hours.

F. Noise complaints received by the Project Representative during the Work will be shared with the Contractor. The Contractor shall work with the Project Representative, as required, to resolve noise related complaints. The Contractor shall modify the Noise Control Plan to reflect major changes.

G. Because Contractor means and methods are not known to the Owner, the following represents a list of potential noise mitigation measures and BMPs that shall be described by the Contractor in its Noise Control Plan, if proposed:
    1. Use electric or hydraulic tools and equipment.
    2. Adjust noisy operations within the hours of Work.
    3. Install individual noise barriers or enclosures around equipment.
    4. Use the best available equipment and technology that assist in meeting noise requirements.
    5. Provide equipment with properly sized and maintained mufflers and silencers as appropriate.
    6. Use broadband alarms on equipment with backup alarms.

7. Limit engine idling time of vehicles, including delivery and haul trucks, to 5 minutes maximum.
8. Reduce vehicle speeds when transiting near residential areas (if applicable).
9. Phase Work with construction equipment that generates noise.
10. Turn off engines when equipment is inactive for a period of time (10 minutes).
11. Potentially limit Work hours or certain activities in locations near residential or live-aboard occupancy.

3.12 VIBRATION AND SETTLEMENT CONTROL

A. Comply with Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections).

B. Coordinate construction activities with business operations within the Work corridor that may be sensitive to construction-related vibrations.

C. Limit construction activities around vibration-sensitive businesses or buildings. Where appropriate, use construction techniques that modify the propagation paths of the ground waves associated with vibration.

3.13 LIGHT CONTROL

A. The Contractor shall comply with light requirements, regulations, and local ordinances regarding light control while conducting activities at the Work Site.

B. Light-generating construction activities will be limited to normal working hours (between the standard hours of 7:00 a.m. and 7:00 p.m. for weekdays and 9:00 a.m. and 7:00 p.m. for weekends and legal holidays) to the extent possible to reduce potential light impacts to the community.

C. Because Contractor means and methods are not known to the Owner, the following represents a list of potential light control measures and BMPs:
   1. Provide shielding to help direct light into the Work areas.
   2. Provide light shrouds or barriers, to help direct light into the Work areas.
   3. Control glare.
   4. Choose specific lamp types.
   5. Choose downcast, rather than upcast, lights.
   6. Reposition lighting equipment to avoid directing light outside of the immediate Work area.
   7. Re-sequence Work during the day (if feasible) to avoid Work outside of standard Work hours in areas more sensitive to light disturbance.
   8. Reposition equipment, such as material barges or dredging equipment, relative to the lighting source.
   9. Apply other appropriate means.

3.14 PERSONNEL AND EQUIPMENT DECONTAMINATION

A. Decontaminate equipment after working in potentially contaminated Work areas and prior to subsequent Work or travel on clean areas.

B. Perform equipment decontamination on Contractor-constructed equipment decontamination pad or in watertight barges to prevent cross-contaminating unimpacted areas.

C. If the Contractor elects to remove the Contractor's equipment from the Work Site for any period (e.g., Contingency Re-Dredge Decision Duration), the equipment shall be decontaminated prior to leaving the Work Site.

D. Each piece of equipment may be inspected by the Project Representative after decontamination and prior to removal from the Work Site and/or travel on clean areas. The Project Representative will have the right to require that additional decontamination be completed if deemed necessary at no additional cost to the Owner.

E. Collect decontamination wastewaters and sediments that accumulate on equipment decontamination pads and properly dispose.

F. Furnish and equip personnel engaged in equipment decontamination with PPE including suitable disposable clothing, respiratory protection, and face shields.

G. Designate exclusion zones, contaminant reduction zones, and other zones applicable to the Project and Work Site.

3.15 CULTURAL RESOURCES

A. The Monitoring and Inadvertent Discovery Plan is available as a reference document in Section 01 13 00 (Reference Material).

B. Archaeological Monitoring:
   1. The Owner's archaeological monitor may occasionally request a temporary halt to Work activities to document archaeological materials or for a closer inspection of an area or the dredged materials. Such documentation usually takes a few minutes (entailing photographs and written descriptions) but may take longer. The Contractor is expected to develop the Baseline Project Schedule to account for this Inherent Delay. The cost associated with this will be considered incidental to the Work, and no separate payment shall be made.
   2. If artifacts or other potential archaeological deposits are observed during dredging/excavation, the Contractor shall temporarily cease Work in the immediate vicinity, while the Owner's archaeological monitor conducts a close inspection. The Owner's archaeological monitor will give an estimate of the amount of time needed to document materials to the Contractor's equipment operator and/or foreman.
   3. In the event that potentially significant archaeological deposits are discovered by the Owner's archaeological monitor, the Contractor shall cordon off the area within 30 feet of the discovery.
   4. Work in the protected area shall remain suspended until the Project Representative authorizes in writing that the Work may resume.

3.16 FINES

A. Be responsible for all fines incurred from noncompliance with regulations of governing authorities.

END OF SECTION

SECTION 01 35 44

GREEN REMEDIATION REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the Project's construction requirements in compliance with green remediation requirements.

1.02 DESCRIPTION OF WORK

A. Comply with green remediation (sustainability) requirements for the items described in this Section.

B. No separate payment will be made for effort associated with Work described in this Section. Work required to comply with this Section is considered incidental to the Work described in the Contract Documents.

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway (LDW) Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

1.04 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals

1. Green Remediation Plan (GRP)

a. The Contractor shall submit a GRP, as part of the Remedial Action Work Plan (RAWP), aimed at promoting sustainable technologies and practices for implementing the cleanup. Construction activities for the Project shall not begin until the GRP has been reviewed and accepted by the Project Representative. The GRP shall include a description of all of the GRP elements in the Contractor's approach as outlined in the Drawings or in these Specifications or independently proposed by the Contractor, including the following:

1) Air pollution requirements:

a) Methods for emission reduction controls and policies at a minimum shall include the following:

(1) Use of cleaner engines on diesel powered equipment with engines greater than 50 horsepower where practicable, including non-road engines meeting Tier 1 or cleaner standards and on-road engines meeting 2004 on-highway Heavy Duty Engine Emission Standards or cleaner

(2) Operation and maintenance inspection schedules for equipment to maximize peak operating efficiency (e.g., engine tune-ups according with manufacturer recommendations,

checking fuel tank for dirt/insects, keeping tight connections and moving parts well-lubricated, periodic replacement of filters in air and fuel systems, use of manufacturer's recommended grade of motor oil)

(3) Use of electrical power where possible for activities such as for water treatment and operation of support facilities

(4) Idling time limit of 5 minutes before engines on equipment shall be shut off. This shall include turning off all diesel engines on construction equipment when not in active use. Engines may be permitted to idle after 5 minutes in cases where the following criteria apply:

(a) Vehicles are stationary in traffic.

(b) It is necessary to operate auxiliary systems associated with the equipment.

(c) It is necessary to maintain safe operation of the equipment.

(d) It is necessary to test, service, and repair of the equipment.

(e) Engine operation is needed for intermittent activities.

(5) Changes in daily routines (e.g., selecting high-quality equipment lubricants made of biodegradable ingredients; cleaning up any spilled fuels immediately to avoid damage to vehicles or engine bodies; handling all materials used to absorb fuel spills in accordance with health and safety requirements and storing the material in noncombustible containers; properly disposing or recycling spent materials or liquid waste such as tires, transmission or brake fluids, used oil and filters, wash-rack waste, coolant, and spent solvent; simple changes in driving techniques [such as avoiding rapid acceleration, braking, and excessive speeds, and removing unneeded items in a vehicle])

(a) Effective fleet management (e.g., planning to minimize fuel consumption through efficient transportation routes, transfer of only full loads, selection of appropriately sized vehicles, and low-carbon commuting and travel by workers)

b) Description of construction equipment type and associated engine tier in each Construction Season to meet requirements for air pollution compliance described in Article 3.01 as follows:

(1) Proposed construction equipment type for each construction activity

(2) Distribution of proposed construction equipment by engine tier for each construction activity

(3) Proposed plan for usage of these equipment types (i.e., approximate percentage of total operating hours of equipment type operating at a certain engine tier)

c) Methods for tracking construction equipment type and associated engine tier for each construction activity, in each Construction Season, for air pollution compliance purposes.

2) Green transportation requirements:

a) Methods for transportation minimization and green transportation at a minimum shall include the following:

(1) The Contractor shall offer incentives to Contractor staff for use of public transportation or carpooling by Work Site workers.

3) Recycling, reuse, and waste minimization requirements:

a) Methods of recycling, reuse, and waste minimization at a minimum shall include the following:

(1) Segregate and recycle Piling.

(2) Use local (within a minimal radius of the Project area) and recycled materials (materials with post- or pre-consumer materials) where opportunities are available and appropriate (i.e., a material that is required and meets the Specifications) with availability, production, and distribution center near the Work Site to minimize fuel consumption associated with delivery.

(3) Properly dispose of or recycle spent materials or liquid waste such as tires, transmission or brake fluids, used oil and filters, wash-rack waste, coolant, and spent solvent.

(4) Consider use of biodegradable ingredients for equipment lubricants.

(5) Consider suppliers that will take back unused materials.

(6) Promote material reuse and/or recycling by considering, but not limited to, the following:

(a) Use non-virgin and/or locally sourced backfill, sand, and armor materials (e.g., beneficial use) provided that gradation and chemical quality criteria can be ensured.

(b) Salvage and sort clean materials with potential value for on-site reuse, recycling, resale, or donation.

4) Best management practices (BMPs) proposed by the Contractor during remedial dredging, material placement, in-water transportation, stockpiling, upland transportation, and final disposal

5) Water use reduction BMPs:

a) Minimize freshwater and potable water consumption.

b) Maximize water reuse during daily operations and treatment processes.

c) Limit the use of water in dust control by preventing overwatering or runoff.

d) Limit the use of water in decontamination through on-site water treatment and reuse and high-pressure cleaning methods.

6) Energy use reduction BMPs:

a) Follow equipment vendor recommendations for routine maintenance, conduct periodic inspections, and quickly repair/upgrade industrial equipment when needed.

b) To the extent possible, replace aging equipment with newer models meeting higher energy conservation standards or utilizing alternative energy sources.

c) Operate vehicles avoiding rapid acceleration, braking, and excessive speeds, and removing unneeded items in a vehicle.

d) Consider tracking energy consumption through tools such as plug-in meters and whole-system meter devices.

e) Consider purchasing clean energy from off-site resources and, to the extent practicable, diversify sources of renewable energy.

7) Use of local materials such as aggregates, concrete, plants, and other materials

8) Environmentally sustainable business practices:

a) The Contractor will be required to generate and manage construction-related documentation including, but not limited to, document submittals, requests for information, correspondence, schedules, and Drawings. This construction-related documentation shall be done using an electronic data management process.

C. Construction Submittals:

1. The Daily and Weekly Construction Reports shall demonstrate compliance with the air pollution requirements in Part 3.

2. The Monthly Air Pollution Compliance Summary Reports shall document construction equipment type and associated engine tier used for each construction activity of the Project, with its usage (number of hours), consistent with Daily and Weekly Construction Reports documentation.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 AIR POLLUTION COMPLIANCE

A. The Contractor shall provide construction equipment that meets the following minimum EPA Tier engine requirements, based on construction activity of the Project where the equipment is used. Air pollution compliance for the Project will be based on a required number of hours the construction equipment will operate at a specific required engine tier:

CONSTRUCTION EQUIPMENT TYPE	CONSTRUCTION ACTIVITY(IES)	REQUIRED ENGINE TIER	REQUIRED USAGE AT REQUIRED ENGINE TIER (% OF TOTAL EQUIPMENT OPERATING HOURS WITHIN CONSTRUCTION EQUIPMENT TYPE)
Cranes	Dredging, Material Placement	Tier 2 Engine	40%
Hydraulic Excavators	Dredging, Material Placement	Tier 2 Engine	100%
Tugboats, Push Boats, Work Boats	Transportation of Sediment and Clean Placement Materials, Surveying, Monitoring/Sampling Activities	Pre-Tier Engine	100%
Crane Used at Contractor Transload Facility	Offloading From Haul Barges	Tier 2 Engine	70%
Front-End Loaders	Miscellaneous Activities	Tier 2 Engine	100%
Trucks (On-road, Off-road)	Upland Transportation	Tier 4 Engine	80%
Train (Locomotive)	Upland Transportation	Tier 4 Engine	80%

B. Refer to Article 1.04 for construction submittal requirements regarding air pollution compliance.

C. In addition, Contractor shall comply with air pollution BMPs are described in Section 01 35 43 (Environmental Procedures).

END OF SECTION

SECTION 01 41 00

ENVIRONMENTAL REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the environmental laws and regulations that pertain to the scope of Work to this Project. The Contractor shall fully comply with the provisions of such laws as they may apply to the Work.

1.02 REGULATORY REQUIREMENTS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Any Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway Superfund Site cleanup remedy will be approved and regulated by EPA. The Work described in these Specifications will be conducted in compliance with the ARARs.

B. The Contractor shall obtain from the Authority Having Jurisdiction all any other permits required to perform the Contract Work off site, as described in Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).

C. The Contractor shall refer to the *Pre-Final (90%) Remedial Design Basis of Design Report for the Lower Duwamish Waterway Upper Reach (*BODR; Anchor QEA, LLC, and Windward Environmental, LLC 2023), dated July 24, 2023 (see Section 01 13 00 – Reference Material), for a full description of the ARARs for each medium, the standards, and the substantive requirements. The Contract Documents shall supersede the 2023 BODR in the event of any conflicting information; any conflicting information shall be communicated to the Owner, the Project Representative, and EPA.

D. The following environmental laws, statutes, and ordinances, associated regulatory requirements and standards, and specific citations that govern the Work related to the Contract are listed as follows:

TOPIC	STANDARD TITLE	REGULATORY CITATION(S)		
		FEDERAL	STATE	LOCAL
Sediment Quality	Sediment quality standards; cleanup screening levels	--	SMS (WAC 173-204); MTCA (RCW 70.105D; WAC 173-340); MTCA SMS (RCW 70.105D, WAC 173-204)	--
Surface Water Quality	Surface Water Quality Standards	Ambient Water Quality Criteria established under Section 304(a) of the Clean Water Act and 33 USC 1314(a); National Toxics Rule (40 CFR 131.36(b)(1) as applied to Washington, 40 CFR 131.36(d)(14))	Surface Water Quality Standards (RCW 90-48; WAC 173-201A); Water Pollution Control Act (RCW 90.48)	--
Land Disposal and Waste	Disposal of materials containing PCBs	Toxic Substances Control Act (15 USC 2605; 40 CFR Part 761(c))	--	--
	Hazardous waste	RCRA Land Disposal Restrictions (42 USC 7401-7642; 40 CFR 268); RCRA, Hazardous Waste (42 USC 6901-6992K, 40 CFR 260-279); EPA Off-Site Rule (40 CFR 300.440); National Contingency Plan (40 CFR Part 300)	Dangerous Waste Regulations Land Disposal Restrictions (RCW 70.105; WAC 173-303)	--

TOPIC	STANDARD TITLE	REGULATORY CITATION(S)		
		FEDERAL	STATE	LOCAL
Waste Treatment Storage and Disposal	Disposal limitations	RCRA (42 USC 6901-6992K;40 CFR 268)	Dangerous Waste Regulations (RCW 70.105; WAC 173-303)	--
Noise	Maximum noise levels	--	Noise Control Act of 1974 (RCW 70.107; WAC 173-60-040, 050)	SMC 25.08; TMC 8.22; KCC 12.86
Light	--	--	--	SMC 23.50.046; TMC 18.44.050
Groundwater	Groundwater quality	Safe Drinking Water Act MCLs and non-zero MCLGs (40 CFR 141)	RCW 43.20A.165 and WAC 173-290-310	--
Dredge/Fill and Other In-Water Construction Work	Discharge of dredged/fill material into navigable waters or wetlands	Clean Water Act (33 USC 401 et seq.; 33 USC 141; 33 USC 1251-1316; 40 CFR 230, 231, 404; 33 CFR 320-330) Rivers and Harbors Act (33 USC 401 et seq.)	Hydraulic Code Rules (RCW 75.20; WAC 220-110)	--
	Open-water disposal of dredged sediments	Marine Protection, Research and Sanctuaries Act (33 USC 1401-1445; 40 CFR 227)	DMMP (RCW 79.90; WAC 332-30-166)	--
Solid Waste Disposal	Requirements for solid waste handling, management, and disposal	Solid Waste Disposal Act (42 USC 6901-6992K; 40 CFR 257-258, 268)	Solid Waste Handling Standards (RCW 70.95; WAC 173-350); Minimum Functional Standards for Solid Waste Handling (WAC 173-304)	--
Clearing and Grading	--	--	--	SMC 22.170; TMC 16; King County Clearing and Grading Code (KCC 16.82)
Construction and Demolition	--	--	--	SMC 22; TMC 16.04 King County Building and Construction Standards (King County Title 16)
Discharge to Surface Water	Point source standards for new discharges to surface water	National Pollutant Discharge Elimination System (40 CFR 122, 125)	Discharge Permit Program (RCW 90.48; WAC 173-216, 222)	--
Vessel Design and Construction Standards	--	Port and Waterways Safety Act of 1972 (33 USC §1221)	--	--
Air Emissions	--	Clean Air Act (42 USC §§ 7401-7671q; 40 CFR 50)	Washington Clean Air Act (RCW 70.94; WAC	--

TOPIC	STANDARD TITLE	REGULATORY CITATION(S)		
		FEDERAL	STATE	LOCAL
			173-400); General Requirements for Air Pollution Sources (WAC 173-400, Puget Sound Clean Air Agency Regulations I and III)	
Shoreline	Construction and development	--	Shoreline Management Act (RCW 90.58; WAC 173-16)	King County and City of Seattle Shoreline Master Plans (KCC Title 25; SMC 23.60); City of Tukwila Shoreline Master Program (TMC 18.44)
Floodplain Protection	Avoid adverse impacts, minimize potential harm	Executive Order 11988, Protection of Floodplains (40 CFR 6, Appendix A); FEMA National Flood Insurance Program Regulations (44 CFR 60.3(d)(3)).	--	King County Critical Area Ordinance (KCC Title 21A.24); City of Seattle (SMC 25.09); City of Tukwila Sensitive Area Ordinance (TMC 18.45)
Critical (or Sensitive) Areas	Evaluate and mitigate impacts	--	Growth Management Act (RCW 36.70a)	King County Critical Area Ordinance (KCC Title 21A.24); City of Seattle (SMC 25.09); City of Tukwila Sensitive Area Ordinance (TMC 18.45)
Habitat for Fish, Plants, or Birds	Evaluate and mitigate habitat impacts	Clean Water Act (Section 404 (b)(1)); U.S. Fish and Wildlife Mitigation Policy (44 CFR 7644); U.S. Fish and Wildlife Coordination Act (16 USC 661 et seq.); Migratory Bird Treaty Act (16 USC 703-712); Endangered Species Act (16 USC §§ 1531-1544; 50 CFR 17 (listings, prohibitions), 402 (interagency consultations), 222-224 (endangered and threatened marine species), 226.212 (critical habitat for Northwest salmon and steelhead)); Bald and Golden Eagle Protection Act (16 USC § 668, 50 CFR 22); U.S. Fish and Wildlife Coordination Act (16 USC 661-666c)	Bald Eagle Protection Rules (RCW 77.12.655; WAC 232-12-292)	King County Critical Area Ordinance (KCC Title 21A.24); City of Seattle (SMC 25.09); City of Tukwila Sensitive Area Ordinance (TMC 18.45)
Pretreatment Standards	National Pretreatment Standards	National Pretreatment Standards (40 CFR Part 403)	--	City of Seattle Wastewater Treatment Requirements

TOPIC	STANDARD TITLE	REGULATORY CITATION(S)		
		FEDERAL	STATE	LOCAL
				(Metro District Wastewater Discharge Ordinance)
Historic Resources	--	Native American Graves Protection and Repatriation Act (25 USC §§ 3001 et seq.); American Indian Religious Freedom Act (42 USC §§ 1196 et seq.); Section 106 of the National Historic Preservation Act (16 USC § 470; 36 CFR 800); Archaeological Resources Protection Act (16 USC 470aa-470mm)	Washington State Executive Order 21-02	KCC 20.62
Health and Safety	--	--	Washington Industrial Safety and Health Act (WAC 173-304)	--

Notes:
--: not applicable
CFR: Code of Federal Regulations
DMMP: Dredged Material Management Program
KCC: King County Code
MCL: maximum contaminant level
MCLG: maximum contaminant level goal
MTCA: Model Toxics Control Act
PCB: polychlorinated biphenyl
RCRA: Resource Conservation and Recovery Act
RCW: Revised Code of Washington
USC: *United States Code*
SMC: City of Seattle Municipal Code
SMS: Sediment Management Standards
TMC: City of Tukwila Municipal Code
WAC: Washington Administrative Code

1.03 ADMINISTRATIVE REQUIREMENTS

A. The Contractor shall comply with the relevant requirements of the regulatory citations presented in this Section.

B. The provisions of this Section shall apply to the Contractor, subcontractors at all tiers, suppliers, and all others who may have access to the Work Site by way of the Contractor's activities.

C. Failure to implement, maintain, and/or comply with the accepted Remedial Action Work Plan, or by order of the Project Representative; or failure to conduct Project activities and operations in accordance with this Section will result in the suspension of the Contractor's operations by the Project Representative in accordance with Section 00 70 00 – General Conditions.

D. The Contractor shall be solely responsible for any damages, fines, penalties, levies, or judgments incurred as a result of Contractor, subcontractor, or supplier negligence in complying with the requirements of this Section.

E. Any time and material costs incurred by the Owner due to damages, fines, penalties, levies, or judgments incurred as a result of Contractor, subcontractor, or supplier negligence in complying with the requirements of this Section will be deducted from payment due by Modification.

F. The Contractor shall be solely responsible for any schedule impacts from damages, fines, penalties, levies, judgments, or stop work orders incurred as a result of Contractor, subcontractor, or supplier negligence in complying with the requirements of this Section. The Project schedule will not be changed to accommodate the time lost.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION [NOT USED]

END OF SECTION

SECTION 01 41 26

PERMITS, EASEMENTS, AND RIGHT-OF-ENTRY AGREEMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies permits, easements, and right-of-entry agreements requirements for the Project.

1.02 PERMITS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in the Specifications will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. The Contractor shall obtain from the Authority Having Jurisdiction any permits required to perform the Contract Work outside of the Work Site, such as for the Contractor Transload Facility(ies) and Disposal Facility(ies) (as described in Section 35 20 23.01 – Transloading, Upland Transportation, and Disposal), Staging and Stockpile Area(s) and the Contractor's field office (as described in Section 01 52 00 – Construction Facilities), and Project Representative's field office (as described in Section 01 52 01 – Project Representative Field Office). The Contractor shall obtain the needed permits in accordance with Article 1.04 and Section 00 72 00 (General Terms and Conditions).

1.03 EASEMENTS AND RIGHT-OF-ENTRY AGREEMENTS BY OWNER

A. The Contractor shall coordinate with the property owners specified below to conduct dredging; Survey Monitoring, Pre-Construction Structural Condition Inspection, and Post-Construction Structural Condition Inspection in accordance with Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections); and other remedial actions. The Contractor shall inform them of Work Site access needs as the Contractor develops its Remedial Action Work Plan (RAWP; refer to Section 01 11 00 – Summary of Work) and Draft Project Schedule (refer to Section 01 32 16 – Construction Progress Schedules). Property owners may identify preferred periods of access (to reduce business impacts) during negotiations with the Contractor, which shall be incorporated as needed into the RAWP.
   1. The Owner will negotiate draft easements and/or right-of-entry agreements with associated draft exhibits detailing anticipated construction operations and needs. The Owner will acquire final easements and/or right-of-entry agreements before construction begins at the affected facilities at no additional expense to the Contractor. Because construction schedules are subject to change over the Project duration (three Construction Seasons), final access agreements may be executed (or revised) as the construction schedule becomes firm at each affected facility.
   2. Contacts for the affected property owners will be provided to the Contractor prior to the start of Work.
   3. Affected property owners include the following:
      a. South Park Marina, located adjacent to Sediment Management Area (SMA) 13
      b. CenterPoint Properties, located adjacent to SMAs 7 and 9
      c. Container Properties, located in and adjacent to SMAs 5 and 6
      d. The Washington State Department of Natural Resources, located in state tidelines in SMA 1
      e. The Boeing Company, located adjacent to SMAs 1, 3, 4, 8, 10, and 11
   4. Copies of the easements and right-of-entry agreements obtained by the Owner will be provided to the Contractor prior to the start of Work at each affected facility. Unless otherwise indicated, the terms,

conditions, and requirements of all easements and right-of-entry agreements are requirements of this Contract, and the Contractor shall comply with the terms, conditions, and requirements contained in each easement and right-of-entry agreement.

B. The Contractor shall comply with the requirements of each easement and right-of entry agreement as required in Section 00 72 00 (General Terms and Conditions) and shall account for such compliance for the purposes of bidding.

1.04 PERMITS, EASEMENTS, AND RIGHT-OF-ENTRY AGREEMENTS OBTAINED BY THE CONTRACTOR

A. The Contractor shall provide and certify that it has obtained all necessary permits to complete the Work as part of its Bid submittal, including but not limited to development of the Contractor Transload Facility, Staging and Stockpile Area(s), and Disposal Facility and establishment of the Project Representative field office and Contractor field office. All space shall be within local land use and permitting requirements at the Contractor's expense.

B. The Contractor shall notify the Owner and shall describe in the RAWP of any additional easements and/or right-of-entry agreements needed by the Contractor to access other proposed locations where land-based construction activities would be conducted. It is the Contractor's responsibility to coordinate with the associated property owners as needed to obtain site access to perform the Work.

C. The Contractor's selected Transload Facility(ies) will be required to have appropriate permits, including but not limited to the following:
   1. Solid Waste Facility Permit
   2. Industrial Stormwater General Permit

D. The Contractor's selected Disposal Facility will be required to have appropriate permits, including but not limited to the following:
   1. Solid Waste Disposal Site Permit
   2. Compliance with applicable permits, as verified by an EPA Region 10 Off-Site Contact

E. The above permits are presented for Contractor convenience only. The Contractor shall be responsible for determining the selected Transload Facility(ies) and Disposal Facility are operating within their jurisdiction and in compliance with federal, state, and local regulations for the activities undertaken.

F. The Contractor shall include a dedicated activity for the Contractor to prepare, submit, and obtain each Contractor-obtained permit, easement, and/or right-of-entry agreement required to perform the Work in the Baseline Project Schedule (as required in Section 01 32 16 – Construction Progress Schedules).

G. The Contractor shall prepare and submit to the proper authority or owner all information required for the issuance of such permit, easement, or right-of-entry agreement. The Contractor shall pay all costs thereof, including agency inspections and easement costs, unless specifically provided otherwise in the Contract.

H. The Contractor shall provide a copy of each permit, easement, and right-of-entry agreement to the Project Representative prior to pursuing any Work covered by the permit or easement.

1.05 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals
   1. Identification of permits, easements, and right-of-entry agreements to be obtained by the Contractor as part of the RAWP
   2. A copy of each Contractor-obtained permit, easement, and right-of-entry agreement

C. Construction Submittals
   1. All permit, easement, or right-of-entry agreement compliance reports
   2. Written construction restoration acceptance form (Standard Form 01 41 26-A; see Attachment A of Section 01 33 10A – Standard Forms)

D. Post-Construction Submittals
   1. Easement releases

1.06 POSTING PERMITS AND EASEMENTS

A. Permits and easements, including those obtained by the Contractor, shall be posted at the Work Site.

1.07 CONSTRUCTION RESTORATION ACCEPTANCE FORM

A. Whenever Work is performed on property other than street right of way, provide a written construction restoration acceptance form (Standard Form 01 41 26-A; see Attachment A of Section 01 33 10A – Standard Forms) from the easement grantor or easement grantors agent for each property, parcel, or area certifying that the restoration of structures and/or surfaces has been completed to the satisfaction of the property owner and that the owner has no claims for damages on account of such restoration.

B. The easement restoration acceptance shall comply with the requirements as set forth in the form provided by the Project Representative. If, in the opinion of the Project Representative, the release is unreasonably withheld by the easement owner, the Owner may, at its sole discretion, not require the easement restoration acceptance to be completed.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION [NOT USED]

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for the Contractor's quality control program (including coordination with material suppliers, testing agencies, and other entities that may be employed by the Project Representative), as well as the Contractor's duties and responsibilities during execution of the Work. This Section also includes requirements for submittal of the Construction Quality Control Plan (CQCP).

1.02 DESCRIPTION OF WORK

A. The intent of this Section is to require the Contractor to establish a necessary level of quality control that will provide sufficient information to assure both the Contractor and Project Representative that the Specification requirements are being and have been met.

B. Establish, provide, and maintain a CQCP as specified herein, detailing the methods and procedures that will be taken to ensure all materials and completed construction elements conform to the Drawings, Specifications, and other requirements. Although guidelines are established and certain minimum requirements specified herein and elsewhere in the Specifications, it is the responsibility of the Contractor to ensure construction and construction quality control are accomplished in accordance with the stated purpose and Specifications as described herein.

C. Be prepared to discuss and present, at the Pre-Construction Meeting, an understanding of the quality control requirements. The Contractor shall not begin any construction until the CQCP has been reviewed and approved by the Owner.

D. No separate measurement or payment will be made for effort associated with quality control work required in this Section. Work required to comply with this Section is considered incidental of all other activities described in the Contract Documents.

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. If the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. All pertinent laws, ordinances, rules, regulations, and codes shall govern construction activities at the Work Site.

C. Other Reference Standards:
   1. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

2. Conform to the reference standards by date of issue current on date of Contract Documents, except where a specific date is established by code.
3. Neither the contractual relationships, duties, nor responsibilities of the parties in the Contract, nor those of the Owner, shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.04 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. CQCP: The Contractor shall submit a CQCP describing the Contractor's means and methods by which completion of construction activities will be monitored for compliance with the Contract.

1.05 CONTRACTOR PERSONNEL REQUIREMENTS

A. All Contractor personnel shall be trained, experienced, and qualified to perform the tasks assigned to them.

B. Submit the Bidder Qualifications of the proposed Contractor Quality Control Officer to the Project Representative for review and approval. The Owner reserves the right to reject the proposed Contractor Quality Control Officer or other key personnel for any reason.
   1. The Contractor shall provide a Contractor Quality Control Officer that is acceptable to the Owner, and who shall be the full-time Contractor Quality Control Officer for this Project.
   2. The Contractor may not remove and replace the Contractor Quality Control Officer from the Project without submitting a formal request to the Project Representative. Any proposed replacement Contractor Quality Control Officer shall be approved by the Owner before they can take over the role of Contractor Quality Control Officer.
   3. The proposed Contractor Quality Control Officer shall have successfully completed three projects of similar type, complexity, and scope. Each project shall have managed contaminated sediment, involved dredging and upland disposal and/or engineered capping of contaminated sediment. The Contractor shall provide documentation of the Contractor Quality Control Officer's qualifications as required in this Section as part of the Pre-Construction Submittals.

1.06 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
   1. Submit a detailed, written CQCP, as part of the Remedial Action Work Plan, in conformance with the Specifications. The CQCP will be reviewed and approved by the Project Representative before any in-water construction activities can start at the Work Site.
   2. The CQCP will be used to document inspections, monitoring, surveys, and other actions to be taken by the Contractor to ensure the Work complies with all Contract Document requirements. At a minimum, the CQCP shall include the following information:
      a. Identification of personnel, procedures, methods, instructions, records, and forms to be used to provide quality control and verification of the Work
      b. Description of the quality control organization, including an organization chart showing the various quality control team members, along with their designated responsibilities and lines of authority. At a minimum, the Contractor shall identify the following key personnel:
         1) Contractor Quality Control Officer
         2) Contractor Site Health and Safety Officer
         3) Survey Lead (or firm the Contractor has hired to perform measurement and payment and Progress Surveys)
         4) Other key personnel deemed necessary by the Contractor for the successful implementation and completion of this Work
      c. Description of procedures for describing and communicating quality control testing and related data with the Project Representative

d. Quality control methods and procedures to ensure compliance with the Specifications
e. Acknowledgement that the quality control staff will conduct inspections for all aspects of the Work specified and shall report to the Contractor Quality Control Officer or someone of higher authority in the Contractor's organization
f. The name, qualifications, duties, responsibilities, and authorities of each person assigned a primary quality control function
g. A summary of the delegated responsibilities of the Contractor Quality Control Officer signed by an authorized official of the firm
h. Procedures for scheduling and managing submittals, including those of subcontractors, off-site fabricators, and material suppliers
i. Testing methods, schedules, and procedures used to report quality control information to the Owner, including samples of the various reporting forms
j. The Contractor is encouraged to add any additional elements to the CQCP deemed necessary to adequately control all production and/or construction processes required by this Contract.

C. Construction Submittals:
1. A Daily Construction Report recording daily quality control activities.
2. A Weekly Construction Report summarizing weekly quality control activities.

D. Post-Construction Submittals:
1. All Quality Control Records (as part of the Project Record Documents) shall be identified in the CQCP and maintained in the Contractor's Work Site files. The Project Representative shall be provided access to these files when requested. Upon completion of the Contractor's contractual activities, these files shall be turned over to the Project Representative.
2. Document control: The Contractor's CQCP shall require that Contractor-generated documents pertaining to quality-related items be controlled. The following types of documents shall be on controlled distribution to ensure changes to them are transmitted and received when applicable:
a. Manuals
b. Instructions
c. Procedures
d. Specifications
e. Drawings
f. Inspection and test plans
g. Field change requests

1.07 QUALITY CONTROL ORGANIZATION

A. Contractor Quality Control Officer: As part of the CQCP, the Contractor shall identify an individual within the Contractor's organization, located at the Work Site, who shall be responsible for overall quality control management for the Contract, who has the authority to act in all quality control matters for the Contractor.

B. Personnel: As part of the CQCP, the Contractor shall identify staff that shall be maintained under the direction of the Contractor Quality Control Officer to perform all quality control activities. The actual number of the staff during any specific work period may vary to cover shift needs and rates of performance. The personnel of this staff shall be fully qualified by experience and technical training to perform their assigned responsibilities and shall be directly hired for the work by the Contractor.

C. Submit the qualifications in resume format of the personnel identified in this Specification as part of the CQCP.

1.08 INSPECTION

A. Allow the Project Representative access to the Work being performed. If part of the Work is in preparation at locations other than the Work Site (e.g., Staging and Stockpile Area[s], Contractor Transload Facility[ies], or Disposal Facility[ies]), the Contractor shall plan for access to such work whenever and wherever it is in progress.

B. Give timely notice requesting inspection if work is designated for special tests, inspections, or reviews by the Project Representative's instructions.

C. If the Contractor covers, or allows to be covered, work that has been designated for special tests, inspections, or reviews before such is made, uncover such work, have inspections or tests satisfactorily completed, and make good such work.

1.09 INDEPENDENT INSPECTION AND TESTING

A. Independent inspection/testing agencies will be engaged by the Project Representative, on behalf of the Owner, for the purpose of inspecting or testing portions of the Work, as applicable. The cost of such services will be borne by the Owner.

B. Procedures:
   1. Notify the Project Representative in advance of requirements for inspections or testing so attendance arrangements can be made.
   2. Submit samples or materials required for inspection or testing, as requested in the Specifications. The Contractor shall submit with reasonable promptness and in orderly sequence to not cause delays in Work.
   3. Provide labor and facilities to obtain and handle samples and materials at the Work Site, Staging and Stockpile Area(s), and Contractor Transload Facility. The Contractor shall provide sufficient space to store samples as necessary.
   4. Complete required materials testing as described in the Specifications for which the work applies. Results of laboratory testing shall be reviewed by the Project Representative to determine compliance with the requirements of the work.

C. Employment of inspection/testing agencies does not relieve the Contractor's responsibility to perform work in accordance with Contract Documents.

D. Access to the area necessary to perform the testing and/or to secure the material for testing shall be provided by the Contractor.

E. If defects are revealed during inspection or testing, additional inspection or testing will be required to ascertain the full degree of defect. The Contractor shall correct defects and irregularities as advised by the Project Representative at no extra cost to the Owner. The Contractor shall pay costs for retesting and reinspection as necessary.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 DOCUMENTATION

A. Quality Control Records are documents that have been reviewed and accepted by the Contractor as complete, correct, and legible. Specific Contractor Quality Control Records required for the Contract shall include, but are not necessarily limited to, the following records:
   1. Drawings, Specifications, procedures used for construction, procurement documents, inspections, and test records
   2. Submittals
   3. Personnel and procedure qualification records
   4. Material, chemical, and physical property test results
   5. Certificates of Compliance and shipment releases
   6. Disposal Facility certified weight tickets
   7. Contractor on-site weight scale reports
   8. Noncompliance reports and corrective action

3.02 CORRECTIVE ACTION REQUIREMENTS

A. The CQCP shall indicate the appropriate action to be taken when a process is deemed or believed to be out of control (out of tolerance) and detail what action will be taken to bring the process into control.

3.03 QUALITY CONTROL—CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, Work Site conditions, and workmanship to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, the Contractor shall request clarification from the Project Representative before proceeding.

D. Comply with specified standards as minimum quality for the work, except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce required and specified quality.

F. Verify field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

H. Familiarity with pertinent codes and standards: In procuring all items used in this work, it is the Contractor's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this work meet or exceed the specified requirements.

I. Rejection of noncomplying items: The Project Representative reserves the right to reject items incorporated into the work that fail to meet the specified minimum requirements. The Project Representative further reserves the right, and without prejudice to other recourse the Owner may take, to accept noncomplying items subject to an adjustment in the Awarded Contract Price as approved by the Project Representative.

3.04 OVERSIGHT BY THE PROJECT REPRESENTATIVE

A. All items of material and equipment shall be subject to oversight by the Project Representative at the point of production, manufacture, or shipment to determine if the Contractor, producer, manufacturer, or shipper maintains an adequate quality control system in conformance with the requirements detailed herein and the applicable Specifications and Drawings. In addition, all items of materials, equipment, and work in place shall be subject to inspection by the Project Representative at the Work Site for the same purpose.

B. To facilitate oversight by the Project Representative, the Contractor shall plan for the Project Representative access to any equipment at the request of the Port while the work is being performed.

C. In cases of dispute, decisions as to standard or quality of work rest solely with the Project Representative, whose decision is final.

D. Oversight by the Project Representative does not relieve the Contractor of performing quality control inspections or testing of either the on-site or off-site Contractor’s or subcontractor’s work.

3.05 NONCOMPLIANCE

A. The Project Representative will notify the Contractor of any noncompliance with any of the foregoing requirements. After receipt of such notice, immediately take corrective action. Any notice, when delivered by the

Project Representative or their authorized representative to the Contractor or their authorized representative at the Work Site, shall be considered sufficient notice.

END OF SECTION

SECTION 01 52 00

CONSTRUCTION FACILITIES

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the Contractor's temporary construction facilities, including requirements for temporary utilities, Work Site access control, temporary roads, and related items.

1.02 DESCRIPTION OF WORK

A. Construction facilities for the Project include the following:
   1. Establishment of the Staging and Stockpile Area(s)
   2. Temporary utilities: Power, heating, ventilation, telephone, water, sanitary facilities and lighting
   3. Work Site access control: Concrete barriers, fencing, and security
   4. Miscellaneous related items: Contractor parking, staging, cleaning, Project signage, and Contractor office
   5. Temporary roads: Haul roads, haul routes, and access roads

B. Locations for temporary construction facilities, Staging and Stockpile Area(s), temporary utility connections, and temporary facilities shall be identified and provided by the Contractor as part of the Temporary Facilities and Control Plan.

C. The Contractor shall install, maintain, and operate all temporary construction facilities and controls as long as needed for the safe and proper completion of the Work for the Project.

D. Unless otherwise noted, the Contractor shall be responsible for all costs for utility usage and permitting associated with the requirements of this Section.

E. Unless otherwise noted, the Owner will not furnish any materials, facilities, utilities, or services.

F. Work under this Section is paid under Bid Item No. A2.1 – Site Preparation and Temporary Facilities Setup and Operations (Construction Season 1), Bid Item No. A2.2 – Work Site Preparation and Temporary Facilities Setup (Construction Season 2), and Bid Item No. A2.3 – Work Site Preparation and Temporary Facilities Setup and Operations (Construction Season 3), as shown on the Bidding Schedule and described in Section 01 29 00 (Measurement and Payment).

G. Details regarding environmental procedures and protection measures associated with temporary construction facilities are described in Section 01 35 43 (Environmental Procedures).

1.03 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Staging and Stockpile Area(s): The Staging and Stockpile Area(s) are defined as the upland areas provided by the Contractor, located adjacent to the Work Site, as identified in the Temporary Facilities and Control Plan, where the Contractor may stage equipment and materials.

1.04 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals

1. Submit a detailed written Temporary Facilities and Control Plan as part of the Remedial Action Work Plan (RAWP), in conformance with the Specifications. Temporary facility construction under this Section may not begin until the Temporary Facilities and Control Plan has been reviewed and accepted by the Project Representative.
2. At a minimum, the Temporary Facilities and Control Plan shall contain the following information:
    a. Layout of all proposed temporary facilities, including but not limited to equipment and structures for the Staging and Stockpile Area(s), on-site Contractor office, Contractor parking areas, materials delivery area(s), equipment/material lay-down and storage areas, equipment and personnel decontamination areas, and fueling and maintenance areas
    b. Grading, including contours, required to construct temporary facilities
        1) Provide temporary facilities drawings to illustrate the layout and dimensions of all temporary facilities, including fencing, ingress, and egress locations.
        2) Provide temporary utility connection locations.
    c. Methods for temporary facilities maintenance and security

1.05 POWER

A. Connect to existing utility owned power service.

B. Provide power requirements and coordinate with the electrical utility for power takeoff points, voltage and phasing requirements, transformers, and metering installation.

C. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. The Contractor shall provide flexible power cords as required.

1.06 TEMPORARY LIGHTING

A. Provide and maintain fluorescent/LED lighting for construction operations to achieve minimum lighting levels required by the Safety Standards for Construction Work (Washington Administrative Code 296-155-165).

B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

C. Maintain lighting and provide routine repairs.

D. In public areas, the Contractor shall provide temporary lighting to maintain lighting levels present prior to beginning of Work at all times during all contractor operations.

E. Comply with lighting requirements per Seattle Municipal Code (Chapter 23.50.046). Refer to Section 01 41 00 (Environmental Regulatory Requirements).
    1. Avoid nuisance light effects on the receiving properties and the public to the maximum extent practicable (see Section 01 35 43 – Environmental Procedures) for light control requirements.

1.07 HEATING, COOLING, AND VENTILATION

A. Provide and pay for temporary heating, cooling, and ventilating of the temporary construction facilities as necessary to maintain safe conditions for construction operations, protect Work and material against damage by dampness and cold, and facilitate completion of the Work.

B. Supply the fuel, equipment, and materials required for temporary heating, cooling, and ventilating. Permanent equipment shall not be used for temporary heating, cooling, or ventilating purposes. Prior to operation of temporary equipment for heating, cooling, or ventilating purposes, the Contractor shall verify that installation is approved for operation, equipment is lubricated, and filters are in place. The Contractor shall provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

C. Ventilate enclosed areas to assist cure of materials, dissipate humidity, and prevent accumulation of dust, fumes, vapors, or gases.

D. Maintain strict supervision of operation of temporary heating and ventilating equipment to do the following:
   1. Conform with applicable codes and standards.
   2. Enforce safe practices.
   3. Prevent abuse of services.
   4. Prevent damage to finishes.
   5. Vent direct-fired combustion units to outside.

E. Be responsible for damage to Work due to failure to provide adequate heat and protection during construction.

1.08 COMMUNICATIONS AND TELEPHONE SERVICE

A. Provide, for the Contractor's own use, telephone and data services at the Contractor's Work Site office. The Contractor shall meet with the Owner and representative of King County Department of Information Technology (KCIT) to coordinate for Local Area Network (LAN) installation and discuss telephone needs.

1.09 WATER SERVICE

A. Provide and maintain suitable quality water service required for construction operations, in addition to all necessary water, piping, and special connections to an existing water supply.
   1. The Contractor will be responsible for fees for construction work activities associated with water usage and disconnecting, reconnecting, or installing water mains, services, and meters.

1.10 SANITARY FACILITIES

A. Provide toilet and wash-up facilities for the crew and subcontractors at the Work Site. Comply with applicable laws, ordinances, and regulations pertaining to the public health and sanitation of dwellings and camps.

1.11 CONCRETE BARRIERS

A. Erect and maintain concrete barriers to limit access to excavations and hazardous areas, to protect existing facilities from damage during construction and demolition operations, and at locations identified in the Temporary Facilities and Control Plan.

1.12 FENCING

A. Place temporary fencing during the entire duration of construction around the temporary construction facilities and upland Work areas as needed in coordination with the Project Representative to enclose the areas of construction and prevent unauthorized entry to construction areas. Gates shall be provided at access points where required, and these shall be kept locked during off-work hours. A lock key or lock combination shall be provided to the Project Representative.

B. Provide existing fencing (as applicable) and outlined in the Temporary Facilities and Control Plan, in addition to the requirements of this Section.

C. Fencing requirements:
   1. Install a 6-foot-high chain link fence.
   2. Install fence posts to allow no movement.
   3. Attach a fabric screen that does not allow one to see through the fence.
   4. Maintain the construction limit fencing vertical at all times.
   5. Chain link fence fabric shall have a minimum breakload of 740 pounds or approved equal.

1.13 CONTRACTOR'S PROVIDED-SECURITY

A. Provide security and facilities to protect the Work, all temporary construction facilities, and existing facilities from unauthorized entry, vandalism, or theft.

B. Ensure the security of neighboring facilities in the event that construction activities endanger those facilities or commodities.

C. Abide by special requests of security personnel and Police and Fire Departments.

D. Verify all Work Site access and security requirements for the different Work Site areas with the Project Representative.

E. Notify the U.S. Coast Guard (USCG) as required to comply with USCG, Maritime Security, and other regulations for operating within the Lower Duwamish Waterway (LDW) and Elliott Bay. All costs associated with implementation of required security measures will be considered incidental to the Contract and should be included in the Contractor's Bid.

1.14 CONTRACTOR OFFICE, PARKING, AND STAGING AREAS

A. Location(s) of the Staging and Stockpile Area(s) shall be shown in the Temporary Facilities and Control Plan.

B. The Contractor shall be responsible for obtaining and maintaining parking and staging areas unless otherwise specified.

1.15 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. The Contractor shall maintain the Work Site in a clean and orderly condition.

B. Collect and remove waste materials, debris, and rubbish from the Work Site and dispose off site in a legal manner.

1.16 CONTRACTOR'S OFFICE

A. Maintain a suitable office near the Work Site to be the headquarters of the representative authorized to receive drawings, instructions, or other communication or articles.

B. Communications given by the Project Representative or delivered at the Work Site office in the Contractor's absence shall be deemed to have been delivered to the Contractor.

