TECHNICAL SPECIFICATIONS
JORGENSEN FORGE OUTFALL SITE, STAGE 2 CMP REMOVAL
8531 EAST MARGINAL WAY SOUTH
SEATTLE, WASHINGTON

Prepared for:

Jorgensen Forge Corporation
and
The Boeing Company

PRELIMINARY DRAFT

Technical Specifications
JORGENSEN FORGE OUTFALL SITE, STAGE 2 CMP REMOVAL

CERTIFICATION PAGE

The engineering material and data contained in these Technical Specifications were prepared under the supervision and direction of the undersigned, whose seal as a registered professional engineer in the State of Washington is affixed below. Construction Drawings are provided under separate cover.

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DIVISION 1
GENERAL REQUIREMENTS

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SECTION 011110
SUMMARY OF WORK

PART 1 GENERAL

1.1 GENERAL DESCRIPTION OF WORK PERFORMED UNDER THIS CONTRACT

A. Preparing and implementing a Health and Safety Plan.

B. Prepaing for review a Construction Work Plan as described in Section 013310.

C. Documenting and protecting existing site conditions, structures and environmental monitoring systems, including installing a protective cover over the existing Stage 1 excavation area.

D. Limited site demolition.

E. Temporary erosion and sediment control and installing and maintaining other temporary construction facilities.

F. Installing drilled shafts hydraulically connecting new SSP walls to existing SSP walls.

G. Maintenance, monitoring and reinforcement of existing steel sheet piles (SSP).

H. Installing RESPONSIBLE PARTIES furnished steel sheet piles.

I. Groundwater management, dewatering, treatment and disposal.

J. Soil excavating, handling and stockpiling north of the 2-66 SSP wall to relieve pressures on the wall, then backfilling the excavation.

K. Dry contaminated soil excavating, and handling.

L. Wet contaminated soil excavating, and handling.

M. Contaminated soil transportation and disposal.

N. Furnishing and placing engineered backfill and quarry spalls to backfill contaminated soil excavations.

O. Removing and decontaminating the SSP walls installed pursuant to this Contract.

P. Coordinating with the RPRto complete confirmation sampling and analysis associated with the RESPONSIBLE PARTIES Sampling and Analysis Plan.

1.2 CONTRACT DESCRIPTION

A. Contract Type: Unit Price.

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1.3 CONTRACTOR'S RESPONSIBILITY

A. Provide the RESPONSIBLE PARTIES with a complete and operable system, even though the Drawings and Specifications may not specifically call out all items of work, complete with incidental appurtenances, materials, and the like.

B. Perform the work in accordance with the lines, grades, cross sections, and dimensions shown on the Drawings. Obtain Resident Project Representative (RPR) approval for deviations.

C. Dimensions on the Drawings are presumed to be correct. Carefully check all dimensions prior to beginning the Work. Immediately notify the RPR in writing if errors or omissions are discovered.

D. Complete Work described in the, Construction Contract Documents, Construction Drawings and Technical Specifications. See referenced Corrugated Metal Pipe Work Plan for intended design and results of the Project.

E. Arrange for, review and deliver work plans, submittals, shop drawings, product data, and samples.

F. Arrange for manufacturers' warranties, inspections, and service.

G. Maintain accurate as-built technical specifications and construction drawing records.

1.4 RESPONSIBLE PARTIES'S RESPONSIBILITIES:

A. Review work plans, submittals, shop drawings, product data, and samples.

B. Provide RESPONSIBLE PARTIES furnished products.

C. Administer Construction Contract Documents.

D. Determine and manageresponsivities that are given to the RPR.

E. Complete RESPONSIBLE PARTIES's responsibilities with regard to the Confirmation Sampling and Analysis Plan.

F. Assist Contractor with management, segregation, containment, profiling, and disposal of solid and liquid wastes in accordance with applicable regulations.

G. Pay disposal fees for disposal of Subtitle D and Subtitle C waste.

1.5 RESPONSIBLE PARTIES'S PROVIDED PRODUCTS

A. AZ 38-700N steel sheet piles (SSP) currently stored on site

B. Six super sacks (1,000 lbs/sack) of is 8x30 mesh liquid-phase virgin coconut shell carbon for use in the water treatment system.

C. Potable water supply.

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1.6 CONTRACTOR USE OF SITE

A. Limit use of site and premises to allow:

1. RESPONSIBLE PARTIES occupancy and on-going facility operations.
2. Boeing occupancy and on-going facility operations.
3. Work by Others and Work by RESPONSIBLE PARTIES.

B. Construction Operations: Limited to areas shown on Drawings.

C. Site Access: via the main security gate on E. Marginal Way S. as shown on the Drawings.

D. Time Restrictions for Performing Work: Monday through Friday 7AM to 10PM. Saturday and Sunday 8AM to 10PM.

1.7 REGULATORY DRIVER.

A. This project is being completed in accordance with the Third *Modification to the Administrative Order on Consent for Removal Action at the Jorgensen Forge Outfall Site*, *CERCLA Docket No. 10-2011-0017.* For additional details review listed reference documents listed in Section 011121.

1.8 CODES AND REGULATIONS

A. Meet requirements of applicable laws, statutes, regulations, ordinances, safety regulations of federal, state, city, and county jurisdictions and as may be further referenced in the Contract Documents.

B. Comply with provisions of federal, state, and local statutes, ordinances, and regulations dealing with the prevention of environmental pollution of natural resources that affect the project.

C. If additional work is required due to the enactment of new or the amendment of existing statutes, ordinances, and regulations dealing with the project, the RESPONSIBLE PARTIES shall issue a change order setting forth the additional work that must be undertaken. The change order will not invalidate the Contract and there will be, in addition to a reasonable extension of contract time, if necessary, a reasonable adjustment in the contract price to compensate CONTRACTOR for all costs and expenses incurred, including overhead, and profit, as a result of the additional work.

1.9 INSPECTION AND TESTING

A. All confirmation sampling and analysis called for in the *Sampling and Analysis Plan/Quality Assurance Project Plan*, these Technical Specifications or deemed necessary by the RESPONSIBLE PARTIES shall be performed by the RESPONSIBLE PARTIES or their authorized representative except when indicated otherwise in the Technical Specifications.

B. All Construction Quality Assurance (CQA) tests and inspections called for in the Technical Specifications or deemed necessary by the RESPONSIBLE PARTIES

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shall be performed by the RESPONSIBLE PARTIES or his authorized representative except when indicated otherwise in the Specifications.

C. Allow representatives of regulatory agencies and RESPONSIBLE PARTIES on Site to inspect the Work at any time.

D. All Construction Quality Control (CQC) and Manufacturers Quality Control (MQC) tests called for in the Technical Specifications or deemed necessary by the RESPONSIBLE PARTIES shall be performed by the CONTRACTOR or his authorized Subcontractors or suppliers.

1.10 STAGING AREA

A. The CONTRACTOR'S Staging Area: RESPONSIBLE PARTIES will set aside on the project property for the CONTRACTOR's use a staging area for workers, equipment, and storage of products.

B. Restore the staging area to its original condition at the conclusion of work, or to a condition acceptable to the RPR.

1.11 FIRE PROTECTION

A. Perform all work in a fire-safe manner. Comply with applicable local and State fire prevention regulations.

1.12 CONSTRUCTION WATER

A. Fire hydrants are available near the site entrance. Another fire hydrant located on Boeing property is shown on the Drawings and is available to the CONTRACTOR. Restrictions on its use will be discussed during the Pre-bid meeting.

B. Back up water may be available from the Duwamish River. Restrictions on its use will also be discussed at the pre-bid meeting.

1.13 COORDINATION

A. Coordinate Work with other project work occurring under separate contracts with RESPONSIBLE PARTIES.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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SECTION 011121
ACRONYMS REFERENCE STANDARDS REFERENCE REPORTS AND DEFINITIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. A summary of acronyms, reference standards and definitions relevant to this Contract.

1.2 ACRONYMS

A. Whenever in the Contract the following acronyms are used, their meanings shall be as follows:

1. AASHTO - American Association of State Highway and Transportation Officials.
2. ASCE - American Society of Civil Engineers.
3. ASTM - ASTM International, Inc.
4. COE - Corps of Engineers.
5. OSHA - Occupational Safety and Health Administration.
6. BMP - Best Management Practice
7. Boeing - The Boeing Company
8. CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
9. CMP - Corrugated Metal Pipe
10. EMJ - Earle M. Jorgensen
11. Ecology - Washington Department of Ecology
12. EPA - U.S. Environmental Protection Agency
13. First Modification - *First Modification to the Administrative Order on Consent for Removal Action at the Jorgensen Forge Outfall Site*, *CERCLA Docket No. 10-2011-0017*
14. HASP - Health and Safety Plan
15. JFC - Jorgensen Forge Corporation
16. JFOS Jorgensen Forge Outfall Site; the area encompassing the northwest corner of the Jorgensen Forge Property and the southwest corner of the Boeing Plant 2 Property, subject to CERCLA Docket No. 10-2011-0017
17. LDW - Lower Duwamish Waterway
18. METRO - King County Wastewater Treatment Division
19. NAD83 - North American Datum 1983
20. NAVD88 - North American Vertical Datum 1988
21. Order - Administrative Order on Consent for Removal Action, CERCLA Docket No. 10-2011-0017

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22. RESPONSIBLE PARTIES - Jorgensen Forge Corporation (JFC) and The Boeing Company (Boeing) collectively referred to as Responsible Parties.
23. PCB - polychlorinated biphenyl
24. Plant 2 - Boeing Plant 2 Property
25. PPE - personal protective equipment
26. Ppm - parts per million
27. QAPP - Quality Assurance Project Plan
28. RCRA - Resource Conservation and Recovery Act
29. SAP - Sampling and Analysis Plan
30. Second Modification - *Second Modification to the Administrative Order on Consent for Removal Action at the Jorgensen Forge Outfall Site*, *CERCLA Docket No. 10-2011-0017*
31. SoundEarth - SoundEarth Strategies, Inc.
32. SSP - Steel Sheet Pile
33. TCE - trichloroethylene
34. TCLP - Toxicity Characteristic Leaching Procedure
35. TESC - Temporary Erosion and Sedimentation Control
36. Third Modification - *Third Modification to the Administrative Order on Consent for Removal Action at the Jorgensen Forge Outfall Site*, *CERCLA Docket No. 10-2011-0017*
37. VOC - Volatile Organic Compound
38. Work Plan - Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016

1.3 REFERENCE DOCUMENTS

A. The following reports provide additional relevant information about the project:

1. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016 (Work Plan).
2. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.
3. Geotechnical Recommendations, Sheet Pile Shoring – Uplands Remediation, Jorgensen Forge Outfall, , PanGeo August 18, 2015.
4. Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.
5. Site Specific Health and Safety Plan, Sound Earth Strategies, January 21, 2016.

1.4 REFERENCED STANDARD PUBLISHED SPECIFICATIONS

A. The Contract Documents contain references to various Standard Published Specifications, codes, practices, and requirements for materials, workmanship, installation inspections, and tests, which references are published and issued by the organizations, societies, and associations listed below by abbreviation

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and name. Such references are hereby made a part of the Contract Documents to the extent cited.

B. Any material, method, or procedure specified by reference to the number, symbol, or title of a specific Published Standard Specification or standard, such as a Commercial Standard, American National Standard, Federal or State Specification, Industry or Government Code, a trade association code or standard, or other similar standard, must comply with the requirements of the edition in effect on the date of Bid Opening.

C. The code, specification, or standard referred to, except as modified in these Specifications, will have full force and effect as though printed in these Technical Specifications. These referenced Published Standard Specifications and standards are not furnished to the BIDDERS since manufacturers and trades involved are assumed to be familiar with their requirements. The RESPONSIBLE PARTIES will furnish, upon request, information as to how copies of the standard Published Specifications and other standards referred to may be obtained.

1.5 REFERENCED STANDARDS RELATED TO WASTE DISPOSAL

A. The publications listed below form a part of this Contract to the extent referenced. The publications are referred to in the text by basic designation CODE OF FEDERAL REGULATIONS (CFR).

1. 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response.
2. 40 CFR 107 Hazardous Materials Program Procedures.
3. 49 CFR 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements.
4. 49 CFR 173 Shippers - General Requirements for Shipments and Packaging.
5. 49 CFR 178 Specifications for Packaging.
6. 40 CFR 260 Hazardous Waste Management System, General and Characteristics of Hazardous Waste.
7. 40 CFR 261 Identification and Listing of Hazardous Waste.
8. 40 CFR 262 Standards Applicable to Generators of Hazardous Waste.
9. 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste
10. 40 CFR 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.
11. 40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.
12. 40 CFR 266 Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities.
13. 40 CFR 268 Land Disposal Restrictions.
14. 40 CFR 270 EPA Administered Permit Programs: The Hazardous Waste Permit Program.
15. 40 CFR 279 Standards for the Management of Used Oil.
16. 40 CFR 300 National Oil and Hazardous Substances Pollution Contingency Plan.
17. 40 CFR 302 Designation, Reportable Quantities, and Notification.

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18. 40 CFR 761 Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.

B. The Washington Administrative Code (WAC) publications listed below form a part of this Contract to the extent referenced. .

1. WAC 173-303 Washington Dangerous Waste Regulations.
2. WAC 173-351 Criteria for Municipal Solid Waste Landfills.
3. WAC 296-843 Hazardous Waste Operations.

1.6 ASTM STANDARDS

A. ASTM Standards are referenced in these Technical Specifications. Each reference represents the most current version.

1.7 DEFINITIONS

A. Whenever the terms listed below are used, the intent and meaning will be interpreted as indicated.

1. ASTM. ASTM International, Inc.
2. Construction Quality Assurance (CQA) Laboratory. A laboratory capable of conducting the product testing required by this CQA Manual.
3. CQA Monitors. Authorized representatives of the CQAC who represent the RESPONSIBLE PARTIES, and who are responsible for on-site implementation of CQA procedures, and are responsible for observing and documenting CQA activities during construction.
4. Construction Quality Control (CQC). Those actions that provide a means to measure and regulate the characteristics of an item or service to comply with the requirements of the contract documents. Quality control will be performed by the CONTRACTOR.
5. Construction Drawings. The plans, profiles, typical cross-sections, elevations, and details, as well as their amendments and supplemental drawings, which show the locations, character, dimensions, and details of the work to be performed. Construction Drawings may also be referred to as the "Plans."
6. Contract Documents. The set of documents issued by the RESPONSIBLE PARTIES, which include bidding requirements, contract forms, contract conditions, Technical Specifications, Construction Drawings, addenda, and contract modifications.
7. CONTRACTOR. The person or persons, firm, partnership, corporation, or any combination, who as an independent Contractor has entered into a contract with the RESPONSIBLE PARTIES to perform construction defined in the contract documents.
8. Design Engineer of Record. The individual or firm responsible for the design and preparation of the project Construction Drawings and Technical Specifications at the time they are issued for construction. Also referred to as “designer" or “ENGINEER."

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9. Earthwork. A construction activity involving the use of soil and aggregate products to construct components of the project as defined in the Technical Specifications.

10. Field Order. Change requested by the RESPONSIBLE PARTIES that does not require a change in Contract Amount or Contract time.

11. Manufacturer Quality Control (MQC). Those actions that provide a means to measure and regulate the manufactured characteristics of a material or product to comply with the requirements of the Technical Specifications. MQC will be performed by the product manufacturers.

12. Municipal Solid Waste (MSW) means: useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, discarded commercial, industrial, demolition and construction materials. The term does not include hazardous waste.

13. Non-conformance. A deficiency in characteristic, documentation, or procedure that renders the quality of an item, product or activity unacceptable or indeterminate. Examples of non-conformance include, but are not limited to, physical defects, test failures, and inadequate documentation.

14. RESPONSIBLE PARTIES's. Jorgensen Forge Corporation, and The Boeing Company referred to collectively as the RESPONSIBLE PARTIES.

15. Procedure. A written instruction that specifies or describes how an activity is to be performed.

16. Products. An article or substance that is manufactured or refined for sale, such as "Stego" geomembrane, and gravel borrow.

17. Project Documents. CONTRACTOR submittals, Construction Drawings, record drawings, Technical Specifications, shop drawings, construction quality control and quality assurance manuals, health and safety plans, and project schedules.

18. Project Communication Records. Documents created throughout the project that record phone conversations, emails, fax communications or other ancillary contact between participants of the project. Such documents are to be maintained as part of the Project Documents and submitted to the RESPONSIBLE PARTIES upon completion of the project.

19. Project Surveyor. The independent surveying firm the RESPONSIBLE PARTIES appoint or the CONTRACTORs retain to provide layout of work, to perform surveys to measure installed quantities, and to perform surveys to document as-built conditions.

20. Record Drawings. Drawings recording the constructed dimensions, details, and coordinates of the project. Also referred to as "as-builts."

21. Resident Project Representative. The authorized representative of the RESPONSIBLE PARTIES who is assigned to the project site or any part thereof who is responsible for administering the construction contract.

22. Site. The area defined on the Site Plan in the set of Construction Drawings.

23. Technical Specifications. The qualitative requirements for products, materials, and workmanship upon which the contract is based.

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24. Testing. Verification that a manufactured or installed product meets specified requirements by subjecting that product to a set of physical, chemical, environmental, or operating conditions.
25. Work. CONTRACTOR's required actions for implementing the construction contract.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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SECTION 011122
FORMAT AND INTENT OF DRAWINGS AND SPECIFICATIONS

PART 1 GENERAL

1.1 FORMAT OF SPECIFICATIONS

A. These Specifications are written in the imperative mood, where the verb that clearly defines the action required by the CONTRACTOR is typically the first word of the sentence. An example follows; “Spread adhesive with a notched trowel”, as opposed to “The CONTRACTOR shall spread the adhesive with a notched trowel”. Because this is a two-party Contract between the RESPONSIBLE PARTIES and one Prime CONTRACTOR the words “CONTRACTOR shall” are inferred and do not need to be repeated in each sentence.

B. Technical Specification section numbers follow guidance provided by the Construction Specifications Institute (CSI) Master Format for numbering and titles, and the page format also follows the CSI standard 3-part format.

1.2 CONSTRUCTION DRAWINGS AND TECHNICAL SPECIFICATIONS

A. The intent of the Construction Drawings (Drawings) and Technical Specifications (Specifications) is to describe work in a manner acceptable to the RESPONSIBLE PARTIES and in full compliance with the terms of the Contract. The Drawings and Specifications are complimentary to one another and must be used together to fully define the Work.

B. The Drawings provide the plans, profiles, typical cross-sections, elevations, and details, which show the locations, character, dimensions, and details of the work to be performed. Construction Drawings may also be referred to as the "Plans.

C. The Specifications provide the qualitative requirements for products, materials, and workmanship upon which the Contract is based.

1.3 CHANGES TO DRAWINGS AND SPECIFICATIONS

A. It is inherent in the nature of construction that some changes to the Drawings and Specifications may be necessary during the course of construction to adjust them to field conditions, and it is the essence of the Contract to recognize a normal and expected margin of change. RESPONSIBLE PARTIES have the right to make such changes, from time to time, to the Drawings and Specifications, in the character of the work as may be necessary or desirable to insure the completion of the work in the most satisfactory manner without invalidating the Contract. See Section 012600 – Modification procedures.

1.4 COORDINATION AND INTERPRETATION OF DRAWINGS AND SPECIFICATIONS

A. The Drawings, Specifications, Contract Conditions, Contract Change Orders, and all supplementary documents are essential parts of the Contract, and a

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requirement occurring in one is as binding as though occurring in all. They are intended to be complimentary and coordinated and to describe and provide for a complete Work.

B. Should it appear that the Work or other matters relative thereto are not sufficiently detailed or explained in the Contract Documents, apply to the RESPONSIBLE PARTIEfor such further explanations as may be necessary and conform to the explanations as part of the Contract.

C. In the event of a discrepancy between a Drawing and the figures written thereon, use the figures. Figured dimensions govern over scaled dimensions. Avoid using scaled dimensions in the performance of the Work. Cross sections and details take precedent over general plan views.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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SECTION 011419
USE OF PREMISES WORK RESTRICTIONS EXISTING SITE CONDITIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Uses and restrictions for the premises, staging and stockpile areas, parking, vehicle and equipment access, work hours, and inadvertent discovery of archaeological materials

B. Requirements for protecting the onsite area described as the "Stage 1 Excavation Area" and "Stage 1 Spot Excavation Area".

1.2 RELATED SECTIONS

A. Section 011110 – Summary of Work.

B. Section 013310 – Construction Work Plan Submittal.

C. Section 014126 – Permits.

D. Section 015210 - Temporary Construction Facilities.

E. Section 015700 - Temporary Controls

F. Section 015713 – Temporary Erosion and Sediment Control.

1.3 USE OF PREMISES

A. Limit use of premises to work in areas shown on the Drawings. Do not disturb portions of the Jorgensen Forge Outfall Site or adjacent Boeing property beyond areas identified as available for CONTRACTOR's use as shown on the Drawings.

B. Limit disturbance of areas outside the Jorgensen Forge Outfall Site limits to designated access points and storage areas shown on the Drawings or specified herein.

C. Property Owner Occupancy: Jorgensen Forge Corporation (Jorgensen Forge); herein referred to as the Property Owner access to the work area, but restrict public access.

D. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to the Property Owner, Property Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

E. Deliveries: Schedule deliveries to minimize the use of driveways and entrances. Schedule deliveries to minimize space and time requirements or the storage of materials and equipment on site.

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F. Move any stored products under CONTRACTOR's control that interfere with the operations of the Property Owner or access to adjacent Boeing property.

G. Protected Areas: The following areas within the project limits are to be protected from any and all negative impacts during construction including materials storage and storm water runoff.

1. Existing Boeing Company (Boeing) sheet pile wall.
2. Existing structures near the project area.
3. Existing fencing to remain near the project area.
4. Existing shoreline slope outside of the excavation limits.
5. Any negative impacts external of the project area caused by the CONTRACTOR during construction are the responsibility of the CONTRACTOR.

1.4 JORGENSEN FORGE SECURITY PROCEDURES

A. Comply with Jorgensen Forge's security procedures that require all visitors to the upland facility comply with a Visitor Security Plan in accordance with the security requirements imposed by Jorgensen Forge's contracts with the U.S. Navy, U.S. Navy suppliers, and other defense-related firms, which:

B. Comply with Boeing's security procedures that require all visitors comply with Boeing's Visitor Security Plan.

C. Comply with the Visitor Security Plan which establishes specific requirements for visitor security and access to the facility.

D. Assure that all visitors have the appropriate safety training for the work they will perform and are citizens of the United States as is required by Jorgensen Forge and Boeing.

E. Escort all non-U.S. citizens all times.

F. Maintain any chain-link fences that secure the entire eastern and western boundaries of the Facility.

G. In accordance with the Visitor Security Plan, maintain and secure a temporary fence during completion of the Work that restricts access to individuals with the appropriate security clearance and safety training.

H. Assure that any ingress or egress through this fence or the main access gate is cleared by a security guard and that their persons possess a visitor badge.

I. Assure that all visitors that enter the JFC Facility through the temporary fence or the main access gate on the eastern portion of the facility receive the necessary safety training provided by the Property OWNER.

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1.5 STAGING AND STOCKPILE AREAS

A. Limit staging and stockpile areas to the areas shown on the Drawings. Limit use of these areas to purposes directly related to the construction of the Project. Do not use these areas until RESPONSIBLE PARTIES provide written approval of the Construction Work Plan and the Section on Staging, Stockpiling, Parking and Truck Access Plan.

1.6 RESTORATION

A. Restore all areas disturbed by the Work. Regrade, replant and re-pave all ingress or egress points that are disturbed by the Work to their original or better conditions.

B. Unless otherwise designated, protect all existing site features to remain from damage above and below grade. If unavoidable damage occurs, notify the RPR immediately and comply with their decision as to how to replace or repair the damage at no additional cost to the RESPONSIBLE PARTIES.

1.7 CONTRACTOR PERSONNEL PARKING

A. Limit parking for personnel to an area within the designated parking area outside of the staging and stockpile areas.

B. At CONTRACTORS discretion secure off-site parking with the approval of the RESPONSIBLE PARTIES.

1.8 TRUCK AND EQUIPMENT ACCESS

A. To avoid traffic conflict with local residents and businesses, and to avoid overloading of streets and driveways elsewhere on the RESPONSIBLE PARTIES's property, limit the access of trucks and equipment to a route as accepted in the Construction Work Plan.

