SECTION 01 11 13

WORK COVERED BY CONTRACT DOCUMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Important Site Information

B. General Requirements

C. Work This Contract

D. Contract Method

E. Work by Others

F. Owner Furnished Materials

G. Disruptions to Service

H. Contractor's Use of Premises

I. Coordination and Cooperation

J. Access for Testing and Inspection

1.2 IMPORTANT SITE INFORMATION

A. Site plan and topographical information shown on drawings is based on information available on the State of Alaska Department of Commerce, Community, and Economic Development database. A site specific survey has not been completed. The Owner will perform a topographic and boundary survey prior to construction and re-issue the drawings to add current topographic, boundary, and survey control information. Minor changes to the pipeline alignment and material quantities should be anticipated. Contractor shall make these changes and provide all work necessary to furnish and install a functional fuel barge off-loading piping system at no additional cost to the owner.

B. Contractor shall perform all surveying necessary for construction and identify and field locate all utilities within the project area. Notify the Engineer immediately if there are conflicts between the proposed improvements and existing utilities.

C. The Sivuqaq Inc. has a John Deere 440 Loader available for rent. Contractor shall contact Sivuqaq Inc. and make necessary rental agreements as required if the Contractor wants to rent the equipment.

D. Contractor shall make his own arrangements for staging of construction materials and equipment and shall coordinate and pay for the use of these areas with the associated

landowners and other appropriate parties. No other staging areas are provided by the Authority.

E. Contaminated materials are anticipated to be encountered. Contractor shall provide a Qualified Environment Professional (QEP) and other personnel as required with the training and equipment necessary and required by State and Federal regulations to safely work, handle, monitor, and document contaminated materials in accordance with the Soils Management Plan Included in Appendix A.

F. Do not disturb Alaska Village Electric Cooperation (AVEC) barge header and barge off-loading piping located in the vicinity of the barge header and piping to be replaced by this project. Field locate AVEC's pipelines and associated infrastructure and protect in place.

1.3 GENERAL REQUIREMENTS

A. The existing barge off-loading pipelines and tank farm shall remain in service during construction. Decommission and abandon existing barge header pipelines after new pipelines are constructed. Coordinate all work with the City of Gambell's Fuel Facility Manager.

B. Furnish all labor, materials, supervision, equipment, tools, transportation, quality control, and supplies required to complete the work in accordance with the Contract Documents.

C. Notify the AEA Project Manager immediately if any conflicts are expected to interfere with the progress of the work.

D. Install all materials and equipment in accordance with the manufacturer's written instructions.

E. Contractor is responsible for all preparatory work and operations, including but not limited to pre-construction and post-construction costs of obtaining all required bonds, insurance, and other costs Contractor must incur before beginning the Work.

F. Contractor is responsible for transportation of all materials, supplies, plant(s), equipment and personnel to and from the jobsite.

G. Items not included in Mobilization and Demobilization include, but are not limited to, any portion of the Work covered by specific bid items or incidental work which is to be included in a bid item or items; and profit, interest on borrowed money, overhead or management costs.

H. Contractor is responsible for erecting and maintaining all plants, temporary structures, storage yards, erosion control measures, and other construction facilities, and for work required to remove said temporary facilities and perform cleanup of the project area in accordance with the Contract Documents.

I. Contractor shall post all OSHA required notices and establish safety programs.

J. Contractor shall submit required Project Schedules.

K. Contractor is responsible for coordinating with and obtaining approval from the City of Gambell for use of the barge landing facility and/or for utilizing the area surrounding the barge landing for stored materials.

L. Mobilization and Demobilization costs for all subcontracted work shall be considered to be included.

M. Construction Standards: Perform construction work as required to meet State and Federal codes and standards and meeting the minimum requirements shown on the Plans and specified in the technical specifications.

1.4 WORK THIS CONTRACT

A. Work under this Contract consists of the construction of new barge header pipelines in the community of Gambell, Alaska.

B. The intent of the Contract is to provide the construction and completion of every detail of work described in the Contract Documents. The Contractor shall furnish all labor, materials, supervision, equipment, tools, transportation, quality control, and supplies required to complete the work in accordance with the Contract Documents. A brief description of the work is as follows:

Construct Barge Header Upgrades: Work consists of providing all labor, materials, and equipment required to complete the Gambell Barge Header Upgrades Project as shown in Section 00 32 00 Bid Schedule. This work includes site work consisting of construction survey, trench excavation, and placement of usable excavation in fill areas, furnishing and installing coarse gravel in fill areas; installing owner furnished above grade fuel piping and below grade fuel piping; furnishing and installing all remaining piping material and project materials that are not owner furnished; furnishing and installing a cathodic protection system; furnishing spill response equipment; decommissioning of the existing below and above grade fuel piping; and all other related work as described in the Contract Documents

1.5 DESCRIPTION OF BID ITEMS

Construct Barge Header Upgrades.