C. Copies of the Drawings, Specifications, and Site-Specific Health and Safety Plan per Section 01 35 29 (Health and Safety); regulatory required items; and other Contract Documents shall be kept at the Contractor's office and available for use at all times.

D. If the Contractor's Office is located on the Work Site, the Contractor's office shall be equipped with energy efficient lighting, Energy Star-rated appliances and electronics, and WaterSense-rated water fixtures.

E. Use double-sided copying as standard practice in the Contractor's office.

1.17 USE AND OCCUPANCY

A. Materials Storage, Staging, and Parking
   1. The Contractor shall provide space for the storage of materials and the pursuance of the Work under this Contract and provide the location of the storage and staging areas in the Temporary Facilities and Control Plan.

2. Contractor employee parking will be confined to the areas shown in the Temporary Facilities and Control Plan.
3. The Contractor shall be allowed additional space for the storage of materials and the pursuance of Work under this Contract in areas approved by the Project Representative.
4. Limit storage of materials, tools, and other items necessary to the Work to areas within the Project boundaries. Items stored outside the designated areas shall be prohibited without prior approval of the Project Representative.

1.18 MAINTENANCE OF UPLAND TRAFFIC AND TRAFFIC CONTROL

A. Conduct the Work to interfere minimally with public travel, whether vehicular or pedestrian.

B. Refer to Section 01 55 26 (Traffic Control) for requirements associated with upland traffic control and associated procedures.

1.19 UPLAND TRANSPORTATION ROUTE(S)

A. Upland transportation route(s) for hauling Dredge Material, Dredge Debris, Identified Debris, and Piling to an approved Disposal Facility are described in Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).

1.20 RESTORATION OF ROADS

A. Clean and repair any damage to road surfaces used by the Contractor from the direct or indirect result of the Contractor's operations as required during and completion of the Work, to the requirements of the Project Representative and the Owner.

B. Unless otherwise noted, resurface paved roadways, and bring to original grade and section roads that are not paved, where the surface is removed, broken, damaged, caved, or settled during the Work.

1.21 ROAD CLOSURES

A. Temporary detours and road closures due to work of others shall be anticipated by the Contractor. Contractor is responsible for planning and coordinating all its operations to work with possible temporary detours and road closures.

B. Be responsible for all additional costs resulting from temporary road closures.

1.22 GENERAL ACCESS TO WORK SITE

A. The Contractor shall have access to the Work Site via water from Elliott Bay and the LDW and via land (see Article 1.23).

1.23 PRIVATE ACCESS (GENERAL)

A. The Owner shall obtain easements and right-of-entry agreements necessary to conduct any Work, prior to the commencement of construction, as described in Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).

B. The Contractor may identify the need to obtain additional permits, easements, and/or right-of-entry agreements to conduct the Work as part of the RAWP and in accordance with Section 01 41 26 (Permits, Easement, and Right-of-Entry Agreements), in which case the access shall be maintained by and at the expense of the Contractor.

C. The Contractor shall comply with all requirements of Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).

1.24 CONSTRUCTION SIGNS

A. Commercial or advertising signs shall not be allowed on the Work Site.

B. Erect and maintain all construction signs.

1.25 BARGE STAGING AND VESSEL TRAFFIC

A. Refer to Section 35 10 00 (Navigation Safety and Marine Traffic Control) for requirements associated with barge staging and marine traffic control procedures.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 RESPONSIBILITIES

A. Ensure that all subcontractors, suppliers, and individuals associated with Contract activities use approved routes.

B. Provide required signage and Contractor oversight for approved routes to ensure compliance with traffic routing requirements. If the Contractor fails to abide by the approved haul routes, Project Representative will assign City of Seattle or City of Tukwila off-duty police officers for enforcement of truck haul route restrictions at the expense of the Contractor.

C. Inspect truck haul routes daily to assure compliance with Section 01 55 26 (Traffic Control).

3.02 IMPROVEMENT, MAINTENANCE AND RESTORATION OF TRUCK HAUL ROUTES

A. Be responsible for any improvements, maintenance, and restoration of truck haul routes related to construction use.

B. Share truck haul routes with business traffic and maintain in good condition. Truck haul routes shall remain smooth, level, and suitable for the Owner or the public to drive passenger cars on without damage to vehicles. If pavement damage is minor due to the Contractor's Work, plane existing asphalt and resurface. If pavement damage is major due to the Contractor's Work, remove existing asphalt and replace with a minimum of 4 inches of asphalt.

C. Restore truck haul routes to their initial condition after they are no longer needed for construction purposes.

END OF SECTION

SECTION 01 52 01

PROJECT REPRESENTATIVE FIELD OFFICE

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for the Project Representative field office during the In-Water Work Window for each Construction Season.

1.02 DESCRIPTION OF WORK

A. The Project Representative field office shall be the property of the Contractor, and upon Final Acceptance of the Contract, the Contractor shall be responsible for its removal and disposition.

B. The Project Representative field office is not for the use of the Contractor.

1.03 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittal:
   1. Submit as part of the Remedial Action Work Plan the following information:
      a. Project Representative field office plan layout

1.04 FIELD OFFICE REQUIREMENTS

A. Install and have Project Representative field office fully functional 15 working days prior to the start of Project field construction.

B. Project Representative field office requirements are as follows:
   1. Provide a single-wide portable facility approximately 12 feet wide by 60 feet long with 2 separate rooms.
   2. Provide a separate conference room with tables and chairs for six people.
   3. Provide workstations for two people. For each workstation, provide desks, computer tables, ergonomically adjustable office chairs, stationary chairs, and wastebaskets.
   4. Provide two windows with Venetian-type blinds.
   5. Provide sanitary facilities (unless existing facilities are available) within 25 feet of the office.
   6. Handwashing facilities are required.
   7. Provide electricity, sewer, water, garbage, recycling, and cleaning services and monitored security for the duration of the Contract.
   8. Provide seismic tie-downs and skirting.
   9. Provide Americans with Disabilities Act (ADA) accommodation including access (entry ramp, landing, and restrooms).
   10. The Project Representative field office shall be an energy efficient/sustainable model that contains the following features:
      a. Programmable thermostats
      b. LED lights or T-8 fluorescent lamps with energy saving ballasts
      c. Weather stripping at all windows and doors
      d. Low volatile organic compound (VOC) paint and sealants
      e. Low “E” window treatment
      f. EnergyStar-compliant HVAC system
      g. Bathroom components that meet WaterSense rating criteria: low-flow toilets, urinals, faucets, and instant hot water heaters

h. Kitchen components that meet Energy Star and WaterSense rating criteria: low-flow faucets, instant water heaters, and energy efficient appliances
i. White/very light-colored roof
j. Building insulation R ratings for floor, walls, and ceiling that meet or exceed the following:
    1) Roof: R54
    2) Walls: R23
    3) Floors: R33
k. Document control and reporting software

C. Obtain all other required permits and comply with all federal, state, and local requirements, including the ADA.

1.05 POWER

A. The Project Representative field office shall provide the following:
    1. Power and any special connections through the local power utility
    2. Power requirements and outlet for one copier
    3. Connections for computer (desktop) at each workstation

B. The Project Representative field office shall meet all current electrical code requirements.

1.06 HEATING, AIR CONDITIONING, AND VENTILATION

A. The Project Representative field office shall provide a functioning Energy Star-rated climate control system that provides heating, air-conditioning, and ventilation. The system shall include the appropriate number of vents and return air ducts to provide an even distribution of air to all areas of the office space. At a minimum, each office space shall contain one HVAC air vent with adjustable damper.

1.07 COMMUNICATIONS AND TELEPHONE SERVICE

A. Provide a plain paper printer/fax/copy machine.

1.08 SANITARY FACILITIES

A. The Project Representative field office shall provide interior toilet and wash-up facilities connected to the public water system and public sanitary sewer system. Comply with applicable laws, ordinances, and regulations, including ADA, pertaining to public health, sanitation, and access.

1.09 SECURITY

A. All exterior doors shall be provided with keyed lock sets and cylinder deadbolt locks that are keyed alike. Provide 3 sets of keys. The Project Representative field office is to be keyed separately from the Contractor's offices.

B. All exterior doors shall provide suitable and appropriate security.

C. Provide an electronic security system with automatic call-out of security service that covers all exterior doors, windows, and potential locations of ingress.

D. All exterior office space windows shall correctly operate with a secure locking system.

E. Exterior windows shall be secured with bars to prevent entry from the outside.

F. Provide exterior lighting at entry and parking areas controlled by photocell.

1.10 SITE PREPARATION

A. The Contractor shall provide the following:
   1. Fencing for the Project Representative field office
   2. Parking for six vehicles

B. The Contractor shall maintain safe, open, and non-congested access at all times.

1.11 MAINTENANCE

A. Provide maintenance including the following:
   1. Twice-weekly vacuuming, wet mopping, trash removal, and recycling removal
   2. Twice-weekly cleaning of restrooms
   3. Restroom supplies on an as-needed basis
   4. HVAC, plumbing, electrical, and communication line maintenance as required
   5. Service and maintenance of all Contractor-supplied office equipment
   6. Maintenance and monitoring services for the electronic security system

B. Maintain the area free of waste materials, debris, and rubbish. Keep walkways free of mud and ice. Maintain the Project Representative field office area in a clean and orderly condition, including vegetation and landscape areas.

1.12 OFFICE EQUIPMENT AND FURNISHINGS

A. Provide and maintain office equipment and furnishings, including the following items:
   1. Two desks, two ergonomically adjustable computer tables, two ergonomically adjustable office chairs, four stationary chairs, and two wastebaskets
   2. A photocopy machine equivalent to a Ricoh FT 7670 with sorting and collating rack and equipped with paper trays for letter, legal, and 11- x 17-inch paper
   3. Three four-drawer legal size filing cabinets, three two-drawer legal size filing cabinets, and four two-shelf bookcases
   4. A drawing layout table and plan rack
   5. Evenly distributed, energy efficient quality office lighting
   6. Venetian type blinds for all windows
   7. Full-size Energy Star-rated refrigerator with freezer and full-size Energy Star-rated microwave oven
   8. Bottled drinking water service with hot and cold water dispenser
   9. Document control and reporting software:
      a. Field tablets that have phone/data service that we use to collect information for daily reporting and track progress. The cost is roughly $100 per month.
      b. Raken and Egnyte or similar software
   10. Drones, including drone insurance, a certified drone pilot, and Drone Deploy.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 SITE PREPARATION

A. Prepare the location designated for the Project Representative field office, in accordance with the Remedial Action Work Plan and Section 31 11 00 (Clearing and Grubbing).

3.02 ONGOING COSTS

A. Be responsible for all ongoing and maintenance costs of the Project Representative field office and its operation for items furnished in Part 1 of this Section.

END OF SECTION

SECTION 01 55 26

TRAFFIC CONTROL

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for upland traffic control during construction activities, including but not limited to material delivery, upland excavation, surveying and monitoring, and upland disposal, and for submittal of the Traffic Control Plan (TCP).

1.02 DESCRIPTION OF WORK

A. The Contractor is responsible for notification schedules, upland traffic control equipment (such as temporary barricades, signs, flaggers, lights, road surfaces, detours, and maintenance) and other safeguards necessary to protect life and related health and safety as specified in this Section.

B. No separate payment will be made for effort associated with Work described in this Section. Work required to comply with this Section is considered incidental to the Work described in the Contract Documents.

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. Reference standards applicable to this Section are as follows:

REFERENCE	TITLE
MUTCD	U.S. Department of Transportation, Federal Highway Administration: Manual on Uniform Traffic Control Devices, Part VI "Work Zone Traffic Control Standards and Guidelines"

1.04 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals
1. The Contractor shall submit a TCP as part of the Environmental Mitigation Binder and in accordance with the requirements of this Section.
   a. Submit to a local authority having jurisdiction.
   b. Submit a copy to the Project Representative.
2. Submit an initial Notification Plan and initial Notification Schedule, as part of the Remedial Action Work Plan (RAWP).

C. Construction Submittals

1. Submit updated Notification Plan and Notification Schedule as part of Progress Meetings, as described in Article 1.07 of this Section.

1.05 TRAFFIC CONTROL PLAN

A. Comply with the requirements of the local authority having jurisdiction.

B. Identify specific streets that the Contractor determines will have a traffic impact.

C. Annotate proposed location of barricades, lighting, signing, temporary striping, and other traffic control devices.

D. Anticipate traffic, bus zone, and driveway relocation resulting from construction operations. Include anticipated loss of bus, passenger, and truck loading zones.

E. Provide location of on-street parking.

1.06 TRAFFIC CONTROL REQUIREMENTS

A. Work crews shall not impact two consecutive street intersections at the same time.

B. Maintain pedestrian and bicycle access at all times. Work with the Project Representative if pedestrian and bicycle pathways require temporary rerouting or closure.

C. Traffic flow on streets where Work is not being performed shall not be revised.

D. Minor arterial streets shall be maintained in each direction at all times.

E. Unless otherwise indicated, provide for passage and access of emergency vehicles and police, fire, and disaster units at all times. Assume liability for damages resulting from failure to provide said access.

F. Use off-duty police officers when affecting normal traffic operation at a signalized intersection.

G. Vehicular and pedestrian routing on streets where the Work is not being performed shall not be revised.

H. At each Work Site where a two-way roadway is restricted to one lane of two-way traffic, provide a minimum of two certified flaggers to ensure safe and effective planning of traffic through the constricted zone. Provide three certified flaggers when the construction zone length causes sight distance or communication problems between a two-member team of flaggers to operate safely.

I. Lane restrictions for specific roadways shall be the following unless otherwise approved by the jurisdiction in writing:
   1. Maintain two-way traffic during hours required by the local jurisdiction. Refer to Section 01 14 00 (Work Restrictions) for the approved working hours. Lanes shall be at least 12 feet in width.
   2. Maintain one lane with flaggers at all other times. Lane shall be at least 12 feet in width.

J. When driveways are impacted, provide the following:
   1. A minimum of 3 weeks' notice when driveway access will be restricted
   2. Clear residential driveway access at the end of every workday, unless otherwise noted
   3. Access to driveways for businesses, public service buildings, and industrial sites during their operating hours
   4. Provide and maintain signage in accordance with this section and as shown on the TCP.

K. Notify and obtain appropriate approvals from both the Police Department and the Fire Department of street closures.

L. Within the construction zones, provide parking restrictions and easels in accordance with the requirements of the local jurisdiction. If there are no local jurisdictional requirements, at a minimum, provide parking easels within 48 hours in advance of the need to clear parking. Keep parking restrictions to a minimum.

M. Provide the services of a uniformed police officer during working hours in the construction zone when signalized intersections are affected by construction to direct traffic, countermand the traffic signal, and if necessary, clear traffic backups. This officer is not for the convenience of the Contractor but rather to facilitate traffic movements.

N. Provide local access to all businesses, industrial sites, and residences. Provide a certified flagger to prevent any conflicts between local access traffic and construction crews and/or heavy equipment whenever local access is required into/out of the construction zone.

O. Provide road closure plans and provide for the type of traffic impacted. Provide design of the detour route for local access.

P. Provide concrete barriers to separate traffic flow from construction work.

Q. Channel traffic flow into the work zone per approved TCP.

R. Provide a temporary 5-foot wide alternate pathway on the same side of the street when construction interferes with the usual pedestrian/cyclist pathways. Keep pedestrians/cyclists, vehicles, and open excavations along the arterial all separate from one another to meet safety requirements. Maintain minimum of 3 crosswalks at all affected intersections.

1.07 JOB COORDINATION

A. Coordinate construction to offer the least possible obstruction and inconvenience to the public.

B. Obtain all necessary street use permits in connection with the Contractor's operations and in accordance with Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).

C. Coordinate with property and business owners to maintain convenient access for local traffic to private properties along the line of Work at all times and/or as specified in this Section.

D. Keep existing street lighting systems in operation during progress of the Work at all times.

E. Do not open sections of Work and leave them unfinished. Finish Work in process insofar as practicable.

F. Have under construction no greater length or amount of Work than can be prosecuted properly with due regards to the rights of the public.

G. Coordinate revisions to existing traffic control with the affected agencies. Keep traffic controls in operation, unless otherwise required by the Project Representative, for the benefit of the traveling public during progress of the Work.

H. As Work progresses and as conditions permit, reset temporarily relocated or removed traffic and street name signs in their permanent location. Replace or repair signs and other traffic control devices that are damaged or lost.

I. Coordinate with property owners or designated representatives and service providers for uninterrupted garbage/recycling collection, mail, and other delivery services.

1.08 NOTIFICATION PLAN AND NOTIFICATION SCHEDULE

A. Submit a Notification Plan (as part of the RAWP) and update for Progress Meetings a Notification Schedule to maintain access for adjacent or affected properties and businesses.

B. Update the Notification Plan and Notification Schedule as necessary for the Progress Meetings and include the following address of affected business/property owners and the estimated dates and number of days construction will be within 150 feet of the addresses and fronting the properties.

C. The Notification Plan and Notification Schedule shall include the following:
   1. Name of affected business/property owner
   2. Mailing address of business or property owner
   3. Address of affected property if different
   4. Contact name and phone number
   5. Estimated week of construction within 150 feet of affected property
   6. Estimated number of days that construction will be fronting the property
   7. Special issues for maintaining access

D. Request and obtain written approval from the Project Representative and the appropriate jurisdictional agency before partially or completely closing any street.

E. Notifications regarding Work performed in street areas shall be in such detail as to give the time of commencement and completion of the Work, names of streets to be closed, schedule of operation, routes of detours, etc.

F. To accommodate emergency vehicle rerouting, notify local fire and law enforcement authorities and other affected agencies in writing not less than 72 hours prior to construction operations that deviate or delay traffic from the existing traffic patterns.

G. Directly inform school district (for buses), post office, and garbage collection a minimum of 72 hours in advance of beginning the Work.

H. Notification of the residents living adjacent to the Work will be by the Owner 2 weeks in advance of the construction in the area of the Work.

I. Directly inform individual owners or household residents at least 48 hours in advance of beginning the Work to minimize or eliminate inconveniences to the public.

PART 2 PRODUCTS

2.01 SIGNS

A. Signs with special or non-standard messages are part of the TCP as required to properly convey information to the motorist or pedestrian. Be responsible for installing and maintaining these signs. Signs shall be in accordance with the requirements of the standards referenced in Part 1 or as required by the business or property owner.

B. Signs shall meet the following criteria:
   1. 24 inches wide by 36 inches high, free standing, with lettering large enough to be visible for 150 feet
   2. Readable from two directions

C. Sign message to be coordinated with property owner and submitted to Project Representative prior to fabrication.

PART 3 EXECUTION

3.01 TRAFFIC MAINTENANCE

A. Traffic control staff and flaggers are required to be dedicated to traffic control and safety; these tasks shall not be performed by workers performing other Work.

B. Take necessary measures to maintain a normal flow of vehicular and pedestrian traffic to prevent accidents and to protect the Work throughout the construction stages until completion of the Work. Make necessary arrangements to reroute traffic and provide and maintain barriers, cones, guards, barricades, and construction warning and regulatory signs. Regulatory devices provided by the Contractor shall be suitable for nighttime operation. Take effective measures necessary to protect other portions of the Work during construction and until completion. This includes providing and maintaining necessary barricade lights, construction signs, guards, temporary crossovers, and flaggers in accordance with the standards referenced in Part 1.

C. Maintain emergency exiting from homes within and immediately adjacent to the Work Site.

D. Maintain vehicular traffic at all locations to the greatest extent possible, and reduce and reroute traffic only for the shortest time possible consistent with effective construction operations. Required travel lanes shall not be blocked by the Contractor's activities, including trucks delivering materials, unless approved by the Project Representative. Material deliveries and other related trucking activities shall occur in the Contractor's protected Work or Staging and Stockpile Area(s). Upon completion of a segment of Work in streets, traffic shall be restored to normal flow as soon as possible. Maintenance of existing directional operation of street systems shall be maintained as much as possible.

E. When pavement markings are obliterated due to construction activities, temporary pressure sensitive pavement marking tape, traffic buttons, or delineators shall be installed where designated by the Project Representative. These temporary features shall be removed only upon installation of permanent traffic channelization.

F. Maintain access by emergency vehicles at all times in all roadways. Use temporary covers over cuts to accommodate traffic. Notify the Project Representative and the fire chief prior to limitation of access in any section of the roadway.

G. Maintain pedestrian movements through construction areas. Facilities for pedestrians include provisions for the safe movement of mobility- and sight-impaired individuals. This includes temporary ramps.

3.02 ACCESS

A. Unless otherwise indicated, provide local access at all times.

B. Maintain access to private properties and businesses at all times, including the Work area; if access is required in the immediate Work area, make provision in the Contractor operations to provide requested access.

C. Where, during some urgent stages of construction, the Project Representative concurs that temporary closure of an access to a property is unavoidable, coordinate the closure with the property owner and provide alternative access, if required. The existing access shall not be closed until the replacement access is available.

3.03 SAFETY

A. Use adequate safeguards, safety devices, and protective equipment and take other needed actions to protect life, health, and safety and to protect property in connection with the performance of the Work.

B. Use flaggers, signs, and other devices, and erect and maintain barricades, guards, signs, warning signs, and detour signs, as are necessary to warn and protect the public at all times from injury or damage as a result of the Contractor's operations, which may occur on streets affected by such operations.

C. Where flaggers are employed, the flaggers' equipment and training shall be in accordance with the applicable laws and regulations. All required equipment shall be used by flaggers while actually flagging traffic.

D. All flaggers are required to possess a current flagging certification card.

E. Provide standard signs as well as other appropriate signs prescribed by the Project Representative as applicable and necessary for the Work. Erect signs on posts and supports and maintain them in a neat and

presentable condition until the necessity for them has ceased. When the need for a sign has ceased, the Contractor, upon approval by the Project Representative, shall take down such sign. Control signs necessary for nighttime traffic control, or remaining in place during the night, shall be fully reflectorized.

F. Safeguard and direct traffic after the existing signs have been removed. Preservation and maintenance of traffic control and street name signs shall be the sole responsibility of the Contractor.

G. Provide and maintain temporary and permanent pavement markings including traffic markers, delineators, thermoplastic stop bars, and crosswalks to meet the City of Seattle and City of Tukwila current standards.

H. When required by the Project Representative, provide flaggers immediately; provide, erect, maintain and remove barricades and lights; and erect, maintain and remove standard signs.

I. In the event that traffic signal or beacon is made inoperative by or at the request of the Contractor, provide an off-duty police officer as per laws and regulations, or provide suitable traffic control devices for control and movement of traffic during the time that the signal or beacon is inoperative.

J. Provide traffic control during the hours of construction and in a safe, prudent, operating manner. During the hours of non-construction, maintain all existing traffic lanes safe for vehicular traffic. Leave all unfinished Work in a safe, non-hazardous condition to the public.

3.04 SIGNS

A. Check each item daily, including weekends and holidays. Replace signs that are missing, vandalized, damaged, or not functioning properly within 24 hours of such act.

B. Non-applicable signs shall be removed or covered during periods not needed.

3.05 CONSTRUCTION AND MAINTENANCE OF DETOURS

A. Construct, maintain in a safe condition, and keep open to traffic detours that will accommodate traffic diverted from the roadway during construction.

B. Provide for all on-site or off-site detours required or necessitated by the Work, including side street crossings.

C. Keep roadways clean to assure the safe passage of pedestrians and vehicles.

END OF SECTION

SECTION 01 70 00

CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.02 SUMMARY

A. This Section provides Project closeout requirements for inspection and declaration that the Work has been completed as required by the Contract Documents. Upon formal review and acceptance of the Work by the Project Representative, the Work will be determined to be complete, and the Contractor shall then demobilize from the Work Site.

1.03 DESCRIPTION OF WORK

A. Work under this Section shall be performed by the Contractor to include furnishing all labor, materials, tools, equipment, and incidentals required to conduct inspections and prepare post-construction submittals in support of the overall Project as described in the Drawings and in these Specifications.

B. The Contractor shall ensure that all procedures and actions identified in this Section and elsewhere in the Contract Documents necessary to fully complete the Work are accomplished in a timely and effective manner. Lack of compliance with the closeout requirements will result in delays to any or all of the milestones identified herein.

C. The preparation and submittal of closeout submittals is incidental to the Work and will not be measured separately. No separate payment will be made for closeout submittals, and work under this Section is paid under Bid Items No. A1.1 – Mobilization and Demobilization (Construction Season 1), No. A1.2 – Mobilization and Demobilization (Construction Season 2), and No. A1.3 – Mobilization and Demobilization (Construction Season 3) for Project Record Documents prepared and submitted in each of the three Construction Seasons, as described in Section 01 29 00 (Measurement and Payment).

1.04 INSPECTION AND DECLARATION

A. Inspection shall be completed by the Contractor for each of the three Construction Seasons for closeout requirement compliance as described below.

B. Contractor Inspection:
   1. The Contractor and its subcontractors shall conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to requirements of the Contract Documents.
      a. The Contractor shall prepare a punchlist prior to requesting an inspection by the Project Representative. An inspection shall not be requested or granted if the Work is incomplete.
      b. Notify the Project Representative, in writing, of satisfactory completion of Contractor inspection and that corrections have been made.
      c. Request for Project Representative pre-final inspection, in writing, and with the punchlist attached at least 3 working days prior to the requested date of inspection (see Section 01 33 00 – Submittals).
   2. Pre-final inspection:
      a. The Project Representative and Contractor will perform inspection of the work to identify defects or deficiencies. The Contractor shall compile a deficiency list describing all noted defects and deficiencies for review and acceptance by the Project Representative. The Contractor shall correct deficient work accordingly, as required by the Project Representative, at no cost to the Owner.
   3. Final inspection:
      a. When items noted in the deficiency list above are completed, the Contractor shall request final inspection of work by the Project Representative at least 3 working days prior to the requested final inspection date. If work is deemed incomplete by the Project Representative, complete outstanding deficient items and request reinspection at no cost to the Owner (see Section 01 33 00 – Submittals).

C. Substantial Completion

1. Substantial Completion is the stage in the progress of the Work in which the Project Representative determines the physical Work at the Work Site is complete (except for warranty work) for each of the three Construction Seasons and the Contractor is off the Work Site.
    a. A Notice of Substantial Completion will be issued in writing by the Project Representative when all the physical work is complete for each Construction Season, only after the following:
        1) The Contractor completes a Project Post-Construction Survey at the end of each Construction Season to document post-construction bathymetric and topographic conditions following completion of all construction activities in Sediment Management Areas remediated within each specific Construction Season.
        2) The Contractor completes disposal of all Dredge Material, Dredge Debris, Identified Debris, and Piling at the Disposal Facility and submittal of all Certificates of Disposal from the Disposal Facility.
        3) The Contractor performs final cleaning of the Work Site, Staging and Stockpile Area(s), and Contractor Transload Facility(ies), as required by Section 01 74 23 (Final Cleaning).
        4) Contractor demobilization is satisfactorily completed.
            a) The Contractor will be required to relocate its equipment outside of the Work Site after the Work for each Construction Season is completed.
        5) All temporary locks, keys, or other items loaned or signed out to the Contractor, including subcontractors, sub-subcontractors, suppliers, and vendors are returned.
        6) Project Record Documents have been submitted and approved by the Project Representative, as required in Section 01 78 39 (Project Record Documents).
        7) The Contractor satisfactorily completes the punchlist items resulting from the Contractor inspection and the pre-final inspection with the Project Representative, including demobilization and restoration of the Work Site and other Project work areas.
        8) The Contractor submits for approval to the Project Representative any Special Warranties, Bonds, or follow-on Contracts required by the Contract Documents.

1.05 FINAL ACCEPTANCE

A. Final Acceptance is the stage in the progress of the Work in which the Project Representative determines the Work is complete (including Substantial Completion and other administrative work), in accordance with the Contract Documents. Final Acceptance represents the end of the Contract Time and the start of the warranty period.

B. The date of Final Acceptance is established in a Notice of Final Acceptance letter issued by the Project Representative.

C. To achieve Final Acceptance, the Contractor shall satisfactorily pass the final inspection and receive the Notice of Final Acceptance from the Project Representative on behalf of the Owner.

1.06 WARRANTIES, BONDS, TEST RESULTS, AND INSPECTION REPORTS

A. Promptly (within 48 hours), repair or replace all defective or damaged items delivered under the Contract Documents.

B. Haul away all defective or damaged items prior to Substantial Completion of the Work.

C. Obtain warranties, bonds, test results, and inspection reports executed in duplicate by subcontractors, suppliers, manufacturers, and inspection agencies within 14 calendar days after completion of the applicable item of Work.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION [NOT USED]

END OF SECTION

SECTION 01 74 23

FINAL CLEANING

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the final cleaning of equipment used during the Work and the areas affected during performance of the Work prior to completion of punchlist items (as described in Section 01 70 00 – Closeout Requirements).

1.02 DESCRIPTION OF WORK

A. The purpose of the final cleaning of the Work Site is to clean up from the construction activities that occurred during the Work required under this Contract. Final cleaning consists of decontamination of equipment that has been in contact with contaminated Dredge Material, Dredge Debris, Identified Debris, and Piling, including but not limited to the dredge bucket (during remedial dredging) and haul barges (during in-water transportation). All contaminated materials and/or fluid collected in the decontamination process shall be collected and disposed of appropriately.

B. The Work Site shall be maintained at the highest level of readiness and cleanliness. The Contractor shall maintain required Work activities in tidy condition, free from accumulation of waste products and debris.

C. Remove waste materials from the Work Site and On-Site Staging and Stockpile Area(s), and the Contractor Transload Facility(ies) at daily regularly schedule times or dispose of as directed by the Project Representative. The Contractor shall not burn waste materials at the Work Site.

D. Make arrangements for off-site disposal of Dredge Material, Dredge Debris, Identified Debris, and Piling at an approved Disposal Facility as described in Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).

E. Provide on-site dump containers with secure lids for collection of other waste materials and other debris.

F. Provide and use marked separate bins for recycling.

G. Schedule regular cleaning operations (including all vessels, barges, and any other equipment operating at the Work Site) so resulting dust, debris, and other contaminants are properly contained and disposed.

H. Take due care that materials purchased under this Contract remain undamaged and free of dust and dirt at all times.

1.03 CLEANING REQUIREMENTS

A. Clean all items affected by the Work and ensure they are free of litter, trash, dust, dirt, stains, damage, or defects.

B. Wash, sweep, or otherwise clean all new and existing hardware, and items of equipment. This includes decontamination of dredge bucket(s) and haul barges.

C. Replace damaged, defaced, or marred items.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

A. Use water and biodegradable soap to clean surfaces. The Contractor shall assume pressure washing may be required.

B. The use of solvents shall be limited to surfaces and contaminants that will not come clean with soap and water. The Contractor shall contain and dispose of spent solvents in accordance with regulatory requirements.

PART 3 EXECUTION

3.01 TIMING

A. Upon approval of the final inspection by the Project Representative (as described in Section 01 70 00 – Closeout Requirements), the Contractor shall clean all construction areas within the Work Site, Staging and Stockpile Area(s), and Contractor Transload Facility(ies), pavement, equipment, piping, and tanks used during construction for each Construction Season.

3.02 CLEANING

A. Decontaminate equipment according to methods and procedures as defined by the Personnel and Equipment and Decontamination Plan per Section 01 35 43 (Environmental Procedures).

B. The Contractor shall do the following:
   1. Remove surplus products, tools, construction machinery, and equipment not required for performance of remaining Work.
   2. Use experienced workers or professional cleaners.
   3. Broom clean paved surfaces; rake clean other surfaces of grounds.
   4. Pressure wash, as appropriate, all surfaces of dredge buckets, haul barges, and other equipment that has been in contact with contaminated Dredge Material, Dredge Debris, Identified Debris, and Piling materials.
   5. Reinstate Work Site areas to pre-construction conditions.

END OF SECTION

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies requirements for the Contractor to provide As-Built Drawings, Record Documents, and record information, showing as-built conditions of the Work Site.

1.02 DESCRIPTION OF WORK

A. For this Contract, the terms As-Built Documents and Record Documents are considered interchangeable and synonymous.

B. As-Built Record Documents refer to the sum of all Record Drawings, Record Documents, and Record information specified in this Section.

C. Throughout progress of the Work of this Contract, the Contractor shall maintain for each Construction Season an updated and accurate record of all Project Record Documents.

D. No separate measurement or payment will be made for Project Record Documents required by this Section. Work under this Section is paid under Bid Items No. A1.1 – Mobilization and Demobilization (Construction Season 1), No. A1.2 – Mobilization and Demobilization (Construction Season 2), and No. A1.3 – Mobilization and Demobilization (Construction Season 3) for Project Record Documents prepared and submitted in each of the three Construction Seasons, as described in Section 01 29 00 (Measurement and Payment).

1.03 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Construction Submittals:
   1. Prior to submitting each request for progress payment, the Contractor shall obtain the Project Representative's acceptance of the working As-Built Record Drawings as currently maintained.

C. Post-Construction Submittals:
   1. The Contractor shall submit to the Project Representative Record Documents, Record Drawings, and any additional Record information for all elements of the Work, as required by the Contract Documents, and as described per Article 3.06B.
   2. Record information shall include, but not be limited to, the following:
      a. Surveys:
         1) Project Pre-Construction Survey for the entire Work Site for each Construction Season
         2) Final Post-Construction Survey for completion of dredging and material placement work elements for each Construction Season as described in Section 02 21 00 (Site Surveys and Positioning Control).
         3) Surveys shall be those used for the basis of measurement and payment of the work as described in Section 01 29 00 (Measurement and Payment).
      b. Any additional Record information provided as part of Daily and Weekly Construction Reports
      c. Record Drawings for all installed structures and utilities
         1) Additional Record information provided by the Contractor shall include the following:
            a) Electronic records from the dredge positioning software (e.g., bucket maps)
            b) Weight tickets generated from the disposal of Dredge Material, Dredge Debris, Identified Debris, and Piling at the Disposal Facility

c) Summary of all Piling driving data, including Piling construction details, installation depths, installation methods, and/or any modifications during installation
d) Geotechnical monitoring data
e) Health and safety summary: include incidents and follow up, monitoring results, and changes in work activities to comply with perimeter sampling results
f) Any additional data or recordkeeping documents requested by the Project Representative during construction
g) Any actions conducted as a response to community concerns, questions, or complaints.

d. The Contractor shall complete a Contractor's Annual Construction Season Summary Report for each Construction Season, following completion of construction activities for the specified Construction Season. The Contractor's Annual Construction Season Summary Report shall contain, at a minimum, the following:
1) Summary of remediation activities completed, specifying Sediment Management Areas (SMAs) completed within the Construction Season
2) Compilation of Project Pre-Construction and Post-Construction Surveys completed within those SMAs
3) Summary of total volumes dredged and disposed, material placed, and surface area completed (% complete)
4) Summary of removal and disposal Work for Piling and Identified Debris and structure installation completed within the Construction Season
5) Summary of the environmental activities completed, including representative Work Site photographs, a summary of environmental inspections and monitoring data collected by the Contractor, environmental management and issues during construction and how these issues were managed, a summary of the effectiveness of protection and mitigation measures, and a summary of environmental lessons learned during construction
6) Summary of deviations from the Contract Document or RAWP, if any, and corrective actions taken to reconcile the deviations so remediation objectives were met

e. The Contractor shall provide one hard copy of As-Built Record Documents and one set of electronic files of all Record Drawings and Record information.

D. Additional Submittal Requirements:
1. For manually produced drawings (full-size, 22- by 34-inch As-Built Drawings):
a. Provide plan view contour drawing using 1-foot contour intervals.
b. Provide plan view spot elevation drawing.
c. Provide cross-sections through the area where work was completed at no greater than 50-feet spacing between cross sections unless otherwise accepted by the Project Representative. Cross-section information shall show the pre-construction elevations and grades, progress or post-construction elevations and grades, and the design template (elevations and grades).
d. Indicate on drawing, at a minimum, the date of survey, datums, extent of survey coverage, elevation markings (for spot elevations and contour lines), location of cross-sections, scale bar, and licensed professional surveyor stamp and signature (for Pre-Construction and Post-Construction Surveys).
2. For CAD produced: electronic files of as-constructed information:
a. Submit all survey data in AutoCAD Civil3D 2012 or older format if acceptable to the Project Representative.
b. Submit all survey data in a separate ASCII text file with XYZ spot elevation data.
c. The Project Representative will provide the Contractor with the Work Site basemap file in *.dwg format for Contractor use.
3. Portable Document Format (PDF)
4. Application software and configuration files in native file format
5. Electronic files distributed through a web link, FTP site, or cloud-based filesharing site

1.04 QUALITY ASSURANCE/QUALITY CONTROL

A. Be responsible for providing all necessary quality controls to successfully complete the Project Record Documents and Quality Control Record (to comply with its Construction Quality Control Plan [CQCP]; submitted as part of the Remedial Action Work Plan), as specified in Section 01 45 00 (Quality Control).

B. The responsibility for maintenance of changes to the Project Record Documents shall be assigned to one person on the Contractor's staff.

C. Survey work requirements and surveyor qualifications shall meet all requirements of Section 02 21 00 (Site Surveys and Positioning Control).

PART 2 PRODUCTS

2.01 AS-BUILT RECORD DRAWINGS AND RECORD DOCUMENTS

A. Continuously maintain, update, and correct full-sized Record Drawings to reflect the Project as-built conditions.
   1. Keep these working as-built marked Record Drawings current on a weekly basis and at least 1 set available at the Work Site at all times.
   2. Changes from the Contact Drawings made in the work or additional information that might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes.
   3. Mark up Record Drawings and Documents per Article 3.01.A.

B. Working As-Built Record Documents and information shall be continuously updated by the Contractor to show the following:
   1. Work accomplished in the prior month to verify payment due
   2. Field changes of dimensions and details made by the Contractor
   3. Changes made by Change Order, responses to Requests for Information or Field Directives.
   4. Record locations of all embedded, buried, and concealed features dimensioned relative to visible features as prescribed in this Section, including the following:
      a. Items located or shown on the Drawings
      b. Items not located or shown on the Drawings but placed by Contractor

C. Show, but do not limit to, the following information on the working and final Record Drawings:
   1. Correct grade, elevations, cross section, or alignment of earthwork, structures, or utilities if any changes were made from the Contract Drawings
   2. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including, but not limited to, fabrication, erection, installation plans, and placing details
   3. Topography, invert elevations, and grades of drainage installed or modified as part of the Project construction
   4. Changes or modifications that result from the final inspection
   5. Where Contract Drawings or Specifications present options, show only the option selected for construction on the final as-built prints.

D. Prepare final As-Built Record Drawings after the completion of each definable feature of work as listed in the CQCP as appropriate for the Project.

E. The working as-built marked prints and final Record Drawings will be jointly reviewed for accuracy and completeness by the Project Representative and Contractor prior to submission of each monthly pay estimate.

F. If the Contractor fails to maintain the working and final Record Drawings as specified herein, the Project Representative will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the Record Drawings. This monthly deduction will continue until an agreement can be reached between the Project Representative and Contractor regarding the accuracy and completeness of updated Record Drawings.

2.02 SUPPLEMENTAL CONTRACTOR-PRODUCED DOCUMENTS

A. When the Specifications require the Contractor to produce information supplemental to that in the Record Drawings and Record Documents, the Contractor shall produce and submit per the following CAD Construction Detail Drawings and Records requirements:
   1. Drawings shall be provided in AutoCAD 2018 or newer *.dwg format.
   2. Information prepared by the Contractor for construction or installation, which is supplemental to the information and detail on the Record Drawings and as required in the Specifications.
   3. Reference appropriate Contract Drawings that show the work.

PART 3 EXECUTION

3.01 MARKING DRAWINGS

A. For markups or revisions (i.e., changes, corrections, additions, and deletions) to the Record Documents, use waterproof felt-tip pens as required to maintain As-Built Drawings described in this Section using the following color coding:
   1. Red: Document changes
   2. Blue: Dimensional and other notations
   3. Green: Work deleted

B. When final markups or revisions have been completed, the Contractor shall show the wording "RECORD DRAWINGS / AS-BUILT CONDITIONS," followed by the name of the Contractor in letters at least 3/16-inch high on the cover sheet drawing. The Contractor shall mark all other Record Drawings either "Record" Drawing, denoting no revisions on the sheet, or "Revised Record," denoting one or more revisions. The date of the original Contract Drawings should be in the revision block.

3.02 DRAWING PREPARATION

A. To prepare Record Drawings, the Contractor shall modify the Contract Drawings as may be necessary to correctly show the features of the Project as it has been constructed by bringing the Contract set into agreement with approved working as-built prints and adding such additional drawings as may be necessary.

B. The Contractor will be furnished with "as-designed" Contract Drawings in electronic format.

C. The working Record Drawings (marked prints) shall be neat, legible, and accurate. These Record Drawings are part of the permanent records of this Project and shall be returned to the Project Representative after approval by the Owner.

D. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Owner.

3.03 CAD DRAWING REQUIREMENTS

A. Only employ personnel proficient in the preparation of CAD drawings to modify the Contract Drawings or prepare additional new Record Drawings.

B. Additions and corrections to the Record Drawings shall be equal in quality and detail to that of the original Contract Drawings.

C. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols.

D. If additional Drawings are required, prepare them using the specified electronic file format, applying the same graphic standards specified for original Contract Drawings.

E. The title block and drawing border to be used for any new final Record Drawings shall be identical to that used on the Contract Drawings.

F. Accomplish additions and corrections to the Contract Drawings using CAD files.

G. Provide all program files, software, and hardware necessary to prepare final Record Drawings.

3.04 ELECTRONIC MEDIA DRAWINGS

A. All drawings provided in electronic format shall be provided in AutoCAD, Release 2018 or newer, *.dwg and in PDF format files with borders and title blocks clearly identifying the Contract and drawing number. Each file shall include the drawing number and drawing title in the filename. The equipment and scope of the drawing shall be as required in the Specifications.

B. Drawing quality and size of presentation shall be legible at a 50% reduction of such drawings.

C. Text size: 0.125 inch for 22- by 34-inch drawings, 0.063 inch for 11- by 17-inch drawings

D. When requested by the Contractor, the Project Representative will provide electronic copies of the original Record Drawings in AutoCAD *.dwg format or Specifications as developed by the design team in Microsoft Word or Excel format.

3.05 RECORDING INFORMATION

A. Record information concurrently with construction progress. No work shall be concealed until the required information is recorded. Payment for Work or structure element placed without recording the location may not be made for the remedial work or structure until the information is documented to the satisfaction of the Project Representative.

B. Mark each item in the Record Drawings to record actual construction, including the following:
   1. Measured depths and elevations of dredged area in relation to Project vertical datum
   2. Measured horizontal and vertical locations of each dredged area
   3. Measured depths of backfill placement areas in relation to Project vertical datum
   4. Measured horizontal and vertical locations of each material placement area
   5. Measured locations and magnitude of dredge slope
   6. Measured locations of structures, utilities, and appurtenances referenced to visible and accessible features of construction
   7. Measured bathymetry, including metadata, the date of survey(s), datums, extent of survey coverage, elevation markings, scale bar, licensed professional surveyor stamp, and signature
   8. Changes made by field conditions
   9. Changes made by change orders
   10. Details not on original Contract Drawings
   11. References to related shop drawings and modifications

C. Include the following in other Record Documents: manufacturer’s certifications, inspection certifications, and field test records required by individual Sections of the Specifications.

D. Provide digital photos for Work Site records as described in Section 01 32 33 (Photographs and Videos).

E. Provide any additional information provided as part of Daily and Weekly Construction Reports in a digital format.

3.06 DELIVERY TO PROJECT REPRESENTATIVE

A. As-Built Record Drawings will be used to verify and document progress as stated in the progress payment request per Section 01 32 16 (Construction Progress Schedules). Work not included in the As-Built Record Drawings is not documented as performed and will not be included for payment in progress payment requests.

B. Prior to request for a Notice of Substantial Completion of the Work for the Project, the Contractor shall transmit Record Documents; Record Drawings; and any additional Record information for all elements of the Work as required by the Contract Documents, including Contract title; date; Contractor's name and address; index with title and number of each Record Document; statement indicating completion of record information for specific areas; or, if for Project closeout, that the documentation is completed and in compliance with Contract Document requirements, attested by the signature of the Contractor or the Contractor's authorized representative.

C. Commissioning will not begin until draft copies of electronic and hard copy As-Built Record Documents are received and approved by the Project Representative. The Contractor shall revise the As-Built Record Documents as a result of any changes made or discovered during commissioning.

D. Changes Subsequent to Substantial Completion:
   1. The Contractor shall be responsible for recording changes in the Work subsequent to Substantial Completion, including changes resulting from replacements, repairs, and alterations made by the Contractor as part of its warranty.

3.07 RECORD DOCUMENTS PAYMENT

A. Two percent of the awarded Contract Price shall be assigned for preparation and submittal of As-Built Record Documents. A maximum of 1% of the awarded Contact Price shall be progressed if the As-built information is up to date. The remaining 1% of the awarded Contract Price shall be retained and progressed only after all required Record Documents are submitted to the Project Representative and determined to be accurate and complete.

END OF SECTION

SECTION 02 21 00

SITE SURVEYS AND POSITIONING CONTROL

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies surveying and positioning control Work requirements. The Contractor shall be required to perform Pre-Construction Surveys, Progress Surveys, and Post-Construction Surveys that will be used for measurement and payment purposes.

1.02 DESCRIPTION OF WORK

A. Employ a third-party Professional Land Surveyor (PLS) licensed in Washington State with at least 2 years of bathymetric surveying experience (i.e., do not use the Contractor's in-house survey crew) to perform bathymetric and topographic measurement used for payment surveys (i.e., Pre-Construction and Post-Construction Surveys) as described in this Section. The Contractor may utilize its own in-house or third-party PLS to conduct Progress Surveys. Progress Surveys do not need to be stamped and signed by a PLS. The Contract shall provide the name of the proposed PLS as part of the Survey and Positioning Control Plan.

B. Local survey control and upland benchmark locations are shown on the Drawings. The Contractor shall refer to benchmark location information to help establish survey control for the Contract Work or propose an alternate method for establishing survey control for Project Representative review and approval.

C. The Drawings represent conditions existing on the date of the surveys shown on the Drawings and are for information purposes only. The Drawings serve as the basis for the estimated quantities of materials as provided and described in the Bidding Schedule.

D. Methods and procedures for bathymetric (also referred to as hydrographic) surveys shall meet or exceed accuracy requirements of "Chapter 3 - Recommended USACE Accuracy Standards for Federal Navigation Projects" per the *Hydrographic Surveying Engineering and Design Manual* (EM 1110-2-1003) prepared by U.S. Army Corps of Engineers (USACE), dated November 30, 2013, or the latest version. Should there be discrepancies between the *Hydrographic Surveying Engineering and Design Manual* and these Specifications, the more stringent survey requirements shall take precedence unless the Contractor obtains approval from the Project Representative otherwise.

E. The Contractor and Contractor's third-party PLS shall use multibeam survey equipment for all Progress, Pre-Construction, and Post-Construction Surveys. If the water depth is shallow enough that there is a more accurate survey method than multibeam, the Contractor shall propose using the alternate survey method for shallow water conditions in its Survey and Positioning Control Plan as part of the Remedial Action Work Plan (RAWP).