B. Limit other vehicular traffic to the areas identified in the accepted Construction Work Plan

1.9 WORK HOURS

A. Perform week day work (Monday through Friday) between 7:00 AM to and 9:00 PM, or during hours defined in the RESPONSIBLE PARTIES accepted Schedule of Working Hours.

B. Do not perform any activities outside those hours defined in the accepted Construction Work Plan without prior approval of the RPR. Request RPR approval no later than 48 hours prior to the proposed work outside of these hours.

1.10 PERMITS RESTRICTIONS AND REGULATORY REQUIREMENTS

A. Comply with Section 014126.

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1.11 EXISTING SITE CONDITIONS

A. Existing 12-inch and 24-inch corrugated metal pipes.

1. Locations shown on Drawing are approximate but based on field observations made during Stage 1 Excavation work.
2. Driven wood piles may exist (but not confirmed) directly below the CMP's that were designed to support the CMPs.
3. The 12-inch and 24-inch CMPs may be joined at some point along the 24-inch CMP, but this is not confirmed.

B. Existing concrete footing

1. An existing concrete footing exists at the approximate location shown on Drawing C-3.
2. Driven wood piles may exist (but not confirmed) directly below the concrete footing that were designed to support the footing.

C. Stage 1 Excavation Area

1. The area defined as "Stage 1 Excavation Area" represents an area that was previously excavated to remove contamination and backfilled with clean soil and covered with quarry spalls. Protect this area as described in Section 011419.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PROTECTING STAGE 1 EXCAVATION AREAS

A. Furnish and install a protective cover over the areas shown on the Drawings as Stage 1 Excavation Area and Stage 1 Spot Excavation Area.

B. Provide a system that prevents any disturbance of the existing ground surface in the Stage 1 Excavation Area and Stage 1 Spot Excavation Area.

C. Provide a cover system that prevents liquid and solids from penetrating the existing ground surface in the Stage 1 Excavation Area and Stage 1 Spot Excavation Area.

D. Extend the protective cover 2 feet beyond the Stage 1 Excavation and Stage 1 Spot Excavation limits (all four sides of the areas).

E. Slope the protective cover to drain inside the SSP enclosure.

F. Acceptable cover systems include:

1. Geomembrane barrier placed between layers (top and bottom) of soil or gravel.

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3.2 EXISTING CATCH BASINS

A. Locate and protect existing stormwater catch basins shown on the Drawings.

3.3 EXISTING GROUNDWATER MONITORING WELLS

A. Locate and protect existing groundwater monitoring wells shown on the Drawings.

END OF SECTION

PRELIMINARY DRAFT

SECTION 011421
DOCUMENTING AND PROTECTING PRE-CONSTRUCTION SITE CONDITIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Documenting site conditions at the time a Notice to Proceed is issued.

B. Protecting installed construction, and buildings, not exclusively including the existing AZ-38-700N steel sheet pile (SSP) wall, existing W-75 SSP, the Stage 1 excavation areas, existing utilities including (but not limited to) cables, sewer lines, catch basins, water lines, and private water intakes, existing survey control bench marks, and existing conditions as shown on the Drawings and areas south of the project area defined by the newly installed SSP wall defining the southern project limit..

C. Coordinating with public utilities and private companies that have any aboveground, belowground, or underwater electric, gas, or other utility lines within the work areas.

1.2 RELATED SECTIONS

A. Section 011419 - Use of Premises and Work Restrictions

B. Section 015210 – Temporary Construction Facilities.

C. Section 022010 – Layout of Work and Surveys.

D. Section 314116 – Steel Sheet Piles.

1.3 PRE-CONSTRUCTION SUBMITTALS

A. Submit a photographic record of the Site as described in Part 3 of this Section.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 PHOTOGRAPHIC RECORD

A. Prior to initiating any Work walk the site with the RPR and take up to 50 photographs that document pre-construction site conditions.

B. Provide photos that include a date stamp.

C. Do not start Work until RPR accepts the photographic record.

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D. Provide post-construction photographic documentation to the RPR per Section 017700.

3.2 PROTECTION

A. Provide protection to maintain existing conditions prior to construction so that the existing installed Work is not damaged at completion of Work.

B. Use equipment and procedures that prevent damage to existing steel sheet pile walls once installed.

C. Protect from direct or indirect damage existing utilities and property in the vicinity of the Work, whether over or underground.

D. Protect existing structures and their finishes from damage.

E. Do not load or permit any part of any existing structure to be loaded in any manner not intended as part of the design

F. Do not subject structures in adjacent properties on adjacent properties to stresses or pressures that will endanger them.

G. Locate and protect the Stage 1 Excavation Areas as described in Section 011419.

H. Locate and protect existing catch basins.

I. Locate and protect existing groundwater monitoring wells.

J. Protect LDW and other land areas from discharges, run-offs or collateral contamination during project

3.3 UTILITIES

A. Locate utilities prior to beginning Work.

B. Contact representatives of each public and private utility and request that they physically mark the locations of any and all utilities in the area of Work at least 7 days prior to commencing work within 100 ft. of that area.

C. Contact Utility Notification Center at 1.800.424.5555, at least 7 working days prior to beginning excavations.

D. Identify all utility setbacks in the work area.

E. Stop Work and notify the RPR if a utility-related object is discovered during excavation operations that was not identified on the Drawings or by the utility.

F. If damage is caused to a utility, immediately notify both the utility company and RPR and coordinate the repair of the utility with the appropriate utility company. Coordinate repairs in coordination with the utility company, at the

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CONTRACTOR's expense. RPR reserves right to stop Work until repairs are made to the utility.

3.4 REPAIR

A. Repair utilities damaged during construction if the utility was identified on the Drawings or located by the private or public utility locate company. Complete these repairs at no additional cost to the RESPONSIBLE PARTIES.

B. If an unidentified utility is damaged during the Work, immediately notify the utility Owner if known and the RPR. Do not proceed with a repair until directed by the RPR This type of repair may require issuance of a Change Order..

3.5 POST-CONSTRUCTION PHOTOS

A. Photograph the post-construction conditions of the Site.

B. Photograph the same general items as the pre-construction photos.

C. Submit with the project record documents.

END OF SECTION

PRELIMINARY DRAFT

SECTION 011435
MOBILIZATION

PART 1 GENERAL

1.1 DESCRIPTION

A. Mobilization consists of preparatory work and operations, including but not limited to those necessary for the movement of personnel, project health and safety, project security including adequate personnel, equipment, supplies, and incidentals to the project site; for the establishment of offices, buildings, and other TEMPORARY facilities necessary for work on the project; for premiums on bond and insurance for the project and for other work and operations the CONTRACTOR must perform or costs the CONTRACTOR must incur before beginning work on the project, which are not covered in other bid items.

B. Mobilization also includes preparation, RESPONSIBLE PARTIES review and one revision to the project Construction Work Plan Submittal that is due after notice of award and prior to initiating construction,

C. Demobilization consists of work and operations included but not limited to, those necessary for movement of personnel, equipment, supplies, incidentals, and offices off site. Demobilization also includes cleaning and restoration of the site and removal of all temporary facilities and erosion control items. Demobilization also includes Contract Closeout requirements.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 012000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Methods for measuring bid items.

B. Basis of payment for bid items.

C. Methods for calculating bid item quantities.

D. Determining the value of unit prices.

E. Description of the force account Work allowance.

F. Procedures for paying for force account work.

G. Procedures and Payment for Change Order or extra work.

H. Non-payment for rejected materials.

I. Measurement and payment descriptions for contract bid items

J. Measurement and payment descriptions for optional bid items

1.2 RELATED SECTIONS

A. Section 004143—Bid Proposal Form.

B. Section 007200—General Conditions.

C. Section 011110—Summary of Work..

D. Section 012600 – Modification Procedures.

E. Section 012900 – Applying for Payment.

1.3 MEASUREMENT OF CONTRACT BID ITEMS

A. Performed according to United States Standard measure.

B. Based on actual units installed or neat line dimensions of work completed and measured based on the methods identified in this Section.

1.4 PAYMENT FOR CONTRACT BID ITEMS

A. Payment for lump sum or unit price items listed in Section 004113—Bid Form include all overhead and profit and for supplying all materials, labor, equipment, and tools, necessary to complete the Work in accordance with the

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Technical Specifications, Construction Drawings, Contract Conditions and accepted CONTRACTOR's Construction Work Plan.

B. Payment also includes all costs of compliance with the regulations of public agencies having jurisdiction, including safety and health requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA)..

C. No separate payment will be made for any item that is not specifically set forth in the Bid Form, and will be considered incidental to the Work.

D. Payment Terms: Payment terms are Net 60 Days calculated from the RESPONSIBLE PARTIES's receipt of an acceptable Application for Payment and confirmation of completed acceptable Work.

1.5 CALCULATION OF QUANTITIES

A. Progress Payment Quantities: The CONTRACTOR will compute all quantities of Work performed, or of materials and equipment delivered to the site for progress payment purposes. The RESPONSIBLE PARTIES may at any time verify quantities calculated by the CONTRACTOR.

B. Final Payment Quantities: The CONTRACTOR will compute all quantities of Work performed, or of materials and equipment delivered to the site for final payment purposes. Calculation of final quantities will be as described in paragraphs 1.11 and 1.12. The RESPONSIBLE PARTIES will verify all quantities.

C. Earthwork quantities: Some quantities of earthwork will be measured in their final installed location only. It is anticipated that soil processing, and stockpiling may require multiple handling of materials. Include all costs necessary for multiple handling of materials or temporary stockpiling in bid item prices.

1.6 VALUES OF UNIT PRICES

A. The number of units and quantities contained in the Bid Schedule (Bid Form) are approximate only, and final payment will be made for the actual number of units and quantities incorporated in the Work or made necessary to complete the project.

B. In the event that work and materials or equipment are required to be furnished to a greater or lesser extent than is indicated by the Contract Documents, furnish such Work and materials or equipment in greater or lesser quantities.

C. Major change of quantities after award of the contract: Where the quantity of a pay item in this Contract is an estimated quantity, and when the value of that pay item is greater than 10 percent of the original contract amount, and the actual installed quantity of such pay item varies more than twenty-five percent (25%) above or below the estimated quantity stated in this contract, an equitable adjustment in the contract unit price shall be made upon demand of the CONTRACTOR or RESPONSIBLE PARTIES. The equitable adjustment shall

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be based upon any increase or decrease in costs due solely to the variation above one hundred twenty-five percent (125%) or below seventy-five percent (75%) of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the RESPONSIBLE PARTIES shall, upon receipt of a written request for an extension of time within ten days from the beginning of such delay, or within such further period of time which may be granted by the RESPONSIBLE PARTIES prior to the date of final settlement of the contract, ascertain the facts and make such adjustment for extending the completion date as in RESPONSIBLE PARTIES judgment the findings justify.

1.7 FORCE ACCOUNT WORK ALLOWANCE

A. For the purpose of providing a common proposal for all Bidders, and for that purpose only, the RESPONSIBLE PARTIES have estimated an amount of $50,000 for force account work for unforeseen conditions. The RESPONSIBLE PARTIES have entered the amount on the Bid Form to become a part of the base bid amount by all Bidders.

B. When required, the allowance will be transferred to the CONTRACTOR in accordance with the force account procedures as outlined in Section 007200 – General Conditions and as stipulated in this Section.

1.8 PAYMENT FOR FORCE ACCOUNT WORK

A. Payment for Force Account work will be determined as follows:

1. Labor
   a. Payment for labor will be based on hourly rates provided on the Force Account Labor Rate Schedule submitted with the Bid Form.
   b. Payment constitutes full compensation for labor including wages, benefits, overhead, and profit for each individual.
2. Equipment
   a. Payment for equipment will be based on hourly rates provided on the Force Account Equipmentr Rate Schedule submitted with the Bid Form.
   b. Payment constitutes full compensation for supplying equipment and includes all costs for maintenance, fuel, insurance, overhead, profit, and any other costs necessary to provide and operate the equipment.
3. Materials
   a. Payment for materials will be paid for at cost plus 10 percent.
   b. Payment will be based on invoices from suppliers indicating full cost to CONTRACTOR
   c. Where invoices are not available, a unit cost must be approved by the RESPONSIBLE PARTIES prior to use of the material.

1.9 CHANGES AND EXTRA WORK

A. Changes and extra work will be measured and paid for in accordance with the requirements of this Section, or as provided in written Change Orders.

PRELIMINARY DRAFT

1.10 REJECTED MATERIALS

A. Quantities of material wasted or disposed in a manner not called for in the Specifications; rejected loads of material, including material rejected after it has been placed by reasons of the failure of the CONTRACTOR to conform to the provisions of the Specifications; material not unloaded from the transporting vehicle; material placed outside the limits indicated by the Drawings or established by the RESPONSIBLE PARTIES; or material remaining on hand after completion of the Work, will not be paid for, and such quantities will not be included in the final total quantities. No compensation will be permitted for loading, hauling, and disposing of rejected material.

1.11 MEASUREMENT AND PAYMENT DESCRIPTIONS FOR BID ITEMS

A. Contract Bid Items

1. Bid Item 1 – Construction Work Plan Submittal
   a. Basis of Measurement: Lump Sum (LS).
   b. Basis for Payment: Includes all cost to prepare, submit and to make one requested revision to the Construction Work Plan as described in Sections 013300 and 013310.
2. Bid Item 2 – Mobilization, Demobilization and Project Management
   a. Basis of Measurement: Lump Sum (LS).
   b. Basis for Payment: Includes mobilization and demobilization of labor and equipment, implementing the HASP, securing the Site, establishing office buildings, obtaining and applying construction water for dust control, to manage the project, to conduct project meetings, to prepare and submit project submittals and progress schedules, for premiums on bond and insurance, and other Work necessary to complete the project as described in Section 011435 and other relevant Division 1 Sections, which is not covered under other Bid Items..
3. Set Up Operate and Maintain Temporary Controls and Temporary Facilities
   a. Basis of Measurement: Lump Sum (LS).
   b. Basis for Payment: Includes all costs to set up, operate and maintain temporary controls and temporary facilities as described in Sections 015210 and 015700.
4. Demolition
   a. Basis of Measurement: Lump Sum (LS).
   b. Basis for Payment: Includes all costs to complete demolition as described in Section 310505, and as shown on the Drawings.
5. Install, Maintain and Remove Stage 1 Excavation Area Protection
   a. Basis of Measurement: Lump Sum (LS).
   b. Basis for Payment: Includes all costs to furnish, install, maintain and remove Products to protect the Stage 1 excavation area and spot excavation area as described in Section 011421 and as described in the accepted Construction Work Plan.

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6. Furnish and Install Drilled Shafts

   a. Basis of Measurement: Lump Sum (LS).

   b. Basis for Payment: Includes all costs to furnish products and install four drilled shafts and to decontaminate personnel and equipment as described in Sections 017423 and 316214 and as shown on the Drawings. Item does not include disposal of drill cutting, which is covered under other items.

7. Install, Remove and Decontaminate RESPONSIBLE PARTIES Furnished Steel Sheet Piles and Install Steel Reinforcement on Existing SSP Wall 2-66.

   a. Basis of Measurement: Lump Sum (LS).

   b. Basis for Payment: Includes all costs to load, clean and install RESPONSIBLE PARTIES furnished steel sheet piles as described in the accepted Pre-Construction Work Plan and as described in Section 314116 and as shown on Sheets S1.1 and S2.1 of the Drawings. Also includes costs to weld steel bands on the existing 2-66 SSP wall as shown on the Drawings and described in Section 314116. Also includes costs to remove SSP walls installed under this contract and to decontaminate and store the removed SSPs as described in Sections 017423 and 314116.

8. Excavate 2-66 Excavation Area and Stockpile

   a. Basis of Measurement: Lump Sum (LS).

   b. Basis for Payment: Includes all costs to perform the excavation north of the 2-66 SSP wall, and to stockpile the excavated soil as described in Section 312316 and as shown on the Drawings.

9. Dry Excavation to Top of CMPs, Load, Haul and Subtitle D Dispose

   a. Basis of Measurement: By the Ton (TN) based on certified weight tickets provided by the Subtitle D solid waste disposal facility.

   b. Basis for Payment: Includes all costs to excavate, load, haul and dispose of designated Subtitle D contaminated soil located above the top of the existing CMPs at a Subtitle D landfill/transfer station, and decontaminating equipment and personnel as described in Sections 017423, 026123 and 028110, as shown on the Drawings and as described in the accepted Construction Work Plan. Owner will pay for disposal fees.

10. Dry Excavation from Top of CMPs to Elevation Minus 4 Feet, CMP Removal, Load, Haul, and Subtitle C Dispose

   a. Basis of Measurement: By the Ton (TN) based on certified weight tickets provided by the Subtitle C solid waste disposal facility.

   b. Basis for Payment: Includes all costs to dewater, treat and discharge groundwater, to remove, load, solidify, haul and Subtitle C dispose existing 12" and 24" CMPs, to excavate, load, haul and Subtitle C dispose of contaminated soil down to elevation -4, and to decontaminate equipment and personnel as described in Sections 017423, 026123, 028110, 312318, 312319, as shown on the Drawings and as described in the accepted Construction Work Plan. Owner will pay for treated groundwater disposal fees and Subtitle C disposal fees.

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11. Furnish and Install SSP Caulking and Stego Wrap

a. Basis of Measurement: Lump Sum (LS).

b. Basis for Payment: Includes all costs to furnish and install caulking in SSP seams and to furnish and install Stego Wrap on the SSP enclosure walls as shown on the Drawings, as described in Section 026123 and as described in the accepted Construction Work Plan. For bidding assume 50 percent of the SSP wall joints require caulking.

12. Wet Excavation to Minus 16 Feet, Load, Haul and Subtitle C Dispose

a. Basis of Measurement: By the Ton (TN) based on certified weight tickets provided by the Subtitle C solid waste disposal facility.

b. Basis for Payment: Includes all costs to dewater, treat and discharge groundwater, to remove, load, solidify (if required), and haul to a designated Subtitle C landfill contaminated soil below elevation -4, and to decontaminate equipment and personnel as described in Sections 017423, 026124, 028110, 312318 and 312319, as shown on the Drawings and as described in the accepted Construction Work Plan. Owner will pay for treated groundwater disposal fees and Subtitle C disposal fees.

13. Load, Haul and Place Engineered Backfill in 2-66 Excavation Area

a. Basis of Measurement: Lump Sum (LS).

b. Basis for Payment: Includes all costs to load, haul, place, moisture condition and compact soil obtained from the 2-66 excavation stockpile as described in Section 312323 and as shown on the Drawings.

14. Furnish and Place Imported Gravel Borrow into SSP Enclosure

a. Basis of Measurement: By the Ton (TN) based on certified weight tickets provided by the gravel borrow supplier.

b. Basis for Payment: Includes all costs to furnish and place imported gravel borrow to backfill the completed dry and wet excavation inside the SSP enclosure, to manage water inside the SSP enclosure during backfilling and to decontaminate equipment and personnel as described in Sections 017423, 312318, 312319 and 312323, as shown on the Drawings and as described in the accepted Construction Work Plan.

15. Furnish and Place Quarry Spalls

a. Basis of Measurement: By the Ton (TN) based on certified weight tickets provided by the quarry spalls supplier.

b. Basis for Payment: Includes all costs to furnish and place quarry spalls over imported gravel borrow backfill as described in Section 313323 and as shown on the Drawings.

16. Force Account Work

a. Basis of Measurement: Based on Force Account Labor and Equipment Rates (FA).

PRELIMINARY DRAFT

b. Basis for Payment: Includes all costs to perform force account work by Change Order as directed by the Responsible Parties as described in Section 012000. For the purpose of bidding, the RESPONSIBLE PARTIES have entered an amount of $50,000 on the Bid Form.

1.12 MEASUREMENT AND PAYMENT DESCRIPTIONS FOR OPTIONAL BID ITEMS

A. Optional Bid Items

17. Bid Item 18 – Remove Existing AZ-38-700N SSP Along Duwamish Waterway

a. Basis of Measurement: Lump Sum (LS) based on an approved Change Order.

b. Basis for Payment: Includes all cost to remove the existing AZ-38-700N SSP located adjacent to the Duwamish Waterway as described in Section 314116.

18. Bid Item 19 – Furnish and Operate Vacuum Dredge and Ancillary Equipment to Remove Flocculated Sediment.

a. Basis of Measurement: Per Day (Day).

b. Basis for Payment: Includes all cost to mobilize and operate a vacuum dredge to remove sediment and water in the SSP enclosure following completion of Wet Excavation and confirmation sampling described in Section 026124 and as described in an approved Change Order. Payment for water treatment and solids disposal will be covered under other Bid Items.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 012500
ALTERNATES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Procedures for submitting alternates.

B. Documentation of changes to Contract Sum/Price and Contract Time.

1.2 RELATED SECTIONS

A. Section 013300 — Submittals.

1.3 PROCEDURES FOR SUBMITTING ALTERNATES

A. Submit Alternates identifying the effect on adjacent or related components.

B. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the RESPONSIBLE PARTIES option. Accepted Alternates will be identified in the RESPONSIBLE PARTIES-CONTRACTOR Agreement.

C. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.4 SELECTION AND AWARD OF ALTERNATES

A. Indicate variation of Bid Price for Alternates in the form described below and list on a supplemental bid form.

B. Bids may be evaluated on the base bid price. After determination of a bidder, consideration will be given to Alternates and Bid Price adjustments.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 012600
MODIFICATION PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Documentation of change in Contract Sum/Price and Contract Time.

B. Change procedures.

C. Work Change Directive procedures.

D. Stipulated price change order.

E. Unit price change order.

F. Time and material (Force account) change order.

G. Execution of change orders.

H. Correlation of CONTRACTOR submittals.

1.2 RELATED SECTIONS

A. Section 012000 – Price and Payment Procedures.

B. Section 013300 - Submittals.

C. Section 017700 - Contract Closeout.

1.3 DOCUMENTATION OF CHANGE IN CONTRACT SUM/PRICE AND CONTRACT TIME

A. Maintain detailed records of work done on a time and material (force account) basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.

B. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.

C. On request, provide additional data to support computations including:

1. Quantities of products, labor, and equipment.
2. Taxes, insurance, and bonds.
3. Overhead and profit.
4. Justification for any change in Contract Time.
5. Credit for deletions from Contract, similarly documented.

D. Support each claim for additional costs, and for work done on a force account basis with additional information including:

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1. Origin and date of claim.
2. Dates and times work was performed, and by whom.
3. Time records and wage rates paid.
4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.4 CHANGE PROCEDURES

A. The RESPONSIBLE PARTIES will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized by issuing Field Order.

B. The RESPONSIBLE PARTIES may issue a Proposal Request which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change and the period of time during which the requested price will be considered valid. CONTRACTOR will prepare and submit an estimate within 5 working days.

C. The CONTRACTOR may propose a change by submitting a request for change to the RESPONSIBLE PARTIES, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum/Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other CONTRACTORs.

1.5 WORK CHANGE DIRECTIVE

A. RESPONSIBLE PARTIES may issue a document, signed by the RESPONSIBLE PARTIES, instructing the CONTRACTOR to proceed with a change in the Work, for subsequent inclusion in a Change Order.

B. The document will describe changes in the Work, and will designate method of determining any change in Contract Sum/Price or Contract Time.

C. Promptly execute the change in Work.

1.6 STIPULATED PRICE CHANGE ORDER

A. Based on Proposal Request and CONTRACTOR's fixed maximum price quotation as approved by RESPONSIBLE PARTIES.

1.7 UNIT PRICE CHANGE ORDER

A. For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis.

B. For unit costs or quantities of units of work, which are not pre-determined, execute Work under a Work Change Directive.

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C. Changes in Contract Sum/Price or Contract Time will be computed as specified for in the Change Order.

1.8 FORCE ACCOUNT CHANGE ORDER

A. Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

B. RESPONSIBLE PARTIES will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents.

C. Maintain detailed records of work done on Force Account basis.

D. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

1.9 EXECUTION OF CHANGE ORDERS

A. Execution of Change Orders: RESPONSIBLE PARTIESwill issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.10 CORRELATION OF CONTRACT DOCUMENTS

A. Promptly revise Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum/Price.

B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

C. Promptly enter changes in Project Record Documents.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 012900
APPLYING FOR PAYMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for payment.