1. Bid Item 1: Mobilization and Demobilization.

    a. The lump sum for Mobilization and Demobilization shall include but not be limited to all work required for the project Mobilization and Demobilization.

2. Bid Item 2: Construction of the Barge Header Above and Below Grade Piping.

    a. The lump sum for this bid item shall include all labor, materials, equipment, and incidentals required to install owner furnished above grade fuel piping and below grade fuel piping and furnishing and installing all other materials required to complete the project that are not furnished by the owner, in accordance with

the plans and specifications.

1. Provide construction survey, trench excavation, placement of usable excavation in fill areas, and furnish and install coarse gravel in fill areas in accordance with the plans and specifications.

2. Install owner furnished above and below grade barge header pipe from the new barge header to the tank farm and furnishing and installing all remaining piping material and project materials that are not owner furnished in accordance with the plans and specifications.

3. Furnish and install a cathodic protection system along buried pipelines in accordance with the plans (Sheet CP1 to CP5) and specifications.

4. Furnish and install pipe supports in accordance with the plans and specifications.

5. Furnish and install up to 4,000 CY of coarse gravel fill material required to fill low areas along the pipe alignment in accordance with the plans and specifications.

3. Bid Item 3: Decommissioning of Existing Below and Above Grade Fuel Piping

   a. The lump sum for this bid item shall include all labor, materials, equipment, and incidentals required to conduct the following:

      1. Purge all remaining fuel and residual liquid from the existing lines, cap pipe ends, and abandon existing below grade fuel piping in place in accordance with the plans and specifications.

      2. Remove all above grade piping and properly disposed of offsite in accordance with the plans and specifications.

      3. Contain, filter and transfer all useable fuel removed from piping to the respective entities tanks in accordance with the plans and specifications.

      4. Dispose of all unusable fuel or sludge from the existing fuel pipelines in accordance with the plans and specifications.

4. Bid Item 4: Furnish Spill Response Equipment.

   a. The lump sum for this bid item shall include all labor, materials, equipment, and incidentals required to conduct the following:

1. Furnish and provide storage for spill response equipment in accordance with the plans and specifications.

1.6 CONTRACT METHOD

A. This Contract is composed of multiple lump sum items. This work shall be measured and paid for work complete, in place, and include all labor, materials, supervision, equipment, tools, transportation, quality control, and supplies required to complete the work in accordance with the Contract Documents

1.7 WORK BY OTHERS

A. None

1.8 OWNER FURNISHED MATERIALS

A. See Section 01 64 00 for information regarding Owner Furnished materials.

1.9 DISRUPTIONS TO SERVICE

A. The facility will remain open and in use during construction. No unscheduled disruptions in services shall be allowed.

1.10 CONTRACTOR'S USE OF PREMISES

A. Coordinate with the AEA Project Manager prior to placing equipment or supplies within the Project boundary. Do not disturb areas outside of Project boundaries.

B. Do not disrupt access to adjacent areas unaffected by the Work. Keep driveways and entrances serving premises clear and available for use at all times. Cooperate with Owner during construction operations to minimize conflicts and facilitate operations.

C. Assume full responsibility for protection and safekeeping of products under this Contract.

D. Assume full responsibility for the protection of existing facilities and contents from damage due to construction operations.

1.11 COORDINATION AND COOPERATION

A. Coordinate all work with facility manager to minimize conflicts with the facilities operations.

B. Other projects may run concurrently with this work. Coordinate and cooperate with other contractors, agencies, and Authority to minimize conflicts.

C. Coordinate work to assure efficient and orderly sequence of installation of construction elements.

D. Sequence work to maximize worker efficiency and minimize construction time.

E. Coordinate space requirements and installation of components. Utilize spaces efficiently to maximize accessibility for other installations, maintenance, and repairs.

1.12 ACCESS FOR TESTING AND INSPECTION

A. Provide access for AEA, the AEA Project Manager, and the Engineer to the site. Provide on-site transportation, ladders, lifts, eye and ear protection, hard hats, appropriate and clean respiratory protection, etc., for inspections and testing of the work.

PART 2 - PRODUCTS

A. Not Used

PART 3 - EXECUTION

A. Not Used

END OF SECTION

SECTION 01 11 17

INTENT OF DOCUMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Explanation of intent and terminology of the Construction Documents.

1.2 RELATED REQUIREMENTS

A. A. Section 00 70 00 General Conditions: Article 1 Definitions relating to 'Drawings' and 'Specifications'.

B. B. Section 00 70 00 General Conditions: Article 3 Contract Documents relating to Intent, Amending, and Reuse.

1.3 SPECIFICATION FORMAT AND COMPOSITION

A. Specifications are divided into Divisions and Sections for the convenience of writing and using. Titles are not intended to imply a particular trade jurisdiction. AEA is not bound to define the limits of any subcontract, and will not enter into disputes between the Contractor and his employees, including Subcontractors.