F. Land surveying equipment and methods shall meet or exceed the standards associated with the latest version of EM 1110-1-1005 "Control and Topographic Surveying" (USACE), dated January 1, 2007, or the latest version, for Contract payment surveys. Should there be discrepancies between the "Control and Topographic Surveying" and these Specifications, the more stringent survey requirements shall take precedence, unless the Contractor obtains approval from the Project Representative otherwise.

G. The Contractor shall conduct and submit to the Project Representative a Project Pre-Construction Survey for each Construction Season for Project Representative review and acceptance prior to start of any construction (excluding other activities such as mobilization and establishment of temporary construction facilities) at the Work Site in a Construction Season. The Contractor shall schedule the Project Pre-Construction Survey in coordination with the Project Representative to allow the Project Representative to have the Owner's surveyor observe the Project Pre-Construction Survey.

H. The Owner may conduct its own pre-construction survey to compare against the Contractor's Project Pre-Construction Survey for quality assurance. If there are discrepancies between the two pre-construction surveys, the Contractor's third-party PLS shall coordinate with the Owner's surveyor to determine which survey is accurate. If the Project Representative determines the Contractor's survey means and methods are inaccurate, the Contractor shall adjust and correct its surveying means and methods at no additional cost to the Owner.
   1. No excavation or dredging Work may commence until the Project Representative has accepted both the Project Pre-Construction Survey and the Contractor's positioning control methods.

I. The Owner reserves the right to conduct its own surveys during construction as quality assurance review of the Contractor's survey Work. In the event of a discrepancy, the Owner may choose to retain another surveyor mutually acceptable to both the Contractor and Project Representative to resolve the discrepancy.

J. The Contractor shall conduct Progress Surveys and positioning control, as described further in this Section, to provide quality control of the Work and to calculate or verify volumes, areas, limits, positions, and other aspects of the Work.

K. Progress Survey data collected by the Contractor shall be used for work progress tracking and for monthly progress payments for Work completed.

L. The Contractor shall perform Post-Construction Survey(s) and submit to the Project Representative for review and acceptance. Once accepted, measurement and payment for the completed Work shall be determined using the Contractor's approved Pre- and Post-Construction Survey results.

M. The Owner may review the Contractor's survey work or conduct additional surveys throughout the construction work as a quality assurance check to the Contractor's Progress and Post-Construction Survey work.

N. The Contractor shall calculate completed in situ placement quantities for all Bid Items measured on a cubic yard (CY) basis, including Required Dredging, Contingency Re-Dredging, and Backfill Material placement, and also for all Bid Items measured on a SY basis, including Enhanced Natural Recovery (ENR) placement, Amended Cover placement, Required Residuals Management Cover (RMC) placement, Inner Perimeter RMC placement, Contingent Outer Perimeter RMC placement, Engineered Cap A placement, and Engineered Cap B placement, based on survey results from the applicable Pre-Construction Survey and Post-Construction Survey for measurement and payment purposes.

O. Work under this Section is paid under Bid Item No. A3 – Surveying and Survey Control as shown on the Bidding Schedule.

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. Reference standards applicable to this Section are as follows:

REFERENCE	TITLE
RCW 58.09	Surveys - Recording
USACE EM 1110-1-1005	Control and Topographic Surveying, January 1, 2007, or latest version
USACE EM 1110-2-1003	Hydrographic Surveying, November 30, 2013, or latest version

Notes:
EM: Engineer Manual
RCW: Revised Code of Washington
USACE: U.S. Army Corps of Engineers

1.04 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Basemap Survey:
   1. The Basemap Survey includes information from bathymetric and topographic surveys, structures and debris surveys, utility reviews and surveys, and review of other as-built information. The Basemap Survey is the basis for the estimated Bid quantities listed in the Bidding Schedule and will be provided to the Contractor by the Project Representative after the Contractor is given the Notice to Proceed.

C. Post-Construction Survey: The Post-Construction Surveys will be completed by the Contractor's third-party PLS to perform and document bathymetric and topographic conditions following completion of each component of the Work. The Post-Construction Surveys shall be submitted to the Project Representative for review and acceptance; once accepted, they will be used for measurement and payment of Contractor Work completed within the Work Site. Post-Construction Surveys are described as follows:
   1. Required Dredging Post-Construction Survey(s): The Contractor shall conduct Post-Construction Survey(s) after Required Dredging is completed and accepted by the Project Representative based on a review of Progress Surveys.
   2. Contingency Re-Dredging Post-Construction Survey(s): The Contractor shall conduct Post-Construction Survey(s) in all Contingency Re-Dredging areas designated by the Project Representative following completion of Contingency Re-Dredging activities.
   3. Placement Post-Construction Surveys:
      a. The Contractor shall conduct Placement Post-Construction Survey(s) after placement of materials including ENR, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, Engineered Cap B, Amended Cover, and Backfill Material, to be placed in the areas shown on the Drawings.
      b. The Contractor shall determine the sequence, number, and extent of surveys necessary to clearly demonstrate the material placement in the Sediment Management Area (SMA) achieves the placement requirements as defined by these Specifications and as shown on the Drawings to the satisfaction of the Project Representative.
      c. The Contractor shall conduct Placement Post-Construction Surveys after placement of each discrete layer of both the Engineered Cap A and Engineered Cap B.
   4. Final Project Post-Construction Survey(s): The Contractor shall conduct a Final Project Post-Construction Survey at the end of each Construction Season to document post-construction bathymetric and topographic conditions following completion of all construction activities in SMAs remediated within each specific Construction Season.

D. Pre-Construction Survey: Pre-Construction Surveys are described as follows:
   1. Project Pre-Construction Survey: The Contractor shall conduct a Project Pre-Construction Survey to document pre-construction bathymetric and topographic baseline conditions in advance of conducting any in-water Work for each Construction Season. The three Project Pre-Construction Surveys shall be submitted to the Project Representative for review and acceptance; once accepted, these surveys will be used for measurement and payment of Contractor Work completed within the Work Site in each Construction Season.
   2. The Project Pre-Construction Survey in each Construction Season shall prevail as the governing Pre-Construction Survey for the area of survey coverage in that Construction Season.
   3. Placement Pre-Construction Surveys:

a. The Project Pre-Construction Survey will serve as the Placement Pre-Construction Survey for placement of the ENR, Amended Cover, Inner Perimeter RMC, and Contingent Outer Perimeter RMC materials.
b. The Required Dredging Post-Construction Survey or Contingency Re-Dredging Post-Construction Survey (if Contingency Re-Dredging is required) will serve as the Placement Pre-Construction Survey for placement of the Required RMC, Engineered Cap A, Engineered Cap B, and Backfill materials.

E. Progress Surveys: The Contractor shall conduct daily Progress Surveys to document progress of construction activities completed as part of the Contract. Progress Surveys will be used as the basis for monthly progress payment to the Contractor. Progress surveys are described as follows:
1. Required Dredging Progress Survey: The Contractor shall conduct these surveys to document dredging progress for Required Dredging activities.
2. Contingency Re-Dredging Progress Survey: The Contractor shall conduct these surveys to document dredging progress for Contingency Re-Dredging activities (if required by the Project Representative, based on results of confirmational sampling and testing, following completion of Required Dredging activities).
3. Placement Progress Survey: The Contractor shall conduct these surveys in bank, slope, and open-water areas of the Work Site to document placement thicknesses of Backfill Material, ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, and Engineered Cap B to document Minimum Required Placement Thicknesses, Targeted Placement Elevations, Targeted Placement Thicknesses, and placement areas as shown on the Drawings.

1.05 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
1. Project Pre-Construction Survey
2. Submit a detailed, written Survey and Positioning Control Plan as part of the RAWP, in conformance with the Specifications, that describes the means and methods that will be implemented for all surveying and positioning control activities required for the Work. In-water construction activities shall not begin until the RAWP has been reviewed and accepted by the Project Representative. At a minimum, the Survey and Positioning Control Plan shall contain the following information:
a. Name, address, telephone number, PLS license number and license expiration date, and statement of qualification for the third-party PLS proposed by the Contractor. This third-party PLS shall be responsible for stamping and signing all Pre- and Post-Construction Surveys as described in this Section. The Owner reserves the right to require that the Contractor substitute another licensed surveyor, at no additional cost to the Owner, if the Owner determines the proposed third-party PLS does not have sufficient experience or capacity to conduct the Pre- and Post-Construction Surveys.
b. Name, address, telephone number, PLS license number and license expiration date, and statement of qualification for the in-house Contractor surveyor, if proposed to be used for Progress Surveys.
c. Descriptions of survey equipment, including range of accuracy, proposed for use in collection of all survey data for the Work
d. Descriptions of survey methods and procedures
e. Description of any alternate survey methods and equipment used for shallow water conditions (where multibeam survey equipment is not the most accurate survey)
f. Descriptions of how the Contractor will provide positioning control (horizontal and vertical control), including range of accuracy, for the equipment conducting the Work
g. Procedures to confirm that daily Progress Survey data, including all electronic information and data from survey instruments, is reviewed and included in the appropriate construction submittal, as described in these Specifications
h. Procedures for providing weekly and monthly summary Progress Survey data and volume and area calculations to the Project Representative for progress review and monthly progress payments during Work
i. Procedures and quantity calculation methods, including survey data interpretation software (e.g., Hypack), for calculating volumes and areas

j. Description of quality control procedures used for surveying, positioning control, and volume calculations

C. Construction Submittals:
1. Progress Surveys in compliance with this Section and Sections 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation) and 35 37 10 (Material Placement).
2. The Contractor shall keep a daily record of Progress Surveys, field notes and verification, and survey calculations and submit to the Project Representative as part of the Daily Construction Report.
3. The Contractor shall submit Post-Construction Surveys and calculated quantities to the Project Representative as part of the Weekly Construction Report.

D. Post-Construction Submittals:
1. As-Built Record Drawings:
   a. Upon completion of all construction activities for each Construction Season and for the Project, the Contractor shall prepare As-Built Record Drawings, as described in Section 01 78 39 (Project Record Documents). The post-construction As-Built Record Drawings shall locate all features as constructed and all real estate/property boundaries and public land survey section corners and lines.
      1) As-Built Record Drawings shall be submitted to Owner within 30 calendar days of Substantial Completion of Construction Seasons 1 and 2, along with the Contractor's Annual Construction Season Summary Report (refer to Section 01 78 39 – Project Record Documents).
      2) Final Project As-Built Record Drawings shall be submitted to Owner within 30 calendar days of Substantial Completion of Construction Season 3.
2. Quantity Calculations:
   a. Quantities for surveyed area (SY) measurement and payment:
      1) Submit quantity calculations to the Project Representative for review and acceptance. Quantities for measurement and payment shall be computed to the nearest SY based on the comparison of the accepted Pre-Construction Survey (as defined in this Section) and Placement Post-Construction Survey.
      2) Supporting information shall include, but is not limited to, certified weight tickets, barge tonnage estimates (based on barge displacement measurements), and supplemental documentation such as electronic records (i.e., "bucket maps").
   b. Quantities for surveyed volume (CY) measurement and payment:
      1) Submit quantity calculations to the Project Representative for review and acceptance. Quantities for measurement and payment shall be computed to the nearest CY using Triangulated Irregular Network (TIN) volume techniques (refer to TIN volume calculation requirements in "Chapter 10 - Construction Dredging Measurement, Payment, and Clearance Surveys" per the *Hydrographic Surveying Engineering and Design Manual* (EM 1110-2-1003) and using 3D calculation methods with generated surfaces from the survey data (Autodesk Civil 3D, Autodesk Land Development Desktop, Hypack TM Max, Terramodel, or other commercially available software, as approved by the Project Representative). The Project Representative will make its own computations as necessary to verify the quantities of progress payments.
      2) Supporting information shall include, but is not limited to, certified weight tickets, barge tonnage estimates (based on barge displacement measurements), and supplemental documentation such as electronic records (i.e., "bucket maps").
      3) The Contractor shall describe its quantity calculation method(s) in the Survey and Positioning Control Plan. Double end area method will not be an acceptable quantity calculation method for measurement and payment purposes but is sufficient for monthly progress payment purposes.
3. Post-Construction Surveys shall be performed in compliance with this Section and Sections 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation) and 35 37 10 (Material Placement).
4. Record of survey recorded per RCW 58.09
5. Construction Season Post-Construction Surveys
6. Final Project Post-Construction Survey

E. Submit all surveys to the Project Representative in hard copy drawing format and electronic drawing format described in Section 01 78 39 (Project Record Documents).

1.06 SURVEY BY CONTRACTOR

A. Using the Contract control point(s), develop and make such additional surveys as needed for construction, such as Progress Surveys to ensure complete removal during Required Dredging, Contingency Re-Dredging and complete placement during Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, ENR, Amended Cover, Backfill Material, Engineered Cap A, and Engineered Cap B placement. Re-establish any benchmarks and survey control points destroyed by Contractor operations at no cost to the Owner.

B. Complete the layout for the Work and be responsible for all measurements that may be required for the execution of the work to the location and limits prescribed on the Drawings. This may include the installation of ranges, tide boards, or tide gauges to monitor the water level at all times during dredging and material placement operations. Perform survey work under the supervision of a land surveyor licensed in the State of Washington.

C. Perform all survey monument referencing for tie-out prior to the Work in the right-of-way.

D. Check and restore monuments and their casings at completion of Work per RCW 58.09.

E. Maintain and preserve all stakes and other marks established until authorized by the Project Representative to remove them.

F. The Project Representative may require that Work be suspended at any time when location and limit marks established by the Contractor are not reasonably adequate to permit inspection of the Work.

G. Comply with the survey requirements for all monitoring, as specified in other Sections.

H. Re-establish all permanent survey control monuments prior to final inspection per RCW 58.09.

I. Provide all requirements of the As-Built Record Documents per Section 01 78 39 (Project Record Documents).

1.07 SURVEYOR QUALIFICATIONS

A. Third-party surveyor shall be a PLS licensed in the State of Washington. The third-party PLS must have a minimum of 2 years of experience in conducting bathymetric surveys.

B. The Project Representative reserves the right to disallow the person(s) selected by the Contractor for surveying. If, in the Project Representative's opinion, the person is not qualified to do the Work, the Contractor shall select another surveyor and submit qualifications until a qualified person is approved.

C. If monuments or control points need to be replaced, the surveyor shall have the qualifications described in Paragraph 3.01C of this Section.

1.08 DATUMS

A. Survey Vertical Datum:
   1. Project survey elevations shall reference the National Oceanographic and Atmospheric Administration/ National Ocean Service (NOAA/NOS) Tidal Datum (mean lower low water [MLLW] = 0.00 foot) as leveled from benchmark ID No. 9447130 (Seattle)
      a. The City of Seattle (COS) Benchmark (BM) 3765-4302 benchmark is a 2-inch brass disk set at 8th Avenue South and South Portland Street in the center of the concrete walk. Elevation:13.322 (North American Vertical Datum of 1988); converted elevation:15.662 MLLW.

B. Survey Horizontal Datum:
   1. Project horizontal datum shall reference North American Datum 83 through the 1991 adjustment, Washington State Plane Coordinate System, North Zone.

1.09 QUALITY CONTROL

A. The Contractor is responsible for providing all necessary controls to successfully complete the Work.

B. The Contractor is responsible for scheduling the Contractor's surveys and verifying it has met Contract requirements prior to proceeding to the next sequence of Work.

C. All dredging and material placement-related surveys for verification of pay quantities will be performed and stamped and signed by the Contractor's third-party PLS that has been accepted by the Owner.

D. If the Contractor's own Progress Surveying means and methods are the same as the Contractor's third-party PLS's means and methods, and the Contractor demonstrates to the Project Representative's satisfaction that its own Progress Surveys achieve the same level of accuracy as the Contractor's third-party surveys (and it is stamped and signed by the Contractor's third-party PLS), the Project Representative may accept the Contractor's Progress Surveys for measurement and payment purposes.

E. The Project Representative will inspect the Work for quality assurance purposes. The Project Representative inspection shall in no way release the Contractor from complying with the Specifications, and the inspection shall in no way be construed as acceptance of Work. The Owner reserves the right to retain an independent surveyor to periodically check the Contractor's survey. Surveying performed by the Owner will be paid for by the Owner.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 GENERAL

A. At the Pre-Construction Meeting, the Contractor's third-party PLS shall meet with the Project Representative and Owner's surveyor to discuss the survey proceedings, methods, and equipment to be employed for the Contractor's surveys and the survey submittal schedules.

B. The Contractor shall establish an accurate method of horizontal and vertical control before the Work begins. Survey control points shown on the Drawings are provided for reference purposes only to assist the Contractor in establishing horizonal and vertical control. Use surveys to establish baselines, line and grade hubs, stake elevations, tidal boards or gauges, and other reference and construction points.

C. The Contractor shall lay out its Work using control points established by the Contractor as part of the Work and shall be responsible for all measurements taken to establish these points.

D. Replaced monuments shall be set by a licensed land surveyor registered in the State of Washington.

E. The proposed method and maintenance of the horizontal control system shall be subject to the acceptance of the Project Representative and if, at any time, the method fails to provide accurate location of the Work, the Contractor may be required to suspend its operations until such time accurate control is established.

3.02 SURVEY EQUIPMENT AND METHODS

A. The Contractor and Contractor's third-party PLS shall use multibeam survey equipment for all Progress, Pre-Construction, and Post-Construction Surveys. Accuracy for measured elevations, at a minimum, shall be +/- 0.25 foot; accuracy of horizontal position, at a minimum, shall be +/-3 feet at the 95% confidence interval.

B. If the water depth is shallow enough that there is a more accurate survey method than multibeam, the Contractor shall propose using the alternate survey method for shallow water conditions in its Survey and Positioning Control Plan that shall be submitted as part of the Contractor's RAWP.

C. Bathymetric surveying methods shall meet or exceed the standards associated with the latest version of USACE EM 1110-2-1003 (November 2013) for “Chapter 3 -- Recommended USACE Accuracy Standards for Federal Navigation Projects,” as described in Article 1.02 of this Section.

D. Land surveying equipment and methods shall meet or exceed the standards associated with the latest version of USACE EM 1110-1-1005 (January 2007) for Contract payment surveys, as described in Article 1.02 of this Section.

E. WINOPS; DREDGEPACK by Hypack, Inc.; or equivalent shall be used to record dredging and material placement progress.

3.03 POSITIONING EQUIPMENT AND METHODS

A. Use real-time kinematic-global positioning system (RTK-GPS) for horizontal positioning during all dredging operations and hydrographic surveying. Equip all dredges and survey vessels with RTK-GPS receivers compatible with the Contractor’s provided RTK-GPS base station and telemetry system. Vertical elevations may be obtained by RTK-GPS or use of a telemetried tide gauge installed at the Work Site. If RTK-GPS is used by the Contractor for water level determination, the telemetried recording tide gauge shall still be installed and used as cross reference and backup for the RTK-GPS system.

B. Each dredge and the dredge bucket will be positioned horizontally and vertically using the RTK-GPS and an integrated positioning and display system. This system shall provide real-time data to the dredge operator and Project Representative, displaying digitally and graphically the dredge position (X, Y, Z), the dredge bucket position (X, Y, Z), the Required Dredge Thickness or Elevation, depth below the dredge bucket, and depth of sediment to be removed at that location. The system shall automatically update and, after each cycle, show the remaining depth of sediment above the Required Dredge Thickness or Required Dredge Elevation. Provide, install, and maintain all software and hardware necessary for this system.

C. Material placement equipment shall use the Contractor’s RTK-GPS system for primary control and positioning. The positioning equipment, sensors, and other equipment shall be integrated into an automated navigation and positioning system which provides the operator real time digital information and graphical display of the equipment position, Targeted Placement Thickness, Targeted Placement Elevation, or Minimum Required Placement Thickness, and actual bucket elevation. The system shall record the position and elevation at which the bucket is opened with each placement of material.

D. Dredging and placement activities shall be performed using dredging and placement equipment capable of achieving +/-3 feet horizontal positioning accuracy and +/-3 inches (0.25 feet) vertical positioning accuracy.

3.04 SURVEYING CONTROL POINTS

A. Furnish, at its own expense, all stakes, templates, platforms, equipment, range markers, transponder stations, and labor as may be required to lay out the Work shown on the Drawings.

B. Furnish, set, and maintain in good order all ranges, buoys, and other markers necessary to define the Work and to facilitate inspection as follows:
   1. The Contractor shall establish and maintain tide gauges or boards in locations where they may be clearly seen during construction operations and inspections.
   2. The Contractor shall install an automatic recording tide gauge with water-level sensor.
   3. The tide gauge shall provide a continuous recording of tidal change for every 15-minute interval or each 0.1-foot change, whichever occurs first.
   4. Tidal changes shall be recorded in NOAA/NOS MLLW datum, with these changes visually provided to the dredging and/or material placement equipment operator(s) at all times during the in-water construction activities to allow proper adjustment of dredging and material placement elevations and grades.
   5. All costs for providing the tide gauges and other survey controls shall be incidental to this Work.

C. Be responsible to maintain all control points established for the Work until authorized to remove them. If such control points are destroyed or disturbed by the Contractor prior to an authorized removal, they shall be replaced by the Contractor at no additional expense to the Owner.

D. If the Contractor encounters survey monuments during construction, the Contractor shall prepare and submit application to the Washington State Department of Natural Resources for a permit to remove survey monuments for those monuments anticipated to be removed or disturbed during construction in accordance with Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).

3.05 CONDUCT OF WORK

A. Each SMA, including the surrounding Side Slope, will require a Pre-and Post-Construction Survey for measurement and payment purposes. Pre- and Post-Construction Surveys are required for all dredging and material placement activities.

B. The Contractor shall conduct field verification (e.g., prepare bucket maps) for dredging and material placement activities to assess compliance with Required Dredging, Contingency Re-Dredging, and material placement activities and submit electronic records, such as supplemental documentation, in the Daily Construction Report.

C. The survey's spot elevation spacing shall be determined by the Contractor and provide sufficient density of spot elevation data to provide adequate information for the Contractor to provide quality control of its Work. The Project Representative shall be satisfied as to the survey's data density and, if not satisfied, may advise the Contractor to increase the survey data density at no additional cost to the Owner.

D. Project Pre-Construction Survey:
   1. The Contractor shall conduct a Project Pre-Construction Survey prior to starting any Work in each Construction Season.
   2. The first Construction Season's Project Pre-Construction Survey shall cover the full extent of the Work Site and extend at least 50 feet past the boundaries of the Work Site involving any and all construction activities including, but not limited to, all dredging areas, Identified Debris and Piling removal, bulkhead (structures) strengthening and reinforcing, and all material placement areas.
      a. The following Construction Season's Project Pre-Construction Surveys (Construction Seasons 2 and 3) shall cover the full extent of all SMAs not yet completed and extend at least 50 feet past the boundaries of those SMAs involving any and all construction activities including, but not limited to, all dredging areas; Identified Debris and Piling removal; bulkhead (structures) strengthening and reinforcing; and all material placement areas.
   3. The Contractor shall employ the approved third-party PLS to conduct a pre-construction multibeam bathymetric (and supplemental topographic surveys, as necessary) to fully identify pre-construction elevations and grades throughout the Work Site at all SMAs. Bathymetric survey equipment may not be suitable for surveying the upper slope and upland areas at SMAs with shoreline areas, and the Contractor may have to conduct a supplemental topographic survey.
   4. The Project Pre-Construction Survey in Construction Season 1 shall be completed upon the Project Representative's approval of the RAWP and submitted to the Project Representative for review and acceptance at least 21 calendar days prior to the start of any Work at the Work Site within the In-Water Work Window (excluding mobilization and temporary construction facilities setup work).
   5. The Project Pre-Construction Survey in following Construction Seasons shall be completed and submitted to the Project Representative for review and acceptance at least 21 calendar days prior to the start of any Work at the Work Site within that season's In-Water Work Window (excluding mobilization and temporary construction facilities setup work).
   6. Each Construction Season's Project Pre-Construction Surveys will be used as the basis for measurement and payment of Contractor Work completed within the Work Site for that Construction Season.
   7. The bathymetric survey shall be adequate resolution to allow subsequent accurate calculations of excavated volumes. Locate all tops and toes of slopes, and all grade breaks, with horizontal and vertical coordinates.
   8. If vessels or other obstructions prevent the Contractor from being able to fully survey all SMAs within the Work Site, coordinate with the Project Representative to determine whether to rely upon the Drawings in

those areas or to rely upon the initial Progress Survey in those areas to supplement the Project Pre-Construction Survey or to resurvey those missing areas to complete the Project Pre-Construction Survey.

E. Progress Surveys:
   1. The Contractor shall employ the approved third-party PLS or Contractor in-house surveyor to provide measurements of the previous day's work as frequent as required by the Project Representative using multibeam (and topographic, if needed) survey equipment.
   2. The Progress Survey data will include all electronic information and data from survey instruments.
   3. Progress Survey results may be used to adjust construction procedures to ensure the configuration of the Work conforms to the Drawings. The Contractor may be required to adjust its construction procedures to ensure compliance with the Drawings at no additional expense to the Owner.
   4. Areal Coverage of Progress Surveys:
      a. The areal coverage of progress surveys for land-based activities (excavation and material placement) shall encompass the entire area of that day's work, plus an additional area of at least 10 feet beyond the outside perimeter of the excavation area (including areas that have been previously excavated and where material has been placed). The Contractor shall survey and record the toe, crest, and corners of all cut and fill slopes.
      b. The areal coverage of progress surveys for in-water-based activities (dredging and material placement) shall encompass the entire area of that day's work, plus an additional area of at least 50 feet beyond the outside perimeter of the dredged area (including areas that have been previously dredged and where material has been placed).
   5. Required Dredging Progress Surveys:
      a. The Contractor shall complete Required Dredging Progress Surveys daily to document daily progress for completion of Required Dredging activities. Results of daily Required Dredging Progress Surveys should accurately depict the daily progress of the dredging Work.
      b. The Contractor's Required Dredging Progress Surveys will be used to determine post-Required Dredge Elevations and grades and for computing progress dredge volumes used for progress payment for the Work.
   6. Contingency Re-Dredging Progress Surveys:
      a. Following evaluation of construction sediment sampling data collected by the Owner, the Project Representative may direct the Contractor to conduct Contingency Re-Dredging.
      b. The Contractor shall complete Contingency Re-Dredging Progress Surveys during completion of Contingency Re-Dredging to document progress for completion of the Work. Results of daily Contingency Re-Dredging Progress Surveys should accurately depict the progress of the Contingency Re-Dredging Work.
   7. Placement Progress Surveys:
      a. The Contractor shall complete Placement Progress Surveys to document progress for placement areas and thicknesses of Backfill Material, ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, and Engineered Cap B, in bank, slope, and open-water areas of the Work Site. Results of Placement Progress Surveys should accurately depict the progress of the material placement Work.

F. Post-Construction Surveys:
   1. Required Dredging Post-Construction Survey(s):
      a. Following completion of Required Dredging Work and Project Representative acceptance of the Work within any SMA based upon review of the Progress Surveys, the Contractor shall direct the approved third-party PLS to conduct a Required Dredging Post-Construction Survey that will be used for final measurement and payment for Required Dredging Work. Results of this survey will be compared to the monthly progress payment requests submitted by the Contractor (for progress payment), and adjustments to final payment for the Work will be made as necessary.
      b. If all Required Dredging within an SMA has not been satisfactorily completed, as determined by the Project Representative, the Contractor shall correct the deficiencies indicated in the survey and resurvey the area, and the Project Representative will review the resurvey to confirm Required Dredging has been satisfactorily completed. Contractor resurvey costs will not be paid for by the Owner.
      c. This Required Dredging Post-Construction Survey will be used as the Pre-Construction Survey for Contingency Re-Dredging activities in the same SMA (if required). Where Contingency Re-Dredging is

not required (as determined by the Project Representative), this Required Dredging Post-Construction Survey will be used as the Pre-Construction Survey for Backfill Material, Required RMC, and Engineered Cap A, and Engineered Cap B placement, depending upon the location of the Work.

2. Contingency Re-Dredging Post-Construction Survey(s):
   a. Following completion of Contingency Re-Dredging Work within each SMA or a portion of an SMA (if required), and Project Representative acceptance of the Work, based upon review of Progress Surveys, the Contractor shall conduct a Contingency Re-Dredging Post-Construction Survey that will be used for final measurement and payment for Contingency Re-Dredging Work.
   b. Results of this survey will be compared to the monthly progress payment requests submitted by the Contractor (for progress payment), and adjustments to final payment for the work will be made as necessary.
   c. Where Contingency Re-Dredging is required (as determined by the Project Representative), this Contingency Re-Dredging Post-Construction Survey will be used as the Pre-Construction Survey for Backfill Material, Required RMC, Engineered Cap A, and Engineered Cap B placement, depending upon location of the Work.
3. Placement Post-Construction Survey(s):
   a. Following completion of Placement and Project Representative acceptance of the Work based upon review of Progress Surveys, the Contractor shall conduct a Placement Post-Construction Survey of Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, ENR, Amended Cover, Engineered Cap A, Engineered Cap B, and Backfill Material that will be used for final measurement and payment purposes.
   b. Results of this survey will be compared to the monthly progress payment requests submitted by the Contractor (for progress payment), and adjustments to final payment for the Work will be made as necessary.
4. Construction Season Post-Construction Surveys:
   a. Following completion of all in-water Work activities in each Construction Season, the Contractor shall conduct a Construction Season Post-Construction Survey at the end of each Construction Season to document post-construction bathymetric and topographic conditions in SMAs remediated within the specific Construction Season.
5. Final Project Post-Construction Survey(s):
   a. Following completion of all in-water Work activities in each Construction Season, the Contractor shall conduct Final Project Post-Construction Surveys to document post-construction bathymetric and topographic conditions in all SMAs remediated within that Construction Season.

3.06 FIELD NOTES

A. Keep in standard bound survey field notebooks using a clear, orderly manner consistent with standard surveying practice. Include titles, numbering, and indexing.

B. Keep a copy of all field notes, including references to monuments and property corners, soundings, time of observations, tidal heights, and corrected soundings. The Contractor shall submit as part of the Daily Construction Report if requested by the Project Representative.

END OF SECTION

SECTION 02 32 00

GEOTECHNICAL INFORMATION

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the available geotechnical information for the Work Site and how it is to be used by the Contractor to support remediation construction activities.

1.02 DOCUMENTS

A. The following geotechnical document provides Work Site Information and is considered Reference Material according to Section 01 13 00 (Reference Material):
   1. Basis of Design Report, Appendix G – Geotechnical Design Analysis
      a. Anchor QEA, LLC, and Windward Environmental, LLC, 2023. *Pre-Final (90%) Remedial Design – Basis of Design Report for the Lower Duwamish Waterway Upper Reach*. Prepared for Lower Duwamish Waterway Group. For submittal to U.S. Environmental Protection Agency.

1.03 GEOTECHNICAL INFORMATION USE

A. The Contractor shall: make its own interpretations, evaluations, and conclusions as to the nature of the geotechnical materials and conditions to determine the difficulties and appropriate means for performing the Work affected by the geotechnical conditions.

B. In making interpretations, evaluations, and conclusions, use the available geotechnical information in a manner that includes a reasonable interpretation after consulting with a registered professional civil engineer with geotechnical expertise or a certified engineering geologist with applicable expertise.

C. Supplemental Data Acquisition:
   1. The Contractor may also conduct other investigations and tests it deems appropriate to implement the remediation construction activities in accordance with the requirements of the Contract Documents.
   2. Prior to the completion of any such investigation and/or testing, the Contractor shall provide a detailed Investigation and Testing Plan for review by the Owner. This plan shall include the following: the geotechnical basis for its completion; the locations of investigations/testing; proposed means and methods and how those relate to the stated geotechnical basis; the anticipated areas of disturbance and means to be implemented to minimize any disturbance; any permitting requirements and the associated timeline for acquisition; and, if any, impacts to the Project Schedule.
   3. Any additional Contractor-obtained investigation and test information shall be shared with the Owner.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION [NOT USED]

END OF SECTION

SECTION 02 41 00

DEMOLITION AND SALVAGE

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies demolition, salvage, cutting, and patching.

1.02 DESCRIPTION OF WORK:

A. Structures and Pilings that shall be removed and disposed of as identified on the Drawings.

B. Work under this Section is paid under Bid Item No. A15 – Piling Removal. It is expected that the Contractor will also encounter Dredge Material and Dredge Debris not identified on the Drawings during the normal course of the Piling removal Work. Removal and disposal of Dredge Material and Dredge Debris associated with Piling removal is considered incidental to Bid Item No. A16 – Piling Transloading, Upland Transportation, and Disposal, and is not part of demolition.

C. The Drawings are for guidance only and to indicate typical general construction features of the various types of structures or Identified Debris and are not to be construed as definitive or adequate to supplant the actual on-site inspection by the Contractor.

1.03 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Piling: Piling is defined as material arising as a result of selective Work Site demolition or structure demolition activities. Piling may include timber (whole pieces or fragments) and timber piles that will not be reinstated or reused.

1.04 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
   1. The Contractor shall prepare and submit a detailed, written Demolition Plan, as part of the Remedial Action Work Plan (RAWP). Demolition activities shall not begin until the Demolition Plan has been reviewed and accepted by the Project Representative. The Demolition Plan shall, at a minimum, address the following:
      a. Protection of the public, adjacent structures, and utilities
      b. Equipment to be used in performance of the demolition work
      c. Pre- and Post-Construction Structural Condition Inspections; refer to Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections) for proper procedures and documentation requirements
      d. Work sequence
      e. Schedule showing coordination of operations with other activities including dredging, transloading, material placement, and other applicable items
      f. Means and methods to minimize waste
      g. Means and methods to control dust
      h. Disposal procedures
      i. Protection of the environment

1.05 SALVAGE DISPOSITION, STORAGE AND HANDLING

A. Piling In-Water Transportation and Disposal:

1. All Piling materials removed from the Work Site shall be transported via barge to the Contractor Transload Facility(ies) per Section 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation).

B. Piling Upland Transportation and Disposal:
   1. Unless otherwise identified, all Piling removed from the Work Site become the property of the Contractor and shall be transported via upland transportation and be disposed of per Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).

1.06 JOB CONDITIONS

A. Protection:
   1. The Contractor shall demolish all features shown on the Drawings, including but not limited to in-water features including Pilings.
   2. The Contractor shall protect all utilities not designated for removal and other structures to remain from damage during Work Site demolition activities.
   3. The approximate locations and dimensions of demolition features are shown on the Drawings, where they are known.
   4. Work Site demolition Work involves handling materials that may contain substances that may be harmful to the health and safety of the workers. The Contractor shall perform all Work in full compliance with Section 01 35 29 (Health and Safety).
   5. Repair or replace property that is damaged.

B. Proper Approval:
   1. Review and obtain approval of authorities for temporary construction that affects such areas.

1.07 CONTRACTOR'S RESPONSIBILITIES

A. Suspect Material:
   1. The Contractor is responsible for reviewing the materials to be encountered at the Work Site to inform the Contractor's Work. All information is provided in the Specifications (included in Section 01 13 00 – Reference Material) and other Contract Documents. Should material not identified in the Specifications be encountered, immediately notify the Project Representative of unusual conditions so the proper actions are implemented.

B. During removal of Identified Debris that is in contact with structures, coordinate with the Project Representative so that the structure owner observation can occur during debris removal. Be prepared to immediately suspend Identified Debris removal if latent detrimental structure conditions are encountered behind or beneath Identified Debris. Coordinate with the Owner to implement Contingency Measures, if directed by the Project Representative, to address any latent detrimental structure conditions.

C. Coordinate with the Project Representative to allow for structure monitoring during demolition and salvage. Be prepared to immediately suspend Demolition and Salvage at the direction of the Project Representative if structure monitoring indicates unacceptable movement. Coordinate with the Owner to implement Contingency Measures, if directed by the Project Representative, to address any unacceptable structure movement.

1.08 OWNER'S RESPONSIBILITIES

A. Upon notification by the Contractor of the existence of suspect material not identified in these Specifications, the Project Representative will have said material inspected and evaluated as appropriate.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 GENERAL

A. Notify the Project Representative prior to beginning of demolition work so that appropriate observation by the Project Representative can be coordinated.

B. Prior to the removal of piles that are to be replaced, the Contractor shall survey the location of the piles.

C. Comply with federal, state, local, and site-specific requirements applicable to the Work, including demolition, removal, packaging, hauling, and disposal regulations.

3.02 DEMOLITION OF FEATURES

A. Start and complete Work in order of precedence as established by the approved schedule. The sequence of Work may be adjusted with prior approval by the Project Representative, as long as the Work does not infringe upon or violate the schedule or Applicable or Relevant and Appropriate Requirements for the Lower Duwamish Waterway Superfund Site cleanup remedy requirements.

B. The Contractor is responsible for ensuring that suitable means of hauling Pilings are provided with effective measures to prevent any Pilings from being released during transport from the Work Site to the approved disposal facility.

3.03 PILE REMOVAL

A. Immediately notify the Project Representative if any pile designated for removal has a number on it. Numbered piles are designated fishing tie-off locations in the waterway.

B. Follow all procedures in the Biological Opinion and Section 404 of the Clean Water Act ARAR Memorandum (refer to Section 01 13 00 – Reference Material) and in the "Best Management Practices for Piling Removal and Placement in Washington State," dated February 18, 2016, which is included at the end of this Section as Attachment A.

C. Treated timber piles (Pilings) shall be separated from other construction Dredge Material, Dredge Debris, and Identified Debris transloaded at the Contractor Transload Facility(ies)and transported directly to the approved Disposal Facility. Piling handling procedures shall be approved by the Project Representative.

D. The Contractor shall obtain all permits in accordance with Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements) for the Contractor Transload Facility(ies) and Disposal Facility approvals required to transload, transport, and dispose of treated timber piles (Pilings) prior to their removal.

E. Dispose of removed Pilings. Do not allow timber, once removed, to enter the waters of the state.

F. Take precautions necessary to prevent damage to existing remaining Work or to adjacent facilities.

3.04 REPLACEMENT PILES

A. All replacement piles as indicated on the Drawings or as directed by the Project Representative shall be installed in the same location as surveyed, where applicable. Replacement piles shall be steel piles (see Section 31 62 10 – Steel Pipe Piling).

3.05 CLEANUP AND DISPOSAL

A. Remove debris, rubbish and materials resulting from cutting, demolition or patching operations.

B. Transportation and disposal of structures and debris shall be performed as described in Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal). If structures and debris are loaded onto haul barges, transloading from barges to upland transportation shall be performed as described in Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).

END OF SECTION

ATTACHMENT A

EPA REGION 10
BEST MANAGEMENT PRACTICES
FOR PILING REMOVAL AND PLACEMENT IN WASHINGTON STATE

EPA Region 10
Best Management Practices
For Piling Removal and Placement in Washington State

February 18, 2016

The following Best Management Practices (BMPs) developed by the Environmental Protection Agency (EPA) are listed by each activity associated with piling removal and placement and are applicable to projects conducted in marine and freshwater environments of Washington State as well as to piling "repair" which includes aspects of both pile removal and placement. A project may include multiple methods of removal or placement. Furthermore, these BMPs may be used for projects in other states as long as they are consistent with any relevant requirements of the appropriate state and federal agencies.

The purpose of these BMPs is to protect water, sediment and habitat quality by minimizing turbidity, sediment disturbance and debris re-entry to the water column and benthic zone during pile removal/placement activities. These BMPs are applicable, regardless of the degree of sediment contamination that may be present, to all types of piling (wood, steel, concrete, plastic) or piling combinations (e.g., dolphins), and for any location (freshwater or saltwater) regardless of tide or sediment makeup (silt, sand, etc.). Additional BMPs that may be particularly applicable for permitted projects co-located with contaminated sediments, or within the boundaries of a regulated sediment clean-up site, are called out in text boxes.

Several agencies have published BMPs related to minimizing the introduction and spread of contaminants associated with pile placement and/or removal (e.g., WDNR[1], WDFW[2], NOAA[3]). Additionally, there are BMPs focused on impacts beyond those covered in this document that are applicable to all in-water construction involving piling. An example is adherence to site specific work windows. One overriding BMP, applicable to all in-water piling removal/placement, is adherence to the approved work windows for Endangered Species Act (ESA) fish protection as described in the U.S. Army Corps of Engineers (USACE) Permit Guidebook:

http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook.aspx

Furthermore, the National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (USFWS) have specific conservation measures that must be followed in order to avoid and/or minimize the effects of underwater noise generated during pile driving and removal operations on ESA-listed fish, marbled murrelets, and marine mammals. It is recommended that the applicant contact NMFS and USFWS to determine if there are ESA-listed species in the

[1] WA Department of Natural Resources Derelict Creosote Piling Removal BMPs see http://wa-dnr.s3.amazonaws.com/publications/aqr_rest_pilingremoval_bmp.pdf

[2] WA Department of Fish and Wildlife Hydraulic Code rules (WAC 220-660-140 and 380) for residential and public recreational docks, pier, ramps, floats, watercraft lifts, and buoys in freshwater and saltwater areas. http://apps.leg.wa.gov/wac/default.aspx?cite=220-660

[3] National Oceanic and Atmospheric Administration, 2009. The Use of Treated Wood Products in Aquatic Environments Guidelines to West Coast NOAA Fisheries Staff for Endangered Species Act and Essential Fish Habitat Consultations in the Alaska, Northwest and Southwest Regions. Prepared by NOAA Fisheries –Southwest Region, October 12, 2009.

project area, and to request technical assistance on conservation measures that could be incorporated into the project to minimize noise-related impacts to listed species.

PILING REMOVAL – General BMPs
The following general BMPs (see also Debris Control BMPs) apply to all piling removal activities regardless of the extraction or cutting technique:

1. Prior to commencement of the work, the project engineer or contractor should assess the condition of the piling, and identify whether piling will be removed using a barge or upland equipment. The contractor's work plan must include procedures for extracting and handling piling that break off during removal. In general, complete extraction of piling is always preferable to partial removal.

2. When possible, removal of treated wood piling should occur in-the-dry or during low water conditions. Doing so increases the chances that the piling won't be broken (greater visibility by the operator) and increases the chances of retrieval in the event that piling are broken.

3. The crane operator shall remove piling slowly. This will minimize turbidity in the water column as well as sediment disturbance.

4. The operator shall minimize overall damage to treated wood piling during removal. In particular, treated wood piling must not be broken off intentionally by twisting, bending or other deformation. This will help reduce the release of wood-treating compounds (e.g., creosote) and wood debris to the water column and sediments.

5. Upon removal from the substrate and water column, the piling shall be moved expeditiously into the containment area for processing, and disposal at an approved off-site, upland facility (see #24 and #25 below).

6. The piling shall not be shaken, hosed-off, stripped or scraped off, left hanging to drip or any other action intended to clean or remove adhering material from the piling. Any sediment associated with removed piling must not be returned to the waterway. Adhered sediments associated with treated piling are likely contaminated and may, along with piling, require special handling and disposal.

7. The operator shall make multiple attempts to remove a pile before resorting to cutting (See Piling Removal BMPs).

PILING REMOVAL - Vibratory Extraction Specific BMPs
Vibratory extraction is the preferred method of piling removal because it causes the least disturbance to the seabed, river or lake bed and it typically results in the complete removal of the piling from the aquatic environment.

8. The operator should "wake up" piling by vibrating to break the skin friction bond between piling and sediment. This bond breaking avoids pulling out a large block of sediment and possibly breaking off the piling in the process.

PILING REMOVAL - Direct Pull Extraction Specific BMPs

Direct pull extraction refers to the removal of piling by grabbing or wrapping the piling and then directly pulling the piling from the sediment – using a crane or other large machinery. For example, piling are wrapped with a choker cable or chain and then removed by crane with a direct upward pull. Another method could involve an excavator with a pincer attachment that can grasp a pile and remove it with a direct upward pull. The use of direct pull can be combined with initial vibratory extraction.

9. Excavation of sediment from around the base of a pile may be required to gain access to portions of the pile that are sound, and to allow for extraction using direct pull methods. Excavation may be performed in-the-dry at low tide or in the water using divers. Hydraulic jetting devices should not be used to move sediment away from piling, in order to minimize turbidity and releases to the water column and surrounding sediments.

PILING REMOVAL - Clamshell Bucket Extraction Specific BMPs

Clamshell removal of piling uses a barge-based or upland excavator-mounted clamshell bucket. The clamshell is lowered from a crane and the jaws grasp the piling stub as the crane pulls up. Clamshell bucket extraction has the potential to disturb sediments if deployed close to the sediment surface and increases the likelihood of damaging piling which can result in incomplete removal of a pile. However, a clamshell bucket may be needed when broken or damaged piling cannot be removed using vibratory or direct pull extraction methods. Extraction with a clamshell might be the best way to remove piling that were cut at or below the mudline previously and have little or no stub accessible above the mudline.

10. To the extent possible, clamshell extraction should be performed in-the-dry during low tide, low river flows, or reservoir draw-down. Under these conditions, the operator can see the removal site and piling, improving the chance for full removal of piling.

11. Since sediment management is potentially a larger concern when using a bucket, every effort should be made to properly size the bucket to the job and operate it in ways that minimize sediment disturbance.

12. Excavation of sediment from around the base of a pile may be needed to gain access to portions of the pile that are sound, and to allow for extraction using a clam shell. Excavation may be performed in-the-dry at low tide or in the water using divers. Hydraulic jetting devices should not be used to move sediment away from piling, in order to minimize turbidity and releases to the water column and surrounding sediments.

13. Because clamshell extraction has a higher potential to generate debris, it is particularly important that an offshore boom be in place with this removal technique. If treated wood piling are being removed, extracted piles shall be transferred to the containment basin without

leaving the boomed area to prevent loss of treated wood chemicals (e.g., creosote) and debris to the water column and sediments.

14. The operator must minimize pinching of treated wood and overall damage to treated wood piling during removal. This will help reduce the potential for releasing treated wood chemicals (e.g., creosote) and debris to the water column and sediments.

15. No grubbing for broken piling is allowed.

Additional Pile Removal BMPs for Locations with Contaminated Sediments

- During project planning, consider that the best tidal condition for piling removal will be dictated by the specifics of the removal. For example, in some circumstances water access for removal equipment at high tide may be less disturbing to the sediment than access in-the-dry at low tide. In others, removal in-the-dry is the best option.
- During project planning, consider the pros/cons of each method and its potential to disturb contaminated sediments. For example, while a clamshell bucket may be more feasible for removal of buried or broken piling, it is also more likely to disturb sediments. It may be preferable to manually excavate and remove by direct pull.
- Based on the EPA's experience at numerous Superfund cleanup sites (e.g., Pacific Sound Resources, Olympic View, Ketchikan Pulp Mill and Lockheed), extraction of piling is not expected to result in exposure to subsurface contaminated sediments via an exposed "hole". Therefore the EPA does not require placement of sand prior to or after pile pulling, unless it is part of an overall project design, such as a cap. Undocumented placement of clean sand may complicate future characterization efforts at cleanup sites.
- If piling removal results in exceedance of turbidity or other water quality standards at the compliance boundary, reconsider the timing of removal to a more restricted time frame, for example, the lowest practical tide condition or around slack water.