1.2 RELATED SECTIONS

A. Section 012000 — Price and Payment Procedures.

B. Section 013300 — Submittals.

C. Section 012600 – Modification Procedures.

D. Section 017700 — Contract Closeout: Final payment procedures.

1.3 APPLICATION PROCEDURES

A. Address monthly pay estimates to the RPR Miles Dyer at the Jorgensen Forge Facility. In addition mail a separate copy to him at 8531 E. Marginal Way South, Seattle, Washington, 98108; or submit electronically using Adobe PDF file format. Email PDF files to the RESPONSIBLE PARTIES's Representative at mdyer@jorgensenforge.com, cc William.d.ernst@boeing.com

B. In each pay estimate submittal clearly identify the work performed for the given time period based on a percentage of work completed for lump sum bid items as presented in the Contract Bid Schedule and actual quantities installed for unit price items. Pay estimates not meeting these requirements are subject to the requirements of Section 007200–General Conditions.

1.4 FORMAT

A. A computer generated spreadsheet. For each bid item and change order item, provide a column listing each of the following:

1. Item number.
2. Description of work
3. Unit
4. Contract quantity
5. Contract unit price
6. Contract amount
7. Previous quantity
8. Previous amount
9. Quantity for current period
10. Amount for current period
11. Quantity to date
12. Amount to date

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13. Percentage complete for each item
14. Summary of quantities and values of materials on hand.

B. Provide a summary that includes the following:

1. Total earned in current month.
2. Total previously earned.
3. Total earned to date.
4. Total value of materials on hand.
5. Total for items 3 and 4.
6. Amount retained.
7. Summary of previous payment.
8. Amount due for current period.
9. Remaining Balance.

1.5 PREPARATION OF APPLICATIONS

A. Present required information on electronic media printout.

B. Execute certification by signature of authorized officer.

C. Provide dollar value in each column for each line item for portion of work performed.

D. Prepare Application for Final Payment as specified in Section 01700.

1.6 SUBMITTAL PROCEDURES

A. Submit three signed copies of each Application for Payment.

B. Payment Period: Submit at intervals stipulated in the Agreement.

1.7 SUBSTANTIATING DATA

A. When RESPONSIBLE PARTIES require substantiating information, submit data justifying quantities or dollar amounts in question.

B. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 013110
PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Designation of a Resident Project Representative (RPR).

B. Construction Coordination.

C. Pre-Construction Meeting.

D. Progress Meetings.

E. Informal Daily Progress Meetings.

F. Coordination Drawings.

G. Contract Closeout Procedures.

1.2 RELATED SECTIONS

A. Section 013216 – Progress Schedule>

B. Section 013300 – Submittals.

C. Section 013310 – Construction Work Plan Submittal.

D. Section 017700 - Contract Closeout.

1.3 RESIDENT PROJECT REPRESENTATIVE

A. The RESPONSIBLE PARTIES will designate a Resident Project Representative (RPR). The RPR represents the RESPONSIBLE PARTIES. Any reference to coordination or communication, both written and verbal, with the RESPONSIBLE PARTIES, must be through the RPR.

B. The RPR also represents the various ENGINEER'S and consultants responsible for project design. All communication with the ENGINEER'S and consultants must go through the RPR.

C. RESPONSIBLE PARTIES RPRs: Miles Dyer (JFC), and Willian Ernst (Boeing)

1.4 CONSTRUCTION COORDINATION

A. Cooperate with the RPR in allocation of areas for field offices and sheds, for access, traffic, and parking facilities.

B. During construction, coordinate use of site and facilities through the RPR.

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C. Comply with the RPR's procedures for intra-project communications; submittals, reports and records, schedules, coordination of drawings, and recommendations; and resolution of ambiguities and conflicts.

D. Comply with instructions of the RPR for use of temporary utilities and construction facilities.

E. Coordinate field engineering and layout work under instructions of the RPR.

1.5 PRE-CONSTRUCTION MEETING.

A. RPR will schedule a pre-construction meeting at the Jorgensen Forge property located at 8531 E. Marginal Way South, Seattle, Washington 98108 (Site) following issuance of a Notice to Proceed (NTP).

B. The RPR will prepare an agenda.

C. Attendance:

1. CONTRACTOR's On-Site Field Superintendent.
2. Any Subcontractors or Supplier's representatives whom the CONTRACTOR may desire to invite or RESPONSIBLE PARTIES may request.
3. The ENGINEERs.
4. The RESPONSIBLE PARTIES representatives including the RP.

D. During the meeting the CONTRACTOR will present and distribute:

1. List of major Subcontractors and suppliers.
2. Preliminary progress schedule.

1.6 PROGRESS MEETINGS

A. The RPR may hold progress meetings at the project site. The RPR will coordinate and schedule meeting dates and times and notify parties that need to attend.

B. Attendance:

1. CONTRACTOR's superintendent.
2. Subcontractors as appropriate to agenda.
3. Suppliers as appropriate to agenda.
4. RESPONSIBLE PARTIES representatives including the RPR.
5. Others as requested by the RPR.

C. Suggested Agenda (Items may vary):

1. Review and approval of record minutes of previous meeting.
2. Health and safety.
3. Review of work progress since previous meeting with completed quantities.
4. Progress planned for upcoming week.

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5. Field decisions.
6. Problems which impede work schedule.
7. Anticipated future problems.
8. Maintenance of quality and work standards (QA/QC).
9. Review of as-built documentation.
10. Review of submittal schedule and status of submittals.
11. Pending changes and substitutions.
12. Review of off-site delivery schedules.
13. Review and revisions to project schedule.
14. Applications for payment.
15. Items requiring measurement by survey methods.
16. Items requiring surveys to document as-built conditions.
17. Scheduling of third party sampling and analysis.
18. Maintenance of erosion and sediment control BMPs.
19. Other business.

1.7 INFORMAL DAILY PROGRESS MEETINGS

A. An informal progress meeting is suggested daily before the start of work. At a minimum, this meeting will be attended by the RPR and the CONTRACTOR's Superintendent.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 013216
PROGRESS SCHEDULE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Progress schedule submittals.

B. Schedule format.

C. Revision procedures.

D. Delays and recovery.

1.2 RELATED SECTIONS

A. Section 011110 – Summary of Work.

B. Section 012600 – Modification Procedures.

C. Section 013300 – Submittals.

D. Section 013310 – Construction Work Plan Submittal.

1.3 REFERENCES

A. Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

1.4 SUBMITTALS AT NOTICE TO PROCEED

A. Submit a preliminary progress schedule within one day of receiving a Notice to Proceed.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 013300
SUBMITTALS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittal types.

B. Submittal transmittal procedures.

C. Coordination.

D. Manufacturer installation instructions and literature product data.

E. Samples.

F. Product date.

G. Soil sample submittals for review .

1.2 RELATED SECTIONS

A. Section 012000 – Price and Payment Procedures.

B. Section 012900 – Applying for Payment.

C. Section 013216 – Progress Schedule.

D. Section 013310 - Construction Work Plan Submittal.

E. Section 014300 — Quality Control.

F. Section 017700 — Contract Closeout.

1.3 DEFINITIONS

A. Submittals for Review: Submittals requiring review and approval by RESPONSIBLE PARTIES, or Engineer..

B. Submittals for Information: Submittals provided for information only, no approval required .

1.4 SUBMITTAL TYPES

A. Submittals with Bids: Submittals required as part of the Bid Form.

B. Pre-Construction Submittals: Submittals required after Contract Award and before receiving a Notice To Proceed that will be reviewed for acceptance by the RESPONSIBLE PARTIES including USEPA and ACOE.

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C. Submittals During Construction: Submittals required after Notice to Proceed that will be reviewed for acceptance by the RESPONSIBLE PARTIES. Some of these have specific timing requirements, which are listed in the various Technical Specifications

D. Contract Closeout Submittals: Submittals required as part of meeting Substantial Completion on the Contract Work.

1.5 SUBMITTAL TRANSMITTAL PROCEDURES

A. Submit a submittal register in duplicate within three (3) days after Notice of Award and during the pre-construction meeting. Identify all submittal requirements identified in the Drawings and Specifications, with references to the Drawing or Specification numbers.

B. The RESPONSIBLE PARTIES intends to complete the review of Submittals During Construction within two (2) working days of receipt. When incomplete or rejected submittals are returned to the CONTRACTOR, make appropriate revisions and re-submit. Review of re-submittals will be completed within 3 working days. Contract time will not be extended due to rejection of submittals.

C. Transmit each submittal electronically.

D. Sequentially number the transmittal form. For revised submittals add an alphabetic suffix to the original number.

E. Identify the Project, the CONTRACTOR, the Subcontractor or the supplier; pertinent drawing and detail number, and specification section number, as appropriate.

1.6 MANUFACTURER INSTALLATION INSTRUCTIONS AND LITERATURE

A. Submit two (2) paper copies of manufacturers' literature for approval.

B. In lieu of the above, submittals typically provided on paper may be submitted electronically as PDFs. The manufacturer's original electronic issue is preferred.

C. When specified in individual specification sections, submit two (2)copies of printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to the RESPONSIBLE PARTIES.

D. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.7 SOIL SAMPLE SUBMITTALS FOR REVIEW

A. Submit soil samples that represent proposed products.

B. For each sample, submit at least 40 pounds of soil in a bucket.

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C. Include identification on each sample, with full Project information.

D. Submit the number of samples specified in individual specification sections. RESPONSIBLE PARTIES will retain one.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 013310
CONSTRUCTION WORK PLAN SUBMITTAL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preparing a Construction Work Plan describing proposed equipment, labor, methods and schedules for:

1. Health and Safety.
2. Staging, Stockpiling, Parking and Truck Access.
3. Temporary Erosion and Sediment Control.
4. Decontamination.
5. Dewatering.
6. Steel Sheet Pile Installation.
7. Dry and Wet Contaminated Soil Excavation Plan.
8. Stage 1 Excavation Area Protection Plan.
9. Environmental Protection for Areas outside of the project limits (LDW and area south of SSP).

B. Making revisions to the Plan based on comments from the RESPONSIBLE PARTIES and government agencies including Ecology, EPA and the Army Corp of Engineers.

1.2 RELATED SECTIONS

A. Section 011110 – Summary of Work.

B. Section 013300 – Submittals.

C. Section 014300 – Quality Control.

D. Section 015713 – Temporary Erosion and Sediment Control.

E. Section 312318 – Dewatering.

F. Section 312319 – Water Treatment and Management.

G. Section 314116 – Steel Sheet Piles.

1.3 CONTRACTOR'S WORK PLAN SUBMITTAL

A. Following Award of the Contract and prior to receiving a Notice to Proceed Submit a Construction Work Plan to the RESPONSIBLE PARTIES that includes the following information organized in individual sections.

B. **Health and Safety Plan (HASP)**. Prior to the start of any work, submit a site-specific Health and Safety Plan (HASP) to the RESPONSIBLE PARTIES,

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which meets all the requirements of the Jorgensen Forge Corporation as well as local, state and federal laws, rules and regulations, and the pertinent regulations listed in Divisions 00 to 31 of the Contract Documents. Address all requirements for general health and safety and include at a minimum:

1. Description of the work to be performed and anticipated chemical and/or physical hazards associated with the work.
2. Map of the Jorgensen Forge Outfall Site illustrating the location of the anticipated hazards and areas of control for those hazards.
3. Hazardous material inventory and Material Safety Data Sheets (MSDSs) for all chemicals that will be brought onto the Jorgensen Forge Outfall Site.
4. Signage appropriate to warn work area personnel and visitors of anticipated site hazards.
5. Signage and caution tape identifying the control zone areas; hot zone, reduction zone, observation area, clean zone with appropriate caution tape visually showing these areas.
6. Engineering controls/equipment proposed to protect against anticipated hazards, including description and limits of the exclusion zone, decontamination zone and decontamination facilities.
7. Personal protective equipment and clothing including head, foot, skin, eye, and respiratory protection.
8. Work area housekeeping procedures and personal hygiene practices.
9. Procedures for entering non-permitted confined spaces.
10. Personnel and equipment decontamination plan.
11. Administrative controls.
12. Emergency plan, including locations of and route to nearest hospital.
13. Record keeping, including Documentation of appropriate employee training (include 40-hour HAZWOPPER current certifications).
14. Name and qualification of person preparing the HASP and person designated to implement and enforce the HASP.
15. Signatory page for work area personnel to acknowledge receipt, understanding, and agreement to comply with the HASP.

C. **Staging, Stockpiling, Parking and Truck Access Plan and Site Plan** that includes a drawing showing:

1. Soil stockpile areas.
2. Parking Areas.
3. Truck routing plans.
4. Exclusion Zone, Contaminant Reduction Zone, observation zone and cold zone.
5. Temporary office and sanitary facilities.
6. Temporary fencing.

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D. **Temporary Erosion and Sediment Control Plan**: Submit a list of all BMPs to be implemented as a part of the project along with a site plan showing locations for each of the BMPs.

E. **Decontamination Plan** that includes:

1. Procedures for documenting that equipment being mobilized to the project site has been properly decontaminated.
2. Details of decontamination procedures, decontamination areas, and the management of decontamination wastes including disposal.

F. **Dewatering Plan** that includes:

1. Dewatering method.
2. Equipment that will be utilized to dewater the dry excavation area inside the SSP shored area.
3. The type of caulk used to seal the SSP seams
4. The procedures for installing and bonding the Stego Wrap to the SSP walls to create a seepage control measure, prior to flooding the excavation and excavating in the wet.

G. **Steel Sheet Pile Installation Plan** that includes the following.

1. Plans for handling and disposal of drill cuttings from the installation of drilled shafts described in Section 316214.
2. Anticipated approach for installing the SSP, assuming that no significant installation difficulties are encountered.
3. Details of proposed methods to drive piling to the depths indicated on the Drawings and references to specific equipment makes/models and level of effort that will be used for SSP installation.
4. Equipment, anticipated to be used for installation of the SSP.
5. SSP installation schedule.
6. Details of proposed methods to remove, clean, decontaminate and stockpile SSPs with references to specific equipment makes/models..

H. Dry and Wet Contaminated Soil Excavation Plan including description of:

1. Containing free water during excavation and loading of wet contaminated soil.
2. Containment, pumping, treatment and disposal of water used to stabilize the SSP enclosure during wet contaminated soil excavation as described in Section 312319.
3. Containing and then removing spilled contaminated soil inside and outside of the EZ and CRZ.
4. Maintaining water levels inside the SSP wall enclosure during wet contaminated soil excavation as described in Section 312319.

I. **Stage 1 Excavation Area Protection Plan** that includes the following.

1. Cover system components.

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2. Cross section of protection components.
3. Cut sheets for proposed products.

1.4 REVISIONS TO CONSTRUCTION WORK PLAN

A. Following RESPONSIBLE PARTIES and government agency review of the Work Plan, make requested revisions, and respond to comments. Re-submit within three (3) working days of receiving all comments.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 013529
HEALTH SAFETY AND EMERGENCY RESPONSE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Requirements for health and safety provisions necessary for all work at the Jorgensen Forge Outfall Site.

B. Compliance requirements with laws, regulations, and ordinances with respect to safety, noise, dust, fire and police action, civil disobedience, security, and traffic.

1.2 RELATED SECTIONS

A. Section 013110 -Project Management and Coordination.

B. Section 013310 – Construction Work Plan Submittal.

C. Section 017423 – Decontamination Procedures.

1.3 REFERENCES

A. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016. (Appendix A Sound Earth Health and Safety Plan).

B. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

C. Site Specific Health and Safety Plan, Sound Earth Strategies, January 21, 2016.

1.4 SUBMITTALS DURING CONSTRUCTION

A. Submit material safety data sheets (MSDS) to the RESPONSIBLE PARTIES for all materials and Products furnished to complete the Work.

1.5 DEFINITIONS

A. Exclusion Zone (EZ)

1. At least one equipment-width wider than the equipment used for excavation and loading and encompassing any exposed subsurface media, such as an area where pavement has been removed.
2. Use proper PPE when entering the EZ and meet the appropriate training and medical clearance.
3. With a boundary identified with fencing or caution/warning tape.
4. Do not bring food, drink, or tobacco inside the EZ.

B. Contaminant-Reduction Zone (CRZ).

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1. Transitional zone between the EZ and the SZ (also known as the “cold zone” or “clean zone”) active during phases of excavation and material decontamination.
2. Equipped with a hand-washing station and boot-washing station.
3. Providing a location for removal and decontamination of PPE and tools leaving the EZ.
4. Do not bring food, drink, or tobacco inside the EZ.

C. Support Zone (SZ).

1. Uncontaminated zone outside the EZ and CRZ and within the geographic perimeters of the JFOS project Site and support areas.
2. Used for support personnel; staging materials; parking vehicles; office, laboratory, and sanitation facilities; and receiving deliveries.
3. Used by delivery personnel, visitors, security guards, and others who will not necessarily be permitted in the EZ or CRZ.

D. Observers’ Zone (OZ)..

1. Will be established for personnel who need to observe and document the CONTRACTOR’s performance of the work.
2. May be located inside the SZ..

E. BMPs: practices planned by the CONTRACTOR that include health and safety, erosion and dust control, management of waste, decontamination, and containment and treatment of wastewater and decontamination of personnel from transition zones.

1.6 PRE-CONSTRUCTION SUBMITTALS

A. As part of the Construction Work Plan submittal include a section describing Site-Specific Health and Safety Plan (HASP) per Section 013310.

1.7 POTENTIAL PHYSICAL AND OTHER HAZARDS

A. Address anticipated physical and other hazards, including heavy equipment in the HASP.

B. Physical hazards are expected to include but are not limited to the following:

1. Work adjacent to the Duwamish River, presenting hazards of falling into water resulting in, hypothermia from exposure to the elements, and drowning.
2. Work adjacent to deep excavations present hazards of falling.
3. Deep dry areas.
4. Excavation area filled with high levels of water.
5. Employees working in vicinity of excavation equipment and loading of transport vehicles.

C. Other anticipated physical hazards include but are not limited to the following.

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1. Heat stress, such as that potentially caused by impermeable clothing (may reduce the cooling ability of the body due to evaporation reduction).
2. Cold stress, such as that potentially caused during times of low temperatures and high winds, especially when precipitation occurs during these conditions.
3. Biological hazards, such as insect stings or bites.
4. Trips and falls.
5. Exposure to VOC's during contaminated soil excavation.

1.8 REGULATORY REQUIREMENTS

A. WAC 296-843 Hazardous Waste Operations

B. 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response

1.9 PROJECT SITE CONDITIONS

A. Project site conditions relative to contaminates of concern are provided in the referenced documents.

PART 2 PRODUCTS

2.1 MINIMUM RESPONSIBLE PARTIES REQUIRED SAFETY EQUIPMENT

A. Equip CONTRACTOR and Subcontractor employees with OSHA-specified hard hats and safety glasses with side shields, steel toe boots, respirators and all other standard or specific safety equipment required in addition to following all of RESPONSIBLE PARTIES's safety requirements when working within RESPONSIBLE PARTIES's facility (Site).

2.2 SDS REQUIREMENTS

A. Provide safety data sheets (SDS) to the RESPONSIBLE PARTIES and maintain copies at the Site, available to a party upon its request.

2.3 OTHER HEALTH AND SAFETY EQUIPMENT

A. Provide the equipment and supplies necessary to support the work described in the site-specific HASP. Equipment and supplies may include but are not limited to.

1. Chemicals used on site including dust suppressants/wetting agents, cleaning degreasing, and/or welding/cutting supplies.
2. Hazardous materials inventory and SDSs for the chemicals brought on site.
3. Fencing and barriers.
4. Warning signs and labels.
5. Fire extinguishers.
6. Equipment to support "hot" work.

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7. Equipment to support “lock out”/”tag out” procedures.
8. Fall protection equipment.
9. Personal protective equipment (hard hats, foot gear, skin, eye, and respiratory protection).
10. Area and personnel exposure monitoring equipment.
11. Decontamination equipment and supplies (mechanical equipment).
12. Decontamination equipment and supplies (personnel).
13. First aid equipment.
14. Release prevention equipment.
15. Field documentation logs/supplies.

PART 3 EXECUTION

3.1 WORK AREA PREPARATION

A. Determine the specific requirements for safety provisions and provide inspections and reports by the appropriate safety authorities that are conducted to ensure compliance with the intent of the regulations.

B. Inform employees and Subcontractors and their employees of the potential danger in working with any potentially contaminated materials, equipment, soils, and groundwater at the Jorgensen Forge Outfall Site.

3.2 DAILY SAFETY BRIEFING

A. Conduct a daily safety briefing involving CONTRACTOR and Subcontractors. Document the meeting with a daily safety briefing sign in sheet and provide RESPONSIBLE PARTIES a copy no later than one (1) business day following the daily briefing. Include details of this meetings purpose in the HASP.

3.3 IMPLEMENTING THE HASP

A. Comply with the accepted HASP during performance of all Work.

B. Comply with health and safety rules; regulations, ordinances promulgated by the local, state, and federal government; the various construction permits, and the Contract Documents including:

1. Any and all protective devices, equipment, and clothing, including proper isolation of the exclusion zone (any area where personnel or equipment could come in contact with PCB contaminated soil), provision of a decontamination zone and decontamination facilities to permit personal decontamination for any personnel exiting the exclusion zone.
2. Designated control route to Observation area that by-passes the CRZ.
3. Guards.
4. Restraints.
5. Locks.

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6. Latches.
7. Switches.
8. Other safety provisions that may be required or necessitated by state and federal safety regulations.

C. Perform whatever work is necessary for safety and be solely and completely responsible for conditions of the work area, including safety of all persons (including employees of the RESPONSIBLE PARTIES , CONTRACTOR, and Subcontractors) and property during the Contract period. This requirement applies continuously and is not limited to normal working hours.

D. Accidents causing death, injuries, or damage must be reported immediately to the RESPONSIBLE PARTIES in person or by telephone or messenger. In addition, promptly report in writing to the RESPONSIBLE PARTIES all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the Jorgensen Forge Outfall Site, giving full details and statements of witnesses. Ensure notification to State of Washington L&I by the appropriate company representative.

E. If a claim is made by anyone against the CONTRACTOR or any Subcontractor because of any accident, the CONTRACTOR shall promptly report the facts in writing within eight (8) hours after occurrence, to the RESPONSIBLE PARTIES, giving full details of the claim with appropriate photographic records.

3.4 RESPONSIBLE PARTIES'S RESPONSIBILITY

A. The RESPONSIBLE PARTIES review of the CONTRACTOR's performance does not include an opinion regarding the adequacy of or approval of the CONTRACTOR's safety supervisor, the site-specific HASP, safety program, or any safety measures taken in, on, or near the Jorgensen Forge Outfall Site or Boeing property.

3.5 SAFETY AND HEALTH OFFICER

A. Designate a person as the Site Safety and Health Officer, who is thoroughly trained in construction safety, marine construction safety, rescue procedures, and the use of all necessary safety equipment, air monitoring equipment, and gas detectors that the work requires.

B. Empower the Site Safety and Health Officer with the delegated authority to order any person or worker at the Jorgensen Forge Outfall Site to follow the safety rules. Failure to observe these rules is sufficient cause for removal of the person or worker(s) from this project.

C. Assign the Site Safety and Health Officer with the responsibility for determining the extent to which any safety equipment must be utilized, depending on conditions encountered at the Jorgensen Forge Outfall Site.

END OF SECTION

PRELIMINARY DRAFT

SECTION 014126
PERMITS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Regulatory drivers that exclude most permitting requirements.

B. Permits required for this Contract.

1.2 RELATED SECTIONS

A. Section 013110 -Project Management and Coordination.

B. Section 014300 – Quality Control.

1.3 REGULATORY DRIVER

A. This project is being conducted pursuant to the Third Modification for the Administrative Order Consent for Removal Action CERCLA Docket No. 10-2011-0017). As such, this project is exempt from permitting through the local permitting agency (City of Tukwila).