B. Pages are numbered independently for each section, and recorded in the Table of Contents. Section number is shown with the page number at the bottom of each page. The end of each section of the specifications is ended by "End of Section". It is Contractor's responsibility to verify that Contract Documents received for bidding and/or construction are complete in accordance with Table of Contents.

C. The language employed in the Contract Documents is addressed directly to the Contractor. Imperative or indicative language is generally employed throughout and requirements expressed are the mandatory responsibility of the Contractor, even though the work specified may be accomplished by specialty subcontractors engaged by the Contractor. References to third parties in this regard shall not be interpreted in any way as to relieve the Contractor of his or her responsibility under this Contract.

D. These Specifications are of the abbreviated, or "streamlined" type, and may include incomplete sentences.

E. Omissions of words or phrases such as "the Contractor shall", "in conformity therewith", "shall be", "as noted on the Drawings", "according to the Drawings", "a", "an", "the", and "all" are intentional.

F. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the Drawings.

1.4 DRAWINGS: CONTENT EXPLANATION

A. Drawings, Dimensions, and Measurements.

1. Contract Documents do not purport to describe in detail, absolute and complete construction information. Drawings are diagrammatic. Contractor shall provide verification of actual site conditions and shall provide complete and operational systems as specified when drawings do not provide full detail.

1.5 COMMON TERMINOLOGY

A. Certain items used generally throughout the Specifications and Drawings are used as follows:

1. Indicated: The term "indicated" is a cross reference to details, notes or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar means of recording requirements in the Contract Documents. Where terms such as "shown", "noted", "schedules", and "specified" are used in lieu of "indicate", it is for the purpose of helping the reader accomplish the cross reference, and no limitation of location is intended except as specifically noted.

2. Installer: The person or entity engaged by Contractor or subcontractors for the performance of a particular unit of Work at the Project site, including installation, erection, application, and similar required operations. It is a general requirement that installers be recognized experts in the work they are engaged to perform.

3. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean"...supply and deliver to the Project site, ready for unpacking, assembly and installation..."

4. Provide: Except to the extent further defined, the term "provide" means to furnish and install, complete and ready for the intended use.

5. Guarantee and Warranty: "Guarantee" is generally used in conjunction with units of work which require both products and substantial amounts of labor at the Project site. "Warranty" is generally used in conjunction with products manufactured or fabricated away from the Project site. The resulting difference is that warranties are frequently issued by manufacturers, and guarantees are generally issued by Contractor and frequently supported (partially) by product warranties from manufacturers.

1.6 CONFLICTS

A. Report any conflicts to the Project Manager for clarification.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 12 19

CONTRACTOR'S CERTIFICATION OF SUBCONTRACTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Procedures for preparing, submitting, and accepting subcontracts.

1.2 RELATED REQUIREMENTS

A. Section 00 10 00 Information to Bidders

B. Section 00 43 00 Subcontractor List

C. Section 00 70 00 General Conditions

D. Section 01 33 00 Submittal Procedures

1.3 PREPARATION

A. Certification Forms: Use forms provided by AEA.

B. Contractor to prepare certification form and submit to AEA prior to the start of work. Multiple subcontracts may be included under a single submittal. Where required, attach additional information (cross-referenced to the appropriate subcontract) to the certification form.

C. Substitute certification forms will not be considered.

1.4 SUBMITTAL OF CERTIFICATION

A. Contractor shall submit the initial and all subsequent certification forms in accordance with the submittal requirements identified under paragraph 1.2 D of this Section.

1.5 CONSIDERATION OF CERTIFICATION

A. Following receipt of submittal and within a reasonable period of time AEA shall review for each of the following:

1. Completeness of forms and attachments.

2. Proper execution (signatures) of forms and attachments.

B. Submittals which are not complete or not properly executed will be returned to the Contractor under a transmittal letter denoting the deficiencies found. Contractor shall correct and resubmit per paragraph 1.4 of this Section.

1. Subcontractors will be required to leave the Project site until properly executed subcontract is in place.

2. Payment will not be made for work performed by a non-certified subcontractor.

1.6 ACKNOWLEDGMENT OF CERTIFICATION

A. Submittals which have been examined by AEA and are determined to be complete and properly executed shall be acknowledged as such by signature of designated AEA representative on the face of each certification form.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 20 13

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Procedures for preparation and submittal of Applications for Payment.