PILING REMOVAL - Pile Cutting Specific BMPs

Pile cutting shall be considered a last resort following multiple attempts to fully extract piling using vibratory, direct pull, and/or clamshell bucket extraction. On a project-specific basis, pile cutting may be appropriate to maintain slope stability or if a pile is broken and cannot be removed by other methods. A pneumatic underwater chainsaw, shearing equipment, or other equipment should be used to cut a pile.

16. Piling shall be cut below the mudline, with consideration given to the mudline elevation, slope and stability of the site.

17. In intertidal and shallow subtidal areas (shallower than -10 ft MLLW) seasonal accretion and erosion of the nearshore and/or beach can expose cutoff piling. In these locations, piling

should be cut off at least 2-feet below the mudline. In deeper subtidal areas (deeper than -10 ft MLLW), piling should be cut off at least 1-foot below the mudline.

18. Hand excavation of sediment (with divers in subtidal areas) is needed to gain access for cutting equipment. To minimize turbidity and releases to the water column and surrounding sediments, hydraulic jetting devices shall not be used to move sediment away from piling.

19. As a condition of their permit, the permittee will be required to provide a post-construction drawing/map to the Corps of Engineers for the Administrative Record, which shows the location and number of piling left in place (above and below mudline) with the GPS location(s) in NAD 83. The permittee will also be required to provide this information to the property owner(s).

Additional Pile Cutting BMPs for Locations with Contaminated Sediments:

- Complete removal of piling from the environment is preferred. When necessary, project-specific requirements (including equipment selection) for cutting shall be set by the project engineer, and coordinated with EPA and any other appropriate resource agencies, considering the mudline elevation, slope and stability of the site and the condition of the piling.
- If cutting is required, the appropriate depth below mudline for cutting should be made on a project-specific basis, with the goal of minimizing both the resuspension of contaminated sediments and release of wood treatment chemicals.
- For projects with derelict treated pile stubs which can't be removed, consideration should be given to either leaving these in place or, if possible, cutting them below the mudline. Cutting the pile at the mudline may release PAHs into the water column. If a sand cover is placed over the cut pile this may help contain the PAHs, however the new sediment may move over time and the pile may be exposed again. WDNR is currently testing other methods to fully extract piling stubs.
- The decision to leave piling in place that were originally slated for removal must be coordinated with the EPA and any other appropriate resource agencies. For example, if the work is being performed as part of a State or Federal cleanup, the decision to leave piling in place, as well as documentation, must be coordinated with the agency with cleanup oversight.
- Any piling left in place (including those below mudline) must be mapped with GPS coordinates (in NAD 83) and characterized by the project engineer. This information must be provided to the Federal or State agency with cleanup oversight, or in the case of a Corps permit, the permittee will be required to provide a post-construction map to the Corps of Engineers for the Administrative Record, which shows the location and number of piling left in place (above and below mudline) with the GPS location(s) in NAD 83. This information will also be provided to the property owner(s).

PILING REMOVAL - Debris Control BMPs
The following BMPs apply to all piling removal activities regardless of the extraction/cutting technique:

20. All work should be confined to within a floating containment boom. The need for a boom, and specifications regarding its type and size should be determined on a project-specific basis, taking into consideration the project size, habitat, water flow conditions, sediment quality, etc. A description of boom placement and management must be included in the permit application. A small boat should be available at all times during active construction to manage the boom and captured debris. If used, anchors must be removed once the project is complete.

21. For projects removing treated wood piling or a pier with wood components (like decking), a floating boom with absorbent pads must be installed to capture floating surface debris and any creosote sheen.

a) The boom shall be located at a sufficient distance from all sides of the structure or piling that are being removed to ensure that contaminated materials are captured.
b) Extracted piles shall be transferred to the containment basin without leaving the boomed area to prevent loss of treated wood chemicals (e.g., creosote) and debris to the water column and sediments.
c) The boom shall stay in its original location until any sheen present from removed piling has been absorbed by the boom or removed utilizing absorbent material.

22. Any shavings, sawdust, woody debris (splintered wood, fragments, loose piling) on the water or sediment surface must be retrieved and placed in the containment area. Likewise any pile-associated sediment and adhered organisms must be collected daily, contained on site, and ultimately disposed at an approved upland disposal site along with the extracted piling and decking.

23. When asphalt or other decking is removed, the contractor shall prevent asphalt grit or other debris on the pier from entering the water. Prior to demolition, the contractor shall remove as much of the surface asphalt grit and debris as possible. Floating platforms, suspended tarps, or other means should be deployed under and around the structure to capture grit and debris.

PILING REMOVAL - Piling Storage, Handling and Disposal BMPs
The following BMPs apply to all piling and associated piling-derived debris.

24. Upon removal from the substrate, the piling and associated sediments shall be moved expeditiously from the water into a containment area on the barge deck, adjacent pier, or upland area.

25. The containment area shall be constructed in such a fashion as to restrict any release of contaminants or debris to the aquatic environment. Containment areas on barges, piers and upland areas shall have continuous sidewalls and controls as necessary (e.g., straw bales, oil absorbent boom, ecology blocks, durable plastic sheeting or lining, covers, etc.) to contain all

sediment, wood-treating compounds, organisms and debris, and to prevent re-entry of these materials into the aquatic environment.

26. Any floating debris, splintered wood, or sediment removed during pile pulling must be placed in a containment area.

27. Creosote-treated wood piling/sections shall be disposed of in a manner that precludes their further use. Piling will be cut into manageable lengths (4-foot or less) for transport and disposal at an approved upland location that meets the liner and leachate standards of the Minimum Functional Standards, Chapter 173-304 WAC. In all cases, the permittee must be prepared to provide documentation of disposal.

28. Any sediments, construction debris/residue and plastic sheeting from the containment basin shall be removed and disposed in accordance with applicable federal and state regulations. For disposal, this will require shipment to an approved Subtitle D Landfill.

Additional Pile Storage, Handling and Disposal BMPs for Locations with Contaminated Sediments:

- Pre-project planning shall include measures to minimize water contact with piling and associated contaminated sediments. For example, the containment area can be designed to be covered during precipitation and when not in use, and/or piling and associated sediment can be quickly moved to a final disposal location and not retained at the project site.

- Water collected in a containment area may require special management or treatment depending on project specifics. In some cases, water may be stored in Baker tanks and treated off site. In others, a treatment system may be constructed on site. Discharge water must meet the requirements of the Clean Water Act, including the requirements of a National Pollution Discharge and Elimination System permit (or substantive requirements) in order to discharge to surface water.

PILING PLACEMENT - Piling Material BMPs

29. Piling may be made of steel, concrete, plastic, treated or untreated wood. For large structural replacements, the EPA encourages installation of piling made of concrete, steel, or plastic.

30. If treated wood is used, piling must be treated with wood preservatives in compliance with the Registration Documents issued by the EPA under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and following the Western Wood Preservers Institute (WWPI) guidelines and BMPs to minimize the preservative migrating from treated wood into aquatic

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SECTION 09 90 62

COATING OF STEEL PILES

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies requirements for materials and application of field- or shop-applied coating for steel piles.

1.02 REFERENCE STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. Reference standards applicable to this Section are as follows:

REFERENCE	TITLE
ASTM D3359	Standard Test Methods for Rating Adhesion by Tape Test
ASTM D4285	Standard Test Method for Indicating Oil or Water in Compressed Air
MIL-A-22262	U.S. Department of Defense Abrasive Blasting Media Ship Hull Blast Cleaning
NACE SP0188	Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates
SSPC PS 13.01	Epoxy-Polyamide Painting System
SSPC Paint 22	Paint Specification No. 22 Epoxy-Polyamide Paints (Primer, Intermediate, and Topcoat)
SSPC SP 1	Solvent Cleaning
SSPC SP 10	Near-White Blast Cleaning

Notes:
ASTM: ASTM International
NACE: National Association of Corrosion Engineers
SSPC: Society for Protective Coatings

1.03 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Product and Material Safety Data Sheets:
1. Epoxy-Polyamide
2. Primer
3. Thinner
4. Blasting Media

C. Certificates and Qualifications:
1. Epoxy-Polyamide
2. Contractor Quality Control Officer
3. Copy of Certification Documents for National Association of Corrosion Engineers (NACE) Inspector(s)

D. Inspection Reports

E. Waste Disposal Report

1.04 ENVIRONMENTAL CONDITIONS

A. The Contractor shall start Work only when ambient and curing temperatures are within limits of coating manufacturer's recommendations.

1.05 HEALTH AND SAFETY PRECAUTIONS

A. Materials listed in this Section contain volatiles, which are toxic. The Contractor shall follow safety procedures as recommended by manufacturer.

PART 2 PRODUCTS

2.01 COATING SYSTEMS

A. Coating:
   1. Provide catalyst component for coating specific for resin component. Use thinners that are compatible with the coating. Coatings that include coal tar in any form shall not be used.
      a. Epoxy-Polyamide
         1) System: Society for Protective Coatings (SSPC) PS 13.01
         2) Paints: SSPC Paint 22, Primer, Intermediate, and Top Coats

2.02 MATERIAL REQUIREMENTS

A. General:
   1. Materials, supplies, and articles provided shall be the standard products of manufacturers. Coatings in a particular system shall be the products of a single manufacturer. Thinners and cleaning solvents shall be compatible with the coating material.

B. Blasting Material:
   1. Blasting material shall meet MIL-A-22262 and shall be arsenic-free and contain no free silica. Blasting material shall not be reused. The Contractor is responsible for removing and legally disposing of the spent abrasive blasting material from the job site.

PART 3 EXECUTION

3.01 CLEANING AND PREPARATION OF SURFACES

A. General:
   1. Surfaces to be coated shall be clean. Before mechanical cleaning is started, remove all oil, grease, drawing and cutting compounds, and soluble salt/chloride contamination. Surfaces shall be prepared in accordance with the coating manufacturer's recommendations. As a minimum, all dirt, rust, loose mill scale, old weathered coatings, and other foreign substances shall be cleaned according to the SSPC standards.

B. Solvent Cleaning:
   1. Clean all surfaces in accordance with SSPC SP 1 solvent cleaning methods and coating manufacturer's instructions.

C. Blast Cleaning:
   1. After solvent cleaning, prepare all steel surfaces in accordance with SSPC SP 10 Near-White Abrasive Blast cleanliness standards. Provide minimum 1-1/2 mils of surface profile of a sharp and angular pattern as opposed to that of a peened surface. Remove residual dust from blasted surface by blowing with dry, oil-free air; vacuuming; or sweeping. Protect all freshly abraded blasted steel surfaces from contamination and flash rusting prior to coatings installations.

3.02 PROPORTIONING AND MIXING OF COATING SYSTEM

A. Proportioning of Epoxy-Polyamide System:
   1. Epoxy-polyamide coatings consist of a two-component system that includes a pigmented polyamide resin, Component A; and an epoxy resin, Component B. Combine both components in the ratio specified by the coating manufacturer. Do not thin coatings when doing so will result in total volatile organic compounds exceeding limits enacted by the local air pollution control district. When thinning is allowed and is necessary, such as during cold temperature application or to improve application characteristics, add up to 1 pint of ethylene glycol monoethyl (EGM) ether for each gallon of the coating.

B. Mixing of Epoxy-Polyamide System:
   1. Mix components of coating by power stirring until a smooth, uniform consistency results. Stir coating periodically during its induction period. Refer to manufacturer's product data for induction time and pot life of mixed batches.

3.03 COATING APPLICATION

A. General:
   1. Coating shall be conducted in accordance with the requirements of SSPC; Good Painting Practice, Volume 1; and coating manufacturer's instructions. Apply coats of each system so that finished surfaces are free from runs, sags, brush marks, and variations in color. Apply coating to the exterior surfaces of pipe piles to the limits prescribed in the Drawings.

B. Application Method of Epoxy-Polyamide System:
   1. Hand-apply stripe coats to all edges.
   2. Apply primer coating to dry surfaces not more than 4 hours after near-white blast cleaning. Allow previous coat to dry to tack-free condition but not more than 72 hours before applying next coat. If more than 72 hours elapses between coats, clean surface, apply a 2-mil wet film thickness of previous coat, allow to cure to a tacky film, and apply a full thickness of next coat.

C. Dry Film Thickness:
   1. Provide total system minimum dry film thickness of 9 mils. Apply in multiple coats as recommended by coating manufacturer. Use a magnetic gauge to measure thickness. Notify the Project Representative prior to taking final measurements.

D. Repair of Defects:
   1. Repair detected coating holidays, thin areas, and areas damaged prior to or during installation by surface treatment and application of additional coating in accordance with manufacturer's recommendations. Areas damaged accidentally or by field welding shall be cleaned and restored immediately to original thickness, to preclude onset of corrosion. Allow a period of at least 72 hours to pass following final coat before placing in immersion service.
   2. Underwater Touchup Coating: Repair coatings damaged underwater with products specifically intended for underwater repair that are compatible with shop-applied coating. Follow manufacturer's recommendations for underwater application.

3.04 SURFACE TO BE COATED

A. Steel Pipe Piling:
   1. Shop coating of pipe piles
   2. Field repair of pipe piles

3.05 QUALITY ASSURANCE

A. General:
   1. Follow all manufacturer's printed instructions unless approved in writing by the manufacturer's representative and the Contractor Quality Control Officer before execution of each change.

B. Inspection:
   1. Off-Site (Shop) Inspection:
      a. For all protective coatings applied at off-site (shop) locations, the Contractor shall provide full inspection by NACE-certified coating inspector. In a batch process, full inspection means the coating inspector shall perform a hold point inspection of all piles in the batch after each step of the cleaning and coating process. The coating inspector shall verify that proper procedures in the cleaning and coating process are followed and that a quality coating application in accordance with the requirements of this Section is achieved. The coating inspector shall be present at the Pre-Construction Meeting to address necessary clarification of inspection and specification requirements. Apparent deviation from the specified requirements or any out-of-tolerance condition shall be reported immediately to the Project Representative for determination of corrective action. Submit inspection reports performed by the coating inspector.
   2. On-Site (Field) Inspection:
      a. On-site coating work as required to coat field cutting of piles shall be inspected for compliance with this specification by a NACE-certified coating inspector provided by the Contractor.
   3. Samples:
      a. For each prime and finish coating, samples shall be taken by the Contractor Quality Control Officer either by receiving a mixed version of the coating placed in a sterile container or taking an unopened 1- or 5-gallon bucket. As a minimum, information taken for each sample shall include product name(s) and number(s), color, batch number(s), date sample was taken, and the representative's name.

C. Inspection Reports:
   1. Samples of the inspection report forms that will be used by the coating inspector shall be submitted at the Pre-Construction Meeting. Completed report forms shall be forwarded to the Project Representative prior to delivery of the coated Work to the Work Site.

D. Inspection Check Points:
   1. Blotter Test per ASTM International (ASTM) D4285:
      a. Upon start-up of abrasive blasting, compressed air shall be checked at least daily for oil and water.
   2. Ambient Conditions:
      a. Perform test for relative humidity, surface temperature, dew point, and ambient temperature to ensure compliance for materials applied. Perform test a minimum of three times per day, and when a noticeable change in conditions occurs, as determined by the Project Representative.
   3. Surface Preparation:
      a. Preparation shall be accepted by the Contractor Quality Control Officer prior to the application of a coating.
   4. Intermediate Dry Film Thickness (DFT) and Wet Film Thickness (WFT) Readings:
      a. A DFT reading shall be taken between coats to check consistency of the application and progress toward total system thickness. A WFT reading may be taken in addition to DFT readings at the Project Representative's request.
   5. Final DFT Readings:
      a. DFT readings shall be taken per SSPC PA-2 on total system thickness as a criterion for final acceptance of a coating.
   6. Adhesion:
      a. Perform adhesion tests per ASTM D3359.
   7. Holiday Testing:
      a. Perform testing for the entire coating per NACE SP0188 in the presence of the Coating subcontractor's quality control/quality assurance representative. Any holidays detected shall be repaired and retested after cure of the coating is complete. Repair holiday by surface treatment and application of additional coating in accordance with manufacturer's recommendations. All repairs shall be retested.

END OF SECTION

SECTION 31 05 10

SEDIMENT MANAGEMENT AREA 5 BANK EXCAVATION

NOTE TO REVIEWERS – THIS SECTION IS A PLACEHOLDER FOR PRE-FINAL (90%) REMEDIAL DESIGN. FOR FINAL (100%) REMEDIAL DESIGN, THE EXISTING 90% DESIGN SPECIFICATION LANGUAGE IN OTHER SECTIONS RELATED TO SMA 5 BANK EXCAVATION AND CAPPING WILL BE MOVED INTO THIS SECTION TO MORE CLEARLY DESCRIBE THIS WORK

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for Sediment Management Area (SMA) 5, as shown on the Drawings, including SMA 5 preparation, clearing and grubbing, bank excavation, temporary stockpiling and handling of excavated materials, loading excavated material into trucks for transportation to the Contractor Transload Facility, construction of the SMA 5 Engineered Cap A, and SMA 5 restoration. This Section includes furnishing transportation, labor, materials, equipment, and incidentals necessary to perform the SMA 5 Work.

1.02 DESCRIPTION OF WORK

1.03 REFERENCED STANDARDS

1.04 DEFINITIONS

1.05 SUBMITTALS

1.06 CONSTRUCTION SEASON

1.07 JOB CONDITIONS

A. Character of Materials

B. Access to SMA 5

1.08 ENVIRONMENTAL PROTECTION

1.09 QUALITY CONTROL

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 GENERAL SEQUENCING

3.02 PROCESS FOR SMA 5 COMPLETION AND ACCEPTANCE

3.03 SURVEYS

3.04 CONDUCT OF WORK

A. SMA 5 Preparation

B. Clearing and Grubbing

C. Excavation

D. Temporary Stockpiling

E. SMA-Specific Staging Area

F. Upland Transportation to Contractor Transload Facility

G. Engineered Cap A Placement

H. SMA 5 Restoration, Planting, and Cleanup

END OF SECTION

SECTION 31 09 00

GEOTECHNICAL INSTRUMENTATION AND CONDITION INSPECTIONS

PART 1 GENERAL

1.01 SUMMARY

A. This Section describes the qualifications, installation, monitoring protection, maintenance, reporting, and removal requirements for instruments to measure ground and structure displacement, as well as the performance of conditions inspections of identified structures and utilities.

1.02 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Action Levels: Tiered, relative displacement thresholds beyond which specific monitoring, reporting, mitigation, and/or remediation actions are required. The two Action Levels include Trigger Level and Maximum Level.

C. Monitoring Points: Fixed markers placed on utilities, structures, or otherwise noted facilities or features for the purpose of monitoring relative vertical and/or horizontal displacement.

D. Survey Monitoring: Precise field measurements using survey techniques for determination of elevations, coordinates, and distances for performing geotechnical monitoring.

1.03 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals
   1. Minimum Qualifications:
      a. Instrumentation and Monitoring Plan:
         1) Monitoring Superintendent: The individual who will be in responsible charge for the performance of the Instrumentation and Monitoring Plan shall possess no less than 3 years of experience with similar programs and no less than 1 year in a supervisory role.
         2) Monitoring Surveyor: The individual who will be in responsible charge for obtaining and processing displacement measurements shall be licensed in the State of Washington per Section 02 21 00 (Site Surveys and Positioning Control). Additionally, the Monitoring Surveyor shall possess no less than 3 years of experience utilizing the methods and equipment prescribed in the Instrumentation and Monitoring Plan and no less than 1 year of experience for programs including monitoring of slopes, walls and/or structures proximate to excavations.
      b. Structural Condition Inspections:
         1) Condition Inspection Engineer: The individual who will be in responsible charge for the performance of Structural Condition Inspections, including before and after construction activities have been completed, shall be licensed in the State of Washington per Section 02 21 00 (Site Surveys and Positioning Control). Additionally, the Condition Inspection Engineer shall have performed structural condition inspections for no less than five projects, including at least two for waterfront and/or marine structures.
   2. Instrumentation and Monitoring Plan:
      a. Submit the Instrumentation and Monitoring Plan as part of the Remedial Action Work Plan.
      b. The Instrumentation and Monitoring Plan shall include a Contractor-Designed Instrumentation Program to monitor displacement of identified surfaces, structures, utilities, and/or properties within or proximate to ground disturbing activities or other Project Works.
      c. The Instrumentation and Monitoring Plan shall describe proposed monitoring locations, including the following details:

1) All Monitoring Points shown on the Drawings
2) Any additional Monitoring Points planned by the Contractor
3) Monitoring Point attachment details
4) Planned instrument type(s) and setup locations relative to identified Monitoring Points
5) Monitoring schedule
6) Action Levels

d. A schedule and outline of procedures for implementation of the Instrumentation and Monitoring Plan, including a summary table indicating the following by number and location:
1) Timing of installation
2) Baseline reading schedule
3) Timing of monitoring commencement and schedule of monitoring
4) Timing of decommissioning/removal

e. Manufacturer's descriptive literature for proposed instruments, including the following:
1) Technical specifications
2) Calibration certificates
3) Installation procedures
4) Operation manuals

f. Sample reports showing how acquired data will be represented for each instrument type

g. Replacement procedures, as follows:
1) In the case of a damaged or removed Monitoring Point:
a) Identify the cause of the damage or removal.
b) Install a replacement Monitoring Point, and identify the date and location of installation.
c) Calibrate with baseline readings.
d) Mitigate against potential future damage or removal.
2) In the case that an instrument must be moved, or at any time requires repair or replacement:
a) Identify the reason(s) for moving, repairing, and/or replacing the original instrument.
b) Submit new instrumentation type and/or location.
c) Identify the date the moved, repaired, or new instrument was operational.

h. Preliminary Corrective Action Plan: Supplemental plan providing actions to be taken in response to any reading that exceeds one of the defined Action Levels indicated in this Section, which shall include the following:
1) Investigation procedures pertaining to the cause(s) of the of the Action Level exceedance
2) Preliminary list of probable actions to be taken, according to structure type and construction activity, if recorded displacements exceeded the Trigger Level indicated in Article 3.04 of this Section
3) Preliminary list of probable actions to be taken, according to structure type and construction activity, if recorded displacements exceeded the Maximum Level indicated in Article 3.04 of this Section

3. Monitoring data including baseline readings:
a. The Monitoring Surveyor shall set control for Monitoring Points and supervise surveying of displacement monitoring.
b. Baseline and monitoring data shall be presented using the Project datum.
c. Electronic monitoring data shall be conveyed to the Project Representative by the end of the shift immediately following that during which the readings were taken. Electronic monitoring data shall be readable in Microsoft Excel.
d. At a minimum, the following shall be included with each set of data:
1) The Monitoring Point identification number and location
2) Any change in Monitoring Point location, including direction(s) of movement, relative to the original Monitoring Point position
3) The date and time that the readings were taken
4) The names of individuals who obtained the reading
5) Distance between the instrument and construction activities at the time of the reading
6) Distance between the Monitoring Point and construction activities at the time of the reading
7) Tables of current readings and Action Levels for each instrument
8) Plots of all measured data versus date for each Monitoring Point

4. Pre-Construction Structural Condition Report: Refer to Article 3.06 of this Section for requirements.

C. Construction Submittals
1. Site-Specific Corrective Action Plan. Refer to Article 3.04 of this Section for requirements.

D. Post-Construction Submittals
   1. Post-Construction Structural Condition Report. Refer to Article 3.06 of this Section for requirements.

1.04 PROJECT CONDITIONS

A. Identification of locations of inspection and/or monitoring by Owner shall not relieve the Contractor of its responsibility for the Work and shall not be regarded as an assumption of risks or liability by the Owner.

B. Availability of Data:
   1. Monitoring data become the property of the Owner and are not to be disclosed to third parties or published without written permission of the Owner.
   2. Upon specific request, data developed by the Owner will be available to the Contractor within 24 hours of being acquired.

C. Permits and Coordination:
   1. Permits, easements, and rights-of entry obtained by Owner are defined in Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements). All other permits and easements required to perform the Work shall be obtained by the Contractor.
   2. Coordinate activities affecting utilities with the appropriate utility company.

PART 2 PRODUCTS

2.01 GENERAL

A. All reading devices, fixtures, cables, and necessary software for the various monitoring systems are to be provided by the Contractor.

B. Instruments and equipment that are the manufacturer's standard products without modifications.

2.02 MONITORING POINTS

A. Locations as indicated in the Drawings

B. Consist of adhesive-backed reflective targets (Leica Models or Approved Equal) that will not damage the feature on which they are installed

C. Compatible with the surveying system used

D. Include a tag or a permanent marking indicating the Monitoring Point identification number

E. Protected from damage or degradation

2.03 SURVEY SYSTEM

A. System Accuracy Requirements:
   1. The accuracy requirements established in this Section apply to the final data, including the composite effects of reflectors, readout instruments, measurement methods, temperature, operator variability, and other contributing factors.
   2. Maintain an associated confidence level of 90% for all accuracies specified in this Section.
   3. Surveyed Monitoring Points shall be as follows:
      a. Within 0.01 foot vertical
      b. Within 0.01 foot horizontal

PART 3 EXECUTION

3.01 GENERAL

A. Provide the Project Representative with access to view Monitoring Points and review data.

B. Be responsible for safety during all installation and monitoring activities, and conduct all activities in accordance with applicable federal, state, and local regulations and all project-specific health and safety plans. The most stringent regulations and plans apply where conflicting requirements are encountered.

C. Allow time for, and include, installation and monitoring baseline readings in the construction schedule.

D. Notify the Project Representative at least 7 working days prior to the start of Work and for any installations located on private property.

E. Obtain stable baseline readings at least 3 working days prior to commencing proximate ground- or structure-disturbing activities.

3.02 MONITORING POINT INSTALLATION

A. General locations of Monitoring Points are shown on the Drawings. Locate Monitoring Points for outfalls as close as practicable to the locations shown on the Drawings. For all other Monitoring Points, locate within 10 feet of the locations shown on the Drawings. Locate instruments to allow for readings at the specified frequencies during all phases of construction.

B. Install Monitoring Points in accordance with the manufacturer's recommendations and requirements unless otherwise specified.

C. Verify the suitability of planned monitoring locations for the equipment and systems to be used. The Contractor is solely responsible for damage to utilities, structures, or other facilities.

3.03 MAINTENANCE

A. Maintain and protect all Monitoring Points and replace damaged instrumentation at no additional cost to the Owner.

B. Maintain all instrumentation in accordance with manufacturer's recommended procedures and schedule, or as directed by the Project Representative.

C. Immediately report all damaged or non-functional instrumentation to the Project Representative.

D. Repair or replace damaged instruments within 48 hours of detection.

3.04 INSTRUMENT MONITORING

A. General
1. The Project Representative will observe monitoring activities.
2. The Project Representative may conduct Quality Assurance monitoring.
3. Provide all necessary assistance in the form of labor and equipment to enable access to the Project Representative.

B. Obtain readings at the locations shown on the Drawings, in accordance with the approved Instrumentation and Monitoring Plan and this Section.

C. Monitoring Points shall be measured relative to survey benchmarks, as follows:

1. Survey benchmarks shall be located more than 150 feet away from excavations and other on-site or off-site ground-disturbing activities.

D. Baseline Readings:
   1. Provide baseline readings by conducting three separate and complete sets of readings on each instrument. Readings shall be conducted at least 1 day apart each and shall be taken with sufficient accuracy to produce similar results in each of the three readings.
   2. Baseline readings shall be comparable and equal within the rated instrument accuracy.
   3. For any locations at which tiebacks are installed, two sets of baseline readings shall be obtained, one prior to and one after tieback installation. Production readings and relative Action Levels shall be referenced to the baseline readings obtained after tieback installation.

E. Production Readings:
   1. Obtain production readings, for the structures and active outfalls identified in the Drawings and listed below, according to the following schedule:

MONITORING GROUP	STRUCTURE	RELATIVE READING SEQUENCE	READING FREQUENCY	READING SEQUENCE DURATION
A	STA 234+50 | Structure IM-F (Sheet Pile Wall)	Day Before Planned Excavation Start	1 Time per Day	1 Day
		During Excavation	1 Time per Day	Until Excavation Completion
		During Backfill	2 Times per Week	Until Backfill Completion
		After Backfill	1 Time per Week	Until Obtaining Three Consecutive Stable Readings
B	STA 251+00 | Structure IM-I (Pier 2, Slip 6)	Day Before Planned Excavation Start	1 Time per Day	1 Day
		During Excavation	2 Times per Week	Until Excavation Completion
		During Backfill	1 Time per Week	Until Backfill Completion
		After Backfill	1 Time per Week	Until Obtaining Two Consecutive Stable Readings

   2. Obtain and report production readings with reference to each relative movement orientation component (vertical and horizontal; X-Y-Z) as well as the vector sum of vertical and horizontal movements.

F. Action Levels:
   1. Action Levels are based on the vector sum of vertical and horizontal movements.
   2. Action Levels are as follows:

STRUCTURE TYPE/ID	TRIGGER LEVEL	MAXIMUM LEVEL
Piers and Docks	1.0 inch	1.5 inches
Soldier Pile and Sheet Pile Walls	1.2 inches	2.0 inches

G. Exceeding Trigger Level:
   1. Take immediate steps to stop the cause of exceedance.
   2. Notify the Project Representative immediately.
   3. Immediately implement, as appropriate, actions identified within the Preliminary Corrective Action Plan.
   4. Develop and provide a Site-Specific Corrective Action Plan within 24 hours with the Project Representative. Include the identified cause of the exceedance.
   5. Verify measurement.
   6. For instruments read less than every other day, increase frequency of readings to daily. For all other reading frequencies, double the frequency of readings. Continue increased frequency of monitoring until the relative incremental change of movement has returned to the pre-action trigger level rate or stabilized as determined by the Project Representative.
   7. If the Site-Specific Corrective Action Plan identifies corrective actions beyond or differing from those in the Preliminary Corrective Action Plan, implement corrective actions in accordance with the Site-Specific Corrective Action Plan. Under some circumstances, corrective actions may require modification of construction procedures.
   8. Verify success of corrective actions.

H. Exceeding Maximum Level:
   1. Take immediate steps to stop the cause of exceedance.
   2. Notify the Project Representative immediately.
   3. Immediately implement, as appropriate, actions identified within the Preliminary Corrective Action Plan.
   4. Develop and provide a Site-Specific Corrective Action Plan within 24 hours with the Project Representative. Include the identified cause of the exceedance.
   5. Verify measurement.
   6. For instruments read less than every other day, increase frequency of readings to daily. For all other reading frequencies, double the frequency of readings. Continue increased frequency of monitoring until the relative incremental change of movement has returned to the pre-action trigger level rate or stabilized as determined by the Project Representative.
   7. If the Site-Specific Corrective Action Plan identifies corrective actions beyond or differing from those in the Preliminary Corrective Action Plan, implement corrective actions in accordance with the Site-Specific Corrective Action Plan.
   8. Verify success of corrective actions.
   9. The Project Representative may suspend Work activities at that location and require the submittal of alternative proposals for minimizing further movements.
   10. If Work activities are suspended, obtain approval from the Project Representative prior to restarting Work activities at that location, under approved procedures.
   11. With the Project Representative, contact the owners of any damaged or affected facilities and structures and perform corrective and restorative measures on an agreed timetable at no cost to the Owner.

3.05 REMOVAL OF MONITORING POINTS

A. The removal of Monitoring Points shall be completed within 30 calendar days following the completion of monitoring, as approved by the Project Representative.

B. Remove Monitoring Points and, if required, restore disturbed or damaged surfaces to the conditions existing before installation of Monitoring Points.

3.06 PRE-CONSTRUCTION AND POST-CONSTRUCTION STRUCTURAL CONDITION INSPECTIONS

A. Complete all Pre-Construction Structural Condition Inspections and submit all Pre-Construction Structural Condition Reports no fewer than 14 calendar days prior to the start of any dredging Work.

B. Complete Post-Construction Structural Condition Inspections after proximate dredging and placement Work has been completed, and submit Post-Construction Structural Condition Report for each structure within 8 working days after completing each Post-Construction Structural Condition Inspection or within 30 calendar days of dredging and placement Work completion, whichever is sooner.

C. All reports shall be prepared, stamped, dated, and signed by the Condition Inspection Engineer.

D. Complete Structural Condition Inspections of, and prepare Pre- and Post-Construction Structural Condition Reports for, the structures and active outfalls identified in the Drawings and listed as follows:
   1. STA 203+50 | Structure IM-A (South Park Bridge Main Piers and Fender Piles)
   2. STA 213+50 | Structure IM-B (South Park Marina, South End)
   3. STA 213+50 | Structure IM-C (Ecology Block Wall)
   4. STA 214+50 | Structure IM-D (Public Pier and Viewpoint)
   5. STA 233+00 | Structure IM-E (Wood Wall)
   6. STA 233+50 | Outfall 2077
   7. STA 234+15 | Outfall 2075
   8. STA 234+50 | Structure IM-F (Sheet Pile Wall)
   9. STA 237+00 | Structure IM-G (Sheet Pile Wall)
   10. STA 246+50 | Structure IM-H (Timber and Dolphin Piles)
   11. STA 251+00 | Structure IM-I (Pier 2, Slip 6)
   12. STA 272+50 | Structure IM-J (Concrete Pier)
   13. STA 308+00 | Structure IM-K (Timber Piles)
   14. STA 308+20 | Outfall 2092
   15. STA 308+70 | Outfall 2097
   16. STA 309+50 | Structure IM-L (Timber Piles)
   17. STA 309+60 | Outfall DC16
   18. STA 310+50 | Structure IM-M (Timber Piles)
   19. STA 310+70 | Outfall 2096
   20. STA 311+90 | Outfall 2093

E. The condition inspection of each structure shall be performed by the Condition Inspection Engineer.
   1. Include visual observations of the condition of the main structural components (e.g., piles, beams, deck slabs, fender pile system, fender logs, camel fenders, and marine hardware) and their coating systems (where relevant), representative photographs identifying areas of significant deterioration or physical damage, with tables describing the damage in detail at each location (e.g., “XYZ Dock, pile bent XX row YY, 200 mm wide by 100 mm high by 25 mm deep concrete spall, no rebar exposed”) and supporting sketch drawings or reference drawings.
      a. Inspections of structural elements that are below water or below the waterway bed are not required.
   2. Photographs and video documentation shall be taken by, or under the supervision of, the Condition Inspection Engineer in accordance with the requirements specified in Section 01 32 33 (Photographs and Videos).
   3. Place 2-dimensional crack measurement templates, such as Avongard or similar, at critical and representative locations during Pre-Construction Structural Condition Inspection.
      a. Obtain measurements at least twice before construction and once during the Post-Construction Structural Condition Inspection prior to removal.

END OF SECTION

SECTION 31 11 00

CLEARING AND GRUBBING

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies Work Site clearing and grubbing in preparation for remedial activities for the Project.

1.02 DESCRIPTION OF WORK

A. The work described in this Section includes, but is not limited to, upland Work Site clearing, removal of trees and brush, grubbing, and removal of other miscellaneous upland items as needed prior to remedial activities for the Project.

B. Work under this Section is paid under Bid Item No. 1 – Site Preparation and Temporary Facilities Setup and Operations, as shown on the Bidding Schedule.

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

1.04 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Cleared and Grubbed Material: Cleared and Grubbed Material is defined as topsoil, brush, trees, logs, stumps, roots, heavy sod, vegetation, rock, stones larger than 6 inches in any dimension, broken or old concrete and pavement, debris, objects, and structures which must be removed to prepare the Work Site for remedial activities.

1.05 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
   1. Submit a detailed, written Site Clearing and Management Plan as part of the Remedial Action Work Plan (RAWP), in conformance with the Specifications. Construction activities shall not begin until the Site Clearing and Management Plan has been reviewed and accepted by the Project Representative.
   2. Requirements for the Site Clearing and Management Plan are listed in Article 1.06 of this Section.

C. Construction Submittals:

1. The Contractor shall keep a daily record summarizing the area(s) cleared and grubbed, a log of quantities derived from clearing and grubbing, and copies of all Certificates of Disposal as part of the Daily Construction Report.
2. The Contractor shall summarize the week's clearing and grubbing activities including Work completed to date and anticipated Work to be completed in the following week in the Weekly Construction Report.

1.06 JOB CONDITIONS

A. Existing conditions: Determine the actual condition of the Work Site as it affects the Work. Before Work, notify the Project Representative if any conditions appear different than what the Contract represents.
   1. By submitting a Bidding Schedule, the Contractor represents that it has visited the Work Site to become familiar with the quantity and character of all upland materials to be cleared and agrees that the premises were made available prior to the deadline for submission of bids for whatever inspection and tests the Contractor deemed appropriate.
   2. The Work Site may have underground and other utilities within the adjacent uplands. The Owner conducted the 2018 topographic survey; however, it is the Contractor's responsibility to adequately locate and verify all existing utilities prior to initiating Work related to this Section to avoid damage to utilities.

B. Protection:
   1. Do not damage structures, landscaping, or vegetation adjacent to the Work Site.
   2. Provide, erect, and maintain barricades, coverings and other types of protection measures necessary to prevent damage to existing trees, structures, utilities, landscaping, and other features designated to remain in place on or adjacent to the Work Site.
   3. Remove salvaged items in a manner that protects adjacent property, structures, vegetation, and utilities.
   4. Maintain benchmarks, monuments, and other reference points. Re-establish if disturbed or destroyed at no cost to the Owner.

C. Repair or replace property damaged by the Contractor's activities.

1.07 SITE CLEARING AND MANAGEMENT PLAN

A. The Site Clearing and Management Plan shall include the following:
   1. Methods for sorting, stockpiling, and protecting woody debris from Work Site clearing for placement for potential Work Site restoration, enhancement, and/or habitat improvement areas.
   2. Description of the following:
      a. Selection methods for source trees for wood materials from trees noted to be removed on the Drawings
      b. Clearing and grubbing methods used to keep rootwads and branches attached to source trees prior stockpiling
      c. Locations and details of stockpiling
      d. Sequencing approach for clearing and grubbing

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 PERFORMANCE

A. Clearing and grubbing:
   1. Notify the Project Representative prior to commencement of clearing and grubbing activities, including activities intended for survey or other Work Site investigation work.
   2. Coordinate clearing and grading operations with erosion control and tree protection requirements.
   3. Unless otherwise indicated on the Drawings, do not remove trees or significant vegetation without authorization from the Project Representative.
   4. Remove obstructions that qualify as Cleared and Grubbed Material. Removal of stumps, roots, and vegetation shall be to a minimum of 12 inches below final excavation lines and grades or until organic matter is removed.

5. Grubbing shall consist of complete removal of roots, stumps, trash, and other debris from all graded areas so that the Work Site is free of roots and debris. Topsoil is to be left sufficiently clean so that further picking and ranking will not be required.
6. Provide for legal off-site disposal, and submit information on disposal site and quantities to the Project Representative.

B. Perform clearing and grubbing according to the sequencing requirements described in Section 01 14 00 (Work Restrictions) and within these Specifications. Clearing and grubbing activities shall be performed in advance of removal of Dredge Debris, Identified Debris, Piling, land-based excavation, and grading work.

C. Restoration, enhancement, and habitat improvement areas:
   1. Implement the Site Clearing and Management Plan.
      a. Mark clearing units and source trees prior to clearing.
      b. Preserve and provide protection for the following:
         1) Adjacent facilities: Exercise extreme care to prevent damage to adjacent facilities that are to remain.
         2) Monuments: Carefully maintain benchmarks, monuments, and other reference points. If disturbed or destroyed, replace as directed. Note the position of all monuments on the As-Built Record Drawings.
      c. Receive approval from the Project Representative to remove marked clearing units and trees.
      d. Keep root wads and branches attached to tree trunks.
      e. Stockpile, preserve, and protect source trees.
      f. Maintain clear right-of-way for required construction and for access to the Work Site. Remove vegetation only as required.
      g. The Contractor shall not perform any general clearing and grubbing of the Work Site that leaves areas exposed that will not have immediate follow-up construction.
      h. All Erosion and Sediment Control Plan measures per Section 31 25 00 (Erosion and Sedimentation Control) shall be in place prior to clearing and grubbing.
      i. Adhere to City of Seattle and City of Tukwila seasonal restrictions for land clearing.

D. Utility Lines
   1. Protect existing utility lines from damage.
   2. Immediately notify the Project Representative of any damage to, or encounter with, an unknown existing utility line.
   3. Be responsible for the repairs of damage to existing utility lines that are indicated or made known to the Contractor prior to the start of clearing and grubbing operations.
      a. Notify the Project Representative in ample time, when encountering utility lines to be removed within the area of operations, to minimize interruption of the service.

E. Utility interference: Where existing utilities interfere with the Work, notify the Project Representative and coordinate necessary relocation with the utility owner in accordance with Section 01 19 50 (Protection and Maintenance of Property and Work).

F. Transportation and Disposal of Cleared and Grubbed Material
   1. The Contractor shall load and transport for final disposal the Cleared and Grubbed Material to an approved Disposal Facility. The Contractor shall identify its proposed Disposal Facility(ies) as part of the RAWP.
      a. The Cleared and Grubbed Material shall be loaded into trucks for upland transportation.
      b. The Contractor shall identify proposed truck haul routes in the RAWP, subject to approval by the Project Representative. Haul routes will be reviewed in coordination with EPA to confirm that they are configured in a manner to reduce impacts to residential neighborhoods to the extent practical.
      c. The Contractor shall be responsible for the safe transport of all Cleared and Grubbed Material in accordance with federal, state, and local laws and regulations.
   2. The Contractor shall be responsible for preparing and signing all Certificates of Disposal (or waste manifests) and obtaining all acceptances for the transportation of all materials. Certificates of Disposal (or waste manifests) shall be provided to the Project Representative. The Contractor shall provide sufficient documentation to track all upland material transport from the area where clearing and grubbing occurred or Contractor Transload Facility(ies) to the Disposal Facility, as applicable.

3. The Contractor shall utilize appropriate controls, such as watertight lining of truck beds and/or covering of loads (i.e., tarps, folded lining, or fully enclosed trucks), to prevent any loss of Cleared and Grubbed Material during upland transport, to minimize the release of odors and dust, and so that no spillage occurs. Contractor's methods of control shall be to the satisfaction of the Project Representative. Any such spillage shall be formally documented and promptly cleaned up.
4. The Contractor shall employ all best management practices as described in Section 01 35 43 (Environmental Procedures) when performing transload and transport activities.
5. In no case shall refuse material be left at the Work Site or be buried in embankments or trenches on the Work Site unless directed otherwise by the Project Representative.

END OF SECTION

SECTION 31 25 00

EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies requirements for constructing and maintaining the upland surface water drainage and temporary erosion and sediment control system, referred to as "Temporary Erosion Control System" or “Erosion Control System,” for all Work conducted above mean higher high water including, but not limited to, Work associated with Sediment Management Areas 1, 5, 6, 7, and 9.

B. This Section consists of the requirements for planning, installing, inspecting, maintaining, upgrading, and removing erosion and sediment control best management practices (BMPs) for upland work as shown on the Drawings, and in the Contractor’s Erosion and Sediment Control (ESC) Plan or as directed by the Project Representative to prevent pollution of water and to control, respond to, and dispose of, eroded sediment and turbid water during the life of the Contract.

1.02 DESCRIPTION OF WORK

A. To comply with the requirements of this Section, the Contractor shall:
   1. Develop and submit a Project-specific ESC Plan.
   2. Revise and modify the ESC Plan during the life of the Contract and maintain records.
   3. Install, maintain, and remove all erosion prevention, containment, and countermeasures BMPs during the life of the Contract.
   4. Contain, clean up, and dispose of all sediment and turbid water as necessary to prevent water containing suspended materials from entering into public or private roadways, waterways, sewers, or drainage systems.
   5. Perform other Work shown on the Drawings, in the ESC Plan, or as directed by the Project Representative.
   6. Properly inspect ESC Plan requirements including BMPs as required; facilitate, participate in, and implement directed corrective actions resulting from inspections conducted by others including the U.S. Environmental Protection Agency (EPA), as directed by the Project Representative.
   7. Educate all Contractor and subcontractor staff in environmental compliance issues at weekly meetings and document attendance and content.
   8. Comply with the requirements of Section 31 11 00 (Clearing and Grubbing).

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of EPA Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

1.04 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Dry Season: May 1 to September 30, pursuant to Washington State Department of Ecology (Ecology) Construction Stormwater General National Pollutant Discharge Elimination System (NPDES) Permit

C. Wet Season: October 1 to April 30, pursuant to Ecology Construction Stormwater General NPDES Permit

1.05 QUALITY ASSURANCE

A. Qualifications:
   1. Certified Erosion and Sediment Control Lead (CESCL):
      a. Active certification through a CESCL course approved by Ecology.
      b. Minimum of 1 year of experience and one similar project.

B. Comply with all applicable requirements of King County.
   1. City of Seattle Stormwater Code
   2. King County Surface Water Management Code

C. Do not allow activities that lead to violations of the following:
   1. Local and state water quality standards for stormwater discharge, including but not limited to surface water quality standards, groundwater standards, sediment management standards, and human health-based criteria in the National Toxics Rule (40 Code of Federal Regulations [CFR] Part 131.36)
   2. Local agency sewer discharge permits if discharge is placed in sanitary sewer system.
   3. Local and state water quality standards including but not limited to Water Quality Standards for Surface Waters of the State of Washington (Washington Administrative Code Chapter 173-201A).

1.06 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
   1. Qualifications of CESCL
   2. Submit a detailed, written ESC Plan, as part of the Environmental Mitigation Binder (EMB), in conformance with the Specifications. Construction activities shall not begin until the following occur:
      a. The ESC Plan has been reviewed and accepted by the Project Representative.
   3. Specific requirements for the ESC are detailed in Article 1.09.
   4. Shop drawings and product data

C. Construction Submittals:
   1. Updated shop drawings and product data
   2. Submit the Construction Stormwater Site Inspection Checklist on a weekly basis as part of the Weekly Construction Report (see Section 01 33 00 – Submittals).

1.07 ADMINISTRATIVE REQUIREMENTS

A. The provisions of this Section shall apply to the Contractor, subcontractors at all tiers, suppliers, and all others who may have access to the Work Site by way of the Contractor's activities.

B. Failure to install, maintain, and/or remove BMPs shown in the approved ESC Plan and associated ESC drawings, and specified herein or by order of the Project Representative, or failure to conduct project operations in accordance with this Section will result in the suspension of the Contractor's operations by the Project Representative.

C. The Contractor shall be solely responsible for any damages, fines, levies, or judgments incurred as a result of Contractor, subcontractor, or supplier negligence in complying with the requirements of this Section.

D. Any damages, fines, levies, or judgments incurred as a result of Contractor, subcontractor, or supplier negligence in complying with the requirements of this Section will be deducted from payment due by modification.

E. Any time and material costs incurred by the Project Representative due to damages, fines, levies, or judgements incurred as a result of Contractor, subcontractor, or supplier negligence in complying with the requirements of this Section will be deducted from any money due to the Contractor or may be recovered from the Contractor's bond.