B. Comply with all applicable local, state, and federal laws and regulations.

1.4 PERMITS

A. Keep fully informed of all local ordinances, as well as state and federal laws that in any manner affect the work herein specified. At all times comply with said ordinances, laws, and regulations, and the KCIW Construction Water Discharge Authorization. Protect the RESPONSIBLE PARTIES officers and agents against any claim or liability arising from or based on the violation of such laws, ordinances, or regulations. Secure and pay for all permits, licenses, and inspection fees necessary for prosecution and completion of the work unless otherwise specified.

B. Comply with all conditions attached to applicable City, County, Federal, State, and local permits. These permits include the following:.

1. King County Industrial Construction Water Discharge Authorization.
2.

C. Permit exemptions under the AOC do not apply to electrical, mechanical, or utility permits, or the King County Industrial Construction Water Discharge Authorization. Obtain these permits where required to complete the work.

PART 2 PRODUCTS

Not Used

PRELIMINARY DRAFT

PART 3 EXECUTION

3.1 POSTING PERMITS

A. Post permits at the site.

3.2 INSPECTIONS

A. Call and make any arrangements for all inspections and testing required by the permits and conditions of the permits.

B. Post inspection reports at the Jorgensen Forge Outfall Site.

3.3 RESTORATION OF PROPERTIES

A. Comply with all property restoration requirements contained in permits and agreements to complete the work.

END OF SECTION

PRELIMINARY DRAFT

SECTION 014300
QUALITY CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality control requirements, duties, and responsibilities during execution of the work. The intent of this Section is to require the CONTRACTOR to establish a necessary level of control that will provide sufficient information to assure both the CONTRACTOR and the RESPONSIBLE PARTIES that the Work meets specified requirements.

B. Quality control of installation.

C. Tolerances.

D. Independent Construction Quality Assurance

E. Construction Quality Assurance Manual

F. Cooperation.

1.2 RELATED SECTIONS

A. Section 013300 —Submittals

B. Section 013310 – Construction Work Plan Submittal.

C. Section 014340 — RESPONSIBLE PARTIES Sampling and Analysis Plan.

1.3 SUBMITTALS

A. As part of the Construction Work Plan submittal include a section describing a Construction Quality Control (CQC) Plan per Section 013310.

1.4 QUALITY CONTROL OF INSTALLATION

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

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

C. 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

D. Verify that field measurements are as indicated on shop drawings and Construction Drawings.

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E. In procuring all items used in this work, 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.

F. Should manufacturers' instructions conflict with Contract Documents, request clarification from the RPR before proceeding.

1.5 TOLERANCES

A. Monitor tolerance control of installed products to produce acceptable Work.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from the RPR before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

D. Do not allow tolerance to accumulate.

1.6 INDEPENDENT CONSTRUCTION QUALITY ASSURANCE

A. The RESPONSIBLE PARTIES may appoint a Construction Quality Assurance Consultant (CQAC) that is not affiliated with the RESPONSIBLE PARTIES and CONTRACTOR to perform construction quality assurance (CQA) inspection and testing in addition to the confirmation sampling and analysis testing described in the *Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.*

B. CQA Inspecting, testing, and source quality control may occur on or off the project site.

C. Reports may be submitted to the RPR indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

D. Notify the CQAC 24 hours prior to expected time for operations requiring inspection or testing services.

E. Testing or inspecting does not relieve the CONTRACTOR to perform quality control Work as defined in the Technical Specifications.

F. CQA re-testing required because of non-conformance with specified requirements will be performed by the CQAC. At the RPR's discretion, the costs of re-testing may be paid by the CONTRACTOR.

1.7 CONSTRUCTION QUALITY ASSURANCE MANUAL

A. A project construction quality assurance (CQA) manual may be prepared for this project.

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B. Review this manual for CQA inspection and testing frequencies and test types that the CQAC will perform during the project.

1.8 COOPERATION

A. Cooperate fully with the CQAC and include any coordination cost in unit costs bid for the Work.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

PRELIMINARY DRAFT

SECTION 014340
RESPONSIBLE PARTIES SAMPLING AND ANALYSIS PLAN

PART 1 GENERAL

1.1 SECTION INCLUDES

A. The RESPONSIBLE PARTIES will engage in a third party consultant to implement the RESPONSIBLE PARTIES responsibilities defined in the *Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016* .

B. The CONTRACTOR's responsibility is to understand the plan and how its implementation could impact schedules and sequencing of Work. Assist the third party consultant with the sampling of soil and water.

C. This SAP/QAPP provides guidance to field, project, and laboratory personnel involved in the removal of CMP and associated soil, to ensure that data quality is maintained.

1.2 RELATED SECTIONS

A. Section 014300 – Quality Control.

B. Section 022010 – Layout of Work and Surveying.

C. Section 026123 – Dry Contaminated Soil Excavating and Handling.

D. Section 026314 – Wet Contaminated Soil Excavating and Handling.

E. Section 028110 - Contaminated Soil Transportation and Disposal.

F. Section 312323 – Engineered Backfill.

G. Section 323319 – Water Treatment and Disposal.

1.3 REFERENCES

A. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

B. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016.

C. ASTM Method D-2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

PART 2 PRODUCTS

Not Used.

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PART 3 EXECUTION

3.1 CONFIRMATION SAMPLES

A. Confirmation soil samples will be collected from the excavation areas by the third party consultant.

B. Use an excavator to suspend a third party supplied clamshell-type sampling device (e.g. Van Veen sampler).

C. Confirmation sample locations are shown on Figure 7 of the *Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016 (*CMP Work Plan). Sample locations will be located in the field by the third party consultant using taped measurements from survey control stakes.

D. The planned confirmation sampling is summarized in the following table.

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Planned Easting And Northing Coordinates For Confirmation Soil Samples			
Sample Position	**Confirmation Sample Location From Figure 7 [(a)]**	**Easting[(1)]**	**Northing[(1)]**
West Bottom, Shored Excavation, Under 12 -inch CMP	1	1275786.5	195806.7
Middle Bottom, Shored Excavation, Under 12-Inch CMP	2	1275798.8	195806.5
East Bottom, Shored Excavation, Under 12-inch CMP	3	1275812.8	195806.3
East Bottom, Shored Excavation, Southern Tier	4	1275814.7	195799.1
Middle Bottom, Shored Excavation, Southern Tier	5	1275803.8	195794.5
West Bottom, Shored Excavation, Southern Tier	6	1275791.7	195791.2

[()]Northing and easting coordinates relative to North American Datum, 1983.

3.2 DECONTAMINATION PROCEDURES

A. At a minimum, decontamination of re-useable materials and equipment will be in accordance with Section 761.79 of the Code of Federal Regulations and the procedures described in Attachment D of the Work Plan.

3.3 WASTE HANDLING AND DISPOSAL

A. Wastes derived during all field activities will be managed and disposed of in accordance with applicable waste management regulations. Generation of the following wastes is anticipated:

1. Excavated soil.
2. Water pumped from the excavation (construction dewatering water).
3. Storage tank suspended solids.
4. Disposable materials used during field work that are impacted by contaminated soil or water (e.g., disposable personal protective equipment, plastic sheeting, paper towels, etc.).
5. Decontamination wash water and rinsate.

B. Wastes produced during field activities will be assumed to be contaminated and will be disposed of properly.

C. Excavated soil has already been profiled for direct-loading and off-site disposal.

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D. Waste water will be contained on-site and sampled, and treated if required, under a King County Industrial Waste Discharge Authorization to be obtained by the RESPONSIBLE PARTIES , prior to discharge to sanitary sewer discharge. Otherwise, waste samples will be collected from the container for characterization.

E. The sampling required by the King County Industrial Waste Discharge Authorization will be performed by the Responsible Parties' consultant.

END OF SECTION

PRELIMINARY DRAFT

SECTION 015210
TEMPORARY CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Furnishing, installing and maintaining temporary facilities required to complete the Work.

1.2 RELATED SECTIONS

A. Section 013310 – Construction Work Plan Submittal.

B. Section 015700 — Temporary Controls.

C. Section 015713 — Temporary Erosion and Sediment Control.

D. Section 017700 — Contract Closeout: Final Cleaning.

1.3 PRE-CONSTRUCTION SUBMITTALS

A. If applicable, submit a plan to store petroleum products as described later in Part 1 of this Section.

1.4 DEFINITION

A. Temporary construction facilities include, but are not be limited to, the following temporary offices, utilities, equipment, materials, facilities, areas, and services:

1. CONTRACTOR's field Office.
2. MSW management and disposal.
3. Parking areas.
4. Temporary roads.
5. Construction equipment.
6. Temporary sanitary facilities.
7. Temporary electric power.
8. Fuel storage management.
9. Security.
10. Shut-down time of services.
11. Status at completion.

1.5 GENERAL REQUIREMENTS

A. Construct, install, maintain, and operate temporary construction facilities in accordance with the applicable federal, state, and local laws, rules, and regulations.

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B. Construct, install, maintain, and operate temporary construction facilities in accordance with the RESPONSIBLE PARTIES accepted Construction Work Plan submittal.

C. Locate and maintain temporary construction facilities in a clean, safe and sanitary condition at all times until completion of the Work.

D. The requirements specified herein are in addition to any requirements specified elsewhere in the Contract Documents.

E. Provide temporary construction facilities that meet the requirements for all-weather service.

F. Design and construct temporary construction facilities and associated utilities to provide uninterrupted service.

1.6 CONTRACTORS TEMPORARY FIELD OFFICE

A. At CONTRACTOR's discretion, provide an office for CONTRACTOR's use.

B. Obtain RPR's approval of the office location as part of the Construction Work Plan submittal.

1.7 MSW MANAGEMENT AND DISPOSAL

A. General Municipal Solid Waste (MSW) means: useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, discarded commercial, industrial, demolition and construction materials. The term does not include hazardous waste.

B. Dispose of all MSW wastes generated during the course of the project in accordance with all applicable local, state, and federal regulations.

C. Periodically dispose of solid waste from the site into on site waste containers .

D. Provide MSW collection systems such as dumpsters for disposal of MSW. Locate the dumpsters outside of the EZ, and CRZ.

E. Keep work area, site, and adjacent properties free from accumulations of waste materials, rubbish, and windblown debris resulting from the work.

1.8 PARKING AREAS

A. Limit parking for personal cars to areas identified in the accepted Construction Work Plan.

B. All employee and CONTRACTOR vehicles must sign out and display site passes in their vehicles at all times.

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1.9 TEMPORARY ROADS

A. Temporary roads are existing roads that are improved or maintained by the CONTRACTOR for convenience of the CONTRACTOR in the performance of the Work.

B. Coordinate temporary road construction with the RPR.

1.10 CONSTRUCTION EQUIPMENT

A. Provide and maintain scaffolding, staging, runways, hoists, barricades, and similar equipment required for performance of the Work.

B. Provide hoists or similar equipment with operators and signals, as required.

C. Provide, maintain, and remove upon completion of the Work, all temporary rigging, dewatering devices, scaffolding, hoisting equipment, debris boxes, barricades around openings and excavations, fences, ladders, and all other temporary facilities.

D. Provide temporary facilities conforming to requirements of state, county, and local authorities, OSHA, and underwriters, which pertain to operation, safety, and fire hazard

1.11 TEMPORARY SANITARY FACILITIES

A. Install and maintain necessary temporary sanitary toilet facilities with hand washing facilities during the term of the Contract. Regularly maintain and disinfect in a sanitary condition. Toilets: chemical type.

1.12 TEMPORARY ELECTRIC POWER

A. Provide and maintain during the course and progress of the Work all electrical power and wiring requirements to facilitate the Work of all trades and services associated with the Work. Make arrangements with the applicable serving utility company or provide generators and pay all charges for providing and maintaining electrical service including usage costs at the site. Furnish all temporary wiring, feeders, and connections.

B. Routing of temporary conductors, including welding leads, must not create a safety hazard nor interfere with operation and maintenance of existing facilities.

1.13 STORAGE AND DISPOSAL OF PETROLEUM PRODUCTS:

A. Petroleum products covered by this section include gasoline, diesel fuel, lubricants, heating oils, and refined and used oil. During project construction, store all petroleum products in such a way as to prevent contamination of all ground and surface waters. Provide storage with secondary containment greater than or equal to the volume of stored petroleum products.

B. Lubricating oil may be brought into the project area in steel drums or other means, as the CONTRACTOR elects. Store used lubricating oil in steel drums,

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or other approved means, and return to the supplier for disposal. Do not burn or otherwise dispose of petroleum products at the Site. Provide storage with secondary containment greater than or equal to the volume of stored petroleum products.

C. If the total volume of stored petroleum products is greater than 1,320 gallons and these products are stored above ground, prepare a Spill Prevention Control and Countermeasure Plan in accordance with applicable EPA and other state regulations. Submit plan to the JFC Environmental Department through the RPR.

1.14 SECURITY

A. Coordinate with the RESPONSIBLE PARTIES site security program.

1.15 SHUT-DOWN TIME OF SERVICES

A. Do not disconnect or shut down any part of the existing utilities and services, except by express permission of the RESPONSIBLE PARTIES .

1.16 MAINTENANCE

A. Maintain all temporary construction facilities, utilities, temporary roads, services to office, and the like in good working condition as required by the RPR during the Work.

B. Do not allow waste material of any kind to remain on Site or on adjacent streets. Immediately upon collection of such materials, take off the site and properly dispose.

C. In the event that MSW, refuse, debris, or rubbish is not so removed from the Site, the RESPONSIBLE PARTIES reserve the right to have such material removed at the CONTRACTOR's expense.

D. Handle, collect and properly dispose of paints, solvents, and other materials with care to prevent entry of contaminants into storm drains, surface waters, or soils.

1.17 STATUS AT COMPLETION

A. Upon completion of the Work, or prior thereto, when so required by the RPR:

1. Repair damage to roads caused by or resulting from the CONTRACTOR's work.
2. Remove and dispose of all temporary construction facilities including office trailers, and other facilities and utilities . Similarly, return all areas utilized for temporary facilities to substantially their near original, natural state, or as otherwise indicated or directed.
3. Restore the area to near original conditions to the extent practicable unless otherwise approved by the RPR.

PART 2 PRODUCTS

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Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 015700
TEMPORARY CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Temporary controls required during the Work for protection of the environment and the health and safety of workers and general public.

B. Furnishing all equipment, materials, tools, accessories, incidentals, and labor, and performing all work for the installation of equipment and construction of temporary controls, including their maintenance and operation during performance of the Work.

C. Temporary controls include:

1. Dust Control.
2. Pollution Control.
3. Traffic and Safety Controls.
4. On-site roadway cleaning.
5. Noise pollution control.
6. Spill Prevention and Control.

1.2 RELATED SECTIONS

A. Section 015210 — Temporary Construction Facilities.

B. Section 015713 — Temporary Erosion and Sediment Control.

C. Section 017700 – Contract Closeout

1.3 REFERENCES

A. JFC's current Stormwater Pollution Prevention Plan.

1.4 DUST CONTROL

A. Dust control consists of transporting water, furnishing required equipment, additives, accessories and incidentals, and carrying out proper and efficient measures wherever and as often as necessary to reduce dust nuisance, and to prevent dust originating from construction operations throughout the duration of the Contract, as required by the RPR.

B. Do not allow visible dust to leave the Site.

C. Apply water by means of pressure-type distributors or pipelines equipped with a spray system or hoses with nozzles that will provide a uniform application of water.

D. Equip all equipment used for the application of water with a positive means of shut-off.

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1.5 POLLUTION CONTROL

A. Perform work using methods that prevent entrance or accidental spillage of solid or liquid matter, contaminants, debris, and other objectionable pollutants and wastes into streams, watercourses, flowing or dry, and underground water sources. Such pollutants and wastes include, but are not limited to: refuse; earth and earth products; garbage; cement; concrete; sewage effluent; industrial waste; radioactive substances; hazardous chemicals; oil and other petroleum products; aggregate processing tailings; and mineral salts. Dispose of pollutants and wastes in accordance with applicable permit provisions or in a manner acceptable to and approved by the RESPONSIBLE PARTIES .

1.6 SPILL PREVENTION AND CONTROL

A. Prevent, contain, and cleanup oil, fuel and other petroleum product spills that occur on site that result from construction operations.

B. Do not discharge oil from equipment or facilities into state waters or onto adjacent land as is described in state water quality regulations.

C. Take the following measures regarding oil spill prevention, containment, and cleanup.

1. Inspect fuel hoses, lubrication equipment, hydraulically operated equipment, oil drums, and other equipment and facilities daily before use for drips, leaks, or signs of damage.
2. Provide maintenance of stored oils and fuels to prevent spills.
3. Maintain proper security to prevent vandalism.
4. Dike and contain all land-based oil and products' storage tanks, and/or locate them to prevent spills from escaping into the waters of the state. Line dikes and containment areas with impervious material to prevent oil from seeping through the ground and dikes..
5. Immediately contain visible floating oils with booms, dikes or other appropriate means and remove from the water prior to discharge into waters of the state.
6. Immediately contain visible oils on land using dikes, straw bales or other appropriate means and remove using sand, ground clay, sawdust or other absorbent material, then properly dispose of the absorbent.
7. Temporarily store waste materials in drums or other leak-proof containers after cleanup and during transport for disposal.
8. Dispose of waste materials off site in accordance with applicable local, state, and federal regulations.
9. In the event of any oil or product discharges into public waters, or onto land with a potential for entry into public waters, immediately notify all parties required by permits and federal, state, and local regulations, and also immediately notify the following parties
   - RESPONSIBLE PARTIES Resident Project Representatives:
   - National Response Center: 800-424-8802
   - Washington Department of Ecology, Northwest Regional Office: 425-649-7000

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- Washington Emergency Management Division: 800-258-5990

D. Maintain the following minimum materials at the at the Site.

1. Oil-absorbent booms: 10 each, 10 feet long.
2. Oil skimming system.
3. Oil dry gloves, and plastic bags.

1.7 TRAFFIC AND SAFETY CONTROLS

A. Post construction areas and roads with traffic control signs or devices used for protection of workmen, the public and equipment. The signs or devices must conform to the American National Standards Institute, Manual on Uniform Traffic Control Devices for Streets and Highways.

B. Remove signs or traffic control devices as soon as they have served their purpose.

C. Provide barricades for protection of employees conforming to the portions of the American National Standards Institute, Manual on Uniform Traffic Control Devices for Streets and Highways.

D. Material Haul on Public Roads: Comply with local laws when using public roads for hauling Products to the Site.

E. Provide flag persons, properly equipped with International Orange protective clothing and flags, as necessary, to direct or divert pedestrian or vehicular traffic.

F. Construct and maintain fences, planking, barricades, lights, shoring, and warning signs as required by local authorities and federal and state safety ordinances, and as required, to protect the RESPONSIBLE PARTIES property from injury or loss and as necessary for the protection of the public.

G. Guard and protect all workers, pedestrians, and the public from excavations, construction equipment, all obstructions, and other dangerous items or areas by means of adequate railings, guard rails, temporary walks, barricades, warning signs, sirens, directional signs, overhead protection, planking, decking, danger lights, etc.

H. Control traffic associated with the Work so that ongoing maintenance and operations of the RESPONSIBLE PARTIES facility and its customers is not disrupted.

1.8 ON-SITE ROADWAY CLEANING

A. Prevent mud, dirt, free water and dust from escaping from trucks and other vehicles operating on or departing the project site by sweeping, covering dusty loads, washing truck tires and all other reasonable methods.

B. When trucks and other equipment are operating on paved public streets and Site roadways/paved surfaces, clean said streets, roadways and other paved surfaces at least daily, and at other times if required by the RPR's.

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C. In the event that these requirements are violated and no action is taken by the CONTRACTOR after notification of infraction by the RPR, the RPR reserves the right to have the streets, roadways, and other paved surfaces in question cleaned by others and the expense of the operation charged to the CONTRACTOR.

D. When direct-loading excavated materials for off-Site removal, sweep clean (or otherwise effectively clean) the loading area after each truckload to eliminate tracking of excavated materials out of the Exclusion Zone. Dispose of sweepings as Subtitle C waste.

1.9 NOISE POLLUTION CONTROL

A. Comply with local noise ordinances as it relates to noisy operations, including starting, warming up and running equipment.

B. Enclose and equip each internal combustion engine, used for any purpose with a muffler of a type recommended by the manufacturer. Do not operate internal combustion engine without mufflers and enclosures.

1.10 MAINTENANCE

A. Maintain all temporary controls in good working conditions during the Work, for safe and efficient transport of equipment and supplies, and for construction of permanent works.

B. Maintain controls in a clean, safe and sanitary condition at all times until Final Completion of the Work.

1.11 STATUS AT COMPLETION

A. Upon Final Completion of the Work, or prior thereto, when so required by the RPR, remove all temporary controls and restore disturbed areas as required by the RPR..

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

PRELIMINARY DRAFT

SECTION 015713
TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Planning, installing, inspecting, maintaining and removing Temporary Erosion and Sediment Control (TESC) Best Management Practices (BMPs) to prevent pollution of air and water, and control, respond to, and dispose of eroded sediment and turbid water during the term of the Contract, consistent with the Washington State Department of Ecology (Ecology) Stormwater Management Manual for Western Washington (2012 edition).

B. These TESC requirements apply to all areas associated with the Work including but not limited to the following.

1. Any excavation areas.
2. Equipment and material storage areas.
3. Staging areas.
4. Stockpiles.
5. Discharge points within or adjacent to the Work areas that are impacted by stormwater runoff from the Site.

1.2 RELATED SECTIONS

A. Section 013529 – Health, Safety, and Emergency Response.

B. Section 013300 – Submittals.

C. Section 013310 – Construction Work Plan Submittal.

D. Section 015210 – Temporary Construction Facilities.

E. Section 015700 – Temporary Controls.

F. Section 017700 – Contract Closeout.

G. Section 026123 – Dry Contaminated Soil Excavating and Handling.

H. Section 026124 – Wet Contaminated Soil Excavating and Handling.

I. Section 3123316 – Excavation.

J. Section 312318 - Dewatering.

K. Section 312323 - Engineered Backfill.

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1.3 REFERENCES

A. JFC's current Stormwater Pollution Prevention Plan.

B. Rules, requirements, and regulations that MAY apply to this work include, but are not necessarily limited to the following.

1. Ecology, "Stormwater Management Manual for Western Washington," 2012..

2. Washington State Department of Transportation (WSDOT) 2006 Standard Specification M41-10, Division 8-01 Erosion Control and Water Pollution control.

3. City of Seattle Stormwater Manual, City of Seattle Public Utilities, Latest Version.

1.4 PRE-CONSTRUCTION SUBMITTALS

A. As part of the Construction Work Plan submittal described in Section 013301 include an Erosion and Sediment Control Plan.

1.5 AUTHORITY OF RESPONSIBLE PARTIES

A. The RESPONSIBLE PARTIES have the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and fill operations, and to direct the CONTRACTOR to provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses and other areas of water impoundment.

B. The RESPONSIBLE PARTIES may increase or decrease the area of erodible earth material to be exposed at one time as determined by analysis of Site conditions.

C. In the event that areas adjacent to the Site are suffering degradation due to erosion, sediment deposit, water flows, or other causes, the RESPONSIBLE PARTIES will stop construction activities until the situation is rectified.

PART 2 PRODUCTS

2.1 GENERAL

A. Provide Products required to accomplish or be incorporated into the Work of this Section as identified in the accepted Construction Work Plan.

2.2 ACCEPTABLE PRODUCTS

A. Silt fence: Silt fences are designed to retain soils on site and to reduce runoff velocity across areas below the fence. They are applicable for sheet overland flows and cannot effectively filter concentrated flow. Therefore, use them in

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conjunction with a sediment trap when the flow path along a slope exceeds 100 feet.

B. Silt fence fabric: Mirafi 100X geotextile in 5-foot wide rolls, or equal as approved by the RPR, and containing ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months' exposure to ultraviolet light.

C. Waddles.

D. Straw Bales such as baled wheat or oat fibers.

E. Plastic sheeting.

PART 3 EXECUTION

3.1 GENERAL

A. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations apply.

B. CONTRACTOR is solely responsible for any damages and fines incurred as a result of CONTRACTOR's negligence while implementing the Temporary Erosion and Sediment Control Plan.

C. CONTRACTOR is solely responsible for schedule impacts incurred as a result of implementing the requirements of this Section.