1.2 RELATED REQUIREMENTS

A. Section 00 70 00 General Conditions.

B. Section 01 33 00 Submittal Procedures.

C. Section 01 29 73 Schedule of Values.

D. Section 01 77 19 Closeout Requirements.

E. Section 01 78 39 Project Record Documents.

1.3 FORMAT

A. Application for Payment form as provided by AEA or Contractor's form containing same information.

1.4 PREPARATION OF APPLICATIONS

A. Type required information on Application for Payment form approved by AEA.

B. Execute certification by original signature of authorized officer upon each copy of the Application for Payment.

C. Submit names of individuals authorized to be responsible for information submitted on Application for Payment.

D. Indicate breakdown of costs for each item of the Work on accepted schedule of values as specified in Section 01 29 73 Schedule of Values.

E. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.

F. Include 10% retainage on each pay request. Retainage shall be eligible for payment on Contractor's final pay request.

G. Prepare Application for Final Payment as specified in Section 01 77 19 Closeout Requirements.

1.5 SUBMITTAL PROCEDURES

A. Submit one copy of each Application for Payment at times stipulated in Contract.

B. Submit under AEA accepted transmittal letter. See Section 01 29 73 Schedule of Values. Identify Contract by the AEA contract number.

1.6 SUBSTANTIATING DATA

A. When AEA requires substantiating information, submit data justifying line item amounts in question.

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

1.7 SUBMITTALS WITH APPLICATION FOR PAYMENT

A. Submit the following with each Application for Payment.

1. Updated construction schedule as required by Section 01 32 16 Construction Progress Schedule.

2. Updated Schedule of Values as required by Section 01 29 73 Schedule of Values.

3. Evidence of transmittal of certified payrolls, if required, to the Labor Department.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 25 13

PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Requests for substitution of products.

1.2 RELATED REQUIREMENTS

A. Section 00 02 00 Invitation To Bid.

B. Section 00 70 00 General Conditions.

C. Section 00 80 00 Supplementary Conditions.

D. Section 01 33 00 Submittal Procedures.

E. Section 01 33 23 Shop Drawings, Product Data, and Samples.

1.3 SUBSTITUTION SUBMITTAL PERIOD

A. All product substitution requests will be considered only within 15 days after date established in Notice to Proceed. Subsequent requests will be considered only in case of product unavailability or other conditions beyond control of Contractor.

1.4 OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards.

B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not specifically named.

C. Products Specified by Naming One or More Manufacturers followed by the term "No Substitutions": use only specified manufacturers, no substitutions allowed.

1.5 PRODUCTS LIST

A. Within (15) days after date of Notice to Proceed, transmit an electronic copy of a list of products which are proposed for installation, including name of manufacturer.

B. Tabulate products by Specifications section number, title, and Article number.

C. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

D. Project Manager will reply in writing within fifteen days stating whether there is reasonable objection to listed items. Failure to object to a listed item shall not constitute a waiver of requirements of Contract Documents.

E. Project Manager will contact Engineer to ascertain any extra Professional fees to assess the substitutions and shall so notify Contractor who will include payment for the professional review cost in the application for substitution.

1.6 LIMITATIONS ON SUBSTITUTIONS

A. Substitutions will not be considered when indicated on Shop Drawings or product data submittals.

B. Substitute products shall not be ordered or installed without written acceptance.

C. Project Manager will contact the Engineer to determine acceptability of substitutions.

1.7 REQUESTS FOR SUBSTITUTIONS

A. Submit separate request for each substitution. Document each request with complete data substantiating compliance of proposed substitution with requirements of Contract Documents.

B. Identify product by Specification section and Article numbers. Provide manufacturer's name and address, trade name of product, and model or catalog number. List fabricators and Suppliers as appropriate.

C. Attach product data as specified in Section 01 33 23.

D. List similar projects using product, dates of installation, and names of design Engineer(s) and, name of the facility owner.

E. Give itemized comparison of proposed substitution with specified product, listing variations, and reference to Specification sections and Article numbers.

F. Give quality and performance comparison between proposed substitution and the specified product.

G. Give cost data comparing proposed substitution with specified product, and amount of net change to Contract Price.

H. List availability of maintenance services and replacement materials.

I. State effect of substitution on construction schedule, and changes required in other Work or products.

1.8 CONTRACTOR REPRESENTATION

A. Request for substitution constitutes a representation that Contractor has investigated proposed product and has determined that it is equal to or superior in all respects to specified product.

B. Contractor will provide same warranty for substitution as for specified product.

C. Contractor will coordinate installation of accepted substitute, making such changes as may be required for Work to be complete in all respects.

D. Contractor certifies that cost data presented is complete and includes all related costs under this Contract.

E. Contractor waives claims for additional costs related to substitution which may later become apparent.

1.9 SUBMITTAL PROCEDURES

A. Submit an electronic copy of complete request for substitution.

B. Project Manager will review Contractor's requests for substitutions with reasonable promptness.

C. During the bidding period, AEA will record acceptable substitutions in Addenda.

D. After Award of Contract, AEA will notify Contractor, in writing, of decision to accept or reject requested substitution within 15 days.