F. The Contractor shall be solely responsible for any schedule impacts from damages, fines, levies, judgments, or stop work orders incurred as a result of Contractor, subcontractor, or supplier negligence in complying with the requirements of this Section. The project schedule will not be changed to accommodate the time lost.

G. The Contractor shall not clear, grub, grade, demolish, or perform any other Work after Notice to Proceed is issued until the following have been installed in upland work areas per the project Specifications, the approved ESC Plan and associated ESC drawings, or as directed by the Project Representative:
   1. Silt fence or other perimeter controls shall be in place.
   2. Areas not to be disturbed shall be delineated with safety fence.
   3. Water flows from off site shall be tight lined and directed away from the Work Site.
   4. All construction entrances are stabilized, and tire wash systems are in place and operational.

1.08 AUTHORITY OF THE PROJECT REPRESENTATIVE

A. The Project Representative has the authority to limit clearing, excavation, demolition, dredging, filling, and any other Contractor operation and to direct the Contractor to provide immediate permanent or temporary erosion and sediment control measures to prevent contamination of the adjacent waterway or of municipal storm drains.

B. In the event that any temporary erosion and sediment control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the Work as scheduled or ordered by the Project Representative, such Work shall be performed by the Contractor at its own expense.

C. In the event that areas adjacent to the Work Site are suffering degradation due to erosion, sedimentation, water flows, or other causes, the Project Representative may stop construction activities until the situation is rectified.

1.09 EROSION AND SEDIMENT CONTROL PLAN

A. Consists of BMPs that control erosion and sedimentation from the Contractor's activities and treats stormwater to meet discharge requirements during each phase of construction as identified by the Contractor in the Baseline Project Schedule

B. Submit the ESC Plan and corresponding ESC drawings and receive a review action of "1" or "2" per Section 01 33 00 (Submittals) prior to commencement of Work.

C. During the Construction Season, the BMPs shall be upgraded and modified as needed to meet discharge requirements for changing construction activities, storm events, and changing Work Site conditions.
   1. Indicate the minimum requirements at the start of Work.

D. Update the ESC Plan and associated ESC drawings 30 working days prior to the start of the Wet Season each year of construction until Final Acceptance is granted by the Owner.

E. Maintain a copy of the current ESC Plan in the EMB at the Work Site at all times. Refer to Section 01 35 43 (Environmental Procedures).

F. Provide at a minimum, the following information:
   1. All requirements in the Drawings and Specifications
   2. Locations and construction details of all proposed ESC Plan BMPs
   3. Schedules for accomplishment of temporary and permanent erosion control work
   4. Approximate slopes, contours, and direction of stormwater flow
   5. Location of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas

6. Location of all surface water bodies, including wetlands, ponds, lakes, streams, drainage ditches, and catch basins
7. Measures to prevent the addition of process water or domestic wastewater into the stormwater
8. Location of water quality sampling stations (if applicable)
9. Maintenance schedule of ESC Plan
10. Staging areas, chemical storage areas, fuel tanks, and refueling locations, and their relationship to drainage pathways, waterways, and other sensitive areas

PART 2 PRODUCTS

2.01 MATERIALS

A. Catch basin insert:
   1. Prefabricated units specifically designed for storm drain inlet protection
   2. Remain securely attached to the drainage structure when fully loaded with sediment and debris
   3. Lifting handle for removal
   4. Overflow to prevent ponding

B. Plastic sheeting:
   1. Color: Clear
   2. Minimum thickness of 6 mil

C. Reinforced plastic fabric:
   1. Construed, copolymer laminate
   2. Reinforcing: Nonwoven grid of high strength nylon cord submerged in a permanently flexible adhesive medium
   3. Equal tear resistance in all directions
   4. Color: Black
   5. Ultraviolet light stabilized
   6. Material to be from a single manufacturer
   7. Physical strength requirements:
      a. Tear strength, pounds: 130 per ASTM International (ASTM) D1004
      b. Elongation percent: 620 per ASTM D882
      c. Minimum life expectancy: 2-1/2 years of normal outdoor exposure

D. Geotextile fabric:
   1. Stabilized construction entrance geotextile fabric shall meet the following criteria:

PROPERTY	TEST	SURVIVABILITY
AOS sieve	ASTM D4751	20-45 US Standard Sieve
Grab tensile strength	ASTM D4751	200 psi
Grab tensile elongation	ASTM D4623	30% max.
Mullen burst strength	ASTM D3786	400 psi min.

Notes:
AOS: Apparent Opening Size
ASTM: ASTM International
max.: maximum
min.: minimum
psi: pound per square inch

2. Geotextile fabric for silt fence shall meet the following criteria:

GEOTEXTILE PROPERTY	TEST METHOD	POSTS WITH WIRE OR POLYMERIC MESH
AOS slit	ASTM D4751	0.60 mm max. for film wovens (#30 sieve). 0.30 mm max. for all other geotextile. 0.15 mm min. (#100 sieve).
Water permittivity	ASTM D4491	0.02 sec-1 min.
Grab Tensile Strength	ASTM D4632	100 lbs. min.
UV Radiation Stability	ASTM D4355	70% strength retained min. after 500 hours in weather meter

Notes:
AOS: Apparent Opening Size
ASTM: ASTM International
lb: pound
max.: maximum
min.: minimum
mm: millimeter
UV: ultraviolet

E. Temporary silt fence wire backing:
   1. 2-inch x 2-inch mesh, 14 gage or approved equal
   2. Hot-dip galvanized, ASTM A392, Class 2
   3. Height: As shown on Drawings

F. Permanent revegetation mat:
   1. Highly flexible polymeric mat with a three-dimensional web-like weave
   2. Color: Green
   3. Biologically inert
   4. Acid and alkaline resistant
   5. Ultraviolet degradation resistant
   6. Physical properties:
      a. Porosity: 85% to 95%
      b. Flexibility: 2,000 milligrams per centimeter ASTM D1388
      c. Weight: 18 ounce per square yard ASTM D3776
      d. Thickness: 0.12-inch ASTM D1777
      e. Tensile strength: length, 15 pounds; width, 5 pounds
      f. Elongation: Length 150%, width 100%

G. Erosion control blankets:
   1. Biodegradable wood materials
   2. No chemical additives
   3. Photo degradable extruded plastic netting top and bottom
   4. Smolder resistant
   5. Physical properties of blanket for slope protection:
      a. Weight: 0.98 pounds per square yard
      b. Netting: 1-inch by 2-inch
      c. Physical properties of blanket for channel protection:
         1) Weight: 1.0 pounds per square yard
         2) Netting: 5/8-inch by 3/4-inch

H. Hold-downs:
   1. Sandbags
   2. Secure with 1/4-inch polypropylene rope at 10 feet on center maximum each way.
   3. Anchor rope with 2-inch by 4-inch fir, standard or better.

I. Sandbags:
   1. Woven polypropylene fabric
   2. Fill material:
      a. Non-cohesive, class 1 or class 2 permeable material

b. Free from clay or deleterious material

J. Straw wattles:
1. Netting: Synthetic photodegradable netting secured at both ends
2. Straw mix: 100% weed free
3. Acceptable manufacturers:
   a. ACF West Inc. Fiber Roll
   b. PermaTex Straw Wattle
   c. HD Supply
   d. Approved Equal

K. Compost socks: Vegetated compost material encased in a biodegradable mesh tube

L. Hydroseed mulch:
1. Wood cellulose fiber mulch:
   a. Fiber shall be produced from natural or recycled (pulp) fiber such as wood chips or similar wood materials, or from newsprint, corrugated cardboard, or a combination of these processed materials.
   b. The fibers shall not contain any rock, metal, or plastic.
2. Treated with a nontoxic green dye nontoxic to plant or animal life to facilitate inspection of the placement of the material
3. Manufactured in such a manner that after addition and agitation in slurry tanks with water, the fibers in the material will become uniformly suspended to form a homogenous slurry
4. When hydraulically sprayed on the ground, the material shall allow the absorption and percolation of moisture.
5. Contain less than 250 parts per million (ppm) boron and be nontoxic to plant and animal life
6. Organic matter content shall be at least 90% on an oven-dry basis as determined by ASTM D586.
7. Moisture content shall be no more than 15% as determined by oven-dried weight.

M. Temporary and permanent seeding: Shall conform with the seeding standards in Ecology's *Stormwater Management Manual for Western Washington* (SMMWW).
1. Temporary erosion control seed mix:

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

N. Wheel Wash:
1. Metallic open grated platform with wheel-washing elements:
   a. Horizontal and vertical spray nozzles and associate piping to wash tires and undercarriage of vehicles
   b. Underground water storage/recycling tank for wheel wash water and return water pump sump
   c. Scraper conveyor for water storage/recycling tank
   d. Electronic optical sensor to activate wheel wash as vehicle approaches the grated platform
   e. Splash walls for spray nozzles
   f. Wheel-washing system pump
   g. Recycling solids collection conveyor
2. Acceptable manufactures/products:
   a. Stanton Systems STB-30
   b. Moby Dick KIT Flex 400C
   c. Approved Equal

PART 3 EXECUTION

3.01 SEQUENCING AND SCHEDULING

A. Construct Erosion and Sediment Control System prior to commencing the Work including but not limited to clearing, grubbing, grading, demolishing, and excavating.

B. Schedule or phase excavation to minimize impacts to critical habitat, mitigation areas, wetlands, streams, and creeks.

C. Install perimeter protection (silt fence) prior to clearing and grubbing.

3.02 PREPARATION

A. Prior to clearing, demolition below grade, excavation, and placement of fill, install clearing limits fences, perimeter silt fences, and a temporary stabilized construction entrance.

B. Prepare Work Site for surface water to flow away from excavations and disturbed soils.

C. The boundaries of the clearing/construction limits indicated on the Drawings shall be clearly marked in the field by a continuous length of high-visibility fencing.
   1. No disturbance beyond the clearing limits shall be permitted.
   2. Maintain the clearing limit fencing for the duration of construction.

D. Protect catch basin inlets to drainage system from sediment influx by installing and maintaining inlet protection.

3.03 INSTALLATION

A. Catch basin inserts:
   1. Install at all locations indicated on the ESC Plan and associated ESC drawings and where inspection deems necessary.
   2. Install according to manufacturer's recommendations.
   3. Install in existing catch basins prior to any earth-disturbing activity uphill of the catch basin.
   4. Install in new catch basins prior to allowing any water to flow into the catch basin.

B. Plastic sheeting:
   1. The use of plastic sheeting shall be limited to the covering stockpiles or very small graded areas for short periods of time. Duration of installation is limited to 30 days before permanent measures are installed.
   2. Embed edges a minimum of 6 inches in soil around the entire perimeter of plastic sheeting.
   3. Overlap joints with minimum 2 feet lap and tape seam.
   4. Install hold-downs at all excavation faces and at stockpiles.
   5. Secure hold-downs with polypropylene rope at 10 feet on center, 10 feet maximum each way, across the entire surface of plastic sheeting.
   6. Anchor the polypropylene rope by driving a 2-inch by 4-inch stake at the top of excavations or bottom of stockpiles and tying rope to the stake.

C. Sandbag hold-downs:
   1. Secure with 1/4-inch polypropylene rope at 10 feet on-center maximum each way.
   2. Anchor rope with 2-inch by 4-inch fir, standard or better.

D. Silt fence:
   1. Install filter fabric over wire backing.
   2. Secure filter fabric to wire fabric as follows:
      a. Secure at top, middle, and bottom of each post.
      b. Wire fabric to extend to the top edge of the above ground filter fabric.
   3. Use steel fence posts.

a. Set posts at 6 foot on-center maximum.
4. Bury wire fabric in trench upslope and adjacent to the steel posts for the full length.
5. Bury bottom 8 inches of fabric in a 4x4 foot trench upslope.
6. Field joints:
   a. Lap joints:
      1) 2-foot minimum
      2) Remove all dirt, dust, moisture, and foreign materials.
      3) Splice only at support posts with wire fabric.
   b. Repairs:
      1) Patch with filter fabric.
      2) Extend lap 6 inches from damaged area in all directions.
      3) Proceed as specified for joint.

E. Erosion control blanket or mat:
1. Install per manufacturer's installation instructions and consistent with the SMMWW.
2. Ensure through surface preparation and staking that the material is in continuous contact with the ground surface.
3. Mulch open-weave netting in order to prevent erosion.

F. Seeding:
1. Hydroseed all disturbed areas following completion of construction of the erosion control system.
2. Seeding may be accomplished by approved hand methods when impracticable to do by hydroseeding.
3. Review all disturbed areas prior to the beginning of the Wet Season to identify which areas can be seeded in preparation for the Wet Season.
4. Disturbed areas shall be seeded within 1 week of the beginning of the Wet Season.
5. All areas to be seeded shall be cultivated to meet the local agency and Ecology requirements.
6. Cultivation may be accomplished by disking, raking, harrowing, or other acceptable means. Perform all cultivating at right angles to the slope if necessary.
7. Install surface runoff control measures such as gradient terraces, interceptor dikes or swales, level spreaders, and sediment basins prior to seeding.
8. Fertilize all areas that are seeded.
9. If hand seeding is allowed by the Project Representative, straw shall be applied to all hand-seeded areas.
10. Where straw mulch for temporary erosion control is required, it shall be applied at a thickness of 2 inches.

G. Sandbag check dams:
1. Install at all locations required by the ESC Plan and the associated ESC drawings.
2. Stack sandbags at least 2 to 3 bags high and 1 to 2 bags thick.
3. Butt ends of bags tightly.
4. Overlap butt joints of row beneath with each successive row.
5. Leave a weir gap at the center of the check dam.
   a. Ensure that the edges of the structure are at a higher elevation than the weir gap to prevent flow from escaping around the sides of the dam.
   b. Place a sandbag(s) as a splash pad on the downstream side of the weir opening.

H. Materials and slopes:
1. If material placement stockpiles (imported or native) are placed on or along a street Right-of-Way, these shall be covered with plastic at all times when not being actively worked; use hold-downs where appropriate.
2. Any areas of exposed soils (i.e. excavated areas, spoil piles, and imported or stored fill) that will not be disturbed for 2 days during the Wet Season or 7 days during the Dry Season shall utilize approved erosion control BMP methods to prevent turbid runoff into surface waters.

I. Temporary spoil piles:
1. Place material in a contained area with sediment control.
   a. Contain area with ecology blocks and/or sediment fences to control runoff.
   b. Cover or sprinkler to control dust and sediment runoff.

J. Stabilized construction entrance:

1. Install in accordance with the ESC drawings and at all locations where vehicles enter and exit the Work Site.
2. Constructed of 4- to 8-inch quarry spalls, placed to a minimum thickness of 12 inches.
3. Separation geotextile shall be placed under the quarry spall to prevent fine sediment from pumping into the rock pad.
4. Install driveway culvert if there is a roadside ditch present.

K. Temporary outlet protection (energy dissipation):
1. Install adequate energy dissipation and stabilization at the outlet of all surface water conveyance systems.
2. Meet or exceed minimum design standard of the SMMWW.

L. Straw wattles:
1. Install as soon as construction allows.
2. Live stakes are allowed for permanent installations. Live stakes are not a replacement for wood stakes.
3. Install from the base of the slope uphill.
4. Spread evenly and lightly compact excavated material from trench on the uphill side of the wattle.

M. Compost socks:
1. Install as shown on the ESC drawings.
2. Upon completion of the Project, cut open compost sock, spread soil, and remove and dispose of mesh sock.

N. Rock check dam:
1. Construct out of 4- to 8-inch quarry spalls.
2. Construct at locations shown on the ESC Plan.

O. Wheel wash:
1. Install per manufacturer's installation procedures.
2. Provide source of clean water.
3. Provide power source.
4. Construct minimum 20-foot length asphalt entrance and exit ramps with extruded asphalt curbs each side with ramps sloped towards the wheel wash to drain wash water to wheel wash storage/recycling tank.
5. Construct potable water standpipe/hose bib to spray wash and remove heavy sediment on tires, truck sides, and ramps.

3.04 MAINTENANCE

A. The Contractor shall be responsible for the implementation of the ESC Plan, including all revisions, and the construction, inspection, maintenance, replacement, and modification of the erosion and sedimentation control facilities.

B. Make revisions to the ESC Plan and perform the Work necessary to meet the requirements of the SMMWW.

C. If unanticipated Work Site circumstances require installation of additional BMPs, the additional BMPs shall be installed within 10 calendar days.
1. If a Stormwater Pollution Prevention Plan (SWPPP) is required per Section 01 35 43 (Environmental Procedures), the Contractor shall use form "Construction Stormwater Site Inspection Checklist" from Ecology Publication #06-10-020 or approved equal to conduct weekly Construction Stormwater Site Inspections. When results of weekly Construction Stormwater Site Inspection Checklist show that a BMP needs repair or maintenance or that an additional BMP is needed, the corrective actions must be implemented within 10 days of the date of the inspection.

D. Prevent solids or turbid runoff from entering storm drains or local surface water bodies by utilizing appropriate source control BMPs.

E. Where erosion occurs, make modifications to the source control BMPs to eliminate the cause of the erosion and then mitigate its effects.

F. General maintenance activities:
   1. Inspect BMPs as required in this Section.
   2. Repair or replace damaged or missing BMPs as soon as possible, but no later than 10 days after noting the item in the Construction Stormwater Site Inspection Checklist (if applicable).
   3. Maintain seeded surfaces throughout construction.
   4. Remove accumulated sediment.

G. Street cleaning: See Section 01 35 43 (Environmental Procedures).

H. Rock check dams:
   1. Remove accumulated sediments when the accumulated sediment depth reaches 6 inches or 3/4 of the height of the check dam, whichever is first.
   2. Prevent sediments from being flushed to the downstream system during cleaning.

I. Silt fences:
   1. Remove sediment from behind silt fences when deposits are 6 inches deep or greater.
   2. Remove filter fabric where deteriorated.
   3. Replace sections of filter fabric that have been torn or ripped.

J. Catch basin inserts:
   1. Remove sediment and replace inserts when no longer providing filtration and through-flow according to manufacturer's recommendations.

K. Plastic sheeting:
   1. Inspect installed sheeting for erosion, undermining, and anchorage failure.
   2. Repair any failures immediately.
   3. Replace torn sheets and repair open seams.
   4. Remove all plastic sheeting when no longer needed.

L. Erosion control blanket or mat:
   1. Repair and staple any areas of the net or blanket that are damaged or not in close contact with the ground.
   2. Fix and repair eroded areas.

M. The Contractor is responsible for performing the required BMP maintenance as defined within the SMMWW.

N. Provide necessary ditches, swales, and dikes to collect and convey stormwater runoff in a nonerosive manner.

O. Cover all areas that will be unworked for more than 7 days during the Dry Season or 2 days during the Wet Season with erosion blankets, mats, wood fiber mulch, compost, plastic sheeting, or equivalent.

P. Wheel Wash:
   1. Vehicle speed shall be limited to provide adequate cleaning of tires and undercarriage.
   2. Hand spray tires when wheel wash does not provide adequate cleaning.
   3. Prevent dirty wash water from leaving the Work Site.
   4. Replace turbid water in storage/recycling tank with clean water to prevent track out onto public roads.
   5. Spray wash entrance and exit ramps to remove sediment tracked onto the ramps or from turbid water dripping from vehicles.
   6. Properly dispose of process water.

3.05 COMPLETION OF CONSTRUCTION

A. Erosion and sediment control BMPs:
   1. Shall be kept operational until the Work Site has undergone final stabilization (e.g., soils have been stabilized by permanent measures, landscaping is installed, etc.) and through Substantial Completion of the Work.
   2. Remove within 30 working days after the Work Site has undergone final stabilization.

3.06 SYSTEM COMPLIANCE

A. The Project Representative and regulatory agencies will determine the effectiveness of the ESC Plan.

B. Upgrade and modify the ESC Plan as required within 5 working days of written Correction Notice from the Project Representative until effective. Refusal to modify and upgrade the ESC Plan may result in the Work being completed by the Project Representative and the cost of the Work being deducted from the Application for Payment.

C. Noncompliance with the erosion control requirements and water quality requirements may result in stoppage of Work.

END OF SECTION

SECTION 31 62 10

STEEL PIPE PILING

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for furnishing and driving steel pipe piles of the type dimensions indicated on the Drawings, including cutting off or building up piles when required.

1.02 REFERENCES

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. Reference standards applicable to this Section are as follows:

REFERENCE	TITLE
ASTM A252	Standard Specification for Welded and Seamless Steel Pipe Piles
AWS D1.1/D1.1M	Structural Welding Code
API 5L	American Petroleum Institute Specification for Line Pipe

Notes:
ASTM: ASTM International
API: American Petroleum Institute
AWS: American Welding Society

1.03 TESTING

A. Testing Agency Qualifications: An independent testing agency qualified according to ASTM International (ASTM) C1077 and ASTM E329 for testing indicated, as documented according to ASTM E548, shall be engaged by the Contractor and approved by the Project Representative.

1.04 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Construction Submittals:
   1. Product Data: For each type of pile product and accessory
   2. Shop drawings: Show fabrication and installation details for piles, including driving points, splices, and field-cut holes.
      a. Indicate welds by standard American Welding Society (AWS) symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
      b. Include qualification data, material test reports, material certifications, and pile driving equipment information.

c. Location and layout of piles coinciding with the floating dock system design
3. Reports: Driving of pile, pile location plumbness, and welding
4. List, description, and capacities of proposed equipment including but not limited to cranes, type of pile driver, and maximum rated energy; and describe equipment suitability to the anticipated Work Site and subsurface conditions. Use of water jets is not permitted. Contractor shall submit a plan describing proposed methodology to install piles to the depths shown. Methodology shall prevent discharge of sediment into the water and shall also comply with all other permit conditions.
5. Provide welding certificates for anyone assigned to work on this Project.

C. Post-Construction Submittals:
1. After piles are driven and installed, a registered Professional Land Surveyor shall make a field survey of completed piling Work. Submit a drawing to the Project Representative showing actual pile locations with respect to the planned pile locations and indicating plumbness of the piles.

1.05 QUALITY ASSURANCE

A. The Project Representative may suspend piling construction if the Contractor substitutes unqualified personnel. The Contractor shall be fully liable for additional costs resulting from suspension of Work, and no adjustments in Contract duration will be allowed resulting from suspension of Work.

B. Welding Standards: Qualify welding procedures and personnel according to AWS D1.1.

C. Pre-Installation Conference: The Contractor shall host and any subcontractors shall attend a conference at the Work Site prior to pile installation.

D. Pile shall not be installed except in the presence of the Project Representative. The Contractor shall notify the Project Representative in writing at least 3 days before commencing pile installation.

E. Coordinate with the Project Representative throughout pile installation. Adjustments to the embedment length and number of piles may be required based upon the actual soils conditions encountered. The Contractor shall maintain contact with the Project Representative and follow requirements of the Project Representative as issued by the Project Representative during pile installation activities.

1.06 TOLERANCES

A. The Contractor shall install piling with a maximum variation of 3 inches off center of any pile from the location shown in the accepted submittal package. Piles shall not be out of plumb more than 0.5%.

1.07 DELIVERY, STORAGE, AND HANDLING

A. The Contractor shall Deliver piles to the Work Site in such quantities and at such times to ensure continuity of installation. The Contractor shall handle and store piles at the Work Site to prevent physical damage.

1.08 PROJECT CONDITIONS

A. The Contractor shall protect structures and other construction from damage caused by pile installation.

B. The Contractor shall remove existing piles, as shown on the Drawings, by vibratory method unless otherwise approved by the Project Representative (see Section 02 41 00 – Demolition and Salvage).

PART 2 PRODUCTS

2.01 PILES

A. Steel Pipe Piles:
1. Pipe Steel: Shall consist of maximum number and size indicated on the Drawings.
2. Steel Pipe Piles shall conform to the following:

a. ASTM A252 Grade 2, seamless or welded.
b. American Petroleum Institute (API) 5Lx42 or API 5Lx50.

3. Piles shall be installed with bottom ends open.
4. Piles shall be installed using a vibratory hammer only to required penetration without distortion or damage. Tip reinforcement shall be provided as required. Establish and maintain axial alignment of leads and piles before and during driving.
5. Piles may be driven in single length or may be spliced with continuous full penetration butt weld. In sections below upper splice, splices shall be spaced at not less than 20 feet. Piles shall not be spliced within 10 feet of the waterway bed. Shell splices shall be watertight. Driving surfaces of shell shall be square cut.
6. All splices shall be full penetration welds. All welding shall be performed by Washington Association of Building Officials-certified welders in accordance with AWS codes.

B. Coating:
1. All structural steel shall be painted as specified in Section 09 90 62 (Coating of Steel Piles).

PART 3 EXECUTION

3.01 GENERAL

A. It shall be the Contractor's responsibility to furnish the specified pile and all labor, equipment, and materials necessary to install the piles.

B. Survey: Registered Professional Land Surveyor shall establish pile locations.

C. After pile is driven and installed, a registered Professional Land Surveyor shall make field survey of completed piling Work. Submit drawing to the Project Representative showing actual pile location with respect to planned pile location and indicating plumbness of the pile.

D. Reports: Submit a report in electronic or quadruplicate hard copy to the Project Representative for each pile detailing diameter or cross section, length, make and model of hammer, driving time, penetration rate (feet per minute, or inches per minute as appropriate), total penetration depth, and any other pertinent information. Include time and duration when pile driving is interrupted and penetration rate per minute when driving resumes.

E. Welding (Shop and Field): Qualification of welding procedures, welders, and operators shall comply with requirements of AWS D1.1. The Contractor shall keep records of test results of welding procedures and submit copies of each qualified welding operator to the Project Representative for approval before starting welding.

3.02 DRIVING EQUIPMENT

A. Pile installation shall be driven by vibratory hammer. Impact hammers will not be allowed. If embedment depth cannot be achieved by vibratory hammer, the Contractor shall use auger, clamshell excavator, Vactor truck, or other means as determined by the Contractor to remove soil plug from inside the steel pile to relieve stress so that installation to specified embedment depth can proceed.

3.03 INSTALLATION

A. The setup and installation should follow the general procedures stated below. The Project Representative may modify these procedures based on the in situ conditions.
1. Installation Procedures:
a. Prior to driving, piles shall be marked at 1-foot intervals for the full pile length, beginning at the bottom. Pile lengths shall be marked on the pile at 5-foot intervals.
b. Measure the vertical distance from the driving platform to the waterway bed.
c. Lift and set up pile with its tip touching the waterway bed.
d. Drop the pile under its own weight; measure the penetration depth after the downward movement stops.
e. Install the pile to the required embedment depth.

f. If rapid penetration to specified tip depth occurs, return after 24 hours and continue driving piles using vibratory hammer to evaluate pile setup or freeze-back as requested by the Project Representative to confirm that pile capacity is satisfactory.

B. Make no penetration measurements for the purpose of determining driving resistance when pile heads are damaged to the extent that may affect measured penetration. Make measurements with minimum interruption of driving.

C. Withdraw damaged or defective piles and piles that exceed driving tolerances and install new piles within driving tolerances. Fill holes left by withdrawn piles as directed by the Project Representative.

D. Cut off tops of piles square with pile axis and at required elevations.

E. Follow all procedures in the Biological Opinion and Section 404 of the Clean Water Act ARAR Memorandum (refer to Section 01 13 00 – Reference Material) and in the "Best Management Practices for Piling Removal and Placement in Washington State", dated February 18, 2016 (see attached to Section 02 41 00 – Demolition and Salvage).

3.04 FIELD QUALITY CONTROL

A. Monitoring of pile installation will be performed by the Project Representative.

B. Weld Testing: In addition to visual inspection, welds shall be inspected according to AWS D1.1, at the Project Representative's direction. The Contractor shall correct deficiencies in Work that test reports and inspections indicate do not comply with the Contract Documents. Cracks or zones of incomplete fusion or penetration will not be accepted.

3.05 DISPOSAL

A. The Contractor shall remove withdrawn piles and cutoff sections of piles from Work Site and legally dispose of at an approved Disposal Facility (see Section 35 20 23.01 – Transloading, Upland Transportation, and Disposal).

END OF SECTION

SECTION 32 32 10

BULKHEAD WALL SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for strengthening and preserving the structural integrity of existing bulkhead consisting of sheet pile wall.

1.02 DESCRIPTION OF WORK

A. This Section includes installing sheet pile walls in front of the existing sheet pile wall and reinforced concrete void backfill as specified herein and indicated on the Drawings.

B. This Section also includes furnishing all labor, materials, and equipment required for completing the Work.

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. Reference standards applicable to this Section are as follows:

REFERENCE	TITLE
ASTM A572	Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
ASTM C1107	Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink)
AWS D1.1	Structural Welding Code
CRD-C-621	Corps of Engineers Specification for Non-Shrink Grout

Notes:
ASTM: ASTM International
AWS: American Welding Society
in: inch
mm: millimeter

1.04 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
   1. As part of the Remedial Action Work Plan (RAWP), the Contractor shall provide the following:
      a. Shop drawings for structural steel components indicating all welding with American Welding Society (AWS) symbols.
      b. Cement grout mix design and procedures for tremie placement.
      c. Reinforcing steel
      d. Installer qualifications

C. Post-Construction Submittals:
   1. Record Drawings: Contractor shall furnish the Project Representative with Record Drawings showing the location and extend of Bulkhead Walls.

1.05 QUALITY ASSURANCE

A. The Contractor is responsible for providing all necessary quality controls to successfully complete the Work and to comply with its Construction Quality Control Plan (submitted as part of the RAWP), as specified in Section 01 45 00 (Quality Control).

B. The Installer must have a minimum of 5 years' experience in the construction of a Bulkhead Wall System similar to that required for this Project; the Installer must submit its qualifications to the Project Representative prior to starting Work.

C. Project Representative may suspend Bulkhead Wall System construction if Contractor substitutes unqualified personnel. Contractor shall be fully liable for additional costs resulting from suspension of Work, and no adjustments in Contract duration will be allowed resulting from suspension of Work.

D. Welding Standards: Qualify welding procedures and personnel according to AWS D1.1.

E. Pre-Installation Conference: The Contractor shall host, and any subcontractors shall attend, a conference at the Work Site prior to shoring system installation.

F. Bulkhead Wall System shall not be installed except in presence of the Project Representative. The Contractor shall notify the Project Representative in writing at least 3 days before commencing Bulkhead Wall System installation.

G. Coordinate with the Project Representative throughout the Bulkhead Wall System installation. The Contractor shall maintain contact with the Project Representative and follow requirements of the Project Representative as issued by the Project Representative during Bulkhead Wall System installation activities.

H. Welding: The Owner's inspector will provide inspection for all field welds.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Work Site in such quantities and at such times to ensure continuity of installation.

B. Protect steel sheets, accessories, etc., from damage during shipping, handling, and storage. Store in dry locations and protect from damage until installed.

1.07 PROJECT CONDITIONS

A. Protect structures and other construction from damage caused by bulkhead installation.

PART 2 PRODUCTS

2.01 GENERAL

A. Steel Sheet Piles:
   1. Sheet piles shall conform to ASTM International (ASTM) A572, Grade 50.
   2. Pile shall be installed using vibratory hammer only to required penetration without distortion or damage. Tip reinforcement shall be provided as required. Establish and maintain axial alignment of leads and sheet pile before and during driving.

B. Underwater Cement Grout:
   1. Cement grout shall be cementitious, non-shrink, and washout resistant and shall be mixed with clean water and well-graded aggregates according to manufacturer instructions. Grout shall meet the performance

requirements of ASTM C1107 and CRD-C-621 and must have minimum compressive strength as indicated on the Drawings. Cement grout shall be as manufactured by:
a. Euclid Chemical, “EUCO Tremie Grout”
b. Denso, “SeaShield 510 UW Grout”
c. Five Star, “Structural Concrete Underwater PG”
d. Dayton Superior, “Underwater Grout”
e. Approved equal

C. Reinforcement:
1. Comply with the following as minimums:
a. Bars: ASTM A615, grade 60
b. Bending: ACI 318
2. Fabricate reinforcement to the required shapes and dimensions, within fabrication tolerances stated in the *Concrete Reinforcing Steel Institute Handbook*.
3. Do not use reinforcement having any of the following defects:
a. Bar lengths, depths, or bends exceeding the specified fabricating tolerances
b. Bends or kinks not indicated on the Drawings or required for this work
c. Bars with cross sections reduced due to excessive rust or other causes

PART 3 EXECUTION

3.01 GENERAL

A. It shall be the Contractor's responsibility to furnish all labor, equipment, and material necessary to install the Bulkhead Wall System.

3.02 MONITORING

A. Existing bulkheads shall be monitored for movement during construction as indicated on the drawings and in specification Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections).

3.03 SHEET PILES

A. Sheet pile installation shall be driven by vibratory hammer. Impact hammers will not be allowed.

B. Reports: Submit a report to the Project Representative for each sheet pile detailing cross section, length, make and model of hammer, driving time, penetration rate (feet per minute or inches per minute, as appropriate), total penetration depth, and any other pertinent information. Include time and duration when pile driving is interrupted and penetration rate per minute when driving resumes.

C. Installation Procedures:
1. Prior to driving, sheet piles shall be marked at 1-foot intervals for the full pile length, beginning at the bottom. Sheet pile lengths shall be marked on the sheet pile at 5-foot intervals.
2. Measure the vertical distance from the driving platform to the waterway bed.
3. Lift and set up sheet pile with its tip touching the waterway bed.
4. Drop the sheet pile under its own weight; measure the penetration depth after the downward movement stops.
5. Install the sheet pile to the required embedment depth.

END OF SECTION

SECTION 33 05 25

OUTFALL ENERGY DISSIPATION STRUCTURES

PART 1 GENERAL

1.01 SUMMARY

A. This Work consists of maintenance and protection of existing active outfalls and construction of outfall outlet energy dissipation structures as indicated on the Drawings.

B. This Section also includes removal of abandoned timber piles and plugging of existing outfalls to be abandoned as indicated on the Drawings.

1.02 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements for the Lower Duwamish Waterway Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

B. Reference standards applicable to this Section are as follows:

REFERENCE	TITLE
ASTM A185	Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A313	Standard Specification for Stainless Steel Spring Wire
ASTM A641	Standard Specification for Zinc–Coated (Galvanized) Carbon Steel Wire
ASTM A764	Standard Specification for Metallic Coated Carbon Steel Wire, Coated at Size and Drawn to Size for Mechanical Springs
ASTM A853	Standard Specification for Steel Wire, Carbon, for General Use
ASTM A856	Standard Specification for Zinc-5 % Aluminum-Mischmetal Alloy-Coated Carbon Steel Wire
ASTM A974	Standard Specification for Welded Wire Fabric Gabions and Gabion Mattresses (Metallic-Coated or Polyvinyl Chloride (PVC) Coated)
ASTM A975	Standard Specification for Double-Twisted Hexagonal Mesh Gabions and Revet Mattresses (Metallic-Coated Steel Wire or Metallic-Coated Steel Wire with Poly (Vinyl Chloride) (PVC) Coating)
ASTM D6711	Standard Practice for Specifying Rock to Fill Gabions, Revet Mattresses, and Gabion Mattresses

Note:
ASTM: ASTM International

1.03 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Gabion: Gabion is a rectangular or double-twisted wire mesh container of variable sizes, uniformly partitioned into internal cells by diaphragms positioned approximately 3 feet on centers, interconnected with other similar units and filled with stone at the Work Site to form a flexible and permeable structure. It is intended for high-strength installations in both horizontal and vertical structures.

C. Gabion Mattress: A Gabion Mattress is a rectangular or double-twisted mesh container uniformly partitioned into internal cells by diaphragms positioned approximately 3 feet on centers, with relatively small height in relation to other dimensions, having smaller openings than the mesh used for Gabions; interconnected with other similar units, and filled with stone at the Work Site to form a flexible permeable structure. It is intended for lower strength, horizontal or nearly horizontal structures.

1.04 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
   1. Energy dissipation structure shop drawings:
      a. Show shop drawings, elevations and fabrication details, and installation plan
      b. Material test reports and certifications for materials and similar items

PART 2 PRODUCTS

2.01 MATERIALS

A. Gabions and Gabion Mattresses
   1. Baskets for Gabions and Gabion Mattresses shall be rectangular, variable in size, and manufactured from the following:
      a. Welded wire fabric meeting the requirements of ASTM International (ASTM) A974, Style 2, fabricated using uncoated steel wire conforming to ASTM A853, with the fabric subsequently zinc-coated by the hot dip process, and overcoated with polyvinyl chloride (PVC)
      b. Double-twisted hexagonal wire mesh meeting the requirements of ASTM A975, Style 1 or Style 3, fabricated using soft-temper galvanized steel wire, Class 3 coating, in accordance with ASTM A641, and overcoated with High Abrasion Resistant polymer
   2. For Gabions, the mesh opening shall not exceed 4-1/2 inches, and its area shall not exceed 10 square inches.
   3. For Gabion Mattresses, the maximum linear dimension of mesh opening shall not exceed 3-1/4 inches.
   4. At the Contractor's option, for lid fastening at edges and diaphragms, either the "Lacing Wire" or the " Steel Ring Fastener System" may be used.
   5. Wire for Gabions, Gabion Mattresses, and lacing shall have a minimum tensile strength of 60,000 pounds per square inch.
   6. Edge, selvage wire, and ring shall be made from the same material used for the wire mesh.

B. Bedding Material, when specified.

C. Geotextile Filter Fabric
   1. The geotextile filter fabric shall meet the minimum physical requirements listed in Table 33 05 25-1 of this Section.
      a. The geotextile fiber shall consist of a long-chain synthetic polymer composed of at least 85% by weight of propylene, ethylene, ester, or amide. The edges of the geotextiles shall be finished to prevent the outer fiber from pulling away from the geotextiles.
      b. During all periods of shipment and storage, the filter fabric shall be protected from direct sunlight, ultraviolet rays, and temperatures greater than 140°F. The fabric shall be maintained wrapped in its protective covering. The geotextile shall not be exposed to sunlight ultraviolet rays until the installation process begins.

Table 33 05 25-1
GEOTEXTILE PHYSICAL REQUIREMENTS CLASS C

PHYSICAL PROPERTY	TEST PROCEDURE	MINIMUM VALUE
Grab Tensile Strength	ASTM D4632	200 lbs. min. (in machine and x-machine direction)
Grab Failure Stain	ASTM D4632	50% min. (in machine and x-machine direction)
Tear Strength	ASTM D4533	80 lbs. min
Puncture Strength	ASTM D6241	430 lbs. min
Apparent Opening Size, U.S. Standard Sieve	ASTM D4751	80 max
Permittivity	ASTM D4491	1.0 sec^{-1}

Notes:
ASTM: ASTM International
lb.: pound
max: maximum
min: minimum
sec: second

D. Stone fill:
   1. Rocks shall be hard, angular to round, durable, and of such quality that they shall not disintegrate on exposure to water or weathering during the life of the structure. Fill shall conform to the requirements of ASTM D6711.
   2. Gradation:
      a. Gabion basket, 4 to 8 inches
      b. Gabion Mattress basket, 3 to 5 inches
      c. The range in sizes shall allow for a variation of 5% oversize and/or 5% undersize rock by weight. In all cases, the sizes of any oversize rock shall allow for the placement of three or more layers of rock within each compartment. In all cases, undersize rock shall be placed within the interior of the compartment and shall not be placed on the exposed surface of the structure.
   3. Source:
      a. The Contractor shall propose a source for Gabion stone fill material.

PART 3 EXECUTION

3.01 GABIONS AND GABION MATTRESSES INSTALLATION

A. The area shall be smoothed by removing surface projections (debris, riprap, etc.), as necessary for proper placement of the Gabions or Gabion Mattresses, as indicated on the Drawings or as directed by the Project Representative. Surface preparation or placement of selected or special backfill material in preparing the surface shall be as indicated on the Drawings or as directed by the Project Representative.

B. When designated on the Drawings or directed by the Project Representative, geotextile fabric shall be placed under and behind the baskets. The fabric shall be placed in strips transverse to the outfall flow line lapped at least 12 inches with the strip to the outside of the structure.

C. The baskets shall be assembled at the Work Site into rectangular baskets of the specified sizes. They shall be of single-unit construction; the base, lid, and sides shall be woven into a single unit; and the ends shall be connected to the base section, in a manner so that strength and flexibility at the point of connection is at least equal to that of the mesh.

D. Prior to installation of Gabions or Gabion Mattresses, the prepared surface shall be inspected and approved by the Project Representative, and no material shall be placed thereon until that area has been approved. The baskets shall be carefully placed into their proper positions for slope and alignment as shown on the Drawings or as directed by the Project Representative. When the slope is not shown, the faces of Gabions shall be sloped 1 (horizontal) to 6 (vertical).

E. Adjacent baskets shall be connected in a manner so that the connection is strong enough that a failure will occur in the mesh, rather than the lacing. Adjoining Gabions and Gabion Mattresses are to be connected at vertical corner edges and diaphragms. Stacked Gabions are to be also connected at the horizontal edges, front and back. All connections shall be laced with loops at approximate 4-inch intervals and as recommended by the manufacturer. Gabions 3 feet high placed in a line shall be tensioned during filling to achieve proper alignment.

F. Each basket shall be carefully filled with the stone fill specified. Machine placement will be permitted. However, considerable handwork is necessary and will be required to assure orientation for maximum density without bulges, a compact and dense exposed face, and maximum aggregate contact with the lid and other baskets placed or to be placed in the structure.

G. Gabions 3 feet high shall be filled in three lifts, 1 foot at a time, orienting the stones within each lift as necessary.

H. When a 3-foot-high cell is to be exposed in the finished structure, two connecting wires shall be securely installed between each lift, connecting each cell face to be exposed with the opposite face or diaphragm. The wires shall be located with equal horizontal spacing. The wires shall be installed by looping each end around two mesh openings, then wrapping the wire tightly around itself with at least four full wraps. The end of the wire shall be locked in place by lacing it under the previous lap. For each 3-foot-high cell with one face to be exposed, four connecting wires are required. For the same cell as an end unit, there are two exposed faces, and eight connecting wires are required.

I. Connecting wires are not required for Gabion Mattresses.

J. The lids shall be fastened in place at edges and diaphragms as specified above.

K. If steel ring fasteners are used, spacing shall not exceed nominal 5 inches (±1.0 inch).

L. Special features or details may also be required. These shall be constructed as indicated on the Drawings or as directed by the Project Representative.

M. The use of concrete grout is not permitted.

N. When the structure is completed, the earthwork shall be finished as indicated on the Drawings or as directed by the Project Representative.

3.02 PROTECTION OF EXISTING UTILITIES

A. The Contractor shall be responsible for the protection and proper maintenance of all existing active utilities and structures and landscape from any kind of damage during construction. Any damage shall be repaired at the Contractor's expense.

3.03 FABRICATION

A. Baskets shall be fabricated into panels in such a manner that the base, sides, and ends can be assembled into a single rectangular unit of the specified size. All perimeter edges of the baskets shall be salvaged with the specified wire so that the salvaged connections have the same strengths as the body of the mesh.

B. Furnished baskets in bundles of flat panels of appropriate sizes for on-site assembly.

C. The Gabion units shall be furnished with the necessary diaphragms secured in proper position on the base, in a manner so that no additional tying at this juncture will be necessary.

D. The Gabion Mattress units shall be subdivided into compartments by the insertion of diaphragms made of the same mesh as the rest of the Gabion Mattress. The diaphragms shall be factory-secured in proper position at the base with a continuous spiral wire, in such a manner that no additional tying at this junction will be necessary.

3.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver Gabions and Gabion Mattresses to Work Site labeled in bundles. Labels to show number and dimensions of material included.

B. Store and handle materials in a manner that prevents damage. Damaged materials will be rejected and shall be replaced by the Contractor at its own expense.

END OF SECTION

SECTION 35 10 00

NAVIGATION SAFETY AND MARINE TRAFFIC CONTROL

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for navigation safety, marine navigation and traffic control, integrity of vessels, and notification procedures that will be enforced during construction.

1.02 DESCRIPTION OF WORK

A. Work under this Section shall be performed by the Contractor to include furnishing all labor, materials, tools, equipment, and incidentals required for installation, maintenance, and removal of navigation aids and to accomplish marine traffic controls and safety, in support of the overall Project, as described in these Specifications.

B. The Contractor shall coordinate all marine activity and vessel movements, frequency, and operations with the U.S. Coast Guard (USCG).

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements for the Lower Duwamish Waterway (LDW) Superfund Site cleanup is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements), as well as the marine safety standards and operation provisions of relevant local, state, and federal for working in and over navigable water, including USCG regulations. In case of conflict between the requirements of this regulations Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirements as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

1.04 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

1.05 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:

1. The Contractor shall submit a detailed, written Vessel Management Plan (VMP) as part of the Remedial Action Work Plan, in conformance with the Specifications. Vessel movement and navigation activities under this Section shall not begin until: 1) the VMP has been reviewed and approved by the Project Representative; and 2) the Contractor receives the Project Representative's approval to begin Work.
    a. At a minimum, the VMP shall contain the following information:
        1) Prior to the start of Work at the Work Site, certifications of barges shall be obtained from a certified marine surveyor, including, but not limited to, certified barge displacement charts for all barges to be used for tracking of Dredge Material, Dredge Debris, Identified Debris, and Piling tonnage.

2) Notifications and procedures to be used for vessel movements for all portions of the Project, including moving dredging/material placement equipment to accommodate inbound and outbound waterway traffic with other Project and non-Project commercial and tribal fishing vessels
3) A map(s) depicting primary vessel routes within, into, and out of the LDW, as well as vessel routes to all proposed facilities (i.e., Contractor Transload Facility[ies])
4) Towing arrangements, both within and out of the LDW under anticipated travel scenarios, including number, capacity, and power requirements for tugs used and length of towline
5) Limitations on vessel movement under low visibility conditions (e.g., sufficient visibility to ensure safe operations at all times)
6) Speed limits when repositioning vessels (2 to 3 knots maximum)
7) Speed limit throughout the LDW (7 knots maximum)
8) Methods, frequency, and rationale for communications between the Contractor and vessel operators
9) Emergency management procedures for extreme weather (e.g., wind warnings, gale warnings, high-flow events, or sinking of vessels)
10) Marine emergency response resources
11) Identification of procedures for monitoring Contractor vessels and for ensuring marine equipment in the LDW is secure and seaworthy at all times, including after working hours, on the weekend, and during periods when the Contractor has no Work physically occurring at the Work Site; the Contractor shall also include contact information for after-hours workers who will be available to respond to the Work Site and mitigate any issues and correct any issues if equipment is not secure and seaworthy as required
12) Description of the number, types, and size/capacity of marine vessel equipment to be used, including names and registration numbers, prior to bringing any vessel (e.g., dredge plant, barges, tugboats, bathymetric survey boat, and work boats) to the Work Site
13) Methods, procedures, and equipment to prevent unsafe navigation around floating equipment for other waterway users
    a) Description of the approach for establishing buffer zones around work areas and for placing, operating, maintaining, and moving marker buoys, signage (e.g., wake restriction, speed limit signs), and lights, lighted buoys, or other required markings to notify other vessels and waterway users of the presence of floating equipment and spuds and to keep a safe distance away from the construction activities.
    b) Methods and procedures to monitor and warn waterway users (e.g., commercial and recreational users) to prevent unsafe transit around the Contractor's equipment.