3.2 TESC DEVELOPMENT AND MAINTENANCE

A. Develop TESC BMPs for the project. Address the following minimum requirements as part of developing and implementing the BMPs.

B. Inspect the TESC facilities daily and maintain these facilities to ensure continued proper functioning. Keep written records of these inspections, and summarize weekly.

C. Immediately stabilize areas of exposed soils, including embankments. Stabilize with approved TESC measures such as mulching, and/or plastic covering.

D. Inspect and maintain TESC facilities in inactive areas of the Site. Do not allow more than 6 inches of sediment to accumulate within a catch basin or manhole. Clean all catch basins, manholes, and conveyance lines at the completion of the Work. During cleaning do not flush sediment-laden water into any downstream system.

3.3 TEMPORARY EROSION AND SEDIMENT CONTROL IMPLEMENTATION

A. Establish methods for controlling sediment and erosion which address vegetative practices, structural control, silt fences, straw dikes, sediment controls, and operator controls as indicated in the approved construction

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permits, or as provided in the RESPONSIBLE PARTIES accepted Construction Work Plan.

B. Institute stormwater management measures as required, including velocity dissipaters and solid waste controls, which address controls for building materials and off-site tracking of sediment.

3.4 WASTEWATER AND STORMWATER MANAGEMENT CONTROLS.

A. Use methods of dewatering, unwatering, excavating, or stockpiling earth and rock materials that include prevention measures to control silting and erosion, and which will intercept and settle any runoff of sediment-laden waters.

B. Prevent wastewater from general construction activities such as drain water collection, aggregate processing, concrete batching, drilling, grouting, or other construction operations, from entering flowing or dry watercourses or saltwater bodies.

C. Divert stormwater runoff from upslope areas away from disturbed areas.

3.5 CONSTRUCTION SITE MANAGEMENT

A. Perform construction activities by methods that will prevent entrance or accidental spillage of solid matter, contaminants, debris, or other pollutants or wastes into saltwater bodies, streams, flowing or dry watercourses, wetlands, or underground water sources or onto adjoining property areas. Such pollutants and wastes include, but are not limited to: refuse, garbage, cement, sanitary waste, industrial waste, hazardous materials, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.

B. Stockpiled or deposited materials: Do not stockpile or deposit excavated materials or other construction materials near or on saltwater shoreline, stream banks, or other watercourse perimeters where they can be washed away by high water or storm runoff, or can in any way encroach upon the watercourse.

C. Route runoff from cleared or disturbed areas through straw bale barriers, silt fences and other Best Management Practices (BMPs) collectively referred to as Temporary Erosion and Sediment Control (TESC) facilities:

D. Stabilize disturbed ground at the end of each workday. Perform surface roughening immediately upon reaching final grade by uniformly track-walking up and down the slope with a crawler tractor or sheepsfoot roller, leaving a pattern of cleat imprints that parallel the slope contours. Implement permanent soil stabilization and erosion/sedimentation controls upon reaching final grade.

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3.6 MAINTENANCE

A. If monitoring or inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.

B. Observe TESC facilities during the first storm following TESC installation to ensure that the facilities are properly located, constructed, and operating as designed.

C. Maintain and repair TESC facilities as needed to ensure that they continue to work as designed.

D. Inspect TESC Facilities and record sediment levels after each runoff-producing rainfall and daily during prolonged rainfall events.

E. Remove accumulated sediments from temporary sediment traps, and from behind silt fences and straw bale barriers to maintain the effectiveness of the facilities.

F. Check for sagging silt fences, torn fabric, and signs of erosion and/or sedimentation down slope of the fence.

G. Make silt fence repairs as necessary.

H. If the silt fence fails due to storm water runoff inundating the fence, construct additional temporary erosion and sediment control measures to remove sediment from and convey the runoff to downstream drainage facilities.

I. Remove accumulated sediment behind silt fences whenever it reaches approximately one third the height of the fence.

3.7 REMOVAL OF TESC FACILITIES

A. Remove all TESC facilities within 30 days after final site stabilization is achieved, as determined by the RPR, or at Substantial Completion.

B. Dispose of used silt fence and supports, straw bales, and plastic covering.

C. Remove trapped sediment from all TESC facilities and stockpile on site as directed by the RPR.

D. Permanently stabilize areas disturbed by TESC removal activities.

END OF SECTION

PRELIMINARY DRAFT

SECTION 017423
DECONTAMINATION PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Decontamination of equipment and reusable materials in accordance with applicable local, state, and federal regulations prior to departure from the Site.

B. Decontamination of equipment before being used to handle or transport clean materials.

C. Decontamination of equipment when/if switching from Subtitle C to Subtitle D soil handling to minimize cross contamination to maximum extent practical.

D. Decontamination to minimize environmental impacts.

1.2 RELATED SECTIONS

A. Section 011419 – Use of Premises and Work Restrictions.

B. Section 013310 – Construction Work Plan Submittal.

C. Section 013529 – Health Safety and Emergency Response.

D. Section 014340 - RESPONSIBLE PARTIES's Sampling and Analysis plan.

E. Section 015700 – Temporary Controls

F. Section 015713 – Erosion and Sediment Controls.

G. Section 028110 – Contaminated Soil Transportation and Disposal.

H. Section 312319 – Water Treatment and Management.

1.3 PRE CONSTRUCTION SUBMITTALS

A. As part of the Construction Work Plan as described in Section 013310, prepare a Decontamination Plan.

B. Submit a cut sheet for the 20-mil minimum thick geomembrane that will line the decontamination cell.

1.4 SUBMITTALS DURING CONSTRUCTION

A. During and after construction submit documentation that decontamination of equipment was completed in accordance with this Section and submit documentation to the RPR for review prior to demobilization. Provide documentation for any equipment that may have contacted contaminated materials.

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1.5 DEFINITIONS

A. **Equipment** means equipment used by the CONTRACTOR that may have come in contact with Subtitle D or Subtitle C sediment, soil or contaminated water during performance of the Work, including, but not limited to appurtenances, tools, and vehicles. Equipment does not include containers used for the off-site transport of wastes.

1.6 REGULATORY REFERENCES

A. 40 C.F.R. §268.45, Table 1, footnote 3.

B. 40 C.F.R. §761.79 (h)(1).

C. 40 C.F.R. §761.79 (b)(1) through (b)(4).

D. 40 C.F.R. §761.79 (e) – (g).

PART 2 PRODUCTS

2.1 20-MIL MINIMUM THICK GEOMEMBRANE

A. Per approved submittal.

PART 3 EXECUTION

3.1 DECONTAMINATION STANDARDS

A. Non-disposable Equipment and Structures - Decontaminate non-disposable equipment and structures using mechanical means or pressure washing to achieve a "clean debris surface" as defined in 40 C.F.R. §268.45, Table 1, footnote 3 and 40 C.F.R. §761.79 (h)(1). Demonstrations that this standard can be met have been previously made by the RESPONSIBLE PARTIES to the applicable level set out in 40 C.F.R. §761.79 (b)(1) through (b)(4).

B. Moveable Equipment: Decontaminate moveable equipment to the standard defined in §761.79(c)(2)(i) (swabbing with solvent), which applies to the black stain areas near the former top ends of the SSP panels. Prior to treating the black stain, measure the surface temperature of each SSP panel using an infrared thermometer to confirm that the materials are within the range of 40°F and 100°F, for maximum extraction efficiency

C. Reusable equipment: Decontaminate all reusable equipment in accordance with the above-listed standards and objectives.

D. Conduct any other decontamination that is subject to EPA approval in compliance with the requirements of 40 C.F.R. §761.79 (e) – (g)..

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3.2 PROCESS WASTES DISPOSAL STANDARD

A. Collect and dispose of all solid process wastes used in the decontamination process in compliance with 40 CFR §761.79 (g).

3.3 RELOCATING AND STAGING OF REMOVED SSP

A. Relocate the removed steel sheet piles to the staging area inside the designated Decontamination Work Zone as identified in the accepted Construction Work Plan.

B. Cover the ground surface of the transportation route between the SSP location in the ground and the staging area inside the Decontamination Work Zone with sheeting to collect residues that may become dislodged from the SSPs during rigging and transport.

C. Transport the SSP panels to the Decontamination Work Zone over the transportation route without allowing the SSPs to contact the plastic sheeting.

D. Stack the SSP panels on dunnage, and on and under plastic sheeting.

E. Schedule removal transport on a fair-weather day so that precipitation does not require collection or management of water coming into contact with the SSPs.

F. Secure the Decontamination Work Zone with temporary fencing and signage to communicate work zone access and egress conditions as described in the accepted Construction Work Plan.

3.4 DESIGNATED DECONTAMINATION WORK ZONE

A. Designate a Decontamination Work Zone on the JFC's property inside the designated Contractor work area within 100 feet of the installedSSP panels. Provide a Decontamination Work Zone that encompasses a decontamination cell, a Contamination Reduction Zone (CRZ), and two separate SSP panel staging areas for before and after decontamination.

1. Anticipated solid wastes from decontamination activities include: solid residue vacuumed from the bottom ends of the SSP panels; dunnage; PPE; slings, rigging, and guide ropes that contact the SSP panels; plastic sheeting; wire brushes and scraping tools.
2. Anticipated liquid wastes from decontamination activities include: excess CAPSUR ® solvent used to treat the interlock channels, decontamination water used inside the CRZ, and incidental precipitation that lands inside the decontamination cell.

B. Sweep the Decontamination Work Zone and paved portions of the access route from the temporary staging area prior to designating and securing the work zone.

C. Appropriately mark the approximate corners of the work zone with utility locating paint on pavement prior to transporting the SSP panels.

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D. Construct a decontamination cell inside the Decontamination Work Zone and on pavement to collect decontamination fluids as well as precipitation that falls during decontamination activities.

E. Construct a decontamination cell consisting of a bermed perimeter lined with two sheets of 20-mil minimum thick geomembrane, separated by a 6-inch thick layer of sand. Construct the berm using Ecology blocks, or equivalent weighted barriers, placed in a manner that anchors the liner. Provide a decontamination cell that is longer and wider than one SSP panel (minimum 20 feet wide, 65 feet long, with a minimum 1-foot berm).

F. Provide a storage tank with a minimum capacity of 5,000 gallons or that is equivalent to a 6-inch deep volume of water stored inside the decontamination cell, whichever is greater. Maintain the storage tank for storage of decontamination fluids and any incidental precipitation that lands inside the decontamination cell. Transfer fluids from the cell to the storage tank for profiling and disposal using a trash pump so that fluid levels inside the decontamination cell do not exceed 6 inches deep.

G. Establish a CRZ next to the decontamination cell. Assure that worker's access and egress the decontamination cell through the CRZ, where they will be able to decontaminate and/or remove personal protective equipment (PPE) and other equipment.

H. Segregate and contain solid and liquid wastes separately to the extent practical.

I. Establish separate staging areas for stacking and protecting the SSP panels before and after decontamination. Provide a new staging area that is similar to the existing staging area, with SSP panels stacked on dunnage, on and under plastic sheeting, and with wattles surrounding them to control precipitation runoff.

3.5 SSP PANEL DECONTAMINATION AND WASTE MINIMIZATION

A. Place dunnage at intervals that do not come into contact with the black stain near the former top ends of the SSP panels and the sandy residue on the former bottom ends of the SPP panels.

B. Visually inspect dunnage and brush clean as necessary whenever the SSP panels are flipped to ensure that any dislodged particles do not come into contact with a decontaminated side of an SSP panel.

C. Scrap and vacuum the sandy residue from the former bottom ends of the SSP (both sides). Scrap and vacuum any sandy residue a second time if remaining after the first step. As a last resort, apply targeted air pressure to the interlock channel to remove sandy residue from the former bottom ends of the channel. If air pressure becomes necessary, construct a Portable framed enclosure finished with plastic sheeting around the former bottom ends of the SSP panels to intercept and contain any residual particles released from the channels. Vacuum dislodged particles from around and under the targeted area. Provide

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a portable enclosure that does not interfere with safe rigging, flipping, or transport of the SSP panels

D. Swab the black stain near the former top inside ends of the SSP using CAPSUR® solvent. Allow excess solvent to flow through the interlock channel down to the former bottom ends and then collect and contain the solvent for disposal.

E. In the event that creosote is present after treating with CAPSUR®, apply an alternative solvent product to remove the creosote residue.

END OF SECTION

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SECTION 017700
CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contract Closeout Submittals.

B. Substantial Completion.

C. Final cleaning.

D. Project record documents.

E. Certificates.

F. Release of Liens.

G. Warrantees.

H. Post Construction Photos.

1.2 RELATED SECTIONS

A. Section 012000 – Price and Payment Procedures.

B. Section 013300 — Submittals.

C. Section 015210 — Temporary Construction Facilities.

1.3 CONTRACT CLOSEOUT SUBMITTALS

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for the RESPONSIBLE PARTIES's inspection.

B. Submit documentation or lien releases from Subcontractors and suppliers documenting payment to Subcontractors and suppliers for all work performed under this Contract.

C. Provide submittals to the RPR that are required by governing or other authorities.

D. Submit final Application for Payment identifying total adjusted Contract Amount, previous payments, and amount remaining due. Use form described in Section 012900. Payment of final project application for payment will <u>not</u> be made until all record as-built drawings, specifications, warranties, guarantees, submittals, lien releases and similar documents have been received and accepted by the RESPONSIBLE PARTIES

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E. Submit Record as-built drawings as described in this Section.

F. Submit record as-built specifications as described in this section.

G. Submit manufacturer's warranties for products installed in the Work.

1.4 DOCUMENT SUBMITTAL

A. Complete closeout procedures, final cleaning, and submit project record documents, warranties, and spare parts before applying for final payment.

B. Final payment will be withheld until Work of this Section is complete and accepted by the RESPONSIBLE PARTIES .

1.5 SUBSTANTIAL COMPLETION

A. Notify the RPR when Work is considered Substantially Complete. Accompany the RPR on a preliminary inspection to determine items to be listed for completion or correction in the CONTRACTOR's Notice of Substantial Completion, “Punch List”.

B. Comply with the RPR’s instructions to correct items of work listed in executed Certificates of Substantial Completion (Punch List) and for access to the RESPONSIBLE PARTIES occupied areas.

C. Notify the RPR when Work is considered finally complete. Accompany the RPR on preliminary final inspection.

D. Comply with the RPR’s instructions for completion of items of Work (Final Punch List) determined by the RPR’s final inspection.

1.6 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. Clean equipment and fixtures to a sanitary condition.

C. Clean site; sweep paved areas, rake clean landscaped surfaces.

D. Remove MSW waste and surplus materials, rubbish, and construction facilities from the construction site.

E. Comply with Section 015210.

1.7 PROJECT RECORD DOCUMENTS

A. Maintain on site, one set of the following record documents and record actual revisions to the work.

1. Construction Drawings issued for construction.
2. Technical Specifications issued for construction.

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3. Addenda issued during Bid Period.
4. Change Orders and other modifications to the Contract.
5. Reviewed shop drawings, product data, samples and submittals.

B. Store Record Documents separate from documents used for construction.

C. Record as-built information concurrent with construction progress, and in accordance with Section 022010.

D. Specifications: Legibly mark and record in each product section (PART 2) the description of actual products installed, included the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and Modifications.

E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured horizontal and vertical location of underground utilities and appurtenances, referenced to permanent surface improvements.
2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
3. Field changes of dimension, detail, or materials.
4. Details not shown on original Construction Drawings.

F. Submit the Record As-Built Drawings on full-sized paper of the same size and scale as the original Construction Drawings.

G. Keep Record Drawings current updated at the time the Products and equipment are installed. Make annotations to the record documents with an erasable colored pencil conforming to the following color code:

1. Additions – Red.
2. Deletions – Green.
3. Comments – Blue.

H. Complete Project As-Built Drawings and verify acceptance by the RESPONSIBLE PARTIES before requesting Final Completion inspection.

I. Record as-built information in the same horizontal and vertical datum as the original Construction Drawings issued for construction.

1.8 RELEASE OF LIENS AND CONSENT OF SURETY

A. No application for final payment will be accepted until satisfactory evidence of Release of Liens and Consent of Surety to Final Payment has been submitted to the RESPONSIBLE PARTIES.

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1.9 WARRANTIES

A. The CONTRACTOR warrants the labor, materials, and equipment delivered under the Contract to be free from defects in design, material, or workmanship, and against damage caused prior to final inspection as described in the General Conditions. Unless otherwise specified, this warranty extends for a period of 1 year from the date of Substantial Completion.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 CLEAN UP

A. General: Prior to completion of the work, remove from the Jorgensen Forge Outfall Site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described below.

B. Timing: Schedule final cleaning as approved by the RESPONSIBLE PARTIES to enable the RESPONSIBLE PARTIES to occupy a completely clean project.

3.2 POST-CONSTRUCTION PHOTOS

A. Photograph the post-construction conditions of the Site as described in Section 011421.

END OF SECTION

PRELIMINARY DRAFT

DIVISION 2
EXISTING CONDITIONS

PRELIMINARY DRAFT

SECTION 022010
LAYOUT OF WORK AND SURVEYS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. General requirements for survey work to be performed by the CONTRACTOR including.

1. Performing surveys to establish survey benchmarks.
2. Performing surveys to locate previously completed Work such as the Stage 1 Excavation Area.
3. Setting offset stakes, slope stakes, and grade stakes to field layout features of the Work.
4. Performing surveys to measure pay item quantities.
5. Performing surveys to record as-built conditions of the project.

1.2 RELATED SECTIONS

A. Section 011419 – Use of Premises and Work Restrictions

B. Section 017700 – Contract Closeout.

C. Section 026123 – Dry Contaminated Soil Excavating and Handling.

D. Section 026124 – Wet Contaminated Soil Excavating and Handling.

E. Section 312316 – Excavation

F. Section 312323 – Engineered Backfill.

G. Section 314116 - Steel Sheet Piles

1.3 REFERENCES

A. Accepted CONTRACTOR's Construction Work Plan Submittal.

1.4 PRE-CONSTRUCTION SUBMITTALS FOR REVIEW

A. As part of the Construction Work Plan, provide a Pre-Construction Survey Location and Installation Plan Including:

1. Locations of survey control points at the work areas such that control points are both outside of the exclusion zone and in locations that will not be disturbed during site operations.

1.5 SUBMITTALS DURING CONSTRUCTION

A. Survey Equipment: Upon request by the RPR, provide certificates of calibration for all survey equipment used during the project five (5) days prior to putting

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equipment into use. Re-calibrate as recommended by equipment manufacturer, then re-submit.

B. Submit copies of all field notes, computations, and records relating to Bid Item quantity surveys, as-built surveys or for layout of the Work upon request of the RPR.

1.6 QUALITY ASSURANCE

A. Perform work under the direct supervision of a licensed surveyor licensed in the state of Washington.

B. Assure that survey, layout, and related work is performed and signed by a surveyor registered in Washington.

C. Provide survey data in x, y, z (easting, northing, elevation) format. With each data file include a descriptive header including software and equipment information, Property Owner, project, horizontal and vertical datum, units, survey type, alignment, and items surveyed.

D. Maintain at the work areas a complete, accurate log of survey work as it progresses.

1.7 PROJECT DATUM

A. Use the following datum for all surveying

1. Horizontal: NAD83 North American Datum 1983.
2. Vertical: NAVD88 North American Vertical Datum 1988 .

1.8 COORDINATION WITH RPR

A. Keep the RPR informed on progress of survey work to allow the RPR sufficient time and ample opportunity to verify survey work without inconvenience or delay to the project.

PART 2 PRODUCTS

2.1 EQUIPMENT

A. Provide instruments and other survey equipment that is accurate, suitable for the surveys required in accordance with recognized professional standards, and in proper condition and adjustment at all times.

PART 3 EXECUTION

3.1 PREPARATION

A. Reference Points. Prior to construction, verify with the RPR the locations of existing site reference points and survey control points. Notify the RPR if survey control points are damaged upon discovery. Also notify the RPR of any

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damage caused by the CONTRACTOR, then repair or replace control points at no additional cost to the RESPONSIBLE PARTIES.

B. The RESPONSIBLE PARTIES reserves the right to perform any desired checking and correction of the CONTRACTOR's surveys but this does not relieve the CONTRACTOR of the responsibility for adequate performance of the Work.

3.2 MONITORING DEVICE PROTECTION

A. Prior to beginning any site work, locate and mark all monitoring wells, piezometers, utility boxes, valve boxes, or other utilities.

B. Protect these items during construction.

C. Replace any items damaged during construction at no cost to the RESPONSIBLE PARTIES.

D. An example replacement cost for a monitoring well is approximately $15,000.

3.3 GENERAL

A. Exercise care during execution of the survey Work to reduce disturbance to existing property and to the utilitiesand waters in and surrounding the work areas.

B. Do not Work in uncontrolled areas, controlled areas, or private property without RPR approval.

C. Coordinate with the RPR's well in advance of the Work to confirm the CONTRACTOR's intent to coordinate access.

D. Obtain right of entry permits, as required, to survey public or private property.

E. Comply with restrictions associated with the Work in Section 011419.

F. Protect survey control points prior to starting Work and preserve permanent reference points during construction. Do not relocate survey control points without prior written notification from the RPR.

3.4 REFERENCE POINTS

A. Install survey control points as needed to provide permanent reference points during construction.

B. Reference survey points to the survey control points and will record locations of the survey control points, with horizontal and vertical data, on project record documents.

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3.5 SURVEYS FOR LAYOUT AND PERFORMANCE OF WORK

A. Perform surveys for layout and performance of the Work, reduce the field notes, make necessary calculations, and prepare drawings necessary to carry out such work.

3.6 SURVEYS FOR MEASUREMENT FOR PAYMENT

A. When the Technical Specifications require items of work to be measured by surveying methods, perform the surveys and perform necessary calculations to determine pay item quantities. The RESPONSIBLE PARTIES may perform independent checks.

3.7 SURVEYS FOR RECORD DRAWINGS

A. Perform as-built surveys to document the as-constructed location of the following items:

1. Horizontal and vertical position of the tops of existing and new SSP walls after all SSP walls are installed to create the excavation enclosure.
2. Horizontal and vertical position of the tops of SSP walls that remain after pulling new SSP walls.

B. Provide as-built survey information and associated point data on the same datum and coordinate basis as the Construction Drawings And all point data in clear, easy to understand descriptions.

C. Provide information in AutoCAD (Release 14 or more recent) format.

D. Submit final as-built survey drawings on or before the date of substantial completion.

3.8 SURVEYING ACCURACY AND TOLERANCES IN SETTING OF SURVEY STAKES

A. Perform control traverse field surveys and computations to an accuracy of at least 1:10,000.

B. The tolerances applicable in setting survey stakes are set forth below. Such tolerances do not supersede stricter tolerances required by the Construction Drawings or Specifications, and do not otherwise relieve the CONTRACTOR of responsibility for measurements in compliance with applicable tolerances.

Table of Mark	Horizontal Position	Elevation
Permanent reference points	1 in 10,000	0.01 ft.
General excavation and earthwork	1 in 2,000	0.10 ft.

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C. Tolerances for designed thicknesses shown on Drawings and for elevations shown on the Drawings are ±0.10 foot unless otherwise specified.

3.9 FIELD QUALITY CONTROL

A. Field Notes and Records. Record surveys in field notebooks and provide copies of such records to the RPR when requested. Furnish each field notebook to the RPR when filled or completed. Electronic notes may be used if printouts are furnished to the RPR and if the format of the printed information is approved by the RPR.

B. Use by the RESPONSIBLE PARTIES. The RESPONSIBLE PARTIES may at any time use line and grade points and markers established by the CONTRACTOR. The CONTRACTOR's surveys are a part of the Work and may be checked by the RESPONSIBLE PARTIES or representatives of the RESPONSIBLE PARTIES at any time. The CONTRACTOR is responsible for (1) any lines, grades, or measurements which do not comply with specified design criteria or proper tolerances, or which are otherwise defective, and (2) for any resultant defects in the Work. The CONTRACTOR will be required to conduct re-surveys or check surveys to correct errors indicated by review of the field notebooks or otherwise detected.

END OF SECTION

PRELIMINARY DRAFT

SECTION 026123
DRY CONTAMINATED SOIL EXCAVATING AND HANDLING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Completing initial dry soil excavation inside the SSP enclosure down to an elevation equal to the top elevation of the existing 12-inch and 24-inch culverts and loading excavated soil for disposal.