E. For accepted products, submit Shop Drawings, product data, and samples under provisions of Section 01 33 23.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 26 57

CHANGE ORDER PROCEDURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Procedures for processing Change Orders.

1.02 RELATED REQUIREMENTS

A. Section 00 32 00 Bid Schedule.

B. Section 00 51 00 Construction Contract: Total amount of Contract Price, as awarded

C. Section 00 70 00 General Conditions.

D. Section 01 20 13 Applications for Payment.

E. Section 01 33 00 Submittal Procedures: Progress Schedules.

F. Section 01 29 73 Schedule of Values.

G. Section 01 77 19 Closeout Requirements.

1.03 SUBMITTALS

A. Submit name of the individual authorized to accept changes, and to be responsible for informing others in Contractor's employ of changes in the Work.

B. Change Order forms will be prepared by AEA.

1.04 DOCUMENTATION OF CHANGE IN CONTRACT PRICE AND CONTRACT TIME

A. Maintain detailed records of work done on a Cost of the Work basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work. Incomplete or unsubstantiated costs will be disallowed.

B. Contractor shall submit a complete, detailed, itemized cost breakdown addressing impact on Contract Time and Contract Price with each proposal.

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

1. Quantities of products, labor, and equipment.

2. Taxes, insurance, and bonds.

3. Justification for any change in Contract Time.

4. Credit for deletions from Contract, similarly documented.

D. Support each claim for additional costs, and for work done on a Cost of the Work basis, with additional information:

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.

1.05 PRELIMINARY PROCEDURES

A. AEA may submit a Proposal Request which includes: Detailed description of change with supplementary or revised Drawings and Specifications, the projected time for executing the change, with a stipulation of any overtime work required, and the period of time during which the requested price will be considered valid.

B. Contractor may initiate a change by submittal of a request to AEA describing the proposed change with a statement of the reason for the change, and the effect on Contract Price and Contract Time with full documentation.

1.06 CONSTRUCTION CHANGE AUTHORIZATION

A. Shall be in accordance with Article 9 - Changes: in Section 00 70 00 - General Conditions.

1.07 LUMP SUM CHANGE ORDER

A. Contractor shall submit an itemized price proposal in sufficient detail to fully explain the basis for the proposal. Contractor and AEA shall then negotiate an equitable price (and time adjustment if appropriate) in good faith. The Change Order will reflect the results of those negotiations. If negotiations break down, Contractor may be directed to perform the subject Work under a COST OF THE WORK CHANGE ORDER.

B. The maximum rates of cost markup (to cover both overhead and profit of the Contractor) shall be in accordance with Article 10- Contract Price, Computation and Change: in Section 00 70 00 – General Conditions.

C. These terms shall also apply to the proposals of subcontracts and allowances.

1.08 UNIT PRICE CHANGE ORDER

A. For pre-determined unit prices and quantities, Change Order will be executed on a lump sum basis.

B. For pre-determined unit prices and undetermined quantities, Change Order will be executed on an estimated quantity basis; payment will be based on actual quantities measured as specified.

1.09 COST OF THE WORK CHANGE ORDER

A. Contractor shall submit documentation required in Paragraph 1.4 of this Section on a daily basis for certification by AEA. AEA will indicate by signature that the submitted documentation is acceptable. If it is not acceptable, Contractor and AEA shall immediately meet to discuss resolution.

B. After completion of the change and within 14 calendar days, unless extended by AEA, the Contractor shall submit in final form an itemized account with support data of all costs. Support data shall have been certified by AEA, as required above in paragraph A.

C. AEA will determine the change allowable in Contract Price and Contract Time as provided in provisions of the Contract Documents.

1.10 EXECUTION OF CHANGE ORDERS

A. AEA will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

1.11 CORRELATION OF CONTRACTOR SUBMITTALS

A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price as shown on Change Order.

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

1. Progress Schedule shall be updated to reflect the changed condition. It shall be identified as a unique single or multiple task activity and shall be linked to it’s predecessor and successor activities from the base schedule set of activities. An update to the cash flow schedule shall be made as well and to the extent possible, operational tasks shall be cross referenced to schedule of values categories

C. Promptly enter changes in Project Record Documents.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 29 73

SCHEDULE OF VALUES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Procedures for preparation and submittal of Schedule of Values.

1.2 RELATED REQUIREMENTS

A. Section 00 70 00 General Conditions.

B. Section 01 20 13 Applications for Payment.

C. Section 01 33 00 Submittal Procedures.

1.3 FORMAT

A. Form and content must be acceptable to AEA.

B. Contractor's standard form or media-driven printout will be considered on request.

C. Follow the table of contents of Project Manual and the Bid Schedule for listing component parts. Identify each line item by number and title of listed Specification sections.