2. Also, as part of the VMP, the Contractor shall have a Safety Management System (SMS) in place that covers all marine work. The SMS shall, at a minimum, include the following:
    a. Operating procedures for the vessel and the use of checklists
    b. Maintenance procedures for the vessel and its associated equipment
    c. Documentation and recordkeeping procedures
    d. Procedures for identifying hazards and managing risks
    e. Procedures to prepare for and respond to emergency situations and drills, training, and familiarization for the vessel's crew
3. Also, as part of the VMP, the Contractor shall submit a list of key personnel and describe specific roles for all navigation vessels.
    a. Single point of contact for coordinating the Contractor's vessels, other LDW traffic (Project and non-Project vessels), and Contractor Transload Facility operations
    b. Personnel experience:
        1) The Contractor shall have properly trained and experienced pilots and crews responsible for knowing and being able to report the real-time position of all of the Contractor's vessels using a real-time vessel tracking system on a continuous 24-hour basis.
        2) The crew member shall have demonstrated knowledge of vessel navigation and location regulations.

C. Construction Submittals:
    1. The Contractor shall keep a daily record of the traffic control coordination, Muckleshoot Tribal Fisheries interactions and communications, and emergency communications as a part of the Daily Construction Report.

2. The Contractor shall summarize the previous week's vessel management activities and planned vessel movements for the following week as a part of the Weekly Construction Report.

1.06 CONSTRUCTION SEASON

A. As described in Section 01 14 00 (Work Restrictions):
   1. The Work included in this Section (except for the pre-construction submittals), shall be completed by the Contractor during the In-Water Work Window.
   2. The Contractor shall comply with additional requirements for Contractor equipment relocation after a Construction Season is completed as described in Section 01 70 00 – Closeout Requirements.

1.07 MARINE SAFETY MANAGEMENT

A. Any near miss or actual incidents related to marine safety shall be reported to the Project Representative immediately. The Contractor shall follow up each incident following the requirements detailed in Section 01 35 29 (Health and Safety).

1.08 JOB CONDITIONS

A. The LDW includes a federal navigation channel (FNC) that extends 5 miles upstream from the southern tip of Harbor Island (river mile [RM] 0.0) to just upstream of the Turning Basin (RM 4.7), a federally authorized and maintained navigation channel consisting of an area where ship traffic can turn around.

B. At the Work Site, the authorized FNC width is 150 feet, and the authorized elevation is -15 feet mean lower low water. The FNC covers 32 acres of the 76-acre subtidal area of the Work Site.

C. LDW is a navigable waterway with active commercial vessel traffic, recreational usage, and tribal fishing activities. Upland businesses use the waterway for transfer of bulk materials, for boatyard operations (such as maintenance and repair), and for vessel storage.
   1. Commerce and businesses (upland owners and tenants) will remain open during the duration of the Construction Season and through completion of the Work, shall have access through the Work Site, and shall take priority over the Contractor's operations, unless otherwise described in project-specific Work Site access agreements.
   2. The Contractor shall be required to stop, move, adjust, and/or slow down to accommodate commercial vessel movement and for tribal fishing activities.
   3. The Contractor shall adhere to specific sequencing requirements (see Article 3.02) to conduct its remedial operations in a manner that will minimize interference with those commercial shipping and tribal fishing activities (see Article 3.01)
   4. The Contractor shall conduct operations in a manner that will minimize interferences with commercial waterway users, monitoring and observing for vessel activity and warning vessels from entering the Work Site or temporarily pausing operations to prevent unsafe navigation in the Work Site for transiting (e.g., recreational, commercial, fishing) vessels around its floating equipment at all times.

D. The Contractor shall closely coordinate with the Owner and Project Representative to understand the Work Site usage and frequency of vessel calls at and around the facilities where remediation work is required to be performed and to coordinate its Work around the active Work Site use.

1.09 INTEGRITY OF VESSELS

A. Establish and maintain onboard procedures to verify the following:
   1. The watertight integrity of the vessel
   2. That the vessel is not overloaded, stressed, or loaded in an unbalanced manner.
   3. That the vessel has adequate stability

B. The Contractor shall submit, prior to the start of in-water Work at the beginning of each Construction Season, a general marine condition survey conducted by a certified marine surveyor on each tug and barge used for the

Work, including both long-haul tugs and barges (i.e., out of the LDW) and short-haul tugs and barges used within the LDW.

C. Repair of vessels:
   1. For barges requiring repair during the Project, the Contractor shall submit a new general marine condition survey report completed by a certified marine surveyor after the completion of the repairs. Vessels will not be allowed to re-enter the Work Site or complete Work under this Contract until the general marine condition survey report is reviewed and accepted by the Project Representative.

D. If the Owner is concerned about the integrity of a vessel, the Contractor shall provide additional information to support the integrity of the vessel at no additional cost to the Owner.

E. The Contractor shall have properly trained and experienced pilots and crews to inspect, certify, and document each barge load of Dredge Material, Dredge Debris, Identified Debris and Piling prior to transport from the Work Site to the Contractor Transload Facility(ies) to assess whether the barge is properly loaded, is seaworthy, is structurally sound, and has no observable stability issues such as evidenced by barge listing.
   1. Procedures for documentation of seaworthiness of each transport barge (such as estimated tonnages for each barge load of material removed from the Work Site or brought to the Work Site) and certifications are to be included in the Daily Construction Report. The Contractor must certify in its Daily Construction Report that each barge that has been transported out of the Work Site has been inspected for leakage and proper loading.
   2. Documentation shall be submitted to the Project Representative prior to the transport barge leaving the point of origin.

1.10 MAINTENANCE STANDARD

A. The maintenance standard shall be such to ensure compliance with applicable laws and regulations, including USCG marine safety requirements for all Contractor vessels.

B. Establish and maintain procedures to verify the following:
   1. Maintenance, repairs, and relevant surveys are carried out in a timely manner in respect of the vessel's application, onboard equipment, equipment operators, and crew.
   2. Maintenance records and reports are available both onboard and in the shore-based management office.
   3. There is a timely supply and availability of spares, materials, and other resources to implement the maintenance procedures.

C. Upon request, make copies of maintenance records available to the Project Representative.

1.11 ACCESS TO CONTRACTOR'S EQUIPMENT

A. The Contractor shall grant access to its dredge derrick, barge(s), tug(s), and all other equipment mobilized for the Project for inspection purposes, to the Project Representative or to any Owner-designated representative. Regulatory agency staff may also require access to equipment and will be escorted by the Project Representative at all times.

PART 2 PRODUCTS

2.01 MATERIALS

A. All marine materials, including but not limited to the following shall comply with U.S. Coast Guard minimum requirements:
   1. Unlighted buoys
   2. Lighted buoys
   3. Day beacons
   4. Lights on structures
   5. No wake signs
   6. Signage

PART 3 EXECUTION

3.01 GENERAL

A. The Contractor shall provide a single point of contact for coordinating the Contractor's vessels, other LDW traffic (Project and non-Project vessels), and the Contractor Transload Facility operations.
   1. The Contractor shall continuously monitor the Work Site for the presence of other waterway users and shall warn waterway users (e.g., commercial and recreational users). The Contractor shall modify operations if necessary to protect the safety of other waterway users.
   2. The Contractor shall notify the Project Representative of planned vessel movements on a weekly basis for all portions of the Project, including moving dredging/material placement equipment to accommodate inbound and outbound waterway traffic (including both commercial shipping and tribal fishing activities) with other Project and non-Project vessels.
   3. The Contractor shall communicate daily with the Contractor Transload Facility subcontractor. Prior to the end of the shift, the Contractor shall coordinate with the Contractor Transload Facility subcontractor for any barge transport to be made during the night shift to sustain transloading operations overnight until the beginning of the next day shift.
   4. The Contractor shall communicate daily with the Muckleshoot Tribal Fisheries coordinator. Prior to the end of the shift, the Contractor shall coordinate with the Muckleshoot Tribal Fisheries coordinator for the next day's construction activities and vessel movements. The Contractor shall provide daily updates to the Project Representative of Muckleshoot Tribal Fisheries interactions and communications as part of the Daily Construction Report.
   5. The Contractor shall provide daily coordination of all vessel traffic transiting through the Work Site, including tracking and maintaining communication with Project and non-Project vessels.

3.02 SEQUENCING

A. Refer to Section 01 14 00 (Work Restrictions) for construction sequencing requirements in relation to the overall sequencing of the Project work.

3.03 VESSEL OPERATIONS

A. All in-water navigation and spudding/anchoring activities shall be completed in accordance with the VMP and with applicable USCG, state, and local regulations.

B. The Contractor shall notify USCG in accordance with USCG regulations and in advance of each Construction Season so USCG can issue the Notice to Mariners prior to the start of each Construction Season.

C. The Contractor is required to coordinate and communicate with all vessels transiting the Work Site to safely maintain a minimum offset distance (to be determined by the Contractor) between all the transiting vessel and Contractor's equipment within the Work Site.

D. The Contractor shall perform the Work with care and pay attention to proximity of existing infrastructure and vessels to avoid abrasion, impacts, allisions, and collisions. The Contractor shall maintain a safe offset distance in the FNC from all LDW existing assets (i.e., docks, piers, and moored vessels) when transiting vessels/barges through LDW and into and out of the Work Site.

E. The Project Representative can direct the Contractor to modify the configuration of equipment in the Work Site, at no additional cost to the Owner, if the Project Representative determines the Contractor's vessels are configured in a manner that may be unsafe or has the potential to cause damage to LDW existing assets.

F. Requirements during vessel operations:
   1. The Contractor is prohibited from grounding of equipment on the waterway bed in any Sediment Management Area (SMA) that has been previously dredged or where material has been previously placed, unless approved by the Project Representative.
   2. The Contractor is prohibited from anchoring of equipment (i.e., use of anchors and anchor lines) on the waterway bed in any SMA that has been previously dredged or where material has been previously placed, unless approved by the Project Representative for specific locations.

3. The Contractor is allowed to spud equipment on the waterway bed for Required Dredging and Contingency Re-Dredging purposes within or adjacent to the SMAs, except for SMAs where material placement has been completed or within the Enhanced Natural Recovery (ENR)/Activated Carbon (AC) Pilot Plots (shown on the Drawings).
    a. Spudding of the Contractor's equipment on the waterway bed may be allowed outside the SMAs if it occurs overnight or when the extent of the SMA doesn't allow for proper positioning of the Contractor's equipment.
    b. Spudding of the Contractor's equipment on the waterway is not allowed within 30 feet of the South Park Bridge active submarine cable (refer to Drawings for location).
4. Conducting dredging or material placement near or adjacent to the ENR/AC Pilot Plots:
    a. If land-based equipment is used in this area, no equipment is allowed to be driven directly on top of the ENR/AC Pilot Plots.
    b. If the Contractor proposes to access adjacent areas through the ENR/AC Pilot Plots, protective measures shall be described (use of steel plates, flexible mat, etc.) to protect the ENR/AC Pilot Plots from damage.
5. In the event that the Contractor's construction equipment (e.g., dredge, tug, barges, survey vessel, and workboats) obstructs the navigable waterway or an identified berthing area so as to hinder movement of commercial vessels or tribal fishing activities, the Contractor's equipment shall be moved to facilitate the activity, unless otherwise described in project-specific Work Site access agreements.

G. Any damage to the Contractor's equipment due to the Contractor's failure to move when required shall be at the Contractor's sole risk and expense.
    1. Dredging barges are not permitted to utilize dredge buckets to reposition themselves.

H. The Contractor shall use the lowest safe operating power for tug operations in shallow-water areas and during dredge plant and barge relocation for dredging, barge transport, and equipment relocations for commercial vessel traffic or shall wait for a higher tide to move marine equipment to minimize disturbance of bottom sediments.

I. Barges will not be overloaded to prevent loss due to spilling. (Minimum freeboard height of 24 inches or greater as indicated by the marine surveyor shall be maintained.)

J. If the Contractor deploys a silt curtain or debris/oil boom, then the silt curtain or boom will be moved as necessary to accommodate vessel operations during cleanup activities.

K. Aids to navigation during dredging and material placement operations:
    1. The Contractor shall install, maintain, and operate aids to navigation if required by USCG regulations. Aids to navigation shall be inspected daily and repaired and replaced as necessary or as directed by the Project Representative.
    2. Once in place, no aids to navigation shall be removed without permission or proper notice to USCG.
    3. If buoys are used to delineate work areas, the Contractor shall arrange buoys daily to prevent unsafe navigation of Project and non-Project commercial, recreational, and tribal fishing vessels around LDW in-water operations.
    4. Prior to the start of Work each Construction Season, the Contractor shall provide signage at the Turning Basin (RM 4.7) at the downstream boundary of the Work Site (RM 3.0) requesting non-Project vessels to operate vessels at a maximum speed to 7 knots within the Work Site.
    5. Vessel control requirements (including no-wake, wake restriction, and speed limit signs) shall be placed upon Project vessels as necessary to alert non-Project vessels.
    6. The Contractor shall perform general maintenance, repairs, and replacement of signage, as necessary.
    7. The Contractor shall have marine VHF radios on all vessels (dredge plant, barges [when occupied], tugboats, bathymetric survey boat, and work boats) capable of clearly receiving and transmitting radio communications over the Project area. The Contractor shall keep radios operational throughout marine operations and shall monitor radios at all times during work hours. All communications made to and from the marine traffic control shall be logged by the Contractor.

END OF SECTION

SECTION 35 20 23

REMEDIAL DREDGING, BARGE DEWATERING, AND IN-WATER TRANSPORTATION

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for remedial dredging (including excavation), Dredge Material, Dredge Debris, and Identified Debris removal; barge dewatering; dredge return water treatment (if applicable); and in-water transportation of Dredge Material, Dredge Debris, Identified Debris, and Piling, to the Contractor Transload Facility(ies). Remedial dredging activities include Required Dredging (to remove Dredge Material and Dredge Debris from the Work Site by dredging or excavation) and potential Contingency Re-Dredging (to remove Dredge Material associated with Generated Residuals or Missed Inventory). The Owner will conduct post-dredge construction sediment sampling and testing and determine the need for Contingency Re-Dredging.

1.02 DESCRIPTION OF WORK

A. The Project is not a standard dredging and disposal project. The purpose of this Project is to implement the cleanup remedy for contaminated sediment (referred herein as Dredge Material). Dredged Material within the Work Site may be located in difficult access areas, is contaminated with various chemicals of concern, and may contain Dredge Debris and Identified Debris. The Contractor shall use extra care to conduct its work in a manner suitable for environmental cleanup and not in a production dredging or excavation manner. The Contractor shall conduct its work in a manner to minimize, to the greatest extent practicable, resuspension and redistribution of contaminated sediment and to comply with environmental protection requirements in these Specifications.

B. Work under this Section shall be performed by the Contractor to include furnishing all labor, materials, tools, equipment, and incidentals required for remedial dredging, barge dewatering, and in-water transportation of Dredge Material, Dredge Debris, Identified Debris, and Piling to the Contractor Transload Facility(ies), in support of the overall Project, as described in the Drawings and in these Specifications.

C. Remedial dredging activities shall be completed according to the general Project and specific dredging sequencing requirements in Section 01 14 00 (Work Restrictions); access requirements in Section 01 41 26 (Permits, Easements, and Right-Of-Entry Agreements); temporary facility requirements in Section 01 52 00 (Construction Facilities); the Drawings; and the approach described in the Contractor's Remedial Action Work Plan (RAWP).

D. The Contractor is responsible for the following: 1) selecting the appropriate means and methods, number and types of dredging/excavation equipment, and whether specialized equipment or techniques may be required to conduct the dredging/excavation in nearshore areas; 2) protecting existing structures from damage or destabilization; 3) preventing grounding of in-water equipment within the Work Site and within the full extent of the LDW; and 4) completing all dredging/excavation Work following requirements in Part 3 and the Work sequencing and milestones provided in Section 01 14 00 (Work Restrictions). By submitting its Bid, the Contractor acknowledges it has carefully considered Work Site conditions, character of materials, facilities usage, and existing structures adjacent to the dredge areas and other Project considerations.

E. Table 35 20 23-1 provides the estimated surface area and estimated Dredge Pay Volume (associated with Required Dredging) and potential Contingency Re-Dredge Pay Volume for each Sediment Management Area (SMA). This table is presented for Contractor convenience only. The Contractor shall determine the actual volumes needed to achieve Required Dredge Elevations and Required Dredge Thicknesses, as shown in the Drawings, considering the details described in these Specifications and shown on the Drawings.

Table 35 20 23-1
ESTIMATED TOTAL DREDGE PAY VOLUME AND POTENTIAL CONTINGENCY RE-DREDGE PAY VOLUME

SMA	SURFACE AREA ASSOCIATED WITH REQUIRED DREDGING (SQ. FT.)[1]	DREDGE PAY VOLUME (CY)[2]	POTENTIAL CONTINGENCY RE-DREDGE PAY VOLUME (CY)[3]
SMA 1	18,500	1,300	--
SMA 2	3,800	300	--
SMA 3	6,500	600	--
SMA 4	9,500	1,000	--
SMA 5	30,100	5,300	--
SMA 6	80,900	12,600	--
SMA 7	26,600	3,500	--
SMA 9	47,700	8,700	--
SMA 11	11,300	1,800	--
SMA 12	81,000	24,300	--
SMA 14	47,800	6,000	--
SMA 15	84,400	16,700	--
SMA 16	71,300	16,000	--
SMA 17	61,200	13,700	--
SMA 18	50,800	11,300	--
TOTAL	**631,400**	**123,100**	**11,100**

Notes:
Volumes presented in this table are approximate and shall not be used for basis of measurement and payment. The volume numbers shown are based on rounded values to the nearest 100 CY. Refer to the Bidding Schedule for Bid volumes associated with this Work.
(1) The estimated surface area includes all required exterior Side Slopes (around the perimeter of the extents of Required Dredging and as shown on the Drawings).
(2) The estimated Dredge Pay Volume includes volumes to meet the Required Dredge Elevations, Required Dredge Thicknesses, and all required exterior Side Slopes (around the perimeter of the extents of Required Dredging and as shown on the Drawings). The estimated Dredge Pay Volume includes a 1-foot Payable Overdredge Allowance.
(3) The estimated potential Contingency Re-Dredge Pay Volume assumes 15% of the Required Dredging area will be re-dredged by 1 foot (plus 6 inches of Payable Overdredge Allowance) to address Generated Residuals, and 20% of the Required Dredging area will be re-dredged by 2.5 feet (plus 6 inches of Payable Overdredge Allowance) to remove Missed Inventory. Actual Contingency Re-Dredge will be conducted as directed by the Project Representative based on test results from post-dredge construction sediment sampling.
cy: cubic yard
sq. ft.: square feet
SMA: Sediment Management Area

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway (LDW) Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. If the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

1.04 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Contingency Re-Dredge Decision Duration: The Contingency Re-Dredge Decision Duration is defined as the period between the Project Representative's acceptance of the Required Dredging Post-Construction Survey and the Project Representative's direction to the Contractor as to whether Contingency Re-Dredging activities will be required. During this period, the Contractor shall not perform Work within the associated SMA. The Contractor shall assume a Contingency Re-Dredge Decision Duration of 15 working days and will not be paid separately for this decision duration and shall account for this time in the Bid Item No. A6 – Contingency Re-Dredging and In-Water Transportation.

C. Contingency Re-Dredge Pay Volume: Contingency Re-Dredge Pay Volume is the volume of all Dredge Material removed by the Contractor as part of Contingency Re-Dredging, as directed by the Project Representative (based on test results from post-dredge construction sediment sampling) that will be paid for. Contingency Re-Dredge Pay Volume will be paid for within the quantity and unit price for Bid Item No. A6 – Contingency Re-Dredging and In-Water Transportation and Bid Item No. A7 – Transloading, Upland Transportation, and Disposal.

D. Contingency Re-Dredging: Contingency Re-Dredging shall be additional dredging as specified by the Project Representative after Required Dredging activities have been completed and is based on Owner-conducted post-dredge construction sediment sampling test results. Any need for Contingency Re-Dredging, as well as the horizontal and vertical limits for Contingency Re-Dredging, will be directed by the Project Representative.

E. Debris: Debris consists of the following types of materials at the Work Site for removal and disposal:
   1. Dredge Debris: Dredge Debris is defined as any solid waste materials other than sediment or soil excavated as part of the dredging operations (such as pile stubs, logs, wire, cable, steel bands, anchors, lumber, trash, rocks, and concrete) that may be encountered. The cost to remove, handle, and dispose of Dredge Debris is incidental to the dredging work and will be paid under Bid Items No. A5 – Required Dredging and In-Water Transportation. Dredge Debris excludes Piling and Identified Debris. The Contractor shall coordinate with the Disposal Facility to determine whether Dredge Debris is required to be screened out of the Dredge Material prior to upland transportation and final disposal; if required, the Contractor shall provide all necessary Debris screening equipment and such work shall be considered incidental to the Work. Dredge Debris shall be disposed of at an approved upland Disposal Facility accepted by the Project Representative and in accordance with applicable local, state, and/or federal regulations.
   2. Identified Debris: Identified Debris is defined as solid waste material resulting from removal of Debris targets shown on the Drawings and shall be kept segregated from Dredge Debris at all times. Identified Debris shall be disposed of at an approved Disposal Facility accepted by the Project Representative. The cost for effort to remove, segregate, offload, transport, and dispose of Identified Debris shall be included in Bid Item No. A4 – Identified Debris Removal, Upland Transportation, and Disposal.

F. Dredge Material: Dredge Material refers to contaminated sediment to be removed under this Contract, in the areas shown on the Drawings, located within the SMAs of the Work Site.

G. Dredge Pay Volume: Dredge Pay Volume is the in situ quantity of Dredge Material and Dredge Debris removed by the Contractor that will be paid for. Dredge Pay Volume will be paid for within the quantity and unit price for Bid Item No. A5 – Required Dredging and In-Water Transportation and Bid Item No. A7 – Transloading, Upland Transportation, and Disposal.

H. Dredge Prism: The Dredge Prism is the area defined by the horizontal and vertical limits of dredging shown on the Drawings that the Contractor is required to dredge. The Dredge Prism includes the area within the defined toe of cuts and the Side Slopes. The Contractor shall remove all material above the Required Dredge Elevations and Required Dredge Thicknesses within the Dredge Prism, including Side Slopes. The Contractor shall not directly remove material from outside of the Dredge Prism.

I. Excessive Dredging: Material dredged outside the Dredge Prism limits and/or below the Maximum Overdredge Allowance is considered Excessive Dredging. The Contractor shall not perform Excessive Dredging. The Contractor will not be paid for Excessive Dredging. The Contractor will be responsible for any regulatory agency fees and/or fines incurred as a result of Excessive Dredging. The Contractor shall not perform Excessive Dredging at the toe of cuts along the Side Slope dredging areas to obtain required grades and Side Slopes. Structural damage or slope movement caused by Excessive Dredging, as determined by the Project Representative, shall be repaired by the Contractor at no cost to the Owner.

J. Generated Residuals: Generated Residuals are defined as contaminated sediments generated and suspended during dredging activities that settle to the surface of the waterway bed.

K. Missed Inventory: Missed Inventory is defined as contaminated sediments below the Required Dredge Elevations and Required Dredge Thicknesses that are not removed as part of Required Dredging. Missed Inventory is to be identified by the Project Representative's post-dredge construction sediment sampling test results.

L. Payable Overdredge Allowance: The Payable Overdredge Allowance for Required Dredging is the vertical distance, as shown on the Drawings, below the Required Dredge Elevation and Required Dredge Thicknesses that will be paid. Dredge Material removed within the Payable Overdredge Allowance will qualify for payment under this Contract for the Work. Dredge Material dredged beyond the Payable Overdredge Allowance is Excessive Dredging and will not qualify for separate payment. The Contractor shall select its means and methods to conduct its dredging work to stay within the Payable Overdredge Allowance limits to the extent practicable. The Contractor shall account for potential non-payable dredge volume it removes due to its means and methods in its bid prices.

M. Required Dredge Elevation: The Required Dredge Elevation represents the elevation that shall be achieved by dredging or excavation within specific SMAs. Required Dredge Elevations are shown on the Drawings and shall be achieved by the Contractor to qualify for acceptance of the Work by the Project Representative. The Contractor is not required to remove encountered hard material bedrock, or till (as determined by field observations and accepted by the Project Representative) to achieve the specified dredge elevations but shall remove sediment to the extent practicable to the specified dredge elevations throughout the entire Dredge Prism.

N. Required Dredge Thickness: The Required Dredge Thickness represents the minimum cut thicknesses that shall be achieved by dredging or excavation within specific SMAs. Required Dredge Thicknesses are shown on the Drawings and shall be achieved by the Contractor to qualify for acceptance of the Work by the Project Representative. The Contractor is not required to remove encountered hard material bedrock, or till (as determined by field observations and accepted by the Project Representative) to achieve the specified cut thickness but shall remove sediment to the extent practicable to the specified cut thickness throughout the entire Dredge Prism.

O. Required Dredging: Required Dredging is defined as the initial dredging or excavation within the horizontal extents and to the Required Dredge Elevations or Required Dredge Thicknesses shown on the Drawings, where the Contractor is required to remove all Dredge Material and Dredge Debris, including Side Slopes. Bid Item No. A5 – Required Dredging and In-Water Transportation includes the Payable Overdredge Allowance volume as part of the Bid quantity. However, the Contractor is not required to remove the entire Payable Overdredge Allowance volume. Additional Contingency Re-Dredging (as defined in this Section) may be necessary as directed by the Project representative based on post-dredge construction sediment sampling test results.

P. Sediment Management Area: An SMA is a specified area, as shown on the Drawings, that requires the Contractor to implement a remedial action. For SMAs with dredging activities, the SMA is assigned a Required Dredge Elevation or Required Dredge Thickness, including Side Slopes within which Required Dredging is to be completed.

Q. Side Slope: The Side Slope is the exterior slope to be excavated between the toe of the dredge cut at the Required Dredge Elevation or Required Dredge Thickness and the intersect point at original ground level (top of slope). The Side Slopes for this Project are shown on the Drawings.

1.05 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
   1. Submit a detailed, written Dredging and Excavation Plan, as part of the RAWP, in conformance with the Specifications. Dredging activities under this Section shall not begin until completion of the following: 1) the

Dredging and Excavation Plan has been reviewed and approved by the Project Representative; 2) the Contractor attends a Pre-Construction Meeting; and 3) the Contractor receives the Project Representative's approval to begin the Work.

2. At a minimum, the Dredging and Excavation Plan shall contain the following information:
   a. General approach that will be implemented for Required Dredging; Contingency Re-Dredging; Dredge Material, Dredge Debris, and Identified Debris removal; barge dewatering; and in-water transportation of Dredge Material, Dredge Debris, Identified Debris, and Piling to the Contractor Transload Facility(ies)
   b. Description of the Contractor's specific approaches to avoid cross-contamination of clean areas outside the Dredge Prism and clean SMAs that have been previously dredged as part of the Project
   c. Equipment identification, including the number, types (and names, if applicable) and capacity of equipment to be used, including dredges, tugboats, workboats, dredge return water treatment barge (if used), haul barges, other marine vessels, and land-based equipment
   d. Work sequence to identify timing and sequencing for completion of Required Dredging, potential Contingency Re-Dredging, barge dewatering, and in-water transportation activities as they relate to other major elements of the Work (The Contractor shall reference the Project Schedule and indicate hours of operation and the time required to complete each remedial dredging, dewatering, and in-water transportation activity.)
   e. Methods, procedures, and equipment (including size and type of dredge buckets) to be used for all Required Dredging and potential Contingency Re-Dredging activities
   f. Methods, procedures, and equipment to be used for slope dredging and excavation activities
   g. Describe plans for land-based excavation and water-based (i.e., floating barge-based) dredging
   h. Methods, procedures, equipment, and proposed locations for any land-based excavation and associated land-based material handling
   i. Methods, procedures, and equipment to be used for anchoring floating equipment
   j. Methods, procedures, and equipment to be used for barge dewatering activities (including passive dewatering or addition of amendments) and associated dredge return water treatment (if applicable, including collection, treatment, and disposal of extracted water from dewatering) of Dredge Material, Dredge Debris, and Identified Debris
   k. Methods, procedures, and equipment to be used for in-water transportation and rehandling (if any) of Dredge Material, Dredge Debris, Identified Debris, and Piling to the Contractor Transload Facility(ies), including an in-water transportation route to it and procedures for preventing release of Dredge Material, Dredge Debris, and Identified Debris and dredge return water during in-water transportation
   l. Methods, procedures, and equipment for protecting existing structures and facilities as shown on the Drawings, including but not limited to the South Park Marina mechanical and electrical utility services, South Park Bridge, South 98th Street Bridge, outfalls, piles, groins, wharves, bulkheads, and existing boat ramp, to be maintained in place during the dredging/excavation activities
   m. Removal of Dredge Debris and Identified Debris:
      1) Procedures and equipment for collecting of submerged and floating Dredge Debris encountered prior to and during remedial dredging operations
      2) Procedures and equipment for removing Identified Debris from the specified locations (as shown on the Drawings), prior to remedial dredging and demolition operations
      3) Methods and procedures for maintaining segregation of Identified Debris from Dredge Material and Dredge Debris
   n. Best management practices (BMPs) proposed by the Contractor during remedial dredging, barge dewatering, and in-water transportation of Dredge Material, Dredge Debris, Identified Debris, and Piling, including those minimum requirements listed in Article 3.04 of this Section and Section 01 35 43 (Environmental Procedures).

C. Construction Submittals:
   1. The Contractor shall keep a daily record summarizing the area(s) dredged, barge dewatering, and in-water transportation to the Contractor Transload Facility(ies), Progress Surveys, supplemental documentation such as electronic dredging records (i.e., "bucket maps") and quantities, and other dredging details of the Work as part of the Daily Construction Report.
   2. The Contractor shall summarize the week's dredging activities, including Work completed to date and anticipated Work to be completed in the following week in the Weekly Construction Report.

D. Post-Construction Submittals:

1. Contractor's Annual Construction Season Summary Report, as described in Section 01 78 39 (Project Record Documents).

1.06 CONSTRUCTION SEASON

A. As described in Section 01 14 00 (Work Restrictions), the Work included in this Section (except for the pre-construction and post-construction submittals) occurring below the Mean Higher High Water elevation, shall be completed by the Contractor during the In-Water Work Window.

1.07 JOB CONDITIONS

A. The Contractor is responsible for reviewing the conditions to be encountered at the Work Site to inform the Contractor's Work, including water depths (also considering tidal elevations), inherent vessel activity (commercial and recreational) using the waterway, the presence of structures and associated elevations relative to the Dredge Prism, all information provided in the Specifications (included in Section 01 13 00 (Reference Material) and other Contract Documents. The Contractor's review of these documents is intended to inform and facilitate the selection of appropriate dredging equipment, barge dewatering system, and in-water transportation equipment appropriate for the Project, as well as to develop the Project Schedule.

B. Character of Materials
   1. Descriptions and documentation of the nature of the Dredge Material to be removed are provided in Section 01 13 00 (Reference Material).
   2. The Contractor shall satisfy itself regarding the nature of the Dredge Material present at the Work Site prior to bidding. The type of materials encountered at the Work Site may vary from the conditions described in the Specifications (including Section 01 13 00 [Reference Material]). Variations in the type of materials encountered that do not differ materially from those indicated in these Specifications may occur. If encountered, they will not be considered as basis for claims due to differing Work Site conditions.
      a. Dredge Material, Dredge Debris, and Identified Debris will be managed as nonhazardous waste. Nature of the Dredge Material, Dredge Debris, and Identified Debris are provided in Section 01 13 00 (Reference Material).
      b. The Contractor is responsible for understanding Work to be conducted along shorelines and banks and the nature of the Dredge Material, which may be light, loose material with low bearing capacity. The Contractor shall determine the type of equipment that may be used in those areas.
   3. Hard material, not including Identified Debris, in its natural state is defined as material requiring blasting and includes bedrock, boulders, or fragments too large to be removed in one piece by the dredging equipment. Hard material in its natural state is not anticipated to be encountered at the Work Site under this Contract. If hard material is encountered within the Dredge Prism during Required Dredging or potential Contingency Re-Dredging, the Contractor shall immediately notify the Project Representative and provide evidence of encountered hard material, which will be reviewed by the Project Representative to determine proper management and remedial cleanup objectives. The Contractor is not required to remove the hard material to the Required Dredge Elevation or Required Dredge Thickness or potential Contingency Re-Dredging thickness to achieve remedial cleanup objectives. Dredge Pay Volume and potential Contingency Re-Dredge Pay Volume are subject to review by the Project Representative if hard material is encountered.
   4. Dredge Debris and Identified Debris:
      a. The Contractor shall expect to encounter Dredge Debris (such as pile stubs, logs, wire, cable, steel bands, anchors, lumber, trash, and concrete) to be removed as part of the Required Dredging. Should Dredge Debris that cannot be removed using the dredge equipment be encountered, the Contractor shall immediately notify the Project Representative to determine its management and disposal.
      b. The Contractor shall remove Identified Debris as shown on the Drawings and shall segregate it from other Dredge Material and Dredge Debris for separate measurement and payment for disposal.
      c. Dredge Debris and Identified Debris shall be disposed at an approved Disposal Facility and in accordance with applicable local, state, and federal regulations and Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal).

C. Interference with Navigation
   1. Refer to Section 35 10 00 (Navigation Safety and Marine Traffic Control) for all requirements related to interference with navigation during dredging, barge dewatering, and in-water transportation activities.

D. Protection of Existing Structures and Facilities to Remain:
   1. Any damage to existing structures and/or existing facilities caused by the Contractor's dredging and excavation operations, as determined by the Project Representative, shall be repaired to the functional equivalent of the pre-Project condition at the Contractor's expense within a reasonable period of time deemed acceptable to the Project Representative.
   2. The Contractor shall coordinate with applicable underground utility providers prior to any spudding, dredging, digging, and excavation within 30 feet of active utility crossing (South Park Bridge) in accordance with Section 01 19 50 (Protection and Maintenance of Property and Work).
   3. The Contractor shall complete a Pre-Construction Structural Condition Inspection of existing structures and facilities to remain prior to beginning any dredging activities to document structural conditions pre-construction, as described in Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections).

E. Encountering Abandoned Utility Lines:
   1. Abandoned electric utility lines, to the extent known, are shown on the Drawings. As-built drawings (see Section 01 13 00 – Reference Material) indicate that the elevation (approximately -23 feet mean lower low water) at which abandoned utility lines cross the LDW near the South Park Bridge is close to the elevation of the dredge remedy in SMAs 14B and 14D. It is the Contractor's responsibility to review and understand the available documents and location of the abandoned utility lines within the Dredge Prism. If encountered during dredging activities, these abandoned utility lines may be removed and disposed.

F. Adjacent Tenants and Other Property Owners:
   1. Tenants and other property owners adjacent to the Work Site will be using in-water portions of the Work Site and other adjacent upland and in-water areas for their operations (see access easements and/or right-of-entry agreements described in Section 01 41 26 – Permits, Easements, and Right-of-Entry Agreements). The Owner will coordinate with these parties on their operations to avoid and/or minimize impacts to their activities. The Owner will then coordinate with the Contractor for access and timing of this Project Work and LDW operations. The Contractor shall review and account for site access requirements and restrictions for each adjacent tenant and property owner to develop their Draft Project Schedule and construction sequencing as part of the RAWP. The Contractor is responsible for making modifications to its Draft Project Schedule and construction sequencing to take into consideration adjacent tenants and property owners site access requirements, and these modifications are incidental to the Work.

1.08 MISPLACED MATERIALS

A. Should the Contractor, during the execution of the Work in this Section, lose, dump, throw overboard, sink, or misplace any material, dredge, barge, machinery, or appliance (collectively termed as "misplaced materials"), the Contractor shall promptly recover and remove the same. The Contractor shall give immediate verbal notice, followed by written confirmation, of the description and location of such obstructions to the Project Representative and shall mark and buoy such obstructions until they are removed.

B. Should the Contractor refuse, neglect, or delay compliance with this requirement, such obstructions may be removed by the Owner or its agents, and the cost of such operations may be deducted from any money due to the Contractor or may be recovered from the Contractor's bond.

C. The liability of the Contractor for the removal of a vessel wrecked or sunk without its fault or negligence shall be limited to that provided by federal and state laws.

D. The Contractor shall be responsible for any fees, fines, penalties, or other costs resulting from misplaced materials and shall not pass costs to the Owner.

1.09 ENVIRONMENTAL PROTECTION

A. Work described in this Section shall be performed in accordance with environmental protection requirements provided in Section 01 35 43 (Environmental Procedures) and the Contractor's accepted Environmental Mitigation Binder (EMB), and in accordance with all ARARs for the LDW Superfund Site cleanup remedy, as specified in Section 01 41 00 (Environmental Regulatory Requirements).

1.10 QUALITY CONTROL

A. The Contractor is responsible for providing all necessary quality control to successfully complete the Work and to comply with its Construction Quality Control Plan (submitted as part of the RAWP), as specified in Section 01 45 00 (Quality Control).

B. The Owner and Project Representative will inspect, at any time, the dredging, barge dewatering, dredge return water treatment (if applicable), and in-water transportation Work for quality assurance purposes. The Owner's and Project Representative's inspections shall in no way release the Contractor from its obligation to comply with the Specifications and will in no way be construed as acceptance of the Work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 GENERAL SEQUENCING

A. Refer to Section 01 14 00 (Work Restrictions) for construction sequencing requirements associated with dredging activities in relation to the overall sequencing of the Project Work. Refer to Section 01 14 00 (Work Restrictions) for general Project sequencing requirements associated with all Work activities. The Work described in this Section shall not begin until the following have occurred: 1) the Owner has completed its review and accepted the Dredging and Excavation Plan; and 2) the Project Pre-Construction Survey has been completed by the Contractor and reviewed and accepted by the Project Representative per Section 02 21 00 (Site Surveys and Positioning Control).

B. The Contractor shall complete a Pre-Construction Structural Condition Inspection of existing structures and facilities within the Work Site, as defined in Article 3.06 of Section 31 09 00 (Geotechnical Instrumentation and Condition Inspection) in advance of the start of any dredging activities.

C. The Contractor shall conduct Required Dredging of Dredge Material within the Work Site to the Required Dredge Elevations and Required Dredge Thicknesses, as shown on the Drawings, and associated Contingency Re-Dredging (as directed by the Project Representative). The process for SMA completion and acceptance will be completed in accordance with Article 3.02. Removal of Dredge Debris and Identified Debris may be performed prior to dredging or concurrently with dredging activities.

3.02 PROCESS FOR SMA COMPLETION AND ACCEPTANCE

A. Once Required Dredging is completed within an SMA, the Contractor shall conduct, within 1 working day, a Required Dredging Post-Construction Survey and shall submit this survey to the Project Representative within 1 working day after conducting the survey to verify that Required Dredge Elevations, Required Dredge Thicknesses, and Side Slopes have been met. The Contractor shall notify the Project Representative within 2 working days prior to completing the Required Dredging Post-Construction Survey in that SMA. The Contractor shall plan for the Project Representative to take 2 working days to review the Required Dredging Post-Construction Survey. The Project Representative may accept the Work as complete for Required Dredging in that SMA or identify high spots to be removed. If the Project Representative determines high spots remain above the bottom of the Required Dredge Elevations and Required Dredge Thicknesses, with the exception of hard material, bedrock, or till (as determined by field observations and accepted by the Project Representative), the Contractor shall remove such high spots to the satisfaction of the Project Representative and perform additional Required Dredging Post-Construction Surveys at no additional expense to the Owner.

B. The Contractor shall notify the Project Representative within 2 working days prior to completing the new Required Dredging Post-Construction Surveys in that SMA The Contractor shall plan for the Project Representative to take an additional 2 working days to review the new Required Dredging Post-Construction Survey to confirm high spots are removed to the satisfaction of the Project Representative. The Contractor shall perform additional Required Dredging and Required Dredging Post-Construction Surveys at the direction of the Project Representative until the Project Representative provides acceptance of the Work as complete for Required Dredging in that SMA.

C. After the Project Representative provides acceptance of the Required Dredging Post-Construction Survey(s), the Owner will conduct post-dredge construction sediment sampling within the SMA.

D. The Contractor shall plan for up to 15 working days (referred to as the Contingency Re-Dredge Decision Duration) of no Work within the SMA following acceptance of the Required Dredging Post-Construction Survey for the Owner to conduct post-dredge construction sediment sampling, receive sampling test results, and inform the Contractor whether Contingency Re-Dredging activities will be required. The Contractor is expected to develop the Draft Project Schedule to account for this required downtime within each SMA and utilize the existing equipment to perform Work in other SMAs as allowed in the Project construction sequencing requirements described in Section 01 14 00 (Work Restrictions). The costs associated with this Contingency Re-Dredge Decision Duration will be considered incidental to the Work, and the costs shall be accounted for in Bid Item No. A6 – Contingency Re-Dredging and In-Water Transportation.
   1. The actual Contingency Re-Dredge Decision Duration may extend beyond 15 working days, and the Contractor shall develop its Draft Project Schedule and sequencing to account for this uncertainty. The Project Representative will inform the Contractor when the decision duration for an SMA will require more than 15 working days.

E. During the Contingency Re-Dredge Decision Duration, the Contractor shall comply with the following requirements:
   1. The Contractor shall complete all required Work in a continuous manner (i.e., do not leave gaps in time between Work activities unless directed by the Project Representative during the Contingency Re-Dredge Decision Duration). The Contractor is expected to relocate its equipment to perform Work activities in other SMAs during the Contingency Re-Dredge Decision Duration to minimize equipment downtime and/or help achieve the Substantial Completion date.
   2. Decontamination requirements in Section 01 35 43 (Environmental Procedures) apply. if the Contractor elects to remove its equipment from the Work Site during this period.
   3. The Contractor shall relocate its dredging equipment from the SMA to provide access for the Owner to perform post-dredge construction sediment sampling.
   4. The Contractor shall not relocate its dredging equipment outside of the Work Site for use at a different project during the Contingency Re-Dredge Decision Duration.

F. Following receipt of post-dredge construction sediment sampling test results and evaluation of the data for a specific SMA by the Project Representative, the Project Representative will direct the Contractor to complete one or more of the following activities:
   1. Complete Contingency Re-Dredging to remove Generated Residuals in locations directed by the Project Representative.
   2. Complete Contingency Re-Dredging to remove Missed Inventory within the SMA in locations directed by the Project Representative.
   3. Conduct no additional dredging activities and proceed to conduct material placement.

G. Once Contingency Re-Dredging activities are considered by the Contractor to be complete within the SMA, the Contractor shall conduct within 1 working day a Contingency Re-Dredging Post-Construction Survey over the SMA of the Dredge Prism and shall submit to the Project Representative within 1 working day after conducting the survey to verify that required Contingency Re-Dredging activities are complete. The Contractor shall notify the Project Representative within 2 working days prior to completing the Contingency Re-Dredging Post-Construction Survey in that SMA. The Contractor shall plan for the Project Representative to take 2 working days to review the Contingency Re-Dredging Post-Construction Survey. If the Project Representative determines that Contingency Re-Dredging has not been completed as required, the Contractor shall complete additional Contingency Re-Dredging work to the satisfaction of the Project Representative and conduct another Contingency Re-Dredging Post-Construction Survey(s) at no additional expense to the Owner.

H. Once Contingency Re-Dredging is completed and accepted by the Project Representative, the Owner will collect post-contingency re-dredging construction sediment samples within the SMA. The Contractor shall plan on this additional construction sediment sampling to take 2 working days. The Contractor shall provide the Project Representative access to collect these post-Contingency Re-Dredging construction sediment samples. No additional Contingency Re-Dredging will be required based on this additional sediment sampling.

3.03 SURVEYS

A. Refer to Section 02 21 00 (Site Surveys and Positioning Control) for all survey and positioning control requirements related to the dredging activities.

3.04 CONDUCT OF WORK

A. Layout of Work:
   1. Refer to equipment positioning and methods in Section 02 21 00 (Site Surveys and Positioning Control).

B. Identified Debris Removal:
   1. Identified Debris removal shall be performed during daylight hours (to ensure proper identification and cataloging of Debris, to facilitate the Contractor's quality control and inspection of the Work, and to facilitate the Project Representative's observation of the Work). The Contractor may propose to remove Identified Debris at night if necessary due to tidal conditions and will require Project Representative approval to work at night.
   2. The Contractor shall anticipate that, in addition to the individual items of Identified Debris listed in the Drawings, other Debris (i.e., Dredge Debris) may exist in nearby locations and other areas of the Work Site. All such additional Dredge Debris that lies within the prescribed cleanup area as shown on the Drawings is to be removed by equipment appropriate to the task and kept separate from Identified Debris. Removal of such additional Dredge Debris is incidental to the dredging Work.
   3. Identified Debris shall be segregated from any Dredge Debris encountered to track and document the quantity of Identified Debris.

C. Required Dredging:
   1. Dredging shall be performed using mechanical methods only, using an environmental bucket as the primary tool for removal and to the maximum extent practicable. The Contractor will be allowed to use other buckets (e.g., clamshell) as Work Site conditions warrant and as approved by the Project Representative to achieve both the Required Dredge Elevations and Required Dredge Thicknesses and to meet environmental protection criteria (e.g., water quality criteria). The Contractor shall select the appropriate equipment to excavate within shorelines and banks of the Dredge Prism.
   2. The Contractor shall remove Dredge Material, Dredge Debris, and Identified Debris to the Required Dredge Elevations and Required Dredge Thicknesses within the boundary of the Dredge Prism, as shown on the Drawings.
      a. The Contractor shall not directly remove material from outside the Dredge Prism.
      b. Conduct slope dredging to construct Side Slopes starting from the top of slope and working down the slope toward the toe of the slope.
      c. The Contractor shall take care to conduct dredging activities according to the requirements of the Drawings and Specifications and in a manner that does not result in adverse impacts to the stability of the slopes or nearby structures.
      d. Side Slopes and the toe of dredge cuts shall not be undercut to result in Excessive Dredging.
   3. The Contractor shall adhere to the dredge offset area set-back requirements when performing dredging activities adjacent to existing structures, as shown on the Drawings. Any damage that occurs during remedial dredging activities to any structures within the Work Site that is caused by the Contractor's failure to adhere to the Drawings and Specifications shall be repaired to existing conditions at no additional expense to the Owner. The Contractor shall exercise great care when dredging to avoid any dredge equipment, vessels, or barges from entering the restricted dredge offset from the structure(s) or contacting the structure(s).
   4. Dredging activities under existing structures:
      a. Under bridge access shall be from the water only.
      b. Be responsible for field verifying dimensions/elevations/horizontal and vertical clearances of structures and underpier access.
      c. Proceed with caution when placing materials while maintaining, navigating, or transitioning floating vessels or other equipment.
      d. Protect all existing structures during under bridge placement and immediately report to the Project Representative any incidents that may have caused damage.

e. The Contractor is responsible for reviewing the structural as-builts and other conditions under the South Park Bridge and South 98th Street Bridge to be encountered during dredging activities (see Section 01 13 00 – Reference Material).
f. The Contractor will be solely responsible for any corrective actions to repair damage cause by Contractor actions.
g. Carefully select and implement means and methods for dredging under existing structures to account for both the tidal fluctuations over the construction duration and limited access under the bridge (both physical access and fluctuating clearance) and to prevent damage to any portion of the existing structures.