B. Completing dewatering and secondary dry soil excavation inside the SSP enclosure down to elevation minus 4 and loading excavated soil for disposal.

C. Furnishing and installing caulk or other sealant to seal visible steady streams of water seeping through SSP wall joints.

D. Furnishing and installing “Stego Wrap” on the interior face of the SSP wall enclosure.

1.2 RELATED SECTIONS

A. Section 011419 - Use of Premises and Work Restrictions.

B. Section 017423 – Decontamination Procedures.

C. Section 026124 – Wet Contaminated Soil Excavating and Handling.

D. Section 028110 – Contaminated Soil Transportation and Disposal.

E. Section 312316 – Excavation

F. Section 312318 – Dewatering.

G. Section 312319 – Water Treatment and Management.

H. Section 314116 – Steel Sheet Piles.

I. Section 316214 – Drilled Shafts.

1.3 REFERENCES

A. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016.

B. Geotechnical Recommendations Report, PanGeo Inc., dated August 18, 2015.

C. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

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D. The flow rate of groundwater intrusion into the excavation area is estimated to be up to 200 gpm.

1.4 DEFINITIONS

A. Subtitle D Dry Contaminated Soil – Soil that exists inside the existing and newly installed SSP walls (SSP wall enclosure) that is impacted with PCBs at concentrations less than or equal to 50 ppm and exists from the ground surface down to an elevation approximately equal to the top of the existing 12- and 24-inch CMPs. This soil is designated for disposal at a Subtitle D disposal facility.

B. Subtitle C Dry Contaminated Soil – Soil that exists inside the existing and newly installed SSP walls (SSP wall enclosure) that is impacted with PCBs at concentrations greater than 50 ppm from an elevation approximately equal to the top of the existing CMPs down to elevation minus 4. This soil is designated for disposal at a Subtitle C disposal facility.

C. Corrugated Metal Pipes (CMPs) – existing 12-inch diameter and 24-inch dimeter corrugated metal pipes that exist inside the SSP wall enclosure that have been impacted by PCBs and are approximately located as shown on the Drawings. These CMP's have been designated for disposal at a Subtitle C disposal facility and can be mixed with Subtitle C soil.

D. PCB - polychlorinated biphenyl

E. 2-66 Excavation Area – the area identified north of the existing W2-75 SSP wall and on Boeing property that is designed to be excavated to elevation 5.

F. Exclusion Zone –

1. At least one equipment-width wider than the equipment used for excavation and loading and encompassing any exposed subsurface media, such as an area where pavement has been removed.
2. Requires use of proper PPE when entering the EZ and appropriate training and medical clearance.
3. With a boundary identified with fencing or caution/warning tape.

G. Contaminant-Reduction Zone (CRZ).

1. Transitional zone between the EZ and the SZ (also known as the "cold zone" or "clean zone") active during phases of excavation and material decontamination.
2. Equipped with a hand-washing station and boot-washing station.

3. Providing a location for removal and decontamination of PPE and tools leaving the EZ.

H. Support Zone (SZ).

1. Uncontaminated zone outside the EZ and CRZ and within the geographic perimeters of the JFOS project and support areas.

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2. Used for support personnel; staging materials; parking vehicles; office, laboratory, and sanitation facilities; and receiving deliveries.

3. Used by delivery personnel, visitors, security guards, and others who will not necessarily be permitted in the EZ or CRZ.

I. Observers' Zone (OZ)..

1. Will be established for personnel who need to observe and document CCONTRACTOR's performance of the work.

2. May be located inside the SZ..

J. BMPs: practices planned by the CONTRACTOR that include health and safety, erosion and dust control, management of waste, decontamination, and containment and treatment of wastewater.

1.5 PRE-CONSTRUCTION SUBMITTALS FOR REVIEW

A. As part of the Construction Work Plan Submittal prepare a section that describes means and methods for dewatering the excavation during removal of Subtitle C Dry Contaminated Soil to elev. minus 4 and for the containment, treatment, and disposal of dewatering water that complies with applicable permits, regulations, and Sections 312318 and 312319.

1.6 SUBMITTALS DURING CONSTRUCTION

A. Caulk: Provide a sample MSDS and cut sheet for the proposed caulk used to seal leaks in the SSP walls.

1.7 QUALITY ASSURANCE

A. RESPONSIBLE PARTIES will engage the services of a third-party consultant to perform sampling and analysis of dry contaminated soils excavated under this Section. Cooperate with and assist the third party consultant in obtaining these samples for analysis.

1.8 PROJECT SITE CONDITIONS

A. Based on previous sampling and analysis soil contaminated with 50 ppm or less of PCB exists inside the SSP walls from existing ground surface to an elevation equal to the top of the CMPs.

B. Based on previous sampling and analysis soil defined as *"Dry Contaminated Soil"* contaminated with greater than 50 ppm of PCB exists inside the SSP walls from an elevation equal to the top of the CMPs to elevation minus 4.

C. Groundwater elevations in the excavation area inside the SSP walls vary, but are expected to be at approximately elevation 5 during the time this project is executed.

D. Previous construction projects in the vicinity of the SSP enclosure encountered driven wooden piles supporting other infrastructure. It is possible, but not

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known. If driven piles exist below and are supporting the 24-inch and 12-inch CMPs. If driven piles are encountered during CMP removal and associated excavations proposed under this contract, dealing with them will be subject to a Change Order.

E. During 1994 work in the vicinity of SSP enclosure cedar logs were encountered at 25 to 30 feet below ground surface. It was assumed that they were deposited there by a historic flood and could be encountered during this project. If encountered under this contract, dealing with cedar logs will be subject to a Change Order.

1.9 SEQUENCING

A. Complete the following work prior to initiating dry contaminated soil excavation above the CMPs:

1. Establish Exclusion Zone, Contamination Reduction Zone, Support Zone and Observer Zone.
2. Install surface protection on Stage I excavation area
3. Reinforcement of the existing W2-75 SSP wall.
4. Installation of the drilled shafts.
5. Installation of RESPONSIBLE PARTIES furnished AZ 38-700N SSP walls shown on the Drawings.

B. Complete the following work prior to initiating dry contaminated soil excavation below the CMPs:

1. Clean soil excavation and stockpiling north of the existing Boeing 2-66, WZ-75 SSP wall to elevation 5.
2. Installation of dewatering system within the SSP enclosure.
3. Installation, testing and activation of a water treatment management system to treat groundwater removed from the dry contaminated soil excavation area.
4. Removal of the 12-inch and 24-inch CMPs.

PART 2 PRODUCTS

2.1 PLASTIC LINING FOR CONTAMINATED SOIL HAULING VEHICLES.

A. Plastic sheeting with a minimum thickness of 10 mils.

B. Having an area large enough to line the entire truck bed without breaks or seams in the plastic.

C. Provide new plastic lining with each load.

2.2 STEGO WRAP

A. Approved Manufacturer: Stego Industries, LLC 877 464 7834.

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B. Product consisting of a multi-layer plastic extrusion that is intended to provide a separation layer between suspended solids within the wet excavation and the surrounding SSP to limit migration of suspended solids and other contaminates to the SSP.

C. Meeting the following properties:

Property	Test	Results
Under Slab Vapor Retarders	ASTM E1745 Class A, B and C – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.	Exceeds Class A, B and C
Vapor Barrier Performance	ASTM F1249 – Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Inferred Sensor	0.0086 perms 0.0036 WVTR
Puncture Resistance	ASTM D1709 – Test Methods for Impact Resistance of Plastic Film by Free Falling Dart Method	2266 grams
Tensile Strength	ASTM D882 – Test Method for Tensile Properties of Thin Plastic Sheeting	70.6 lbf/in.
Permeance After Conditioning (ASTM E1745 Sections 7.1.2 – 7.1.5)	ASTM E154 Section 8, F1249 – Permeance after wetting, drying, and soaking	0.0098 perms
	ASTM E154 Section 11, F1249 – Permeance after heat conditioning	0.0091 perms
	ASTM E154 Section 12, F1249 – Permeance after low temperature conditioning	0.0097 perms
	ASTM E154 Section 13, F1249 – Permeance after soil organism exposure	0.0095 perms
Methane Transmission Rate	ASTM D1434 – Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting	192.8 GTR mL(STP)/m^2day)
Radon Diffusion Coefficient	K124/02/95	8.8 x 10^{-12} m^2/sec.
Thickness		15 mils
Roll Dimensions		14ft x 140 ft.
Roll Weight		140 lbs

Notes:
Perm unit = grains/(ft^2 hr in.Hg)
WTR = Water Vapor Transmission Rate.
GTR = Gas Transmission Rate.

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2.3 CAULKING.

A. Product suitable for sealing leaks in the SSP seams that was approved through the pre-construction submittal process.

PART 3 EXECUTION

3.1 NOTIFICATIONS

A. Notify RESPONSIBLE PARTIES third party sampling and analysis consultant 24 hours prior to initiating dry contaminated soil excavation and loading.

3.2 GENERAL PREPARATION

A. Establish communication Control Zones.

B. Prepare to perform Work under this Section in the specified sequence.

C. Prepare contaminated soil loading areas.

D. Install plastic lining inside contaminated soil transportation trucks.

E. Stage trucks waiting to be loaded inside the Support Zone.

F. Maintain sediment and erosion control systems and other BMPs to contain contaminated soil spillage inside the Exclusion Zone or provide other spill containment systems around the exclusion zone.

G. Provide means to clean and capture spilled soils off loaded vehicles prior to removal.

3.3 EQUIPMENT SETBACK REQUIREMENTS

A. 2-66 Sheet Pile Wall - No crane loads or soil stockpiles are permitted within 20 feet of the sheet pile wall.

B. AZ 38-700N sheets - No crane loads permitted within 20 feet of top of sheet.

C. Prepare an area adjacent to the excavation area for positioning trucks that will haul contaminated soil such that they can be direct loaded from the enclosure to the trucks. Setback trucks being loaded 10 feet from top of sheet pile walls.

3.4 EXCAVATION AREA PREPARATION

A. Prepare an area for positioning trucks that will haul contaminated soil such that they can be direct loaded from the enclosure to the trucks.

B. Position the trucks inside the Exclusion Zone when they are being loaded.

3.5 EXAMINATION

A. Verify excavation area lines and elevations.

B. Stop excavation if deflection exceeds tolerances as directed by the RPR.

C. Verify Stage 1 excavation area is protected per Section 011419.

D. Verify water treatment plant is operational.

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3.6 PROTECTION

A. Protect existing installations and previously remediated areas from damage including SSP walls, dewatering systems and environmental monitoring systems.

3.7 INITIAL DRY EXCAVATION

A. Position the trucks inside the Exclusion Zone when they are being loaded.

B. Excavate the entire enclosed area to an uniform depth equal to the tops and ends of the existing 12-inch and 24inch CMPs as Shown on the Drawings.

C. Load excavated soils into plastic lined hauling vehicles (trucks).

D. Load transportation vehicles without displacing or damaging plastic bed liners.

E. Clean-up all spilled soils prior to removal of the loaded vehicle to prevent cross contamination to uncontaminated zones.

F. Scrape soil adhering to the exposed SSP surfaces including within SSP crenulations to the same elevation as the initial dry excavation.

G. To the extent practical, avoid spilling of the excavated soil when loading.

H. If requested by the RPR, survey the surface of the completed initial excavation.

I. Transport loaded initial excavation soil to a Subtitle D disposal facility per Section 028110.

J. Complete preparation of bill of lading per Section 028110.

3.8 CMP REMOVAL

A. Remove the 12-inch and 24-inch CMPs.

B. Remove pipes in sections short enough to fit inside hauling vehicles.

C. Load, haul and place the CMP sections in plastic lined hauling vehicles (trucks) independent of, or co-mingled with Subtitle C Dry Contaminated Soil.

D. Transport loaded CMP sections to a Subtitle C disposal facility per Section 028110.

E. Complete manifesting per Section 028110.

3.9 WING WALL REMOVAL

A. Remove the existing wing wall remaining inside the new SSP wall as part of the initial Dry Excavation.

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B. Load, haul and place the wing wall in plastic lined hauling vehicles (trucks).

C. Transport loaded wing wall to a Subtitle D disposal facility per Section 028110.

D. Complete preparation of bill of lading per Section 028110.

3.10 SECONDARY DRY EXCAVATION WITH DEWATERING

A. Initiate dewatering of the excavation per Section 312318.

B. Continue dewatering of the excavation during secondary excavation to maintain a groundwater elevation below the surface of the soil being excavated to minimize the volume of free water that is loaded into the plastic lined trucks.

C. Excavate to the elevation shown on the Drawings, which is elevation minus 4.

D. Meet this elevation uniformly throughout the plan area inside the SSP enclosure.

E. While excavating wait until free water no longer drips from the excavation bucket before loading excavated soil into the transportation vehicle.

F. Load excavated soils into plastic lined hauling vehicles (trucks).

G. Verify no free standing liquids occur on top of load before removal from the Exclusion Zone. If necessary, add stabilizer to reduce liquids.

H. To the extent practical, avoid spilling of the excavated soil when loading.

I. Clean-up all spilled soils prior to removal of the loaded vehicle to prevent cross contamination to uncontaminated zones.

J. Scrape soil adhering to the exposed SSP surfaces to the same elevation as the secondary dry excavation.

K. Load transportation vehicles without displacing or damaging plastic bed liners.

L. If requested by the RPR, survey the surface of the completed secondary dry excavation.

M. Transport loaded secondary excavation soil to a Subtitle C disposal facility per Section 028110.

N. Complete manifesting per Section 028110.

3.11 REMOVING SOIL FROM FACE OF SSP ENCLOSURE

A. Scrape soil off the face of the inside face of the SSP enclosure to remove all visible signs of soil.

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B. Remove the scrapings as part of the dry secondary soil excavation or as part of the wet excavation.

C. Treat this scraped off soil as Subtitle C soil.

3.12 SEALING SSP WALLS

A. Following primary and secondary dry excavation visually inspect new and existing steel sheet pile walls for signs of seepage. Where visible steady streams of water are seeping through the SSP enclosure walls from outside the enclosure, seal them with caulking from elevation minus 4 to elevation 10.

B. Following caulking, furnish and install “Stego Wrap”.

C. Install the “Stego Wrap” on the face of all SSPs that form the excavation enclosure.

D. Install Stego Wrap from the top of the SSP walls, down the face terminating at elevation minus 4.

E. Install per manufacturers recommendations.

F. Install such that the Stego wrap is in intimate contact with all SSP wall enclosure surfaces.

3.13 EXCAVATION TOLERANCES

A. Initial dry excavation:

1. Line: to the SSP dimensions.
2. Grade: plus 0.2 feet and minus 0.0 feet of the CMP surface.

B. Secondary dry excavation with dewatering:

1. Line: to the SSP dimensions.
2. Grade: plus 0.1 feet and minus 0.0 feet of the designed elevation of minus 4 feet.

3.14 FIELD QUALITY CONTROL

A. Implement grade checking systems that can verify excavation elevations to the design depths and tolerance listed in this Section and shown on the Drawings.

3.15 CLEANING

A. Following loading of each vehicle remove all spillage from the EZ and load into plastic lined trucks. Perform cleaning after each load and prior to another vehicle being brought in for loading.

B. Load haul and dispose of clean up soil as Subtitle C waste.

PRELIMINARY DRAFT

C. Following completion of the secondary excavation with dewatering remove all spillage from the EZ and load into plastic lined trucks or place inside the excavation. Load haul and dispose as Subtitle C waste.

END OF SECTION

PRELIMINARY DRAFT

SECTION 026124
WET CONTAMINATED SOIL EXCAVATING AND HANDLING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. PURPOSE--The deepest portion of the excavation for this project will be done in the wet. Water will be pumped into the SSP enclosure and maintained at a specific elevation in order to reduce the load on the SSP walls. Failure to maintain that head of water could cause collapse of the structure and potentially serious releases and other consequences.

B. Completing wet excavation inside the SSP wall enclosure to the design contours shown on the Drawings.

C. Furnishing and installing a water management system that maintains liquid head to a design elevation inside the SSP walls during wet excavation.

D. Performing additional.wet contaminated soil excavation below the design contours if conformance sampling and analysis indicate contamination above levels specified in the Work Plan.

1.2 RELATED SECTIONS

A. Section 011419 - Use of Premises and Work Restrictions.

B. Section 017423 – Decontamination Procedures.

C. Section 026123 – Dry Contaminated Soil Excavating and Handling.

D. Section 028110 – Contaminated Soil Transportation and Disposal.

E. Section 312316 – Excavation.

F. Section 312319 – Water Treatment and Management.

G. Section 314116 – Steel Sheet Piles.

H. Section 316214 – Drilled Shafts.

1.3 REFERENCES

A. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016.

B. Geotechnical Recommendations Report, PanGeo Inc., dated August 18, 2015.

C. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

PRELIMINARY DRAFT

1.4 DEFINITIONS

A. Subtitle C Wet Contaminated Soil – Soil that exists inside the existing and newly installed SSP walls that is impacted with greater than 50 ppm of PCB and exists from elevation -4 down to the contours shown on Drawing C-7.

B. PCB - polychlorinated biphenyl

C. 2-66 SSP Excavation Area – the area identified north of the existing WZ-75 SSP wall and on Boeing property that is designed to be excavated to elevation 5.

1.5 PRE-CONSTRUCTION SUBMITTALS FOR REVIEW

A. As part of the Construction Work Plan Submittal described in Section 013310 prepare a section that describes means and methods of wet contaminated soil excavation.

B. Submit a cut sheet for the proposed flocculation agent.

1.6 QUALITY ASSURANCE

A. RESPONSIBLE PARTIES will engage the services of a third-party consultant to perform sampling and analysis of wet contaminated soils excavated under this Section and to obtain conformance samples from the bottom of the completed wet soil excavation. Cooperate with and assist the third party consultant in obtaining these samples for analysis.

1.7 PROJECT SITE CONDITIONS

A. Based on previous sampling and analysis soil defined as *"Wet Contaminated Soil"* contaminated with greater than 50 ppm of PCB exists inside the SSP walls from an elevation of approximately minus 4 down to contours shown on Drawing C-7.

B. Groundwater elevations in the excavation area inside the SSP walls vary but are expected to be at approximately elevation 5 during the time this project is executed.

C. The flow rate of groundwater intrusion into the excavation is estimated to be up to 200 gpm.

D. Previous construction projects in the vicinity of the SSP enclosure encountered driven wooden piles supporting other infrastructure. It is possible, but not known. if driven piles exist below and are supporting the 24-inch and 12-inch CMPs If driven piles are encountered during CMP removal and associated excavations proposed under this contract, dealing with them will be subject to a Change Order.

E. During 1994 work in the vicinity of SSP enclosure cedar logs were encountered at 25 to 30 feet below ground surface. It was assumed that they were deposited there by a historic flood and could be encountered during this

PRELIMINARY DRAFT

project. If encountered under this contract, dealing with cedar logs will be subject to a Change Order.

1.8 SEQUENCING

A. Complete the following work prior to initiating wet contaminated soil excavation below the CMPs:

1. Dry contaminated soil excavation and dewatering to approximate elevation minus 4.
2. Caulking seems in the newly installed SSP from elevation minus 4 to elevation 10.
3. Installation of Stego Wrap on all interior faces of the SSP enclosure from the top of sheet to elevation minus 4.
4. Set up testing and operation of a water management system that maintains the designed liquid levels inside the SSP enclosure during wet contaminated soil excavation..

PART 2 PRODUCTS

2.1 PLASTIC LINING FOR HAULING VEHICLES.

A. Plastic sheeting with a minimum thickness of 10 mils.

B. Having an area large enough to line the entire truck bed without breaks or seams in the plastic.

C. Provide new plastic lining with each load.

2.2 POTABLE WATER FOR MAINTAINING DESIGN WATER ELEVATION.

A. Water obtained from a public drinking water supply. Pre-approved sources include:

1. Fire hydrant shown on the Drawings.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify excavation area lines and elevations.

3.2 NOTIFICATIONS

A. Notify RESPONSIBLE PARTIES third party sampling and analysis consultant 24 hours prior to initiating wet contaminated soil excavation and loading.

3.3 PREPARATION

A. Maintain contaminated soil loading areas.

PRELIMINARY DRAFT

B. Install plastic lining inside contaminated soil transportation trucks.

C. Stage trucks waiting to be loaded inside the Support Zone.

D. Maintain sediment and erosion control systems and other BMPs to contain contaminated soil spillage inside the Exclusion Zone or provide other spill containment systems around the exclusion zone.

E. Install and test the water management system.

F. Complete the Stage 1 excavation area protection per Section 011419.

G. Prepare an area adjacent to the excavation area for positioning trucks that will haul wet contaminated soil such that they can be direct loaded from the excavation area to the trucks.

H. Position the trucks inside the Exclusion Zone when they are being loaded.

3.4 SSP WALL PREPARATION

A. Caulk SSP seams and line the excavation with Stego Wrap, as a seepage control measure, per Section 026123 prior to flooding the excavation and initiating wet contaminated soil excavation.

3.5 PROTECTION

A. Protect existing installations and adjacent areas from damage including SSP drilled shafts, SSP walls, water management systems, environmental monitoring systems and the Stage 1 excavation area protection.

3.6 WET CONTAMINATED SOIL EXCAVATION

A. Flood the excavation area with potable water to elevation +10 feet NAVD88 prior to advancing the wet contaminated soil excavation. This water elevation must be maintained 24 hours per day until backfilling of the SSP enclosure has been approved.

B. To prevent excessive deflection of the 2-66 sheet pile wall as well as the AZ 38-700N SSPs, intermittently pump potable water into the SSP enclosure to maintain design water level during wet contaminated soil excavation. This design water elevation must be maintained 24 hours per day until backfilling of the SSP enclosure has been approved.

C. Excavate wet contaminated soil to the elevations and contours shown on the Drawings.

D. While excavating and loading wait until free water no longer drips for the excavation bucket before loading contaminated soil into the transportation vehicle.

E. Load transportation vehicles without displacing or damaging plastic bed liners

PRELIMINARY DRAFT

F. After loading, verify no free standing liquids are present in the loaded vehicle prior to removal from the EZ. Solidify liquids as necessary to avoid spillage.

3.7 MANAGING SETTLEABLE SOLIDS.

A. Excavating in the wet inside the shored enclosure could result in suspension of solids and subsequent re-settling of PCB-containing solids in the base of the excavation. To minimize settleable solids entrained in the water column, take the following steps:

1. Remove soils above the CMP and manage in accordance with Section 026123.
2. Prior to excavating in the wet, dewater the shored enclosure and target the removal of soils with the higher PCB concentrations at elevations above minus 4 ft.
3. Initiate protocols for excavating in the wet, and advance the excavation inside the shored enclosure to approximate Elevation -9 feet.
4. Allow solids to settle for at least 24 hours prior to deepening excavation. Use a flocculation agent to decrease settling times.
5. Advance the excavation inside the shored enclosure to Elevation -16 feet while maintaining the specified water level in the enclosure.
6. Allow solids to settle for at least 24 hours prior to the RESPONSIBLE PARTY collecting confirmation samples
7. If confirmation samples fail, a vacuum dredge may be deployed to remove settleable solids from the bottom of the excavation, depending upon the results of confirmation sampling. If required, this vacuum dredge Work will be done under conditions of a Change Order.

3.8 ADDITIONAL WET CONTAMINATED SOIL EXCAVATION

A. Perform additional excavation and loading of wet contaminated soil as directed by the RPR, if sampling and analysis of confirmation samples obtained from the bottom of the wet excavation do not meet the PCB clean up criteria of less than or equal to 1 ppm.

B. Continue wet excavation until clean up criteria is obtained as determined by confirmation sampling and analysis performed by as part of the RESPONSIBLE PARTIES Sampling and Analysis Plan.

C. Perform additional wet contaminated soil excavation under a RESPONSIBLE PARTIES / CONTRACTOR executed Change Order.

3.9 EXCAVATION TOLERANCES

A. Initial wet excavation:

1. Line: to the SSP dimensions.
2. Grade: plus 0.0 feet and minus 0.5 feet of the designed excavation contours or as directed by the OWNER.