1.4 CONTENT

A. List installed value of each major item of Work and each subcontracted item of Work as a separate line item to serve as a basis for computing values for progress payments. Round off values to nearest dollar.

B. For each major subcontract, list products and operations of that subcontract as separate line items.

C. Coordinate listings with progress schedule.

D. Component listings shall each include a directly proportional amount of Contractor's overhead and profit.

E. For items on which payments will be requested for stored products, list sub-values for cost of stored products.

F. No progress payments will be made for Substantial Completion Submittals and Closeout Submittals until **all** submittals have been submitted to and accepted by AEA.

G. The sum of values listed shall equal total Contract Price.

1.5 SUBMITTAL

A. Submit a copy of Schedule in electronic format within 15 days after the Notice to Proceed. Subsequent updated Schedule of Values shall be presented for review ten days prior to each Application for Payment.

B. Transmit on an AEA accepted form transmittal letter. Identify Project by AEA's title and Project number; identify Contract by AEA's Contract number.

1.6 SUBSTANTIATING DATA

A. When AEA requires substantiating information, submit data justifying line item amounts in question.

B. Provide an electronic copy of data with cover letter for each copy of the Application for Payment. 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

SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Contractor participation in preconstruction conferences.

B. Contractor administration of progress meetings and pre-installation conferences.

1.2 PRECONSTRUCTION CONFERENCES

A. AEA will administer a preconstruction conference to be held at AEA's main office located at 813 West Northern Lights Blvd, Anchorage, Alaska, for execution of Contract and exchange of preliminary submittals. The conference will be scheduled for a mutually agreeable time for the AEA Project Manager, AEA Engineering, AEA Operations, Engineer, and Contractor following Notice-To-Proceed. During the conference, the contractor shall present his schedule, construction methodology, and other pertinent information. Contractor will be required to field questions about his operation.

1.3 PREINSTALLATION CONFERENCES

A. When required in individual Specification section, or directed by the Project Manager, convene a pre-installation conference prior to commencing Work of the section unless this requirement is waived or modified by AEA.

B. Require attendance of entities directly affecting, or affected by, Work of the section.

C. Review conditions of installation, preparation and installation procedures, and coordination with related Work.

1.4 PROGRESS MEETINGS

A. Contractor shall schedule and administer weekly project meetings throughout progress of the work (unless this requirement is waived by AEA).

B. Attendance: Contractor's Project Manager, job superintendent, major subcontractors and suppliers; AEA, Engineer, and relevant stakeholders as appropriate to agenda topics for each meeting.

C. At the progress meeting, the Contractor shall present a current and accurate schedule and discuss his planned operations for the coming 2 weeks.

D. The Contractor will coordinate the date, time, and location of project meetings with all parties.

E. The Contractor shall provide facilities so that people may attend the meeting in person, or by telephone and distribute approved drawings by mail, fax, or email when required.

F. Contractor shall document the meetings and shall distribute meeting minutes within 2 working days of adjournment.

G. Meeting frequency may be reduced at the discretion of the Project Manager.

1.5 OTHER MEETINGS

A. At various times throughout the duration of the Contract, the Contractor will be required to attend meetings as requested by AEA. It is anticipated that such meetings will involve coordination with others, project schedule review, problem resolution, change order negotiations, and other topics of mutual importance.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Preliminary Schedule.

B. Construction Progress Schedule, bar Gantt chart.

1.2 RELATED REQUIREMENTS

A. Section 00 70 00 General Conditions.

B. Section 01 20 13 Applications for Payment.

C. Section 01 33 00 Submittal Procedures.

1.3 SUBMITTALS

A. Within fifteen (15) days after date established in Notice to Proceed, submit preliminary schedule.

B. Within (10) days after joint review, submit complete schedule.

C. Submit updated schedule with each Application for Payment.

1.4 SCHEDULE FORMAT

A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

B. Diagram Sheet Size: Maximum 11 x 17 inches.

C. Scale and Spacing. To allow for notations and revisions.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 PRELIMINARY SCHEDULE

A. Prepare preliminary schedule in the form of a horizontal bar chart.

B. Include a separate bar for each major trade or operation, identifying the duration of each activity and precedent activities.

C. Complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Show each work plan and separate work area as a separate activity or group of activities.

3.2 CONSTRUCTION PROGRESS SCHEDULES

A. Submit horizontal bar Gantt chart. Schedule shall show:

1. Separate bar for each major trade or operation, identifying the duration of each activity and precedent activities.

2. Complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Show each work plan and separate work area as a separate activity or group of activities.