5. For any Contractor-proposed land-based excavation, the Contractor shall comply with the following:
   a. The Owner has obtained access agreements presented in Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).
   b. Land-based dredging (i.e., excavation) may be allowed for SMAs 1, 5, 6, 7, and 9 if the Contractor receives approval from the Project Representative and access agreements are in place. For any other location where the Contractor proposes land-based access and an Owner-provided access agreement is not provided, the Contractor is responsible for obtaining such access agreement.
   c. All Dredge Material and Dredge Debris (including that removed from land-based equipment) shall be placed directly into a floating transport barge when feasible. Dredge Material and Dredge Debris removed from land-based equipment may be placed into trucks for upland transportation to the Contractor Transload Facility(ies) as described in Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal) when Work Site conditions limit access of the floating transport barge and in accordance with the access easements and/or right-of-entry agreements as described in Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).
   d. SMA 5 Work:
      1) Refer to Section 31 05 10 (Sediment Management Area 5 Bank Excavation)
6. If Progress Survey results indicate the Contractor is performing Excessive Dredging, the Contractor shall modify its dredging operations and/or positioning control immediately to avoid additional Excessive Dredging. Excessive Dredging, if performed, will not be paid for separately by the Owner.
7. The Contractor shall comply with the Contractor's Vessel Management Plan and all applicable U.S. Coast Guard and state and local regulations related to vessel anchoring and construction, including but not limited to lighted markers, vessel lighting, and communication protocols (see detailed requirements in Section 35 10 00 – Navigation Safety and Marine Traffic Control).
8. Dredging activities shall be performed in accordance with the requirements of these Specifications, all other applicable environmental regulatory requirements (Section 01 41 00 – Environmental Regulatory Requirements), and the EMB to protect water quality during the completion of the Work. BMPs shall include the following:
   a. Selection of the appropriate dredge bucket for site-specific conditions will be required.
   b. Removal of large to medium-sized Identified Debris will be required prior to dredging in known debris areas, if practicable.
   c. Multiple bites by the dredge bucket on the waterway bed before ascending to the surface is prohibited.
   d. "Sweeping" (i.e., dragging a bucket or beam) or leveling of the waterway bed by pushing bottom Dredge Material around with the dredge bucket to knock down high spots to achieve Required Dredge Elevations or Required Dredge Thicknesses is prohibited. Instead of leveling to remove high spots, the Contractor may be required by the Project Representative to make an additional dredging pass to remove any high spots identified during review of Post-Construction Surveys.
   e. Interim underwater stockpiling of Dredge Material is prohibited (i.e., taking small dredge cuts and temporarily stockpiling material at the waterway bed in a mound to allow the dredge operator to grab a fuller bucket).
   f. Overfilling of conventional clamshell and environmental buckets is prohibited. If bucket overloading is observed, the Contractor shall take measures to reduce this potential (e.g., decrease the maximum cut thickness or lower bucket descent rate).
   g. Maintain stable Side Slopes during dredging by performing shallow top-to-bottom cuts.
9. The Contractor is responsible for implementing additional BMPs the Contractor shall propose in the Dredging and Excavation Plan, in addition to those described in Article 3.04C8 to reduce sediment resuspension during dredging operations to comply with water quality criteria. Some example BMPs for the Contractor to consider implementing follow:
   a. Slow the rate of dredge bucket descent and ascent through the water column

b. After placing dredged sediment into the haul barge, hold the opened bucket above the barge for a short period of time to allow residual materials from the bucket to fall into the barge.
c. After placing dredged sediment into the haul barge, wash the bucket to remove loose residual materials from the bucket before lowering it into the waterway.

10. Grounding, anchoring, or spudding requirements of the Contractor's equipment on the waterway bed are described in Section 35 10 00 (Navigation Safety and Marine Traffic Control).
11. Requirements for dredging conducted near or adjected to the ENR/AC Pilot Plots are described in Section 35 10 00 (Navigation Safety and Marine Traffic Control).

D. Contingency Re-Dredging:
1. Following completion of Required Dredging activities and after review of the Owner-conducted post-dredge construction sediment sampling test results, the Project Representative may direct the Contractor to conduct Contingency Re-Dredging in specified location(s) of the SMAs to remove Generated Residuals or Missed Inventory.
a. The Contractor shall re-occupy the specified location(s), as directed by the Project Representative, and dredge to the horizontal and vertical limits (including Payable Overdredge Allowances) specified for Generated Residuals Contingency Re-Dredging or Missed Inventory Contingency Re Dredging.
b. Based on post-dredge construction sediment sampling test results, the Project Representative may also direct the Contractor to conduct Contingency Re-Dredging in limited locations outside of the SMAs to remove Generated Residuals.
2. The Contractor shall conduct Contingency Re-Dredging Progress Surveys to document contingency dredging progress for Contingency Re-Dredging activities (if required by the Project Representative, based on post-dredge construction sediment sampling test results).

E. Barge Dewatering:
1. The Contractor shall provide detailed description, photographs, and drawings as necessary describing its proposed means and methods for Dredge Material dewatering on the barge as part of the Dredging and Excavation Plan. Photographs and videos shall be obtained in accordance with Section 01 32 33 (Photographs and Videos).
2. All transport barges used for Dredge Material, Dredge Debris, Identified Debris, and Piling transport shall be sealed and watertight.
3. Dredge return water release from the material barge to the waterway is only allowed with Project Representative-approved water filtration to remove suspended solids from dredge return water to comply with water quality criteria. It is the Contractor's responsibility to understand the dewatering requirements and costs to provide sufficient dewatering for the Dredge Material to be disposed of at the approved Disposal Facility.
a. Passive dewatering or dewatering by amendment costs for Dredge Material from any SMA shall be included in Bid Items No. A5 – Required Dredging and In-Water Transportation and No. A6 – Contingency Re-Dredging and In-Water Transportation.
4. Barge dewatering shall be conducted by the following methods:
a. Passive Dewatering for Dredge Material:
1) The Contractor is allowed to passively dewater Dredge Material, Dredge Debris, and Identified Debris on the barge, provided the Contractor's means and methods comply with the water quality criteria as described in the Section 01 35 43 (Environmental Procedures). The Contractor shall be responsible for reviewing and understanding these water quality criteria requirements.
b. Filter Media:
1) The Contractor shall use filter fabric media that has activated carbon embedded in the fabric, or within a separate filter layer, to filter all dredge return water being discharged to the waterway to remove suspended solids. The filter fabric product and method for filtering dredge return water shall be described in the RAWP and accepted by the Project Representative, prior to conducting any dredging Work. The Dredge Material, Dredge Debris, Identified Debris, and Piling shall be placed onto a flatbed scow or barge that has been made watertight so that all dredge return water will be collected and discharged through the approved filter media system.
a. The Contractor is responsible for ensuring that all scuppers, sideboards (fixed permanent containment walls on all four sides), or other passageways for dredge return water to discharge back to the Work Site are covered and sealed to prevent unfiltered release of solids or dredge return water.

b. To discharge dredge return water to the waterway from the barge, the Contractor shall demonstrate that its dredge return water filtering system is operational and that no obvious leaking of the barge is observed prior to placing contaminated dredged material within the barge.
c. The sediment shall be slightly heaped to promote drainage of excess water to the filter media.
d. No overtopping of the sideboards is allowed.
e. The Contractor shall provide sufficient barge freeboard for safe transportation as determined by the certified marine surveyor as required in Section 35 10 00 (Navigation Safety and Marine Traffic Control).

2) No loss of Dredge Material, Dredge Debris, Identified Debris, or Piling is allowed.
3) Filter fabric media shall be changed regularly to ensure filter material effectively treats the dredge return water in a manner that will comply with the water quality criteria.

c. If the Contractor elects to dewater Dredge Material by amendment addition:
1) Sealed (watertight) barges are required if the Contractor elects to dewater using amendments. No water discharge from the barge is allowed when using amendments.
2) Water management on haul barges may be done with the addition of drying amendment for Dredge Material.
3) The Contractor shall select the type of amendment and appropriate dosage to facilitate dewatering.
4) The use of amendments is at the sole discretion of the Contractor, and the Contractor is responsible for ensuring the use of amendments is acceptable by the Disposal Facility and meets requirements of federal, state, and local regulations.
5) Use of amendments for Dredge Material from any other SMA will be considered incidental to the Work. The Contractor has sole responsibility for cleanup and damage costs related to the use of amendments.

F. In-Water Transportation to Contractor Transload Facility(ies)
1. Transport Dredge Material, Dredge Debris, Identified Debris, and Piling to the Contractor Transload Facility(ies) according to the means and methods described in the RAWP.
2. All material barges are required to be inspected and certified as watertight by a certified marine surveyor prior to barge use.
a. No barge water shall be discharged from the dredged material haul barges during transport outside of the Work Site and in transit to the Contractor Transload Facility(ies). Barge water shall be discharged only within the Work Site.
1) The Contractor shall collect and store dredge return water as necessary to discharge at the Contractor Transload Facility once the barge arrives.
b. Watertight barges shall have fixed permanent containment walls on all four sides and be sealed to prevent dredge return water and Dredge Material Dredge Debris, Identified Debris, and Piling discharge during in-water transportation.
3. The Contractor shall inspect each barge load of Dredge Material, Dredge Debris, Identified Debris, and Piling prior to transport from the Work Site and to the Contractor Transload Facility(ies).
a. The Contractor shall obtain barge displacement measurements upon arrival to the Work Site when the barge is empty and prior to in-water transportation of a loaded barge from the Work Site and establish an estimated tonnage of material associated with that barge load. Estimated tonnages for each barge load removed from the Work Site shall be recorded in the Contractor Daily and Weekly Construction Reports.
4. Barge management activities shall be performed in accordance with the requirements of these Specifications, all other applicable environmental regulatory requirements (Section 01 41 00 – Environmental Regulatory Requirements), and the EMB to protect water quality during the completion of the Work. BMPs shall include the following:
a. All barges handling dredged materials will be required to be properly fitted to filter dredge return water.
b. Uneven filling and overfilling of barges beyond the top of the side rails is prohibited.
5. The Contractor is responsible for safe transportation of Dredge Material, Dredge Debris, Identified Debris, and Piling from the Work Site to the Contractor Transload Facility(ies) (in accordance with Section 35 10 00 – Navigation Safety and Marine Traffic Control and local, state, and federal regulations).
6. The Contractor is responsible for assessing current and forecasted weather conditions during all in-water transportation and storage activities and appropriately accounting for potential weather impacts on marine equipment stability.

3.05 WATER QUALITY CRITERIA

A. The Contractor is required to comply with all water quality performance standards as defined in EPA's Section 401 Water Quality Certification, including applicable local, state, and federal standards.

B. The WQMP has been prepared and it is attached to the Contract Documents (see Section 01 13 00 – Reference Material). In accordance with the WQMP, the Owner will perform water quality monitoring for quality assurance purposes during dredging activities. The Owner's water quality monitoring does not alleviate the Contractor's responsibility to conduct its own observations and implement water quality controls to comply with all water quality criteria. The results of water quality monitoring will be regularly reviewed by the Project Representative during construction to identify the need for any corrective actions by the Contractor.

C. The Contractor shall have the following in place:
   1. BMP used to prevent water quality criteria exceedances.
   2. Contingency corrective measures that are to be implemented should water quality exceedances or visible plumes occur during dredging and barge dewatering activities.
   3. Contractor shall immediately implement corrective measures when notified by the Project Representative.

D. The Contractor shall describe in the EMB, as part of the RAWP, the means, methods, and procedures that will be used to prevent water quality criteria exceedances and which contingency corrective measures will be taken to restore compliance with water quality requirements should water quality exceedances occur during completion of dredging, barge dewatering, and in-water transportation activities.

E. Delays due to water quality exceedances or other efforts needed to comply with water quality requirements or corrective measures shall not be cause for additional compensation to the Contractor or be justification for delay claims.

END OF SECTION

SECTION 35 20 23.01

TRANSLOADING, UPLAND TRANSPORTATION, AND DISPOSAL

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for transloading (including offloading, temporary stockpiling, dewatering [if applicable], and rehandling) of Dredge Material, Dredge Debris, Identified Debris, and Piling at the Contractor Transload Facility(ies), and the requirements for upland transportation for delivery to and final disposal at an approved upland Disposal Facility(ies). This Section also specifies requirements for recording and reconciling quantities of materials shipped for final disposal.

1.02 DESCRIPTION OF WORK

A. Work under this Section shall be performed by the Contractor to include furnishing all labor, materials, tools, equipment, and incidentals required for transloading, upland transportation, and disposal of Dredge Material, Dredge Debris, Identified Debris, and Piling in support of the overall Project, as described on the Drawings and in these Specifications.

B. Transloading, upland transportation, and disposal activities shall be completed according to the general Project sequencing requirements (Section 01 14 00 – Work Restrictions) and access requirements (Section 01 52 00 – Construction Facilities), the Drawings, and the approach described in the Contractor's Remedial Action Work Plan (RAWP).

C. The Contractor shall propose a Contractor Transload Facility(ies) to be used to transfer materials between the Contractor's floating equipment and land, including offloading the Contractor's haul barges of Dredge Material, Dredge Debris, Identified Debris, and Piling. The Contractor Transload Facility(ies) shall also serve for temporary stockpiling, dewatering (if applicable), and rehandling of these materials. The Contractor Transload Facility(ies) shall be operated in compliance with federal, state, and local regulations for the activities undertaken. The Contractor shall have ownership or lease documentation in place to demonstrate that the activities to be conducted at the Contractor Transload Facility(ies) are allowed or accepted by the property owner and shall provide the documentation to the Project Representative as part of the RAWP.

D. Transloading, upland transportation, and disposal activities shall not begin until approval of the RAWP.

E. The Contractor is responsible for the Dredge Material, Dredge Debris, Identified Debris, Piling, and all other work-related materials (if applicable) to be disposed of meeting all Disposal Facility requirements. Data collected to support a preliminary waste determination are provided in the documents described in Section 01 13 00 (Reference Material) for the Contractor's information, but the provision of such data does not alleviate the Contractor's responsibility to determine, in consultation with the operators of the Contractor Transload Facility(ies) and Disposal Facility(ies), the methods for managing all applicable waste streams.

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the Lower Duwamish Waterway (LDW) Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

1.04 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Contractor Transload Facility(ies): The Contractor's Transload Facility(ies) is defined as the Contractor-provided upland location(s) where Dredge Material, Dredge Debris, Identified Debris, and Piling that has been generated from the Work Site are offloaded, stockpiled, dewatered (if applicable), rehandled, and transferred onto trucks or railcars (if rail access is available) for upland transport and disposal at an approved upland Disposal Facility(ies). The Contractor Transload Facility(ies) are required to be appropriately permitted, in accordance with Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements) within their jurisdiction and operated in compliance with federal, state, and local regulations for the activities undertaken.
   1. The Contractor shall be responsible for determining the selected Contractor Transload Facility(ies) is operating in compliance with its permits by obtaining approval from the appropriate jurisdiction.
   2. The name and address of the selected Contractor Transload Facility(ies) shall be submitted to the Owner for review and approval as part of the Contractor's RAWP.

C. Disposal Facility: A Disposal Facility consists of a permanent, existing (i.e., in operation prior to the Notice to Proceed) upland landfill facility located in the United States and permitted by their jurisdiction in accordance with Section 01 41 26 (Permits, Easements, and Right-of-Entry) and the Resource Conservation and Recovery Act,. The Disposal Facility shall be operated in compliance with federal, state, and local regulations for the activities undertaken.
   1. The Contractor shall be responsible for determining the selected Disposal Facility(ies) is(are) operating in compliance with its permits.
   2. The name and address of the selected Disposal Facility(ies) shall be submitted to the Owner for review and approval as part of the RAWP.
   3. The proposed Disposal Facility is subject to EPA approval according to EPA's Off-Site Rule 40 Code of Federal Regulations 300.440.

1.05 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
   1. The Contractor shall submit a detailed, written Transloading, Upland Transportation, and Disposal Plan as part of the RAWP, in conformance with the Specifications. Transloading, upland transportation, and disposal activities described within this Section shall not begin until the Transloading, Upland Transportation, and Disposal Plan has been reviewed and approved by the Project Representative.
   2. At a minimum, the Transloading, Upland Transportation, and Disposal Plan shall contain the following information:
      a. General approach that will be implemented for transloading, upland transportation, and disposal of Dredge Material, Dredge Debris, Identified Debris, and Piling
      b. Contractor Transload Facility(ies) location(s) and copies of existing permits and approvals for operation of the facility(ies) to transload Dredge Material, Dredge Debris, Identified Debris, and Piling.
         1) Refer to Article 1.07 for additional requirements for the Contractor Transload Facility to be provided by the Contractor as part of the Transloading, Upland Transportation, and Disposal Plan.
         2) National Pollutant Discharge Elimination System (NPDES) stormwater permit
      c. Contractor Transload Facility(ies) layout, including the following:
         1) Existing conditions and facilities, construction facilities, and temporary environmental controls provided by the Contractor and/or facility owner or operator
         2) Drawing showing temporary stockpile area(s), temporary stockpile barriers, fencing, entry and exit access locations, and truck routing into the Contractor Transload Facility(ies)
         3) Barge landing, moorage, and offload areas; environmental protection zones; equipment and personnel decontamination areas; and wastewater treatment and storage areas
      d. Work sequence to identify timing and sequencing for completion for transloading, upland transportation, and disposal as they relate to other major elements of the Work. The Contractor shall reference the Draft Project Schedule and indicate hours of operation and the time required to complete each transloading, upland transportation, and disposal activity cycle.

e. Means and methods for operating Contractor Transload Facility(ies)
    1) Description of the proposed perimeter containment to contain the Dredge Material, Dredge Debris, Identified Debris, Piling, and any associated water effluent
    2) Description of the temporary stockpiling operations (if used) and associated number of temporary stockpiles, size, and locations within the Contractor Transload Facility(ies)
    3) Methods, procedures, and equipment to be used to dewater Dredge Material, Dredge Debris and Identified Debris (if necessary) at the Contractor Transload Facility(ies) and to treat (as necessary) the water effluent to meet the Contractor Transload Facility's NPDES permit criteria prior to discharge
        a. The Contractor is responsible for understanding the compliance requirements for water effluent discharge.
    4) Methods, procedures, and equipment for spill prevention to prevent untreated sediment and water effluent release from the Contractor Transload Facility(ies) into the receiving waters
    5) Methods, procedures, and equipment to be used for rehandling and loading of Dredge Material, Dredge Debris, Identified Debris, and Piling onto railcars and/or trucks at the Contractor Transload Facility(ies)
f. Methods, procedures, and equipment to be used for offloading from barges to provide environmental protection during these activities, such as the following:
    1) Spill prevention methods and measures to prevent loss of Dredge Material, Dredge Debris, Identified Debris, Piling, and water effluent into the LDW during barge offloading
    2) Barge water management methods and measures
g. Measures to prevent spillage of Dredge Material, Dredge Debris, Identified Debris, Piling, and water effluent outside of the Contractor Transload Facility(ies) on public roadways during upland transport and procedures and equipment to be employed to prevent, capture, and clean up accidental spills during all handling and transfer operations
h. Methods and procedures for lining, covering, and securing trucks and railcars (e.g., containers and gondolas) for upland transportation.
i. Methods, procedures, and equipment to be used for loading trucks and/or railcars and upland transport of Dredge Material, Dredge Debris, Identified Debris, and Piling to the upland Disposal Facility(ies) to meet federal, state, and local regulations to prevent the release of water, dust, and materials during upland transportation
j. Methods and procedures for segregating potentially recyclable materials (such as non-creosote Piling and concrete Identified Debris) from all other waste streams (Dredge Material, Dredge Debris, Identified Debris, and Piling) to have clearly established stockpile designations to prevent nonrecyclable materials from being taken to a recycling facility.
k. Methods of upland transportation to be used, transport times, and methods employed to ensure safe upland transportation of the materials from the Contractor Transload Facility(ies) to the Disposal Facility(ies). At a minimum, the Contractor shall provide the following information:
    1) Proposed truck transportation (haul) routes if used by the Contractor to transport material to and from the Contractor Transload Facility(ies) by trucks
    2) Any street use permits that may be required in connection with the Contractor's operations
    3) Proposed railroad line and route for rail transportation and general description of rail use and capacity
l. Methods, procedures, and equipment for cleanup and removal of the Contractor Transload Facility(ies)
m. Disposal Facility(ies) description: name and address of the selected Disposal Facility(ies) and copies of existing permits and approvals for operation of the facility(ies) to receive Dredge Material, Dredge Debris, Identified Debris, and Piling, in accordance with Article 1.07.

C. Construction Submittals:
1. The Contractor shall keep a daily record of transloading, upland transportation, and disposal activities, including weight tickets and associated documentations as part of the Daily Construction Report.
    a. The Contractor shall submit full barge displacement measurements of each barge received at the Contractor's Transload Facility with Dredge Material, Dredge Debris, Identified Debris, and Piling and corresponding tonnage.
    b. The Contractor shall submit empty barge displacement measurements following offload of each barge with Dredge Material, Dredge Debris, Identified Debris, and Piling and corresponding tonnage of material offloaded into the Contractor Transload Facility.

2. The Contractor shall summarize the week's work for transloading, upland transportation, and disposal activities in the Weekly Construction Report.
    a. The Contractor shall submit full barge displacement measurements of each barge received at the Contractor's Transload Facility with Dredge Material, Dredge Debris, Identified Debris, and Piling and corresponding tonnage.
    b. The Contractor shall submit empty barge displacement measurements following offload of each barge with Dredge Material, Dredge Debris, Identified Debris, and Piling and corresponding tonnage of material offloaded into the Contractor Transload Facility.

D. Post-Construction Submittals:
1. The Contractor shall submit to the Project Representative copies of all Certificates of Disposal to account for and demonstrate the disposal of all Dredge Material, Dredge Debris, Identified Debris, and Piling in relation to Section 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation) no later than 30 calendar days after the material has been delivered to the Disposal Facility(ies).
2. Contractor's Annual Construction Season Summary Report, as described in Section 01 78 39 (Project Record Documents).

1.06 CONSTRUCTION SEASON

A. As described in Section 01 14 00 (Work Restrictions), the offloading Work (i.e., offloading in-water transportation barges at the Contractor Transload Facility[ies]) included in this Section shall be completed by the Contractor during the In-Water Work Window.

B. Upland activities, such as transloading, stockpile management, dewatering, and truck or railcar loading activities (at the Contractor Transload Facility), upland transportation, and disposal activities, may occur outside the In-Water Work Window but shall be completed for each Construction Season to obtain Substantial Completion for the Construction Season in compliance with Section 01 14 00 (Work Restrictions) and Section 01 70 00 (Closeout Requirements).

1.07 LOCATION, PERMITTING, AND TRACKING

A. As part of the Transloading, Upland Transportation, and Disposal Plan, the Contractor shall propose a Contractor Transload Facility that has already been permitted to be used during construction for review and approval by the Owner as part of the RAWP. The Contractor shall provide the following information as part of the RAWP:
1. Location and owner of proposed Contractor Transload Facility(ies)
2. Documentation of all necessary permits or substantive equivalence for the proposed Contractor Transload Facility(ies)
3. For each Construction Season, the Contractor shall provide the following:
    a. Estimated weekly capacity (in cubic yards [CY]) of the Contractor Transload Facility(ies) to transload and transport dredged materials, considering facility characteristics and upland transportation capacities.
    b. Estimated storage capacity (in CY) to handle dredged material stockpiling at the Contractor Transload Facility(ies) in the event of a delay in upland transportation, considering available stockpile capacity at the Contractor Transload Facility or off site in rail cars staging in the railyard.

B. As part of the Transloading, Upland Transportation, and Disposal Plan, the Contractor shall propose the Disposal Facility(ies) to be used during construction for review and approval by the Owner. No Disposal Facility(ies) shall be developed for the specific use of this Contract. The Contractor shall provide the following information:
1. Location and owner of proposed Disposal Facility(ies) and a copy(ies) of the operating permits
2. Documentation that the proposed Disposal Facility(ies) is (are) licensed and suitable for accepting and disposing of the Dredge Material, Dredge Debris, Identified Debris, and Piling

1.08 INSPECTION OF FACILITIES

A. The Owner and Project Representative may inspect the proposed Contractor Transload Facility(ies) and Disposal Facility(ies) prior to the start of construction to evaluate whether the facility(ies) meet(s) the requirements of these Specifications and federal, state, and local regulations.
   1. The Contractor shall provide access to the Project Representative or designee to inspect the Contractor Transload Facility(ies) and Disposal Facility(ies), including providing health and safety orientation and access to machinery to facilitate sampling, assessment, and documentation.

1.09 MISPLACED MATERIALS

A. Should the Contractor, during the execution of the Work in this Section, lose, dump, throw, or misplace any material, dredge, barge, machinery, or appliance (collectively termed as misplaced materials), the Contractor shall promptly recover and remove the same. The Contractor shall give immediate verbal notice, followed by written confirmation, of the description and location of such obstructions to the Project Representative and shall mark and buoy such obstructions until they are removed.

B. Should the Contractor refuse, neglect, or delay compliance with this requirement, such obstructions may be removed by the Owner or its agents, and the cost of such operations may be deducted from any money due to the Contractor or may be recovered from the Contractor's bond.

C. The Contractor shall be responsible for any fees, fines, penalties, or other costs resulting from misplaced materials and shall not pass costs to the Owner.

1.10 ENVIRONMENTAL PROTECTION

A. Transload, upland transportation, and disposal activities shall be performed in accordance with environmental protection requirements, as stated in Section 01 35 43 (Environmental Procedures) and the Contractor's accepted Environmental Mitigation Binder and in accordance with all ARARs for the LDW Superfund Site cleanup remedy, as specified in Section 01 41 00 (Environmental Regulatory Requirements).

1.11 QUALITY CONTROL

A. The Contractor is responsible for providing all necessary quality controls to successfully complete the Work and to comply with its Construction Quality Control Plan (submitted as part of the RAWP), as specified in Section 01 45 00 (Quality Control).

B. The Owner and Project Representative will inspect at any time the transload, upland transportation, and disposal Work for quality assurance purposes. The Owner's and Project Representative's inspections shall in no way release the Contractor from its obligation for complying with the Specifications and will in no way be construed as acceptance of the Work.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.01 SEQUENCING

A. Refer to Section 01 14 00 (Work Restrictions) for construction sequencing requirements associated with transload, upland transportation, and disposal activities in relation to the overall sequencing of the Project work.

3.02 GENERAL

A. The provisions of this Part apply to Dredge Material, Dredge Debris, and Identified Debris that will be managed as nonhazardous waste. Nature and characterization of the Dredge Material, Dredge Debris, and Identified Debris are provided in Section 01 13 00 (Reference Material). It is the Contractor's responsibility to coordinate with the Disposal Facility(ies) to determine if the Dredge Material, Dredge Debris, and Identified Debris

characterization is sufficient for disposal purposes. In the event the Disposal Facility(ies) determines that additional pre-construction characterization of the Dredge Material, Dredge Debris, and Identified Debris is required, the Contractor shall perform corresponding additional waste characterization to confirm the nature and classification of these for disposal. If any Dredge Material, Dredge Debris, or Identified Debris is found to require management and disposal as hazardous waste, the Contractor shall manage such material in accordance with the requirements of Washington Area Code Section 173-303-100.

B. The transloading of Dredge Material, Dredge Debris, Identified Debris, and Piling for upland transportation and disposal may occur at an existing, permitted, and approved commercial Transload Facility(ies) or at an alternate Contractor-provided Transload Facility (to be reviewed and approved by the Project Representative as part of the RAWP).
   1. The following commercial Contractor Transload Facilities located on the LDW have been identified for potential use:
      a. The Duwamish Reload Facility (Operated by Waste Management) located at 7400 8th Avenue South
      b. Water access to the Duwamish Reload Facility through Slip 4 at, approximately, river mile 2.8
   2. The Contractor may identify and propose other commercial Transload Facility(ies), subject to review and approval by the Owner and EPA.
   3. The Contractor may propose to use an alternate Transload Facility, provided that the Contractor can obtain all necessary permits and substantially complete development of the facility such that the Project construction would not be delayed or impeded by its use. The use of an alternate (non-commercial) Transload Facility is subject to review and approval by the Owner and EPA.

3.03 CONDUCT OF WORK

A. Transloading:
   1. The Contractor shall offload in-water transportation barges at the Contractor Transload Facility(ies) in a manner that prevents spillage of material or effluent water to any receiving waters. Spillage from the transloading operation to water is not permitted. A spill apron (or equivalent spill-prevention measure) shall be used at all times during completion of offloading activities.
   2. The Contractor shall measure the loaded barge displacement when the barge arrives at the Contractor Transload Facility and remeasure the empty barge displacement after the barge has been offloaded. The Contractor shall provide its estimate of the tonnage offloaded from each barge as part of the Daily or Weekly Construction Report.
   3. No offloading can begin at the Contractor Transload Facility(ies) until the spill prevention measures are reviewed and accepted by the Project Representative and determined to be in place and working.
   4. Any spillage on the spill apron shall be removed as soon as practicable and properly disposed. Any such spillage outside of the enclosed stockpile area(s) at the Contractor Transload Facility(ies) shall be formally documented and promptly cleaned up and is incidental to the Work.
   5. The Contractor shall load trucks or railcars within an enclosed loading area to control spillage of sediment, debris, and water effluent to the outside of the loading area. The loading areas shall be designed by the Contractor to contain all spilled sediment, debris, and water effluent and prevent loss of sediment, debris and water effluent. The loading area shall be swept and water effluent collected as needed to prevent truck tires from tracking contaminated material outside of the loading area.
   6. It is the Contractor's responsibility to determine and understand the structural capacity of the Contractor Transload Facility(ies) proposed for offloading, staging, and stockpile use. The maximum structural capacity of these facilities shall not be exceeded by the Contractor.
   7. The Contractor shall employ all best management practices (BMPs) as described in Section 01 35 43 (Environmental Procedures) when performing transloading activities.
   8. Any material encountered by the Contractor that is visibly not Dredge Material, Dredge Debris, nor Identified Debris shall be segregated during transloading at the Contactor Transload Facility. The Contractor shall appropriately manage this material, depending on its nature, and shall determine proper disposal at a permitted Disposal Facility.

B. Temporary Stockpiling:
   1. Temporary stockpile area(s), located at the Contractor Transload Facility(ies), shall be enclosed by a suitable barrier (e.g., Jersey Barrier, "Ecology" blocks, or similar method) and lined along the inside of the enclosure with an impermeable liner of polypropylene or similar material accepted by the Project Representative to prevent loss of dredged material and water effluent.

2. Any storm drains, drainage ports, or other stormwater collection and discharge openings within the temporary stockpile area(s) shall be temporarily plugged to prevent untreated discharge of stockpiled materials and effluent.
3. The temporary stockpile area(s) shall have signs, placards, or reflective barriers that are highly visible at night placed around the area.
4. The Contractor shall construct, operate, and maintain the temporary stockpile area(s) such that all effluent drainage water, stormwater, or other form of discharges from stockpiled Dredge Material, Dredge Debris, Identified Debris, and Piling are collected for treatment and proper disposal. Surface water management outside temporary stockpile areas but within the Contractor Transload Facility(ies) shall comply with permit requirements found in Section 01 35 43 (Environmental Procedures).
5. The Contractor may propose to mix additives with the Dredge Material to bind available dredge effluent water during offloading, temporary stockpiling, or dewatering activities at no additional cost to the Owner.
    a. The type and amount of amendments or additives and means and methods of mixing shall be reviewed and accepted by the Project Representative.
    b. The Contractor has sole responsibility for proper storage, handling, usage, and containment of additives.
    c. The Contractor has sole responsibility for cleanup and damage costs related to the use of additives.
    d. Use of additives is the Contractor's choice and is considered incidental for the purposes of payment.
    e. The Contractor is responsible for the use of additives meeting all material requirements for the Disposal Facility(ies) and meeting requirements of federal, state, and local regulations.
    f. The use of amendments is at the sole discretion of the Contractor, and the Contractor is responsible for ensuring the use of amendments is acceptable by the Disposal Facility and meets requirements of federal, state, and local regulations.
    g. Use of amendments for Dredge Material from any other Sediment Management Area will be considered incidental to the Work. The Contractor has sole responsibility for cleanup and damage costs related to the use of amendments.
6. Upon completion of the Work, the Contractor shall remove all vestiges of Dredge Material, Dredge Debris, Identified Debris, Piling, liner, pump, discharge pipe, and other materials and clean up the temporary stockpile area(s) at the Contractor Transload Facility(ies) to the pre-Project condition, to the satisfaction of the Project Representative. This is incidental to the Work.
7. The Contractor shall employ all BMPs as described in Section 01 35 43 (Environmental Procedures) when performing stockpiling activities.

C. Upland Transportation:
    1. The Contractor shall load and transport for final disposal the Dredge Material, Dredge Debris, Identified Debris, and Piling to the approved Disposal Facility(ies).
        a. After the Dredge Material, Dredge Debris, Identified Debris, and Piling have been sufficiently dewatered, as determined by the Disposal Facility(ies), to be acceptable for upland transportation to the Disposal Facility(ies), the material shall be loaded into lined and covered railcars (e.g., containers or gondolas) for upland transportation.
        b. The Contractor is prohibited from transporting material directly from to the Contractor Transload Facility to the Disposal Facilit(ies) by truck.
        c. If the Contractor Transload Facility is located at a distance greater than 50 miles from the Disposal Facility(ies), upland transportation by rail shall be the primary transportation method for disposal. It is the Contractor's responsibility to verify rail access and capacity for railcar staging at Contractor Transload Facility(ies) or railyard (see specific requirements in Article 1.07).
        d. If the Contractor Transload Facility does not have rail access, the Contractor may be allowed to use trucks to transport materials from the Contractor Transload Facility to the Disposal Facility(ies) operator's rail transfer station and rehandle the materials from the truck (or enclosed container) to railcars for upland transport to the Disposal Facility(ies), as approved by the Project Representative and in accordance with trucking requirements described in Subparagraph 3.03 C (2).
        e. The Contractor may be allowed to transport materials by barge from the Contractor Transload Facility to the Disposal Facility(ies) operator's transfer station.
        f. If the Contractor Transload Facility is located at a distance less than 50 miles from the Disposal Facility(ies), the Contractor may be allowed to use trucks to transport materials directly to the Disposal Facility(ies), as approved by the Project Representative and in accordance with trucking requirements described in Subparagraph 3.03 C (2).

g. All Dredge Material and Dredge Debris (including that removed from land-based equipment) shall be placed directly into a floating transport barge when feasible. Dredge Material and Dredge Debris removed from land-based equipment may be placed into trucks for upland transportation to the Contractor Transload Facility or Disposal Facility(ies) operator's rail transfer station, where it will be loaded on rail cars for upland transport when Work Site conditions limit access of the floating transport barge and in accordance with the access easements and/or right-of-entry agreements as described in Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).
h. For Dredge Material transfer from a temporary upland stockpile area, truck loading will occur within the Disposal Facilit(ies) operator's rail transfer station, and the trucks shall be decontaminated and inspected within a designated contained footprint before they leave the transfer area.

2. Requirements for Truck Transportation:
   a. The Contractor shall identify proposed truck haul routes in the Transloading, Upland Transportation, and Disposal Plan and in accordance with the Drawings, subject to approval by the Project Representative. Haul routes will be reviewed in coordination with EPA to confirm they are configured in a manner to reduce impacts to residential neighborhoods to the extent practical.
   b. All trucking haul routes and operations shall comply with the requirements of Section 01 55 26 (Traffic Control).
3. The Contractor shall measure tonnage (provide weigh tickets) for each truck and/or rail car load prior to leaving the Contractor Transload Facility for upland transportation. The Contractor shall corroborate the weight tickets leaving the Work Site to the Certificates of Disposal provided by the Disposal Facility.
4. The Contractor shall be responsible for the safe transport of all Dredge Material, Dredge Debris, Identified Debris, and Piling in accordance with federal, state, and local laws and regulations.
5. The Contractor is responsible for preparing and signing all Certificates of Disposal (or waste manifests) and obtaining all acceptances for the transportation of all materials. Certificates of Disposal (or waste manifests) shall be submitted to the Project Representative in the Contractor's Weekly Construction Report no later than 30 calendar days after the material has been disposed. The Contractor shall provide sufficient documentation to track all upland material transport from the Contractor Transload Facility(ies) to the Disposal Facility(ies), as applicable.
6. The Contractor shall utilize appropriate controls to prevent any loss of material during upland transport to minimize the release of odors and dust and so no spillage occurs.
   a. The Contractor's methods of control shall be described in the RAWP and shall be to the satisfaction of the Project Representative.
   b. All methods of transporting dredged materials to the Disposal Facility(ies) shall be lined with impermeable liner and securely covered (i.e., tied down) to prevent leakage of water and loss of transported materials, unless placed into watertight containers or gondolas. The Contractor shall inspect each load for evidence of leakage and shall repair any observed leakage before allowing the load to leave for the Disposal Faciltiy(ies).
   c. Any such spillage shall be formally documented and promptly cleaned up; cleanup is incidental to the Work.
   d. All methods of transporting dredged materials to the Disposal Facility(ies) shall be inspected for evidence of spilled dredged materials outside of the lined and contained materials, including on truck tires. Spilled dredged materials on the outside of trucks or railcars, and on truck tires, shall be cleaned off using water and/or brushes to remove the dredged material.
7. The Contractor shall employ all BMPs as described in Section 01 35 43 (Environmental Procedures) when performing transport activities.

D. Disposal and Recycling:
1. The upland Disposal Facility(ies) will determine acceptable characteristics, including water content, of the Dredge Material, Dredge Debris, Identified Debris, and Piling. In some cases, disposal may not be allowed unless the required water content of the unsuitable sediments can be achieved when subjected to the Paint Filter Liquids Test (EPA Method 9095A, Revision 1, December 1996). It is the Contractor's responsibility to coordinate with the Disposal Facility(ies) to determine if the Dredge Material, Dredge Debris, Identified Debris, and Piling are suitable for disposal.
2. Disposal Facility(ies):
   a. Acceptable nonhazardous waste Disposal Facility locations are listed below. The Contractor shall confirm that the Disposal Facility is currently in compliance with its operating permits and able to accept nonhazardous waste from a Superfund site by contacting the EPA Regional Off-Site Contact. Refer to https://www.epa.gov/superfund/site-rule for current contact information.

1) Republic Services, Inc.
   Roosevelt Regional Landfill
   Klickitat County, Goldendale, Washington
2) Waste Management, Inc.
   Columbia Ridge Landfill
   Arlington, Oregon

b. This is not a complete list of acceptable Disposal Facilities. If the Contractor elects to propose another Disposal Facility(ies), such facility(ies) shall be documented in the RAWP. The Owner will approve any alternate proposed Disposal Facility(ies) location with the Contractor-provided proper documentation. The Contractor shall make arrangements for transportation and disposal of the Dredge Material, Dredge Debris, Identified Debris, and Piling with the Disposal Facility(ies) operator(s); however, the responsibility for satisfactory disposal remains with the Contractor.

3. The Disposal Facility may include recycling facilities for applicable potential recyclable materials (such as non-creosote Piling and concrete Identified Debris)
   a. Recycling shall be conducted in off-site locations in accordance with applicable regulations.
   b. The selection of any recycling facility(ies) and its (their) operation shall, at all times, be subject to the approval of the Project Representative.
   c. Potential recyclable materials shall be separated after removal from all other waste streams (Dredge Material, Dredge Debris, Identified Debris, and Piling) and maintained segregated during upland transportation until disposal.

END OF SECTION

SECTION 35 37 10

MATERIAL PLACEMENT

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements for the practice placement, placement of Enhanced Natural Recovery (ENR), Area-Specific Technology B – Amended Cover, Required Residuals Management Cover (RMC), Inner Perimeter RMC, Contingent Outer Perimeter RMC, Backfill Material, Engineered Cap A, and Engineered Cap B, within the footprints shown on the Drawings.

1.02 DESCRIPTION OF WORK

A. Conduct practice placement, as described in Article 3.01, prior to starting any in-water placement Work,

B. Placement of ENR material as shown on the Drawings.

C. Placement of Area-Specific Technology B – Amended Cover (referred herein as Amended Cover) material as shown on the Drawings.

D. Following completion of all remedial dredging activities (Required Dredging and Contingency Re-Dredging) and acceptance of the Work within a Sediment Management Area (SMA) by the Project Representative, the Contractor shall conduct the following:
   1. Placement of Backfill Material, as shown on the Drawings
   2. Placement of Required RMC material over portions of the Dredge Prism footprint, as shown on the Drawings
   3. Placement of Inner Perimeter RMC material, surrounding the Dredge Prism footprint and from top of dredge cut daylight, as shown on Drawings
   4. Placement of Contingent Outer Perimeter RMC material, surrounding the Inner Perimeter RMC, based on post-dredge construction sediment sampling and as directed by the Project Representative
   5. Placement of additional Project Representative-directed RMC placement areas outside of the RMC placement areas shown on the Drawings
   6. Placement of Engineered Cap A materials in SMA 5, as shown on the Drawings
   7. Placement of Engineered Cap B materials in SMA 12B, as shown on the Drawings

E. Materials shall be placed in the application placement area described in Table 35 37 10-1 and as shown on the Drawings.

Table 35 37 10-1
MATERIAL TYPE AND APPLICATION PLACEMENT AREA

MATERIAL TYPE	APPLICATION TECHNOLOGY	APPLICATION PLACEMENT AREA	GENERAL DESCRIPTION
1	Backfill A, Capping Isolation Layer	Backfill on Side Slope dredge surfaces, Engineered Caps A and B areas	Well-graded gravelly sand
2	Backfill B, ENR, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC	Backfill within flat dredge surfaces, ENR areas, Required RMC/Inner Perimeter RMC/Contingent Outer Perimeter RMC areas	Well-graded medium-to-coarse sand
3	Amended Cover	Area-Specific Technology B areas	Material Type 1 (gravelly sand) blended with GAC
4	Capping Filter Layer	Engineered Caps A and B areas	Gravel
5	Capping Erosion Protection Layer	Engineered Caps A and B areas	Quarry spalls

Notes:
ENR: Enhanced Natural Recovery
GAC: granular activated carbon
RMC: residuals management cover

F. Work under this Section shall be performed by the Contractor to include furnishing all labor, materials, tools, equipment, and incidentals required for material placement in support of the overall Project, as described on the Drawings and in these Specifications.

G. Material placement activities shall be completed according to the general Project and specific material placement sequencing requirements in Section 01 14 00 (Work Restrictions); access requirements in Section 01 41 26 (Permits, Easements, and Right-Of-Entry Agreements); temporary facility requirements in Section 01 52 00 (Construction Facilities); the Drawings, and the approach described in the Contractor's Remedial Action Work Plan (RAWP).

H. The Contractor is responsible for the following: 1) selecting the appropriate means and methods, number, and types of placement equipment and determining whether specialized equipment or techniques may be required to conduct the material placement in open-water, nearshore, bank, and shoreline areas; 2) protecting existing structures from damage or destabilization; 3) preventing grounding of in-water equipment within the Work Site and within the full extent of the Lower Duwamish Waterway (LDW); and 4) completing all material placement Work following requirements in Part 3 (Execution) and the Work sequencing and milestones provided in Section 01 14 00 (Work Restrictions). By submitting its Bid, the Contractor acknowledges it has carefully considered Work Site conditions, character of materials, facilities usage, and existing structures adjacent to the placement areas and other Project considerations.

I. Table 35 37 10-2 provides the estimated material placement volumes for ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, and Backfill Material to be placed as part of the Project. This table is presented for Contractor convenience only. The Contractor shall determine the actual volume needed to achieve acceptable placement over the areas shown on the Drawings, considering the details and Vertical Placement Tolerances described in these Specifications and shown on the Drawings. The Contractor shall account for any additional material it deems necessary to accomplish acceptable material placement, considering the Contractor's equipment, means and methods, experience, and the type of material being placed, and potential for loss of material during placement through resuspension or compaction/settlement of the placed materials. All such quantity shall be included in the Contractor's Bid price.

Table 35 37 10-2
ESTIMATED ENR, AMENDED COVER, REQUIRED RMC, INNER PERIMETER RMC, CONTINGENT OUTER PERIMETER RMC, AND BACKFILL VOLUMES

ENR VOLUME (CY)[1]	AMENDED COVER VOLUME[2] (CY)	RMC VOLUME[3] (CY)			BACKFILL VOLUME[5] (CY)
		REQUIRED WITHIN TOE OF DREDGE PRISM AND SIDE SLOPES[4]	INNER PERIMETER	CONTINGENT OUTER PERIMETER	
500	200	13,200	9,800	2,500	57,500

Notes:
Volumes presented in this table are approximated only and shall not be used for basis of measurement and payment. The volumes shown are in situ volumes to place materials to the upper bound of the Vertical Placement Tolerance and do not include estimates of additional quantity associated with material compaction or loss during placement. The volume numbers shown are based on rounded values to the nearest 100 CY. Refer to the Bidding Schedule for Bid areas and/or volumes associated with this Work.

a. The estimated volume for ENR includes the Targeted Placement Thickness of 0.75 foot and a Vertical Placement Tolerance of +0.25 foot.
b. The estimated volume for Amended Cover includes the Targeted Placement Thickness of 1 foot and a Vertical Placement Tolerance of +0.25 foot. Amended Cover volume includes the addition of a minimum GAC dosage of 1.5% (by dry weight).
c. The estimated volumes for Required RMC within the toe of the Dredge Prism, Inner Perimeter RMC, and Contingent Outer Perimeter RMC include the Targeted Placement Thickness of 0.75 foot and Vertical Placement Tolerance of +0.25 foot, as shown on the Drawings, other than the Side Slopes. Actual Contingent Outer Perimeter RMC placement will be conducted as directed by the Project Representative based on test results from construction sediment sampling performed by the Owner.
d. The estimated volume for Required RMC placed on the Side Slopes (top to toe of dredge cut daylight) includes a 2-foot Targeted Placement Thickness and a Vertical Placement Tolerance of +0.5 foot.
e. The estimated volume for Backfill Material includes volume to restore the sediment bed to pre-construction elevations as appropriate (either to a Targeted Placement Thickness or to a Targeted Placement Elevation) and a +0.5-foot Vertical Placement Tolerance, as shown on the Drawings.

CY: cubic yard
ENR: Enhanced Natural Recovery
GAC: granular activated carbon
RMC: residuals management cover

J. Table 35 37 10-3 provides the estimated material placement volumes for Engineered Cap A and Engineered Cap B to be placed as part of the Project. This table is presented for Contractor convenience only.