PRELIMINARY DRAFT

B. Additional wet excavation:

1. Line: to the SSP dimensions.
2. Grade: as directed by RPR.

3.10 FIELD QUALITY CONTROL

A. Implement grade checking systems that can verify excavation is completed to the contours shown on the Drawings and to the tolerances listed in this Section.

3.11 CLEANING

A. Following completion of the entire wet excavation, clean up all spillage of soil and water and load into plastic lined trucks.

B. Keep work area, site, and adjacent properties free from accumulations of waste materials, rubbish, and windblown debris resulting from the work.

C. If necessary utilize truck wheel wash to prevent tracking of mud off site.

END OF SECTION

PRELIMINARY DRAFT

SECTION 028110
CONTAMINATED SOIL TRANSPORTATION AND DISPOSAL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Furnishing all labor, tools, equipment, and incidentals required for transportation and disposal of Subtitle D and Subtitle C contaminated soil.

1.2 RELATED SECTIONS

A. Section 011419 - Use of Premises and Work Restrictions.

B. Section 013529 – Health, Safety, and Emergency Response Procedures.

C. Section 014300 – Quality Control.

D. Section 015210 – Temporary Construction Facilities.

E. [1]Section 015713 – Erosion and Sediment Control.

F. Section 017423 – Decontamination Procedures.

G. Section 026123 -Dry Contaminated Soil Excavating and Handling.

H. Section 026124 -Wet Contaminated Soil Excavating and Handling.

I. Section 316214 – Drilled Shafts.

1.3 DEFINITIONS

A. Subtitle C Waste: Soil obtained from excavations inside the SSP wall enclosure below the top of the CMPs with total PCB concentrations exceeding 50 ppm.

B. Subtitle D Waste: Soil obtained from excavations inside the SSP wall enclosure above the CMPs with total PCB concentrations of less than 50 ppm.

1.4 SUBMITTALS WITH BID

A. Submit proposed disposal sites upon which bid prices for waste disposal are based.

PRELIMINARY DRAFT

B. As part of the Construction Work Plan, submit procedures and products that are proposed to solidify saturated contaminated soils to prevent liquid leakage from hauling vehicles.

1.5 SUBMITTALS DURING CONSTRUCTION

A. Submit a waste disposal receipt generated by the waste disposal facility for each load of Subtitle C and D waste disposed of at the Subtitle C and D facilities. With each receipt provide the waste classification and waste tonnage as measured at the disposal facility on certified scales. Submit disposal records to the RPR on a daily basis and on the day the disposal took place.

B. Submit copies of waste Manifests or Bills of Lading for each load of Subtitle C and D waste on the day that load leaves the Site. Submit to the RPR.

C. Submit a cut sheet from any proposed liquid absorbent.

1.6 EXPECTED WASTE TYPES

A. Subtitle “D” PCB-contaminated waste, including debris removed from the site, PPE, and soil removed from above an elevation equal to the top of the CMPs.

B. Demolished surface materials that cannot be recycled or reused.

C. Subtitle “C” PCB-contaminated waste including removed CMPs and soil removed from below an elevation equal to the top of the CMPs.

1.7 REGULATORY REQUIREMENTS

A. Dispose of all wastes generated during the course of the project in accordance with all applicable local, state, and federal regulations.

B. The Toxic Substances Control Act (TSCA) (40 CFR 761) establishes prohibitions of and requirements for the manufacture, processing, distribution in commerce, use, cleanup, storage and disposal of polychlorinated biphenyls (PCBs) after January 1, 1978.

C. TSCA regulations for PCBs apply to concentrations of PCBs equal to or greater than 50 ppm that are subject to disposal requirements set forth in 40 CFR 761.60 (a) (2) to 761.60(a) (5) storage requirements of 40 CFR 761.65, and decontamination standards and procedures of 40 CFR 761.79.

D.

1.8 CONTRACTOR RESPOSIBILITY

A. Provide trucking and transport of Subtitle D waste materials to the designated disposal facility for disposal.

B. Provide trucking and transport of Subtitle C waste materials to the designated disposal facility for disposal.

PRELIMINARY DRAFT

C. Coordinate with the RPR and designated landfill representative for transportation and disposal.

D. Collect and submit disposal site records

1.9 RESPONSIBLE PARTIES RESPONSIBILITIES

A. JFC will contract directly with a Resource Conservation and Recovery Act (RCRA) Subtitle D disposal facility to pay disposal fees for Subtitle D waste materials.

B. JFC will contract directly with a RCRA Subtitle C disposal facility to pay disposal fees for Subtitle C waste materials.

PART 2 PRODUCTS

2.1 PLASTIC LINING FOR HAULING VEHICLES.

A. Plastic sheeting with a minimum thickness of 10 mils.

B. Having an area large enough to line the entire transportation vehicle bed without breaks or seams in the plastic.

C. Provide new plastic lining with each load of Subtitle D and C waste.

2.2 ACCEPTABLE SUBTITLE C AND D WASTE HAULING EQUIPMENT.

A. Single bed dump trucks with beds lined with plastic liners described in Part 2.1 and with a secure cover such as a pull over tarp.

B. Double bed dump trucks such as transfer trailer trucks with beds lined with plastic liners described in Part 2.1 and with a secure cover such as a pull over tarp for each bed.

C. Roll off containers with beds lined with plastic liners described in Part 2.1 and with a secure cover such as a pull over tarp.

2.3 WASTE CLASSIFICATIONS

A. Waste generated from excavation activities inside the SSP walls will be classified as Subtitle “D” , or Subtitle “C” Waste

B. Waste generated from decontamination activities including discarded PPE is classified as Subtitle D waste.

C. Waste classified as municipal solid waste will be waste generated from demolition activities and other non soil excavation activities during construction.

PART 3 EXECUTION

PRELIMINARY DRAFT

3.1 PREPARATION

A. Prepare a contaminated soil loading area inside the exclusion zone that will contain any contaminated soil and free liquid spillage inside the exclusion zone.

B. Maintain erosion and sedimentation controls established around the project perimeter.

C. Provide for and maintain dust control (zero visible dust).

3.2 EXAMINATION

A. Examine plastic lined hauling vehicles after they are loaded with Subtitle D or C waste to verify no free liquid is present. If free water is present, remove the liquid to the extent possible and transfer it to the water treatment system. Solidify any residual water that cannot be removed from the lined hauling vehicle using an adsorbent accepted during the submittal process.

B. Do not allow a transportation vehicle with free liquids to leave the exclusion zone.

C. Solidify saturated contaminated soils as needed and as described in the RESPONSIBLE PARTIES accepted Construction Work Plan.

3.3 SOURCE QUALITY CONTROL

A. Perform quality control activities to verify waste generated at the Site is properly classified for disposal.

3.4 SUBTITLE C AND D WASTE TRANSPORTATION AND DISPOSAL

A. Direct-load and otherwise contain excavated soil intended for off-site transport and disposal.

B. Verify no residuals or liquids are on the outside of the loaded vehicle prior to removal from EZ. If present, take corrective action(s), including wiping area with CAPSUR.

C. When on the disposal facility site comply with facility rules and regulations.

D. Cover loaded Subtitle C and D waste with a tarp that is secured to the transportation vehicle bed such that no waste is exposed to rain or could escape the bed during transportation.

E. Secure the load inside the exclusion zone.

F. Complete the waste manifest documentation before leaving the Site.

G. Directly transport the waste to the disposal facility.Obtain a waste disposal facility generated receipt for the waste after it enters the facility entrance and passes over the scales.

PRELIMINARY DRAFT

H. Haul waste to the designated disposal location as directed by the facility operators.

I. Verify that all waste and the plastic bed lining are disposed of at the disposal facility and sweep beds clean before leaving the disposal site.

3.5 SUBTITLE C WASTE MANIFESTS AND SUBTITLE D BILL OF LADING

A. Complete and submit to the RPR a bill of lading for each load of Subtitle D waste.

B. Complete and submit to the RPR a waste manifest for each load of Subtitle C waste.

3.6 CLEANING AND DECONTAMINATION

A. Decontaminate hauling vehicles per Section 017423.

END OF SECTION

PRELIMINARY DRAFT

DIVISION 31
EARTHWORK

PRELIMINARY DRAFT

SECTION 310505
DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Performing a utility locate.

B. Demolition of designated structures and removal of materials from site.

C. Removal and disposal of asphalt paving in the area that clean soil excavating will occur.

D. Site clearing in preparation to initiate Work.

1.2 RELATED SECTIONS

A. Section 011419 - Use of Premises and Work Restrictions.

B. Section 011421 – Documenting and Protecting Existing Site Conditions.

C. Section 015210 – Temporary Construction Facilities.

D. Section 312316 – Excavation.

1.3 DEFINITIONS

A. Municipal Solid Waste (MSW): useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, discarded commercial, industrial, demolition and construction materials. The term does not include hazardous waste.

1.4 REGULATORY REQUIREMENTS

A. Comply with WAC 173-351 for disposal of demolition waste that is designated as municipal solid waste.

1.5 SEQUENCING

A. Complete a utility locate prior to initiating other Work described in this Section.

B. Complete demolition Work described in this Section prior to initiating drilled shaft and SSP wall installation, and clean soil excavation.

PART 2 PRODUCTS

2.1 EXISTING PRODUCTS DESIGNATED FOR DEMOLITION

A. Existing asphalt paving located north of the existing WZ-75 SSP wall as shown on the Drawings.

PRELIMINARY DRAFT

PART 3 EXECUTION

3.1 EXAMINATION

A. Mark and verify items designated for demolition.

3.2 UTILTIY LOCATE

A. Perform a utility locate in all areas where demolition, excavation, stockpiling or storage may occur.

3.3 PROTECTION

A. Protect asphalt and fences designated to remain.

B. Locate and protect existing survey control points.

C. Locate and protect environmental monitoring systems designated to remain.

D. Locate and protect existing stormwater management systems.

E. Protect adjacent areas under CERCLA orders which have been previously remediated. Protect LDW from any bucket drops or liquids from excavated area.

3.4 ASPHALT REMOVAL

A. Saw cut the existing asphalt along the line that designates limits of asphalt removal.

B. Remove in pieces small enough to load and haul to a disposal or recycling facility.

C. Load, haul and dispose of asphalt at a municipal solid waste landfill or load, haul and deliver to an acceptable recycling facility.

END OF SECTION

PRELIMINARY DRAFT

SECTION 312316
EXCAVATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Excavating soil on the north side of the existing Boeing Wall 2-66 and within the AZ-38-700N SSP enclosure south of the Boeing Wall 2-66.

B. Excavating within the SSP enclosure in the dry and in the dry with dewatering.

C. Excavating within the SSP enclosure in the wet where the SSP is flooded to allow the excavation to extend to the designed depths shown on the Drawings without overstressing the SSP walls.

1.2 RELATED SECTIONS

A. Section 011419 - Use of Premises and Work Restrictions.

B. Section 011421 – Documenting and Protecting Existing Site Conditions.

C. Section 015713 – Temporary Erosion and Sediment Control.

D. Section 026123 – Dry Contaminated Soil Excavating and Handling.

E. Section 026124 – Wet Contaminated Soil Excavating and Handling.

F. Section 310505 – Demolition.

G. Section 314116 – Steel Sheet Piles.

1.3 REFERENCES

A. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016.

B. Geotechnical Recommendations Report, PanGeo Inc., dated August 18, 2015.

C. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

1.4 DEFINITIONS

A. 2-66 Excavation Area – the area identified north of the existing WZ-75 SSP wall and on Boeing property that is designed to be excavated to elevation 5.

B. BMPs: practices planned by the CONTRACTOR that include health and safety, erosion and dust control, management of waste, decontamination, and containment and treatment of wastewater.

PRELIMINARY DRAFT

1.5 EXISTING CONDITIONS

A. Excavations on the north side of Wall 2-66 will encounter asphalt surfacing overlying crushed rock base course, overlying clean sandy-gravel backfill that was placed during a removal action by Boeing as part of the Plant 2 RCRA Order. Prior to being placed, soil which is now the existing backfill was sampled and tested for the potential presence of petroleum, solvents, and eight total metals. The analytical results confirmed the uncontaminated nature of the backfill when originally placed.

B. Wall 2-66 extends down to elevation minus 34 feet.

C. Soil on the south side of Wall 2-66 includes:

1. Fill consisting of silty sand and gravel
2. Concrete debris and rubble, (pile supported?) reinforced concrete foundations, timber piling, and outfall pipes.
3. Native Alluvium consisting of medium dense silty sands and sandy silts

1.6 QUALITY ASSURANCE

A. RESPONSIBLE PARTIES will engage the services of a third-party consultant to perform sampling and analysis of soils excavated under this Section. Cooperate with and assist the third party consultant in obtaining these samples for analysis.

1.7 SEQUENCING

A. Install temporary erosion and sediment controls and associated BMP's.

B. Install drilled shafts shown on the structural drawings leaving 1 day set up time before drilling overlapping shafts.

C. Install AZ 38-700N sheet piles as shown on the Drawings

D. Excavate area north of Wall 2-66 to elevation 5 feet or the water table, whichever is higher, and to the lines shown on the Drawings. Place all excavation spoil in the Boeing designated area and cover stockpile with plastic for dust control and subsequent reuse as backfill behind (north of) Wall 2-66.

E. Excavate south side of Wall 2-66 to an elevation no lower than 8 feet and install reinforcement on Wall 2-66 as shown on the structural Drawings and dispose material as described in Section 028110.

F. Continue excavation on the south side of Wall 2-66 in the dry to elevation -4 feet using sumps to remove water from the excavation and treat pumped water before discharge. Dispose all excavated material as described in Section 028110.

G. Scrape all sheet pile walls of soil above elevation -4 feet, seal sheet interlocks as needed to control leakage, and install Stegowrap on exposed face of walls.

PRELIMINARY DRAFT

H. Flood SSP enclosure and continuously maintain water surface at Elevation 10 feet while excavating in the wet to the design grades shown on the Drawings or as directed by the RPR. Dispose all excavated material as described in Section 028110.

I. Upon RPR approval, place backfill in the wet within the SSP enclosure up to elevation minus 4 feet while continuously maintaining the water surface within the SSP enclosure at elevation 10 feet.

J. When the backfill reaches a uniform level at elevation minus 4 feet, turn off pumps maintaining the water level within the SSP at elevation 10 feet and continue backfill placement in the wet up to elevation 5 feet.

K. Above Elevation 5 feet, remove freestanding water within the SSP and place backfill in the dry simultaneously on both sides of Wall 2-66 or separately.

PART 2 PRODUCTS

2.1 STEEL BAND REINFORCEMENT FOR 2-66 SSP

A. Use products approved during the submittal process.

PART 3 EXECUTION

3.1 PREPARATION

A. Complete site clearing and demolition.

B. Set required lines, levels, contours, and datum by construction staking or by DTM or GPS methods.

C. Locate, identify, and protect utilities from damage.

D. Notify utility company to locate utilities, if necessary.

E. Provide for dust control.

F. Protect benchmarks, survey control points, existing structures, environmental monitoring systems such as groundwater monitoring wells, stormwater management systems and fences from excavation equipment and vehicular traffic.

G. Protect adjacent CERCLA areas previously remediated.

H. Coordinate excavation operations with RPR's.

I. Identify and confirm soil stockpile locations with RPR's prior to beginning excavation.

PRELIMINARY DRAFT

3.2 STEEL BAND INSTALLATION

A. Weld the steel bands to the 2-66 Boeing WZ-75 SSP wall at the location shown on the Drawings.

B. Provide a continuous weld along the entire length of the steel band.

3.3 EXCAVATING

A. Excavate existing soil located north of Wall 2-66 to the lines, grades and contours shown on the Drawings.

B. Load, haul and place excavated soils north of the excavation area inside the area described as “Area Available To Contractor for Staging, Storage and Clean Soil Stockpiling”.

C. Notify RPR of unexpected subsurface conditions and discontinue affected work in the area until notified to resume work.

D. Machine grade base and perimeter slopes to designed subgrade lines, grades, contours and slopes.

E. Prevent surface water from draining into excavation.

F. Correct areas over-excavated.

3.4 TOLERANCE

A. Line: plus or minus 1.0 feet.

B. Grade Plus 0.0 feet and minus 0.2 feet.

3.5 FIELD QUALITY CONTROL

A. Implement grade checking systems that verify excavation is completed to the contours shown on the Drawings and to the tolerances listed in Part 3.3 of this Section.

END OF SECTION

PRELIMINARY DRAFT

SECTION 312318
DEWATERING

PART 1 GENERAL

1.1 SECTION INCLUDES-

A. Performance requirements for dewatering the excavation area inside the SSP enclosure to allow "Dry Excavation" between approximately elevation +5 feet to – 4 feet as described in Section 026123.

1.2 RELATED SECTIONS

A. Section 026123 – Dry Contaminated Soil Excavating and Handling.

B. Section 026124 – Wet Contaminated Soil Excavating and Handling.

C. Section 312316 – Excavation.

D. Section 312319 – Water Treatment and Management.

1.3 REFERENCES

A. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016.

B. Geotechnical Recommendations Report, PanGeo Inc., dated August 18, 2015.

C. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

D. King County Code 28.84.060 - self-monitoring requirements..

1.4 PRE-CONSTRUCTION SUBMITTALS

A. Following award of the Contract submit a Construction Work Plan as described in Section 013310 with a section describing means, methods and equipment that will be used to dewater the excavation.

1.5 PROJECT SITE CONDITIONS

A. Soil at and below the tops of the existing CMPs contains soil with PCB concentrations greater than 50 ppm. The majority of the Subtitle C soils are situated below the groundwater table.

B. The flow rate of groundwater intrusion into the excavation is estimated to be up to 200 gpm.

1.6 SEQUENCING

A. Complete the following work prior to initiating dewatering:

PRELIMINARY DRAFT

1. Install drilled shafts.
2. Install new AZ 38-700N SSP walls shown on the Drawings.
3. Excavate area north of Wall 2-66 to elevation 5 feet or the water table and stockpile soil in designated area.
4. Excavate area south of Wall 2-66 to elevation 10 feet and install steel band on 2-66 wall.
5. Continue excavation within SSP enclosure in the dry to elevation minus 4 feet.
6. Complete contaminated soil excavation to the top of the CMPs.
7. Remove CMPs.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 SYSTEM START UP

A. Start up and test the dewatering system prior to initiating excavation below the top of the former CMPs.

3.2 PROTECTION

A. Protect the SSP walls and drilled piles from damage during installation and operation of the dewatering system.

3.3 DEWATERING DURING EXCAVATION

A. Operate the dewatering system as needed to control groundwater during excavation and to minimize the water content in Subtitle C level soils that are excavated, loaded and hauled off site for disposal.

B. Provide a dewatering system that meets the requirements of the RESPONSIBLE PARTIES accepted Dewatering Plan.

C. Operate and maintain the dewatering system to lower groundwater to elevation minus 4 to allow excavation of contaminated soil in the dry as described in Section 026123.

D. Maintain the water level at elevation minus 4 feet until all contaminated soil is removed in the dry. Then seal seeps in SSP wall seams, and apply Stego Wrap on the face of the SSP wall enclosure as a seepage control measure, prior to flooding the excavation.

E. Manage, treat and dispose of water removed by dewatering in accordance with King County Construction Water Discharge Authorization.

END OF SECTION

PRELIMINARY DRAFT

SECTION 312319
WATER TREATMENT AND MANAGEMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Collection, treatment, and discharge of groundwater derived from dewatering activities.

B. Collection, treatment and discharge of water used to stabilize the SSP enclosure sheet piles surrounding the wet contaminated soil excavation area.

C. Collection, treatment, and discharge of surface water collected as part of erosion and sediment control and other construction related activities that produce surface water runoff.

1.2 RELATED SECTIONS

A. Section 015713 – Temporary Erosion and Sediment Control.

B. Section 017423 – Decontamination Procedures.

C. Section 026123 – Dry Contaminated Soil Excavating and Handling.

D. Section 026124 – Wet Contaminated Soil Excavating and Handling.

E. Section 312318 - Dewatering.

1.3 REFERENCES

A. RESPONSIBLE PARTIES are currently applying for a KCIW Construction Water Discharge Authorization. When received the authorization (permit) will be provided to the Bidders.

B. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016.

C. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

1.4 CONTRACTOR RESPONSIBILITIES

A. Furnish construction water treatment system.

B. Construction water treatment system operation, and maintenance, corrective actions and paying fines associated with exceeding permit discharge limits.

C. Complying with the KCIW Discharge Authorization obtained by RESPONSIBLE PARTIES.

PRELIMINARY DRAFT

1.5 RESPONSIBLE PARTIES RESPONSIBILITIES

A. Obtain a KCIW Construction Water Discharge Authorization.

B. Pay for trated water disposal fees.

1.6 SEQUENCING

A. Set up, test and prepare the construction water treatment system for operation before initiating any other Work.

1.7 MAINTENANCE

A. Maintain the water treatment system as described in the KCIW Construction Water Discharge Authorization.

PART 2 PRODUCTS

2.1 RESPONSIBLE PARTIES SUPPLIED PRODUCTS

A. Six super sacks (1,000 lbs/sack) of 8x30 mesh liquid-phase virgin coconut shell carbon for use in the water treatment system.

2.2 EQUIPMENT

A. Provide materials and equipment required by the KCIW Construction Water Discharge Authorization

2.3 ACCESSORIES

A. Keep on hand, or have immediate access to spare components to provide for repair of breakdown(s).

PART 3 EXECUTION

3.1 PERFORMANCE REQUIREMENTS

A. Approvals: Operate the system to meet the KCIW Discharge Authorization limits at a design flow rate that meets or exceeds the estimated dewatering flow rate of up to 200 gpm.

3.2 PREPARATION

A. Locate treatment equipment in a permanent location for the entire duration of the project.

3.3 SYSTEM OPERATION

A. Furnish all labor, materials, power, and equipment and perform all operations required to furnish, install, test, operate, and maintain the construction water treatment equipment.

PRELIMINARY DRAFT

B. Provide a water treatment system with the treatment and storage capacity to manage water from excavation dewatering operations without causing construction delays.

C. Use RESPONSIBLE PARTIES supplied carbon.

D. Treat all water that comes in contact with site soils to remove PCBs, solids, and other chemicals of concern (COCs) in accordance with KCIW Discharge Authorization limits.

E. Operate, and maintain the treatment system such that dewatering water can be continuously treated without interruption. Include system redundancies as needed to ensure treatment operation is not interrupted as a result of discharge limit exceedances, power failures, equipment failures, maintenance activities, or other circumstances.

F. Discharge treated water to the existing sanitary sewer manhole located on the Jorgensen Forge facility as shown on the Drawings. Confirm that the flow rates in the receiving manhole outlet piping are adequate for the proposed system discharge rate.

G. If an upset condition occurs that may result in a release or non-conformance with the discharge requirements, immediately suspend operation and notify the RPR's and take immediate positive measures to prevent any run-off into LDW.

3.4 ERECTION

A. Erect all water treatment and storage equipment on Site and remove at Substantial Completion.

3.5 RESPONSIBLE PARTIES SAMPLING AND CHEMICAL ANALYSIS

A. Sampling and laboratory analysis of effluent discharge will be performed by the RESPONSIBLE PARTIES or their designated representative in compliance with the project SAP/QAPP to ensure that the discharge meets the KCIW Construction Water Discharge Authorization requirements. Cooperate with the RESPONSIBLE PARTIES's representative and assist as needed to obtain samples.

END OF SECTION

PRELIMINARY DRAFT

SECTION 312323
ENGINEERED BACKFILL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Loading, hauling and placing stockpiled soil removed from the 2-66 excavation as backfill north of Wall 2-66.

B. Furnishing and placing imported gravel borrow to backfill the excavation areas inside the SSP wall enclosure. Complete this work in stages. First to an interim grade to allow access to the area for a geoprobe investigation and then to a final grade.

C. Furnishing and installing steel plates to cover the area backfilled to interim grades. This platform will support a geoprobe drill rig furnished and operated by others.

D. Furnishing and placing imported quarry spalls to complete the backfilling inside the SSP enclosure to final design grades.