3. Submittal dates for Shop Drawings, product data, and samples, and product delivery dates, including any furnished by AEA and those under allowances.

4. All required submittals and indicating the date for each required submittal.

5. Show projected percentages of completion for each item of Work and submittal as of time of each Application for Progress Payment.

6. Schedule shall be computer generated; (MS Projects, Sure-Trac, or Primavera); Gantt format with preceding and succeeding operational tasks indicated by relationship arrows. An accompanying cash flow chart shall reflect estimated monthly draw amounts. To the extent possible, operational tasks shall be cross referenced to schedule of values categories.

3.3 REVIEW AND EVALUATION OF SCHEDULE

A. Participate in joint review and evaluation of schedule with Project Manager at each submittal.

B. Evaluate project status to determine work behind schedule and work ahead of schedule.

C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.4 UPDATING SCHEDULE

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity.

C. Indicate changes required to maintain Dates of Substantial Completion.

3.5 DISTRIBUTION OFSCHEDULE

A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Engineer, Authority, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Procedures for the preparation, tracking, and review of submittals for the project.

B. Manufacturer's Instructions.

C. Manufacturer's Certificates.

1.2 RELATED REQUIREMENTS

A. Section 01 20 13 Applications for Payment

B. Section 01 26 57 Change Order Procedures

C. Section 01 71 23.16 Construction Surveying

D. Section 01 12 19 Contractor’s Certification of Subcontracts

E. Section 01 25 13 Product Substitution Procedures

F. Section 01 32 16 Construction Progress Schedule

G. Section 01 33 23 Shop Drawings, Product Data, Samples

H. Section 01 29 73 Schedule of Values

I. Section 01 45 00 Quality Control

J. Section 01 50 00 Construction Facilities and Temporary Controls

K. Section 01 55 26 Traffic Control

L. Section 01 77 19 Closeout Requirements

M. Section 01 78 39 Project Record Documents

N. Section 01 94 00 Decommissioning Fuel Piping

O. Section 05 50 00 Metal Fabrications

P. Section 09 96 00.01 Plant and Field Applied Fusion Bonded Epoxy (FBE)

Q. Section 09 96 00.02 Hot Dipped Galvanized Coatings

R. Section 10 44 16.13 Portable Fire Extinguishers

S. Section 11 80 00 Spill Response Equipment

T. Section 23 11 00 Facility Fuel Piping

U. Section 31 20 00 Earth Moving

V. Section 33 05 26.13 Signage

W. Operations and Maintenance Manuals

X. Equipment Installation Data

Y. Other Sections specifying materials to be used in the Work, including fill material and gravels.

1.3 PROCEDURES

A. Delivery of Submittals:

1. Within 10 days following Notice to Proceed, Contractor shall submit to Project Manager in electronic format, a Submittal Register (Section 01 33 23 1.12A) as required by the Contract (by Section Number, Paragraph Number, Page Number, and time criteria if required). The schedule must be approved by the Project Manager before any submittals required by the Contract will be accepted.

2. Contractor shall provide a submittal register, broken down per specification section, for all materials and deliverables specified and provided.

3. Electronically transfer submittals directly to the Project Manager and Engineer.

4. Minimize the number of submittals. **Full divisions must be submitted together** (no partial submittals will be accepted).

B. Transmit each item on an AEA accepted form. Identify Project, Contractor, Subcontractor, and major Supplier. Identify pertinent Drawing sheet and detail number, and Specification section number, as appropriate. Identify deviations from Contract Documents by submitting a separate Substitution Request Form. Provide a minimum of 8 1/2" x 5 1/2" blank space on the front page for Contractor, and Engineer review stamps.

C. Submit initial progress schedules and Schedule of Values in electronic format as directed by the Project Manager, in accordance with Document 00 70 00 - General Conditions. Form and content shall be reviewed by AEA. After review by AEA, revise and resubmit as required. Submit subsequent updated schedules with each Application for Payment. See Section 01 32 16 for progress schedules.

D. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.

E. After Project Manager review of submittal, revise and resubmit as required, identifying changes made since previous submittal. The Project Manager will not return the first or revised copies of rejected submittals for re-use. DO NOT submit partial copies of submittals for incorporation into rejected submittal packages which have been kept by the Project Manager. Provide COMPLETE copies for each review.

F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

G. If drawings, product submittals, samples, mock-ups, or other required submittals are incomplete or not properly submitted, Project Manager will not review the submittal and will immediately return submittal to Contractor. Project Manager will review a submittal no more than two times (incomplete or improper submittals count as one). Contractor shall pay all review costs associated with more than two reviews, unless a re-submittal is required due to new comments addressing previously submitted information.