Table 35 37 10-3
ESTIMATED ENGINEERED CAP A AND ENGINEERED CAP B VOLUMES

ENGINEERED CAP A VOLUME (CY)			ENGINEERED CAP B VOLUME (CY)		
ISOLATION LAYER	FILTER LAYER	EROSION PROTECTION LAYER	ISOLATION LAYER	FILTER LAYER	EROSION PROTECTION LAYER
1,700	1,100	1,700	3,000	2,000	3,000

Notes:

Volumes presented in this table are approximated only and shall not be used for basis of measurement and payment. The volumes shown are in situ volumes to place materials to the upper bound of either the Maximum Overplacement Allowance and do not include estimates of additional quantity associated with material compaction or loss during placement. The volume numbers shown are based on rounded values to the nearest 100 CY. Refer to the Bidding Schedule for Bid areas and/or volumes associated with this Work.

a. Engineered Cap A to be placed in SMA 5:The estimated volume for the isolation layer within the Engineered Cap A includes the Minimum Required Placement Thickness of 1 foot, plus a Maximum Overplacement Allowance of 0.5 foot above the Minimum Required Placement Thickness.
b. The estimated volume for the filter layer within the Engineered Cap A includes the Minimum Required Placement Thickness of 0.5 foot, plus a Maximum Overplacement Allowance of 0.5 foot above the Minimum Required Placement Thickness.
c. The estimated volume for erosion protection layer within the Engineered Cap A includes the Minimum Required Placement Thickness of 1 foot, plus a Maximum Overplacement Allowance of 0.5 foot above the Minimum Required Placement Thickness.

Engineered Cap B to be placed in SMA 12:

a. The estimated volume for the isolation layer within the Engineered Cap B includes the Minimum Required Placement Thickness of 1 foot, plus a Maximum Overplacement Allowance of 0.5 foot above the Minimum Required Placement Thickness.
b. The estimated volume for the filter layer within the Engineered Cap B includes the Minimum Required Placement Thickness of 0.5 foot, plus a Maximum Overplacement Allowance of 0.5 foot above the Minimum Required Placement Thickness.
c. The estimated volume for erosion protection layer within the Engineered Cap B includes the Minimum Required Placement Thickness of 1 foot, plus a Maximum Overplacement Allowance of 0.5 foot above the Required Minimum Thickness.

CY: cubic yard
SMA: Sediment Management Area

1.03 REFERENCED STANDARDS

A. This Project is conducted under the jurisdiction of U.S. Environmental Protection Agency (EPA) Region 10. Work for this Project will be performed in accordance with the EPA *Record of Decision* (EPA 2014); therefore, compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for the LDW Superfund Site cleanup remedy is required. The Work described in this Section will be conducted in general accordance with the environmental provisions of relevant local, state, and federal regulations, as listed in Section 01 41 00 (Environmental Regulatory Requirements). In case of conflict between the requirements of this Section and those listed in Section 01 41 00 (Environmental Regulatory Requirements), the more stringent requirement as determined by the Owner shall prevail. No requirement in this Section shall be construed to contravene applicable laws and regulations. In the event that the Contractor identifies a more stringent requirement within the laws and regulations, the Contractor shall fully comply with such requirement.

1.04 DEFINITIONS

A. Refer to Section 01 11 00 (Summary of Work) for definitions related to the Contract Documents.

B. Amended Cover: Area-Specific Technology B – Amended Cover material is defined as clean, well-graded gravelly sand material blended with granular activated carbon (GAC), meeting the requirements of this Section that the Contractor shall place, as shown on the Drawings. The Targeted Placement Thickness for Amended Cover is 1.0 foot, with a Vertical Placement Tolerance +/-0.25 foot, as shown on the Drawings. Amended Cover consists of Material Type 3, which is a blend of Material Type 1, with the addition of a minimum GAC dosage of 1.5% by dry weight.

C. Backfill Material: Backfill Material is defined as clean, well-graded gravelly sand or medium to coarse sand materials meeting the requirements of this Section that the Contractor shall place, as shown on the Drawings, to restore the sediment bed to pre-construction elevations for habitat purposes and where steeper (2 horizontal to 1 vertical [2H:1V]) temporary dredge cuts need to be restored to a more stable (3H:1V) long-term slope. Placement of the Backfill Material includes a +/-0.5-foot Vertical Placement Tolerance, as shown on the Drawings.

1. Backfill Material consists of Material Type 1 (to be placed on Side Slope dredge surfaces; referred to as Backfill A) and Material Type 2 (to be placed on flat dredge surfaces; referred to as Backfill B).

D. Engineered Cap A: Engineered Cap A shall be placed in SMA 5, as shown on the Drawings. Engineered Cap A will consist of three capping layers:
   1. Isolation layer, using Material Type 1 with a 1-foot Minimum Required Placement Thickness and a 0.5-foot Maximum Overplacement Allowance
   2. Filter layer, using Material Type 4 with a 0.5-foot Minimum Required Thickness and a 0.5-foot Maximum Overplacement Allowance
   3. Erosion protection layer, using Material Type 5 with a 1-foot Minimum Required Placement Thickness and a 0.5-foot Maximum Overplacement Allowance

E. Engineered Cap B: Engineered Cap B shall be placed in SMA 12, as shown on the Drawings. Engineered Cap B will consist of three capping layers:
   1. Isolation layer, using Material Type 1 with a 1-foot Minimum Required Placement Thickness and a 0.5-foot Maximum Overplacement Allowance
   2. Filter layer, using Material Type 4 with a 0.5-foot Minimum Required Placement Thickness and a 0.5-foot Maximum Overplacement Allowance
   3. Erosion protection layer, using Material Type 5 with a 1-foot Required Minimum Required Placement Thickness and a 0.5-foot Maximum Overplacement Allowance

F. Enhanced Natural Recovery (ENR): ENR is defined as clean, well-graded medium to coarse sand material meeting the requirements of this Section that the Contractor shall place as shown on the Drawings. The Targeted Placement Thickness for ENR is 0.75 foot, with a Vertical Placement Tolerance of +/-0.5 foot, as shown on the Drawings. ENR material consists of Material Type 2.

G. Excessive Overplacement: Material placement conducted either outside of the placement areas and/or above the Maximum Overplacement Allowance is considered Excessive Overplacement. The Contractor shall not perform Excessive Overplacement. The Contractor will not be paid for Excessive Overplacement. The Project Representative reserves the right to require the Contractor to remove Excessive Overplacement material. The Contractor will be responsible for any regulatory agency fees and/or fines incurred as a result of Excessive Overplacement.

H. Maximum Overplacement Allowance: The Maximum Overplacement Allowance is the maximum allowable thickness above the Required Minimum Placement Thickness that will be paid for. Maximum Overplacement Allowance varies by type of material and areas of placement, as shown on the Drawings. The maximum volume of the Maximum Overplacement Allowance is included in the Bidding Schedule.

I. Minimum Required Placement Thickness: The Minimum Required Placement Thickness is defined as the thickness that the Contractor shall place Engineered Caps A and B within areas as shown on the Drawings, below which the Work will not be accepted as complete.

J. Residuals Management Cover (RMC): RMC is defined as clean, well-graded medium to coarse sand material meeting the requirements of this Section that the Contractor shall place, as shown on the Drawings. RMC material consists of Material Type 2.
   1. RMC refers to Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, and additional Project Representative-directed RMC placement areas (outside of the RMC placement areas shown on the Drawings), as follows:
      a. Required RMC shall be placed over dredge areas that do not receive Backfill Material and in specific SMAs (as shown on the Drawings). The Required RMC placement footprint includes dredge cut Side Slopes areas (top to toe of dredge cut daylight).

b. Inner Perimeter RMC shall be placed within a 20-foot-wide perimeter surrounding the Dredge Prism, except in the downstream direction that requires a 30-foot-wide perimeter (from top of dredge cut daylight), as shown on the Drawings.
c. Contingent Outer Perimeter RMC shall be placed, as directed by the Project Representative, generally within a 20-foot-wide perimeter surrounding the Inner Perimeter RMC, except in the downstream direction that requires a 30-foot-wide perimeter (outside and surrounding the Inner Perimeter RMC), as shown on Drawings. Construction sediment sampling within the Contingent Outer Perimeter RMC area will be performed to determine whether there is a need for RMC placement in the outer perimeter, and this placement will be directed by the Project Representative.

2. Required RMC within the toe of the Dredge Prism, within the Inner Perimeter RMC, the Contingent Outer Perimeter RMC, and other Project Representative-directed RMC placement areas, is as follows:
   a. Targeted Placement Thickness for these areas is 0.75 foot, with a Vertical Placement Tolerance of +/-0.25 foot, as shown on the Drawings, other than the Side Slopes.
3. Required RMC in exterior Side Slopes is as follows:
   a. Required RMC placed on the exterior Side Slopes (top to toe of dredge cut daylight) is a 2-foot Targeted Placement Thickness, with a Vertical Placement Tolerance of +/-0.5 foot, as shown on the Drawings.
4. The Contractor shall not place additional RMC at thicknesses above the upper end of the Vertical Placement Tolerance.
5. Sediment monitoring during construction may indicate a need to place RMC outside of the defined RMC placement areas shown on the Drawings. The Project Representative may direct the Contractor to place RMC in other locations.

K. Sediment Management Area (SMA): An SMA is a specified area, as shown on the Drawings, that requires the Contractor to implement a remedial action. For SMAs with material placement activities, the SMA is assigned placement of Backfill Material, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Amended Cover, Engineered Cap A, and Engineered Cap B.

L. Targeted Placement Elevation: The Targeted Placement Elevation is defined as the design elevation at which the Contractor shall place Material Type 1 within the required Backfill A placement areas and Material Type 2 within the required Backfill B placement areas, as shown on the Drawings. The Contractor will be paid for Material Types 1 and 2 placed within the Vertical Placement Tolerance.

M. Targeted Placement Thickness: The Targeted Placement Thickness is defined as the design thickness at which the Contractor shall place Material Type 2 within ENR and RMC placement areas and Material Type 3 in Amended Cover placement areas, as shown on the Drawings. The Contractor will be paid for Material Types 2 and 3 placed within the Vertical Placement Tolerance.

N. Vertical Placement Tolerance: The Vertical Placement Tolerance is the depth and elevation ranges above and below the Targeted Placement Elevation/Thickness that qualify for payment under this Contract. The Contractor shall account for the Vertical Placement Tolerance in its Bid Item for the applicable material volumes based on its proposed means and methods.
   1. The Vertical Placement Tolerance for ENR, Amended Cover, Required RMC Material (placed within the toe of the Dredge Prism), Inner Perimeter RMC, and Contingent Outer Perimeter RMC placed is +/-0.25 foot, as shown on the Drawings.
   2. The Vertical Placement Tolerance for Backfill Material and Required RMC placed on Side Slopes is +/-0.5 foot, as shown on the Drawings.

1.05 SUBMITTALS

A. Refer to Section 01 33 00 (Submittals) for all submittals and associated timelines related to the Contract Documents.

B. Pre-Construction Submittals:
   1. Submit a detailed written Material Placement Plan, as part of the RAWP, in conformance with the Specifications. Placement activities for an SMA under this Section shall not begin until the following has taken place: 1) the Material Placement Plan has been reviewed and approved by the Project Representative; and 2) all Required Dredging and Contingency Re-Dredging has been completed for each SMA and accepted by the Project Representative.
   2. At a minimum, the Material Placement Plan shall contain the following information:
      a. General approach that will be implemented for placement of ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, Engineered Cap B, and Backfill Material
      b. Description of sequencing for placement of ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, Engineered Cap B, and Backfill Material, including their intended locations (by SMA) and timing of placement (including Construction Season)
      c. Equipment identification, including the number, types (and names, if applicable), and capacity of equipment to be used, including the following: dredges, tugboats, workboats, haul barges, other marine vessels, and land-based equipment
      d. Work sequence to identify timing and sequencing for completion of material placement of ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Outer Perimeter RMC, Engineered Cap A, Engineered Cap B, and Backfill Material in each SMA as related to other major elements of the Work; the Contractor shall reference the Project Schedule and indicate hours of operation and the time required to complete each placement activity
      e. Methods, procedures, and equipment to be used for all material placement activities, so that Work is completed within the Maximum Overplacement Allowance or the Vertical Placement Tolerance, as described in this Section and shown on the Drawings
      f. Methods, procedures, and equipment to conduct practice placement to meet requirements described in Part 3 (Execution). Description of the approach for protecting existing structures if land-based material placement is proposed.
      g. Methods, procedures, and equipment for pre-soaking and blending of GAC to meet requirements for Amended Cover, described in Part 3 (Execution)
      h. Identification of the location where GAC shall be presoaked and description of means and methods for preparing Material Type 3 and associated quality control process
      i. Documentation for an established upland source of origin for materials for ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Engineered Cap A, Engineered Cap B, and Backfill Material and associated testing certificates provided by the supplier for the Project Representative's review and acceptance prior to the start of Work
      j. Methods, procedures, and equipment to be used for transporting (by truck and/or barge) of ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Outer Perimeter RMC, Backfill Material, Engineered Cap A, and Engineered Cap B to the Work Site
      k. Identification (name and location) and certification of accreditation documents for the independent, certified analytical laboratory(ies) that will conduct required testing for all placement materials that will be used for the Work, as described in this Section

C. Construction Submittals
   1. The Contractor shall provide a physical sample of each Material Type to be used for the Work to the Project Representative a minimum of 15 working days prior to the start of material placement at the Work Site. Each sample shall comply with requirements in

Article 2.10 and consist of approximately 0.5 cubic foot of material composited from no less than five subsamples from any one source of imported material. The Contractor shall ensure that the sample is representative of the material to be imported. The Contractor shall ensure that the source of the ENR, Amended Cover, Required RMC, Inner Perimeter RMC, Contingent Outer Perimeter RMC, Backfill Material, Engineered Cap A, and Engineered Cap B will not change once the sample has been submitted or shall submit a new separate sample for review and acceptance by the Project Representative if a new source is used.
   a. The Contractor shall provide additional imported material samples to the Project Representative upon request.
2. The Contractor shall provide laboratory test reports for the imported materials, as described in Article 2.10. All laboratory test results shall be submitted to the Project Representative for review and approval no later than 15 working days prior to the start of any material placement activities.
3. The Contractor shall submit a daily record of material delivery to the Work Site (including a table of weight tickets), material placement, placement material source, Progress Surveys, supplemental documentation such as electronic placement records (i.e., "bucket maps"), quantities, and a summary of other details of the Work completed as part of the Contractor's Daily Construction Report.
4. The Contractor shall summarize the week's material placement activities in its Weekly Construction Report, including Work completed to date and anticipated Work to be completed in the following week.

D. Post-Construction Submittals:
   1. The Contractor's Annual Construction Season Summary Report, as described in Section 01 78 39 (Project Record Documents)

1.06 CONSTRUCTION SEASON

A. As described in Section 01 14 00 (Work Restrictions), the Work included in this Section (with the exception of the pre-construction and post-construction submittals and delivery/stockpile of products described in Part 2 [Products]) occurring below the Mean Higher High Water elevation shall be completed by the Contractor during the In-Water Work Window.

1.07 JOB CONDITIONS

A. Interference with Navigation
   1. Refer to Section 35 10 00 (Navigation Safety and Marine Traffic Control) for all requirements related to interference with navigation during material placement activities.

B. Protection of Existing Structures and Facilities to Remain
   1. Any damage to existing structures and/or existing facilities caused by the Contractor's placement operations, as determined by the Project Representative, shall be repaired to the functional equivalent of the pre-Project condition at the Contractor's expense within a reasonable period of time acceptable to the Project Representative.
   2. The Contractor shall complete a Post-Construction Structural Condition Inspection of existing structures and facilities to remain after all material placement activities have been completed in a specific SMA adjacent to existing structures and/or facilities to document structural conditions post-construction, as described in Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections).

C. Adjacent Tenants and Other Property Owners
   1. Tenants and other property owners adjacent to the Work Site will be using in-water portions of the Work Site and other adjacent upland and in-water areas for their operations (see access easements and/or right-of-entry agreements described in Section 01 41 26 – Permits, Easements, and Right-of-Entry Agreements). The Owner will coordinate with

these parties on their operations to avoid and/or minimize impacts to their activities. The Owner will then coordinate with the Contractor for access and timing of this Project Work and LDW operations. The Contractor shall review and account for site access requirements and restrictions for each adjacent tenant and property owner to develop their Draft Project Schedule and construction sequencing as part of the RAWP. The Contractor is responsible for making modifications to its Draft Project Schedule and construction sequencing to take into consideration adjacent tenants' and property owners' site access requirements at no additional cost to the Owner.

1.08 MISPLACED MATERIALS

A. Should the Contractor, during the execution of the Work in this Section, lose, dump, throw overboard, sink, or misplace any material, dredge, barge, machinery, or appliance (collectively termed as misplaced materials), the Contractor shall promptly recover and remove the same. The Contractor shall give immediate verbal notice, followed by written confirmation, of the description and location of such obstructions to the Project Representative and shall mark and buoy such obstructions until removed.

B. Should the Contractor refuse, neglect, or delay compliance with this requirement, such obstructions may be removed by the Owner or its agents, and the cost of such operations may be deducted from any money due to the Contractor or may be recovered from the Contractor's bond.

C. The liability of the Contractor for the removal of a vessel wrecked or sunk without his fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbors Act of 3 March 1899 (33 United States Code 410 et seq.).

D. The Contractor shall be responsible for any fees, fines, penalties, or other costs resulting from misplaced materials and shall not pass costs to the Owner.

1.09 ENVIRONMENTAL PROTECTION

A. Work described in this Section shall be performed in accordance with environmental protection requirements, as stated in Section 01 35 43 (Environmental Procedures) and the Contractor's accepted Environmental Mitigation Binder (EMB), and in accordance with all ARARs for the LDW Superfund Site cleanup remedy, as specified in Section 01 41 00 (Environmental Regulatory Requirements).

1.10 QUALITY CONTROL

A. Be responsible for providing all necessary quality controls to successfully complete the Work and to comply with its Construction Quality Control Plan (submitted as part of the RAWP), as specified in Section 01 45 00 (Quality Control).

B. The Owner and Project Representative will inspect at any time the material placement Work for quality assurance purposes. The Owner's and Project Representative's inspections shall in no way release the Contractor from its obligation to comply with the Specifications and will in no way be construed as acceptance of the Work.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide all required placement materials for the Project. Placement materials shall be of the quality, size, shape, and gradation as specified in this Part. Imported placement materials to be

used for construction will be imported, clean, granular material free of roots, organic material, contaminants, and all other deleterious and objectionable material.

2.02 INSPECTION OF PLACEMENT MATERIALS

A. Pre-Construction Inspection of Borrow Source(s)
   1. Prior to any placement activities, the Contractor shall submit a list of the suppliers and borrow source locations for all materials to be placed for the Project.
   2. The borrow source locations shall be inspected by the Contractor prior to delivering material to the Work Site. During such inspection, the Contractor shall demonstrate that the materials to be delivered to the Work Site will meet the appropriate requirements of this Section.
   3. Provide notice to the Project Representative within 5 working days of such inspections. At the Project Representative's discretion, the Project Representative or other designated representative may accompany the Contractor to witness such inspections. This witnessing will in no way release the Contractor from complying with the Specifications, and the Contractor shall not construe this witnessing as approval of any particular source of material.

B. Barges with placement materials shall be visually inspected by the Contractor upon delivery to the Work Site. Placement materials shall be inspected for the presence of foreign, recycled, or reprocessed material or debris to ensure that imported materials are natural, native, virgin materials and free of contaminants (i.e., meet the appropriate requirements of this Section). The presence of foreign, recycled, or reprocessed materials or debris is to be reported to the Project Representative, who will determine if the import placement materials are acceptable for performance of the placement Work. In the event of rejections, it is the responsibility of the Contractor to remove all rejected material from the Work Site at no extra cost to the Owner. Acceptance or rejection of import placement materials brought to the Work Site will be provided within 1 working day of the Contractor reporting inspection of placement material results to the Project Representative.

C. The Project Representative may, at any time, perform an independent inspection or conduct sampling/testing of any placement materials. Materials may be rejected if identified as substandard, based on the sole discretion of the Project Representative. The Project Representative may collect samples from the Contractor's stockpile of imported materials and test the samples for quality assurance purposes at the Project Representative's discretion. The Contractor shall provide safe access for the Project Representative to collect samples from the Contractor's imported material stockpiles. Owner sampling and testing does not alleviate the Contractor's responsibility to conduct the required material testing and characterization described in Article 2.10. Inspection and testing by the Project Representative shall not be used by the Contractor as a delay claim.

2.03 MATERIAL SOURCES

A. Acceptable established upland borrow sources shall be those listed in the RAWP. Prior to ordering/purchasing placement materials, the Contractor shall verify the material supplier meets the design quantities, delivery schedules, gradations, and chemical quality criteria established for each Material Type.

2.04 GRANULAR ACTIVATED CARBON

A. GAC: GAC shall be a virgin, not regenerated, carbon, with coconut fiber or anthracite as source material. Sample of material, vendors name, manufacturers name, manufacturer's specification sheet, grain size testing results shall be submitted to Project Representative at least 15 working days prior to ordering GAC for review and approval of proposed GAC material. The Contractor

shall not order GAC material for Project use until it has received written approval from the Project Representative.

1. GAC shall be relatively well-graded across the grain size range of 200 to 1,000 microns and approved by the Project Representative.
2. GAC shall be washed and free of floatable material.
3. Water soluble ash content of GAC material shall be less than 0.5% (by weight) per ASTM International (ASTM) D5029.

B. Product specification sheets for the selected GAC material shall be submitted to the Project Representative for review and approval 15 working days prior to ordering the GAC material.

C. Prior to shipment, the manufacturer shall label each package with the following identifying product information:
   1. Manufacturer name
   2. Manufacturer address
   3. Product code and lot number

D. The GAC material shall be suitably packaged to isolate the material from the environment so as to preserve its efficacy for the duration of storage.

E. A visual inspection of the imported packaged GAC material shall be conducted by the Contractor upon delivery to the designated location, where blending for the Amended Cover material is proposed, to identify if any packaging has been damaged. The Contractor shall notify the Project Representative of GAC material in damaged packaging. The individual packaging shall be marked and further inspected for product integrity.

F. The Contractor may propose an alternative GAC material or products for the purpose of minimizing or eliminating blending or pre-soaking of the GAC material prior to placement, to be approved by the Project Representative prior to procurement.

2.05 MATERIAL TYPE 1

A. Material Type 1 shall be a well-graded naturally occurring water-rounded gravelly sand. Aggregates from quarries, ledge rock, and talus slopes are not acceptable for these applications. The material shall contain no organic matter nor soft friable particles in quantities considered objectionable by the Project Representative.

B. Material Type 1 shall be used for placement as Backfill Material on Side Slope dredge surfaces (Backfill A) and as the capping isolation layer in Engineered Caps A and B and conform to the following gradation:

U.S. STANDARD SIEVE SIZE	PERCENT BY DRY WEIGHT, PASSING
1-1/2 inches	100
3/4 inch	73 to 83
5/8 inch	60 to 70
1/2 inch	56 to 66
1/4 inch	54 to 64
U.S. No. 4	48 to 58
U.S. No. 10	27 to 37
U.S. No. 40	8 to 18
U.S. No. 200	0 to 5

2.06 MATERIAL TYPE 2

A. Material Type 2 shall be a well-graded naturally occurring medium to coarse grained sand. Aggregates from quarries, ledge rock, and talus slopes are not acceptable for these applications. The material shall contain no organic matter nor soft friable particles in quantities considered objectionable by the Project Representative.

B. Material Type 2 shall be used for placement as Backfill Material flat dredge surfaces (Backfill B) and in ENR and RMC areas and conform to the following gradation:

U.S. STANDARD SIEVE SIZE	PERCENT BY DRY WEIGHT, PASSING
3/8 inch	100
U.S. No. 4	99
U.S. No. 8	75 to 82
U.S. No. 16	44 to 59
U.S. No. 30	19 to 37
U.S. No. 50	4 to 16
U.S. No. 100	1 to 5
U.S. No. 200	0 to 2

2.07 MATERIAL TYPE 3

A. Material Type 3 shall be Material Type 1 blended with GAC material at the dosage required in Part 3 (Execution).

B. Material Type 3 shall be used for placement as the Amended Cover

C. GAC shall be presoaked prior to blending, as required in Part 3 (Execution).

D. Amended Cover material shall be blended prior to placement by proportioning the Material Type 1 and GAC in proper amounts, as required in Part 3 (Execution).

2.08 MATERIAL TYPE 4

A. Material Type 4 shall be clean, free-draining gravel material. Individual particles shall be free from all objectionable coatings. The material shall contain no organic matter nor soft friable particles in quantities considered objectionable by the Project Representative.

B. Material Type 4 shall be used for placement of the capping filter layer in Engineered Caps A and B and conform to the following gradation:

U.S. STANDARD SIEVE SIZE	PERCENT BY DRY WEIGHT, PASSING
2-1/2 inches	100
2 inches	65 to 100
3/4 inch	40 to 80
U.S. No. 4	0 to 5
U.S. No. 200	0 to 1

2.09 MATERIAL TYPE 5

A. Material Type 5 shall be a clean, free-draining quarry spalls. Individual particles shall be free from all objectionable coatings. The material shall contain no organic matter nor soft friable particles in quantities considered objectionable by the Project Representative.

B. Material Type 5 shall be used as the capping erosion protection layer in Engineered Caps A and B and shall conform to the following gradation:

U.S. STANDARD SIEVE SIZE	PERCENT BY DRY WEIGHT, PASSING
8 inches	100
3 inches	40 max.
3/4 inch	10 max.

2.10 MATERIAL TESTING AND CHARACTERIZATION

A. The Contractor shall utilize an analytical laboratory with current environmental laboratory accreditation from the Washington State Department of Ecology for the analysis of the matrix of solid and chemical materials using the specified analytical methods.

B. The Contractor shall test samples of all materials to be imported for the following physical properties:
   1. Grain Size Distribution (ASTM D6913)

C. The Contractor shall test samples of all materials to be imported for the chemical concentrations provided in Table 35 37 10-4, except for Material Type 5. Imported material shall have chemical concentrations lower than the sediment quality criteria presented in Table 35 37 10-4.

Table 35 37 10-4
IMPORTED MATERIAL SEDIMENT QUALITY CRITERIA

ANALYTE	REPORTING LIMIT	CRITERIA	UNITS	EPA METHOD
METALS				
Arsenic	0.2	7	mg/kg dw	EPA 6020B UCT-KED
Cadmium	0.1	5.1	mg/kg dw	EPA 6020B UCT-KED
Chromium	0.5	260	mg/kg dw	EPA 6020B
Copper	0.5	390	mg/kg dw	EPA 6020B UCT-KED
Lead	0.1	450	mg/kg dw	EPA 6020B
Mercury	0.025	0.41	mg/kg dw	EPA 7471B
Silver	0.2	6.1	mg/kg dw	EPA 6020B
Zinc	6	410	mg/kg dw	EPA 6020B UCT-KED
SEMIVOLATILE ORGANIC COMPOUNDS				
AROMATIC HYDROCARBONS				
Total LPAH	20	5200	µg/kg dw	EPA 8270E (calculated)
2-Methylnaphthalene	20	670	µg/kg dw	EPA 8270E
Acenaphthene	20	500	µg/kg dw	EPA 8270E
Anthracene	20	960	µg/kg dw	EPA 8270E
Fluorene	20	540	µg/kg dw	EPA 8270E
Naphthalene	20	2100	µg/kg dw	EPA 8270E
Phenanthrene	20	1500	µg/kg dw	EPA 8270E
Total HPAH	20	12000	µg/kg dw	EPA 8270E (calculated)
Benz[a]anthracene	20	1300	µg/kg dw	EPA 8270E
Benzo[a]pyrene	20	1600	µg/kg dw	EPA 8270E
Benzo[g,h,i]perylene	20	670	µg/kg dw	EPA 8270E
Chrysene	20	1400	µg/kg dw	EPA 8270E
Dibenzo[a,h]anthracene	20	230	µg/kg dw	EPA 8270E
Fluoranthene	20	1700	µg/kg dw	EPA 8270E
Indeno[1,2,3-c,d]pyrene	20	600	µg/kg dw	EPA 8270E
Pyrene	20	2600	µg/kg dw	EPA 8270E
Total benzofluoranthenes	40	3200	µg/kg dw	EPA 8270E (calculated)

ANALYTE	REPORTING LIMIT	CRITERIA	UNITS	EPA METHOD
cPAH (µg TEQ/kg dry weight)	18.1	590	µg TEQ/kg dw	EPA 8270E
PHTHALATE ESTERS				
Bis[2-ethylhexyl]phthalate	50	1300	µg/kg dw	EPA 8270E
Butylbenzyl phthalate	20	63	µg/kg dw	EPA 8270E
Dimethyl phthalate	20	71	µg/kg dw	EPA 8270E
ORGANIC AND CHLORINATED ORGANIC CHEMICALS				
2,4-Dimethylphenol	20	29	µg/kg dw	EPA 8270E-SIM
4-Methylphenol	20	670	µg/kg dw	EPA 8270E
Benzoic acid	200	650	µg/kg dw	EPA 8270E-SIM
Pentachlorophenol	100	360	µg/kg dw	EPA 8270E-SIM
Phenol	20	420	µg/kg dw	EPA 8270E
1,2,4-Trichlorobenzene	5	31	µg/kg dw	EPA 8270E-SIM
1,2-Dichlorobenzene	5	35	µg/kg dw	EPA 8270E-SIM
1,4-Dichlorobenzene	5	110	µg/kg dw	EPA 8270E-SIM
Dibenzofuran	20	540	µg/kg dw	EPA 8270E
Hexachlorobenzene	0.5	22	µg/kg dw	EPA 8081B
n-Nitrosodiphenylamine	5	28	µg/kg dw	EPA 8270E-SIM
PCBs				
Total PCBs (sum of congeners)	0.2	2	µg/kg dw	EPA 1668c
DIOXINS/FURANS				
Dioxin/furan TEQ	1.6	2	ng/kg dw	EPA 1613b
2,3,7,8-TCDD	0.1	-	ng/kg dw	EPA 1613b
1,2,3,7,8-PeCDD	0.1	-	ng/kg dw	EPA 1613b
1,2,3,4,7,8-HxCDD	0.1	-	ng/kg dw	EPA 1613b
1,2,3,6,7,8-HxCDD	0.1	-	ng/kg dw	EPA 1613b
1,2,3,7,8,9-HxCDD	0.1	-	ng/kg dw	EPA 1613b
1,2,3,4,6,7,8-HpCDD	0.1	-	ng/kg dw	EPA 1613b
OCDD	0.1	-	ng/kg dw	EPA 1613b
2,3,7,8-TCDF	0.1	-	ng/kg dw	EPA 1613b
1,2,3,7,8-PeCDF	0.1	-	ng/kg dw	EPA 1613b
2,3,4,7,8-PeCDF	0.1	-	ng/kg dw	EPA 1613b
1,2,3,4,7,8-HxCDF	0.1	-	ng/kg dw	EPA 1613b
1,2,3,6,7,8-HxCDF	0.1	-	ng/kg dw	EPA 1613b
1,2,3,7,8,9-HxCDF	0.1	-	ng/kg dw	EPA 1613b
2,3,4,6,7,8-HxCDF	0.1	-	ng/kg dw	EPA 1613b
1,2,3,4,6,7,8-HpCDF	0.1	-	ng/kg dw	EPA 1613b
1,2,3,4,7,8,9-HpCDF	0.1	-	ng/kg dw	EPA 1613b
OCDF	0.1	-	ng/kg dw	EPA 1613b

Notes:
µg: microgram
µg/kg: microgram per kilogram
EPA: U.S. Environmental Protection Agency
dw: dry weight
HPAH: higher molecular weight polycyclic aromatic hydrocarbon
HpCDD: Heptachlorodibenzo-para-dioxin
HxCDD: Hexachlorodibenzo-p-dioxin
HxCDF: Hexachlorodibenzofuran
LPAH: lower molecular weight polycyclic aromatic hydrocarbon
mg/kg: milligram per kilogram
ng/kg: nanogram per kilogram
OCDD: Octachlorodibenzodioxin
OCDF: Octachlorodibenzofuran
PAH: polycyclic aromatic hydrocarbon
PCB: polychlorinated biphenyl
PeCDD: Pentachlorodibenzo-p-dioxin
PeCDF: Pentachlorodibenzofuran
TCDD: Tetrachlorodibenzodioxin

TCDF: Tetrachlorodibenzofuran
TEQ: toxic equivalents quotient
TEQ/kg: toxic equivalents quotient per kilogram

D. Prior to placement activities, the Contractor shall provide a physical sample of each Material Type to be used for the Work (refer to Article 1.05).

E. One sample for every 10,000 cubic yards (CY; with an absolute minimum of two samples) of material sources of Material Types 1, 2, and 4 to be imported to the Work Site shall be collected by the Contractor and analyzed per the above tests. The frequency of testing may be increased or decreased by the Project Representative if considered appropriate based on the results of testing or visual assessment of imported material. A minimum of two samples shall be collected and analyzed for each Material Type, even if the required volume imported to the Work Site is less than 10,000 CY.

F. The Contractor shall test the samples at an approved analytical laboratory with current environmental laboratory accreditation from the Washington State Department of Ecology to demonstrate that the source material concentrations are lower than the sediment quality criteria provided in this Section. The Contractor shall submit laboratory results to the Project Representative for review and approval. The Contractor shall provide the results of such tests to the Project Representative for review and approval at least 15 working days before delivery and use of the materials to the Work Site. The results shall be provided in report form, with the reports clearly identifying the following:
   1. Source of samples
   2. Sampling dates
   3. Chain of custody
   4. Sampling locations
   5. Material Certification: Submit certification from material supplier that the materials meet specification requirements for gradation and chemical testing.

PART 3 EXECUTION

3.01 GENERAL SEQUENCING

A. Refer to Section 01 14 00 (Work Restrictions) for general Project sequencing requirements associated with all Work activities. Material placement for an SMA described in this Section shall not begin until the following has occurred: 1) the Owner has completed its review and accepted the Material Placement Plan; and 2) all Required Dredging and Contingency Re-Dredging for each SMA has been completed by the Contractor and accepted by the Project Representative per Section 02 21 00 (Site Surveys and Positioning Control).

B. Practice Placement:
   1. Prior to initiation of any material placement activities at the Work Site, the Contractor shall demonstrate to the Project Representative that the Contractor's proposed placement means and methods are adequate and effective in meeting the Targeted Placement Thicknesses for ENR and RMC.
      a. The practice placement shall be conducted using the same proposed equipment, materials, and placement methods that will be used for full-scale placement in the areas shown on the Drawings.
      b. The Contractor shall provide visible measurement of the practice placement for observation and acceptance by the Project Representative.
      c. The practice placement shall be conducted above the water surface on a flat working area (such as a flat deck barge or at a Contractor-provided upland staging area) to allow visual observation and measurement of placed thickness. Practice placement

area and size shall be proposed by the Contractor and needs to be accepted by the Project Representative.

d. If the practice placement does not meet the Targeted Placement Thicknesses, the Contractor shall modify its means and methods and conduct additional practice placement to demonstrate compliance with the Specification requirements at no additional cost to the Owner.
    1) Practice placement is considered incidental to placement Work in this Section, and the Contractor shall account for this cost under the Bid Items No. A9 – Purchase and Placement of ENR Material and No. A11 – Purchase and Placement of Required RMC Material and Inner Perimeter RMC Material.

C. Placement sequencing of Backfill Material in areas adjacent to Required RMC:
    1. When placing Backfill Material adjacent to Required RMC, as shown on Drawings, the Contractor shall place the Backfill Material first. Backfill Material placement shall be accepted by the Project Representative prior to placing the adjacent Required RMC material in that area.

D. Placement sequencing of Engineered Cap layers:
    1. When placing Engineered Cap A and Engineered Cap B, Placement Post-Construction Surveys shall be completed by the Contractor following placement of each Engineered Cap A and B layer (isolation, filter, and erosion protection layers).
    2. Each capping layer shall meet the Required Minimum Placement Thicknesses, as shown on the Drawings, prior to placing the next Engineered Cap layer in that area.

E. All material placement activities for a specific SMA shall occur in the same Construction Season as Required Dredging/Contingency Re-Dredging for that same SMA (refer to Section 01 14 00 – Work Restrictions).

F. The Contractor shall perform a Post-Construction Structural Condition Inspection described in Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections) after all placement activities have been completed within nearby SMAs.

3.02 PROCESS FOR SMA COMPLETION AND ACCEPTANCE

A. Material placement activities shall not begin within a dredged SMA until the Project Representative has completed review and accepted all Required Dredging Post-Construction Surveys or Contingency Re-Dredging Post-Construction Surveys in a specific SMA of the Work Site. This Required Dredging Post-Construction Survey or Contingency Re-Dredging Post-Construction Survey for a specific SMA will serve as a Pre-Construction Survey for placement of the Required RMC, Engineered Cap A, Engineered Cap B, and Backfill Material, as described in Section 02 21 00 (Site Surveys and Positioning Control).

B. Material placement activities for ENR and Amended Cover areas shall use the current Construction Season's Project Pre-Construction Survey (i.e., for the area of survey coverage in that Construction Season) as the Pre-Construction Survey for placement of ENR and Amended Cover materials, as described in Section 02 21 00 (Site Surveys and Positioning Control).

C. The Contractor shall conduct Placement Progress Surveys and Placement Post-Construction Surveys and associated field verification (e.g., bucket plot placement maps) to assess compliance with the Targeted Placement Elevation, Targeted Placement Thickness, and Minimum Required Placement Thickness, in accordance with Section 02 21 00 (Site Surveys and Positioning Control). The Contractor shall notify the Project Representative within 2 working days prior to completing material placement. The Contractor shall plan for the Project Representative to take 2 working days to review the Placement Post-Construction Survey and provide acceptance of the Work as complete for material placement in that SMA.

1. The Project Representative-accepted Placement Post-Construction Survey will be used to compare against either of the following, as applicable: 1) Dredging Post-Construction Surveys or Contingency Re-Dredging Post-Construction Surveys, or 2) Project Pre-Construction Survey, as defined in Section 02 21 00 (Site Surveys and Positioning Control) for measurement and payment purposes for each application placement area. The Project Representative will review the Placement Post-Construction Survey data and, if satisfactorily completed, will accept the material placement activities for each SMA as complete.

D. Material placement acceptance criteria:
   1. The Contractor shall meet the material placement acceptance criteria in Table 35 37 10-5. Both acceptance criteria (Vertical Placement Tolerance or Maximum Overplacement Allowance, plus placement area horizontal tolerance) shall be met for the material placement to be accepted by the Project Representative within each SMA.

Table 35 37 10-5
MATERIAL PLACEMENT ACCEPTANCE CRITERIA

PLACEMENT AREA	PLACEMENT CRITERIA	VERTICAL PLACEMENT TOLERANCE OR MAXIMUM OVERPLACEMENT ALLOWANCE	PLACEMENT AREA HORIZONTAL TOLERANCE
Backfill	Targeted Placement Elevation	Elevation +/-6 inches from Targeted Placement Elevation (and grades)	Minimum of 50% of surface area at or higher than Targeted Placement Elevation (and grades)
ENR	9-inch Targeted Placement Thickness	Thickness of +/-3 inch of Vertical Placement Tolerance from Targeted Placement Thickness	Minimum of 50% of surface area equal to or thicker than Targeted Placement Thickness
RMC	Required RMC (within the toe of the SMAs) and Inner and Outer Perimeter RMCs: 9-inch Targeted Placement Thickness Required RMC (exterior Side Slopes with 3H:1V placement): 24-inch Targeted Placement Thickness	Within the toe of the SMAs: Thickness of +/-3 inches of Vertical Placement Tolerance from Targeted Placement Thickness Exterior Side Slopes: Thickness of +/-6 inches of Vertical Placement Tolerance from Targeted Placement Thickness	Minimum of 50% of surface area equal to or thicker than Targeted Placement Thickness
Amended Cover	12-inch Targeted Placement Thickness	Thickness of +/-3 inch of Vertical Placement Tolerance from Targeted Placement Thickness	Minimum of 50% of surface area equal to or thicker than Targeted Placement Thickness

Engineered Caps A and B Layers	Isolation layer: 12-inch Minimum Required Placement Thickness, with 6-inch Maximum Overplacement Allowance Filter layer: 6-inch Minimum Required Placement Thickness with 6-inch Maximum Overplacement Allowance Erosion Protection Layer: 12-inch Minimum Required Placement Thickness with 6-inch Maximum Overplacement Allowance	Minimum Required Placement Thickness with Maximum Overplacement Allowance	NA

Notes:
ENR: Enhanced Natural Recovery
NA: not applicable
RMC: residuals management cover
SMA: Sediment Management Area

E. If the Targeted Placement Elevation/Thickness requirements are not achieved within the Vertical Placement Tolerances, the Minimum Required Placement Thickness requirements are not achieved within the Maximum Overplacement Allowances, the horizontal area-based acceptance criteria are not met in all placement areas as shown on the Drawings, or Excessive Overplacement occurs, the Contractor shall correct placement deficiencies and conduct additional associated Placement Post-Construction Surveys to the satisfaction of the Project Representative and at no extra cost to the Owner.

3.03 SURVEYS

A. Refer to Section 02 21 00 (Site Surveys and Positioning Control) for all survey and positioning control requirements related to the placement activities.

3.04 CONDUCT OF WORK

A. Layout of Work:
   1. Establish an accurate method of horizontal and vertical control before placement begins.
   2. The proposed method and maintenance of the horizontal control system shall be subject to the acceptance of the Project Representative and if, at any time, the method fails to provide accurate location for the placement operation, the Contractor may be required to suspend the placement activity until accurate control is established. Refer to equipment positioning and methods in Section 02 21 00 (Site Surveys and Positioning Control).

B. Material Type 3 Soaking and Blending Requirements:
   1. Material Type 1 used for preparation of Material Type 3 shall use the same source of Material Type tested per Article 2.10.
   2. Material Type 3 shall be generated by uniformly blending GAC with Material Type 1 (see Article 2.07), at a minimum dosage of 1.5% (by dry weight).
   3. The Contractor may elect to blend Material Type 3 at the aggregate supplier or within the Work Site. An upland location is preferred for the Contractor to pre-soak the GAC and blend it with Material Type 1 to prepare Material Type 3.
   4. The GAC shall be soaked in water (fully submerged) and agitated for a minimum of 24 hours prior to blending with Material Type 1.
   5. The Contractor shall provide a means of verification of the GAC content within the amended mixture, subject to acceptance by the Project Representative. At time of blending, the Project Representative will observe blending and may collect samples of Material Type 3 to verify GAC content. The Contractor shall provide the Project Representative at least 3 working days' notice of all Material Type 3 blending and barge

loading activities. Any barges loaded without proper notification to the Project Representative may result in rejection of material at the Project Representative's discretion at the sole expense of the Contractor.

6. After soaking and blending Material Type 3, the Contractor shall keep the stockpile of Material Type 3 wet (or re-wet as needed) prior to placing it. The Contractor shall verify Material Type 3 is wet before placement.

C. Material Placement

1. The Contractor shall conduct practice placement, as described in Article 3.01, and obtain the Project Representative's acceptance of its placement methods prior to starting any in-water material placement Work.
2. Material placement activities shall be completed in a manner that does not result in mixing of the subgrade of placed materials. Placing materials by use of a bottom dump barge is not allowed due to excessive mixing that could occur. The Contractor shall use the proposed equipment approved by the Project Representative in the Material Placement Plan prior to starting material placement activities.
3. Placement of Contingent Outer Perimeter RMC (surrounding the Inner Perimeter RMC) shall be conducted by the Contractor as directed by the Project Representative, based on post-dredge construction sediment sample testing results. Additional RMC placement outside of the RMC placement areas shown on the Drawings may be directed by the Project Representative.
4. For any Contractor-proposed land-based material placement, the Contractor shall comply with the following:
    a. The Owner has obtained access agreements presented in Section 01 41 26 (Permits, Easements, and Right-of-Entry Agreements).
    b. Land-based material placement may be allowed for SMA 13 if the Contractor receives approval from the Project Representative and provided that access agreements are in place. For any other location where the Contractor proposes land-based access and an Owner-provided access agreement is not provided, the Contractor is responsible for obtaining such access agreements.
    c. For upland access of Contractor equipment to SMA 13, located adjacent to the South Park Marina (as shown on the Drawings), the Contractor shall assess the capacity of shoreline structures to support the Contractor's proposed loading of existing operating structure in that location. In the event that the Contractor elects to access this SMA via upland, and potential Contractor equipment proposed for accessing is in excess of current structure loading, the Contractor shall describe and demonstrate its approach for protecting the structures in the Material Placement Plan.
5. All placement activities shall be performed in accordance with the requirements of these Specifications and the EMB to protect water quality during the completion of the Work. The Contractor shall conduct its Work in such a manner to minimize to the extent practical the resuspension and loss of placement material during placement. Therefore, the following Best Management Practices (BMPs) shall be described in detail in the Contractor's Material Placement Plan and implemented to meet water quality criteria. These BMPs may be modified or eliminated upon approval by the Project Representative:
    a. Materials shall be placed from bottom (toe) of the slope and working up the slope and in such a way that allows for complete coverage of the designated area and minimizes disturbance to the existing sediment bed surface.
    b. The Contractor shall not place materials by rapid dumping of a barge load; rather, a barge load shall be placed in a controlled manner.
    c. Engineered cap layers shall be placed in a manner that does not damage previously placed engineered cap layer(s).
6. The Contractor will not be allowed to drag equipment over areas with placed material to even out the overplacement high spots.
7. The Contractor shall obtain barge displacement measurements for all loaded material barges as they arrive at the Work Site. Barge displacement measurements, both empty and full, shall also be collected and provided as part of the Daily Construction Report at the end

of each work shift and following placement of all materials stockpiled on the Contractor material barges.

8. The Contractor shall collect electronic records of each placement location (i.e., “bucket maps”) and include such information in a format acceptable to the Project Representative as part of the Daily Construction Report.
9. Grounding, anchoring, or spudding requirements of the Contractor’s equipment on the waterway bed are described in Section 35 10 00 (Navigation Safety and Marine Traffic Control).
10. Requirements for material placement conducted near or adjected to the ENR/AC Pilot Plots are described in Section 35 10 00 (Navigation Safety and Marine Traffic Control).

D. Material placement under existing structures:
   1. Under-bridge access shall be from the water only.
   2. Be responsible for field verifying dimensions/elevations/horizontal and vertical clearances of structures, and underpier access.
   3. Proceed with caution when placing materials while maintaining, navigating, or transitioning floating vessels or other equipment.
   4. Protect all existing structures during under-bridge placement, and immediately report to the Project Representative any incidents that may have caused damage.
      a. The Contractor is responsible for reviewing the structural as-builts and other conditions under the South Park Bridge and South 98th Street Bridge to be encountered during placement activities (see Section 01 13 00 – Reference Material).
      b. The Contractor will be solely responsible for any corrective actions to repair damage caused by Contractor actions.
   5. Carefully select and implement means and methods for placing materials under existing structures to account for both the tidal fluctuations over the construction duration and limited access under the bridge (both physical access and fluctuating clearance) and to prevent damage to any portion of the existing structures.

END OF SECTION