E. Water management, treatment and disposal during backfilling operations.

1.2 RELATED SECTIONS

A. Section 011419 - Use of Premises and Work Restrictions.

B. Section 015713 – Temporary Erosion and Sediment Control.

C. Section 026123 – Dry Contaminated Soil Excavating and Handling.

D. Section 026124 – Wet Contaminated Soil Excavating and Handling.

E. Section 310505 – Demolition.

F. Section 312316 – Excavation.

G. Section 312319 – Water Treatment and Management.

H. Section 314116 – Steel Sheet Piles.

1.3 REFERENCES

A. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort.

B. ASTM D2216 — Standard Test Method for determining water content of soil aggregate mixtures.

PRELIMINARY DRAFT

C. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

D. Geotechnical Recommendations Report, PanGeo Inc., dated August 18, 2015.

E. Sheet Piling Eavluation, Sheet Geoprobe Support, PanGeo Inc., dated February 3, 2016.

F. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

G. WSDOT Standard Specifications for Road and Bridge Construction, 2014 Edition.

H. WSDOT – Washington State Standard Specifications for Roads and Bridges, 2014 Edition, Sections 9-03.14(1), and 9-13.6.

1.4 DEFINITIONS

A. Engineered Backfill: soil or aggregate that is placed in a controlled manner.

1.5 SUBMITTALS DURING CONSTRUCTION

A. Within five (5) days of receiving Notice to Proceed submit sieve analyses test results of gravel borrow proposed for use as backfill.

B. Within five (5) days of receiving Notice to Proceed submit a 40 pound sample of the proposed quarry spalls product.

C. Within five (5) days of receiving Notice to Proceed submit gradation test results complying with ASTM C136, and moisture density test results complying with ASTM D1557 for the proposed gravel borrow.

D. Within five (5) days of receiving Notice to Proceed submit a shop drawing that specifys the steel plate type, their proposed locations and details for a safty railing.

1.6 QUALITY ASSURANCE

A. RESPONSIBLE PARTIES will engage the services of a third-party consultant to perform conformance sampling and analysis of backfill products as described in the referenced Sampling and Analysis Plan/Quality Assurance Project Plan. Sampling of backfill will be performed at the completion of placement. Cooperate with and assist the third party consultant in obtaining these samples for analysis.

1.7 DELIVERY STORAGE AND HANDLING

A. Deliver and stage trucks hauling backfill products to the site at a rate equal to the rate of backfill placement to avoid the need to stockpile and re-handle the products.

PRELIMINARY DRAFT

1.8 PROJECT SITE CONDITIONS

A. Groundwater elevation in the excavation area inside the SSP wall enclosure vary , but is expected to be at approximately elevation 5 during the time this project is executed.

B. Steady state groundwater flow into the SSP enclosure when excavating below the water table is estimated at up to 200 gpm, exclusive of the rate of material removal.

1.9 GENERAL SEQUENCING

A. Do not begin backfilling until the RESPONSIBLE PARTIES have verified through sampling and analysis that clean up levels have been met and RESPONSIBLE PARTIES have provided authorization to proceed.

B. Do not use clean soil removed from the 2-66 excavation area to backfill inside the SSP enclosure.

C. Maintain water within the SSP enclosure at Elevation 10 throughout excavation and backfill placement below elevation minus 4 feet. Continue backfilling in the wet until the surface of the fill reaches Elevation 5 feet, at which time remove water above Elevation 5 feet in the SSP enclosure to allow remaining backfill to be placed in the dry.

D. Place backfill in the SSP enclosure and north of Wall 2-66 at elevations above 5 feet in 12 inch thick lifts and compact to a dense and unyielding condition or to 95% of the material's Modified Proctor maximum dry density. Third party representatives will be on site to monitor the compaction of the backfill.

E. Place top of compacted backfill north of Wall 2-66 to match the base of the adjacent pavement section on the Boeing property and to the lines and grades shown on the Drawings.

F. Place top of compacted backfill south of Wall 2-66 to meet required subgrade elevations for the placement of the Quarry Spalls.

G. Place top of Quarry Spalls to match the grades shown on the Drawings.

PART 2 PRODUCTS

2.1 GRAVEL BORROW BACKFILL

A. Furnish Product complying with WSDOT Section 9-03.14(1), Gravel Borrow.

2.2 2-66 EXCAVATION AREA BACKFILL

A. Re-use the soil removed from the 2-66 Excavation Area.

2.3 QUARRY SPALLS

A. Complying with WSDOT Section 9-13.6.

PRELIMINARY DRAFT

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

A. Provide dust control during all backfilling operations.

B. Protect existing and installed SSP walls from damage.

3.2 2-66 EXCAVATION AREA BACKFILL (BOEING PROPERTY)

A. Commence backfill placement north of Wall 2-66 after backfill placement within the SSP enclosure reaches elevation 5 feet.

B. Place and spread 2-66 backfill in horizontal lifts of uniform thickness not exceeding 12 inches.

C. Compact backfill to a dense and unyielding condition or to 95 percent of the materials Modified Proctor maximum dry density.

D. Keep lifts free of water, debris, and foreign material during placement and compaction.

E. Place engineered backfill to match grades at the base of the existing pavement section.

3.3 BACKFILL IN THE WET (ELEVATION -16 TO APPROXIMATELY 5)

A. During backfilling inside the SSP walls (shored enclosure) monitor and maintain water surface at Elevation 10 feet until the backfill reaches elevation minus 4 feet, at which point the water surface within the SSP enclosure no longer needs to be maintained.

B. Contain, treat and dispose of water removed from the shored enclosure per Section 312319, Water Treatment and Management and the Construction Water Discharge Permit.

C. Place gravel borrow backfill inside the shored enclosure in the wet at a rate equal to or less than the water treatment systems capacity to pump and treat water removed from the enclosure.

D. Place backfill with an excavator bucket or similar methods that result in the backfill being placed in a controlled manner with a minimum volume of backfill free falling through the water.

E. Place the initial backfill at the lowest elevation of the excavation inside the shored enclosure.

F. Place backfill gently in a manner that minimizes disturbance of the bottom of the excavation.

G. Compress back-filled materials with back of bucket during placement to assist in compaction and fill voids.

PRELIMINARY DRAFT

3.4 BACKFILL IN THE DRY ABOVE ELEVATION 5

A. When the backfill within the SSP enclosure reaches elevation 5 feet, remove freestanding water above the fill surface to allow placement and compaction of backfill in the dry.

B. Place gravel borrow backfill in the dry in 12-inch thick lifts.

C. Compact backfill to a dense and unyielding condition or to 95 percent of the materials Modified Proctor maximum dry density.

D. Keep backfill free of water, debris, and foreign material during placement and compaction.

E. Continue backfill placement and compaction in 12-inch lifts until the backfill elevation reaches the interim grades shown on the Drawings for geoprobe sampling.

F. Cover the interim graded area with a steel plate drilling platform as described in 3.5 below.

G. After completion of geoprobe sampling (by others), remove the steel plate platform and railing and continue backfill placement and compaction in 12-inch lifts until the backfill elevation reaches the final grades shown on the Drawings

H. Blend perimeter of backfill area to match existing grades corresponding to the base level for quarry spall placement.

3.5 DRILLING PLATFORM

A. Install a steel plate drilling platform with safety railing to cover the interim backfill grades and to comply with the RESPONSIBLE PARTIES accepted shop drawings.

B. Install the steel platform:

1. to cover an area extending 3 feet beyond (west of) the existing AZ-38-700 SSP wall (cantilever) on the west perimeter of the SSP enclosure.
2. to cover an area extending 15 feet east of the existing SSP wall.
3. to cover an area as wide (north-south dimensions) as the existing SSP wall.

C. Install a continuos safety railing to enclose the west perimeter of the platform and at least 8 feet of the south and north limits of the steel platform.

D. Install the safety railing to be at least 36 inches high with continuos horizontal steel cables along the top of the rail and at maximum 12-inch intervals below the top cable.

E. Install the steel platform such that a 6,000 pound geoprobe rig can be set up to drill vertically through the steel plates and directly adjacent to the west side of the existing SSP wall.

PRELIMINARY DRAFT

3.6 QUARRY SPALL PLACEMENT

A. Verify underlying gravel borrow backfill is completed and accepted by RPR.

B. Place to the final grade contours shown on the Drawings.

C. Place to the thickness shown on the Drawings. If not shown then to a minimum thickness of 12 inches.

D. Do not segregate products during placement.

E. Uniformly distribute large stones with small stones.

F. Prevent contamination of quarry spalls by other soil and rock.

G. Compact with three passes of a vibratory roller.

3.7 BACKFILL SEQUENCE

A. Stop in the wet placement of gravel borrow backfill within the SSP enclosure when the surface of the backfill reaches Elevation 5 feet.

B. Remove water within SSP enclosure to Elevation 5 feet.

C. Continue gravel borrow backfill placement and compaction within the SSP enclosure to designed interim grades shown on the Drawings simultaneously with or separately from the placement and compaction of backfill north of Wall 2-66.

D. If backfill is placed separately, place and compact backfill north of Wall 2-66 to finished design grades.

E. Install platform for geoprobe installation

F. Allow geoprobe work to be completed.

G. Continue gravel borrow backfill placement and compaction within the SSP enclosure to designed final design grades simultaneously with or separately from the placement and compaction of backfill north of Wall 2-66.

H. Place quarry spalls to finished design grades.

3.8 SSP WALL REMOVAL SEQUENCE

A. Do not initiate SSP wall removal until backfill placement and compaction north of Wall 2-66 has been completed to at least elevation 13 feet and backfilling inside the SSP enclosure is at or above the finished design grade for gravel borrow.

B. Remove only the SSP walls that were installed under this Contract.

PRELIMINARY DRAFT

C. Remove SSP walls as described in the RESPONSIBLE PARTIES accepted Construction Work Plan.

D. If removal of the existing SSP wall on the west side of the enclosure is accepted as part of this Contract remove it after removal of the other SSP walls.

E. Decontaminate and stack all sheets in the on-site area designated by the RPR.

3.9 QUALITY CONTROL

A. During SSP wall removal, protect the surface of clean backfill materials to prevent contamination from residue that may fall or drip off of the removed SSPs.

B. Sound the wet backfill placed from elevation -16 to -5 feet during backfill operations to monitor the backfill elevation and to confirm that the backfill surface remains relatively flat as the backfill elevation rises.

3.10 TOLERANCE

A. Final grade inside shored area : plus or minus 0.2 feet.

B. Surface of engineered backfill north the 2-66 Boeing WZ-75 steel sheet pile wall. .

1. Line: plus or minus 1.0 feet.
2. Grade: plus or minus 0.1 feet.

3.11 FIELD QUALITY ASSURANCE (BY RESPONSIBLE PARTIES CONSULTANT)

A. Once each excavation area has been backfilled to final grade, post-construction baseline samples will be collected from the surface of the backfill material and analyzed for PCBs in accordance with the SAP/QAPP. Three post-construction baseline samples will be collected from the shored excavation area.

END OF SECTION

PRELIMINARY DRAFT

SECTION 314116
STEEL SHEET PILES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Installing excavation support and protection systems (Steel Sheet Piles).

B. Furnishing labor, products, equipment, surveys, and services necessary for or incidental to the following:.

1. Driving RESPONSIBLE PARTIES furnished AZ-38-700N steel sheet piles, herein referred to in this specification as "SSP". .
2. Installation of reinforcing support systems for the existing Boeing 2-66 WZ-75 SSP.
3. Removing all AZ-38-700N SSPs installed under this contract.

1.2 RELATED SECTIONS

A. Section 011421 – Documenting and Protecting Pre-construction Site Conditions.

B. Section 015713 – Temporary Erosion and Sediment Control.

C. Section 017423 – Decontamination Procedures.

D. Section 022010 – Layout of Work and Surveys.

E. Section 026123 – Dry Contaminated Soil Excavating and Handling.

F. Section 026124 – Wet Contaminated Soil Excavating and Handling.

G. Section 312216 – Excavation.

H. Section 312323 – Engineered BackFill.

I. Section 316214 – Drilled Shafts.

1.3 REFERENCES

A. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016.

B. Geotechnical Recommendations Report, PanGeo Inc., dated August 18, 2015.

C. Jorgensen Forge Outfall Site Sampling and Analysis Plan/Quality Assurance Project Plan, Sound Earth Strategies, January 21, 2016.

D. Thoroughly review the referenced documents, the scope of the SSP installation, and the nature of the subsurface conditions that may be during installation.

PRELIMINARY DRAFT

1.4 PRE-CONSTRUCTION SUBMITTALS

A. As part of the Construction Work Plan described in Section 013310 submit a Steel Sheet Pile Installation Plan..

B. Select the proposed pile driving equipment, including hammers and other required items, and submit complete descriptions of the proposed equipment means and methods.

1.5 SUBMITTALS DURING CONSTRUCTION

A. Submit SSP wall survey data described in Part 3 of this Section to the RPR as it is obtained.

B. Provide in digital format in the form of a points list with a column for each survey event, and each survey data point along the existing 2-66 Boeing WZ-75 SSP wall.

1.6 PROJECT SITE CONDITIONS

A. Subsurface conditions at the Site where SSPs will be installed reportedly consist of 10 feet of gravelly sand fill with concrete rubble overlying Duwamish alluvial sediments consisting of medium dense to dense silty sands that extend to depths in excess of 80 feet below ground surface. Groundwater at the time of installation with be at approximately elevation 5 NAVD88.

B. SSPs will be installed through clean soil, and lean concrete filled areas (drilled shaft columns).

C. Previous construction projects in the vicinity of the SSP enclosure encountered driven wooden piles supporting other infrastructure. It is possible, but not known, if driven piles exist below and are supporting the 24-inch and 12-inch CMPs or other structures, such as footings.

D. During 1994 work in the vicinity of SSP enclosure cedar logs were encountered at 25 to 30 feet below ground surface. It was assumed that they were deposited there by a historic flood and could be encountered during this project. If encountered under this contract, dealing with cedar logs will be subject to a Change Order.

E. One SSP will be installed through an existing lean concrete wing wall.

1.7 SEQUENCING

A. Complete the installation of drilled shafts (Section 316214) before installing the RESPONSIBLE PARTIES furnished AZ-38 -700N steel sheet piles.

PART 2 PRODUCTS

PRELIMINARY DRAFT

2.1 RESPONSIBLE PARTIES SUPPLIED STEEL SHEET PILES

A. Use RESPONSIBLE PARTIES provided AZ-38-700N steel sheet piles stored on site.

2.2 PILE DRIVING EQUIPMENT

A. Use of the proposed equipment is subject to review by the RESPONSIBLE PARTIES. Changes in the selected pile driving equipment will not be allowed after the equipment has been accepted by the RESPONSIBLE PARTIES, except as specified and directed. No schedule accommodation will be made for CONTRACTOR-proposed changes to the equipment.

B. Impact Hammers.

1. For impact hammers, provide a pile cushion block to protect the enclosure piling integrity.

C. Provide vibratory type or impact type pile driving hammers.

D. Size vibratory pile driving hammers appropriately based on available subsurface information.

PART 3 EXECUTION

3.1 SSP INSTALLATION PREPARATION

A. Identify and locate the presence of underground utilities or other obstructions. Remove, relocate, protect, or abandon underground utilities located within the pathway of the proposed steel sheet piling to facilitate installation of the steel sheet piling.

B. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during SSP installation. Provide protection as described in Section 011421.

C. Provide adequate clearance of support and protection systems within work areas to allow for proper installation.

D. Determine piling layout and grade by survey. Perform survey as described in Section 022010.

E. Protect Stage 1 Excavation Area as described in Section 011421.

F. Repair damages to adjacent structures caused by SSP installation at no cost to RESPONSIBLE PARTIES.CONTRACTOR

3.2 INSTALLATION

A. Install the AZ-38-700N steel sheet piles at the plan locations and to the elevations shown on the Drawings.

PRELIMINARY DRAFT

B. Install sheets through the lean concrete backfill in the drilled shafts as shown on the Drawings.

C. Drive SSP with equipment suitable for the task. Use methods and equipment that will deliver the necessary energy to drive the piling to the design depths shown on the Drawings with little or no damage to the SSP.

D. Employ suitable procedures to prevent damage to pile tops and joints such as using a pile cushion block.

E. Monitor, prevent, and correct any tendency of SSP to bend, twist, or rotate, and to pull out of the interlock.

F. Take reasonable care throughout the installation process so that the SSPs do not declutch.

G. Maintain the integrity of each pile and interlocked joint during and after driving.

H. Take necessary precautions so that adjacent installed piles do not penetrate deeper than the design depth during additional SSP pile installations.

I. Splicing is not permitted unless pre-approved by the RESPONSIBLE PARTIES.

3.3 PROCEDURES WHERE REFUSAL IS MET

A. Off-Set Installation/Realignment: If three consecutive sections of piling meet refusal at depths less than the design depth.

B. Coordinate with the RPR to determine an off-set/realigned installation pattern.

C. Remove any material that halts the driving of SSPs prior to continuing the driving, or develop an alternate methodology, reviewed and approved by the RPR to complete the installation.

D. If the SSPs cannot be installed to the design depth using the means and methods identified in the CONTRACTOR's Construction Work Plan, immediately notify the RPR.

E. Subsequently participate in discussions with the RPR regarding potential implementation of contingency measures.

F. When proposing contingency measures or alternate approaches (if any) consider the specific circumstances of the installation (e.g., depth of refusal, location of piling relative to design depth, depth of the confining unit, measures that have already been implemented, and experience gained elsewhere within the site).

G. Submit final proposal in writing in the form of a proposed Change Order after meeting with RESPONSIBLE PARTIES to determine a course of action.

PRELIMINARY DRAFT

3.4 TOLERANCE

A. Plumb SSPs to 0.5 inch vertical and 0.5 inch per 10 feet of piling horizontally.

3.5 RE-INSTALLATION

A. Replace SSPs damaged or driven outside the specified tolerances. Immediately pull and replace any SSP ruptured in the interlock or otherwise damaged during driving.

B. Pull any enclosure piling that is known to have pulled out of the interlock or is suspected of having tip or interlock damage.

3.6 FIELD QUALITY ASSURANCE

A. RESPONSIBLE PARTIES Engineer will monitor wall movement (if any) during construction and report results to the RPR.

3.7 SSP WALL REMOVAL AND STORAGE SEQUENCE

A. Do not initiate SSP wall removal until backfill placement and compaction north of Wall 2-66 has been completed to at least elevation 13 feet and backfilling inside the SSP enclosure is at or above the finished design grade for gravel borrow.

B. Remove only the SSP walls that were installed under this contract.

C. Remove as described in the RESPONSIBLE PARTIES accepted Construction Work Plan and Section 312323.

D. Do not remove the existing Boeing WZ-75 sheet piles.

E. Decontaminate the removed SSPs as described in Section 017423.

F. Stack the decontaminated SSPs at JFC's on-site location east of the metal building on the concrete surface.

3.8 EXISTING WESTERN SSP WALL REMOVAL AND STORAGE

A. If directed by the RPR, remove, decontaminate and store the existing AZ-38-700N SSP Wall that forms the west limits of the enclosure.

B. Remove, decontaminate and store as described in this section for the SSP walls installed under this Contract.

END OF SECTION

PRELIMINARY DRAFT

SECTION 316214
DRILLED SHAFTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Furnishing lean concrete backfill, labor and equipment to install drilled shafts. The purpose of the drilled shafts are to provide hydraulic seal at the location that newly installed AZ-38-700N sheet piles will meet existing 2-66 Boeing WZ-75 sheet piles.

B. Handling of the drill cuttings designated as Subtitle D waste.

1.2 RELATED SECTIONS

A. Section 011419 - Use of Premises and Work Restrictions.

B. Section 011421 – Documenting and Protecting Existing Site Conditions.

C. Section 017423 – Decontamination Procedures.

D. Section 026123 – Dry Contaminated Soil Excavatiing and Handling.

E. Section 026124 – Wet Contaminated Soil Excavating and Handling.

F. Section 028110 – Contaminated Soil Transportation and Disposal.

G. Section 314116 – Steel Sheet Piles.

1.3 REFERENCES

A. Corrugated Metal Pipe Work Plan, Sound Earth Strategies Inc., dated March 8, 2016.

B. Geotechnical Recommendations, Sheet Pile Shoring – Uplands Remediation, Jorgensen Forge Outfall, , PanGeo August 18, 2015.

C. Jorgensen Forge Outfall Site - Steel Sheet Pile Wall Design Memorandum, The Intelligence Group, January 14, 2014.

D. ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens**.**

1.4 SUBMITTALS DURING CONSTRUCTION

A. 10 days prior to initiating drilled shaft installation, submit a mix design and compression strength test complying with ASTM C39 for the proposed lean concrete backfill.

PRELIMINARY DRAFT

B. Submit lean concrete mix certifications with each load of lean concrete mix delivered to the Site.

1.5 DELIVERY STORAGE AND HANDLING

A. Deliver lean concrete mix to the Site in ready-mix concrete trucks.

1.6 PROJECT SITE CONDITIONS

A. Subsurface conditions at the Site where drilled shafts will be installed reportedly consist of 10 feet of gravelly sand fill with concrete rubble overlying Duwamish alluvial sediments consisting of medium dense to dense silty sands that extend to depths in excess of 80 feet below ground surface. Groundwater at the time of installation with be at approximately elevation 5 NAVD88.

B. Drilled shafts are expected to be installed through clean soil, however, treat drill cuttings as Subtitle D Contaminated Soil.

1.7 SEQUENCING

A. Install the drilled shafts before installing the new AZ-38-700N sheet piles..

PART 2 PRODUCTS

2.1 EXISTING SHEET PILES

A. The plan location and vertical extent of the existing 2-66 Boeing WZ-75 sheet piles are shown on the Drawings. They are approximately 50 feet long and extend to the elevations shown on the Drawings.

2.2 LEAN CONCRETE BACKFILL

A. Pre-approved mix - CalPortland Mix 1420

B. Alternate mix design with 1½ sack mix concrete

2.3 EQUIPMENT

A. Provide equipment capable of drilling 24-inch diameter holes to a depth of 40 feet and tremie equipment that will extend to the bottom of the drilled shaft allowing the lean concrete backfill to be installed bottom to top in the boring.

B. Provide and install casing as required to stabilize the boring.

PART 3 EXECUTION

3.1 PREPARATION

A. Verify location of and protect the existing 2-66 Boeing WZ-75 sheet piles prior to drilling shafts.

B. Identify the location of the four drilled shafts.

PRELIMINARY DRAFT

C. Identify a location inside the exclusion zone to temporarily stockpile drill cuttings.

3.2 INSTALLATION

A. Install the drilled shafts at the locations shown on the Drawings and as close as practical to the existing Boeing WZ-75 sheet piles with the intent of removing soil as close as practical to the SSPs.

B. Drill each of the four shafts (two each at two locations) to an open depth of 40 feet below ground surface.

C. Position the outside diameter of the shafts to overlap by 6 inches as shown on the Drawings.

D. Verify the shafts remain open to full design depth as the lean concrete is installed.

E. Backfill the drilled shaft with the approved lean concrete mix design using a tremie. Install the lean concrete beginning at the bottom of the shaft working to the top of the shaft.

F. Completely back fill the shaft without leaving voids in the lean concrete.

G. Collect any water being displaced without any spillage. Treat and dispose of collected water as described in Section 312319 and the King County Construction Water Discharge Permit.

3.3 HANDLING AND DISPOSAL OF DRILL CUTTINGS

A. Place drill cuttings on the existing ground surface inside the SSP enclosure and not on top of the Stage 1 excavation area.

B. Handle and dispose of cuttings as Subtitle D contaminated soil.

3.4 SEQUENCING

A. Sequence the Work in a manner where one shaft is installed and backfilled with lean concrete, allowed to cure for 1 day, and then the second shaft is drilled in the overlap position and through the installed lean concrete.

3.5 TOLERANCE

A. Depth minus 0.5 and plus 0.0.

B. Line: plus or minus 0.1 feet.

C. Verticality : Plumb shafts to 0.5 inch vertical and 0.5 inch per 10 feet of drilled shaft horizontally.

PRELIMINARY DRAFT

3.6 FIELD QUALITY CONTROL

A. Use procedures that assure the shafts are drilled to the listed tolerances, that the drilled shafts remain fully open prior to backfill and the backfill is placed without leaving voids.

3.7 DECONTAMINATION

A. Decontaminate personnel and equipment as described in Section 017423.

END OF SECTION

PRELIMINARY DRAFT