1.4 CONSTRUCTION PROGRESS SCHEDULES

A. Submit in accordance with Section 01 32 16 Construction Progress Schedule.

1.5 SCHEDULE OF VALUES

A. Submit in accordance with Section 01 29 73 Schedule of Values.

1.6 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

A. Submit in accordance with Section 01 33 23 Shop Drawings, Product Data, and Samples.

B. Submit signed and sealed engineering design calculations performed by a Professional Engineer licensed in the State of Alaska where the Contractor is responsible for design as required in the Contract Documents.

1.7 MANUFACTURER'S INSTRUCTIONS

A. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for product data.

1.8 QUALITY CONTROL DATA

A. Submit in accordance with Section 01 45 00 Quality Control and individual specification sections.

1.9 CONSTRUCTION PHOTOGRAPHS

A. Provide photographs of construction throughout progress of Work.

B. Submit photographs with daily work reports via email to the Engineer, Owner and Owner’s representatives, not less than daily. Photographs may be sent as separate file from daily report.

C. Photographs: Digital color photographs, minimum size 2 megapixels.

D. Take site photographs form differing directions indicating relative progress of the Work on a daily basis.

E. Take photographs as evidence of daily project conditions including by not limited to:

1. Demolition of Structures and Utilities

2. Placement and Compaction of Fill

3. Associated Mechanical and Electrical work.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 33 23

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Procedures for submittals.

1.2 RELATED REQUIREMENTS

A. Section 00 70 00 General Conditions

B. Section 01 25 13 Product Substitution Procedures

C. Section 01 33 00 Submittal Procedures

D. Section 01 45 00 Quality Control

E. Section 01 77 19 Closeout Requirements

1.3 SHOP DRAWINGS

A. Present drawings in a clear and thorough manner. Label each Shop Drawing with AEA's Project name and Project number; identify each element of the Shop Drawings by reference to sheet number and detail, or schedule.

B. Identify field dimensions; show relation to adjacent or critical features or Work or products.

C. Minimum Sheet Size: 8-1/2"x11". Larger sheets may be submitted in multiples of 8-1/2"x11".

1.4 PRODUCT DATA

A. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to Specification section and Article number. Show reference standards, performance characteristics, capacities, wiring and piping diagrams and controls, component parts, finishes, dimensions, and required clearances.

B. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the Work. Delete information not applicable.

1.5 SAMPLES

A. Submit full range of manufacturer's standard finishes except when more restrictive requirements are specified, indicating colors, textures, and patterns, for Project Manager selection.

B. Submit samples to illustrate functional characteristics of products, including parts and attachments.

C. Approved samples which may be used in the Work are indicated in the Specification section.

D. Label each sample with identification required for transmittal letter.

E. Provide field samples of finishes at Project, at location acceptable to the Project Manager, as required by individual Specification section. Install each sample complete and finished. Acceptable finishes in place may be retained in completed Work.

1.6 MANUFACTURER'S INSTRUCTIONS

A. Manufacturer's instructions for storage, preparation, assembly, installation, start-up, adjusting, balancing, and finishing under provisions of Section 01 45 00.

1.7 CONTRACTOR REVIEW

A. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirements of Contract Documents.

B. Coordinate submittals with requirements of Work and of Contract Documents.

C. Notify the Project Manager in writing at time of submittal, of any deviations from requirements of Contract Documents.

D. Do not fabricate products or begin Work which requires submittals until return of submittal with Authority acceptance.

1.8 SUBMITTAL REQUIREMENTS

A. Each submittal to be numbered by Specification Section and Paragraph. Revisions shall be identified by a hyphen after the paragraph, with a letter designator. Example: 1st submittal "01 33 23 1.08A" 2nd submittal 01 33 23 1.08A - A".

B. Transmit submittals in accordance with the required submittal schedule and in such sequence to avoid delay in the Work.

C. Provide 8 1/2" x 5 1/2" blank space on each submittal for Contractor and Engineer stamps.

D. Apply Contractor's stamp, signed or initialed, certifying to review, verification of products, field dimensions and field construction criteria, and coordination of information with requirements of Work and Contract Documents.

E. Coordinate submittals into logical groupings to facilitate interrelation of the items.

F. Submit electronic copies of shop drawings required in the Contract. Contractor may be required to submit, to the Project Manager, four opaque reproductions of full-size shop drawings at no additional cost to the Owner.

G. Submit electronic copies of product data and manufacturer's instructions required by the contract.

H. Submit number of samples specified in individual Specifications sections.

I. Submit under AEA's accepted transmittal form letter. Identify Project by title and AEA's Project number; identify Contract by AEA's contract number. Identify Work and product by Specification section and Article number.

J. Each submittal shall have as its face document a completed, Authority furnished, Submittal Summary form.

1.9 RESUBMITTALS

A. After the Project Manager review of submittal, revise and resubmit as required, identifying changes made since previous submittal. Project Manager will not return the first or revised copies of rejected submittals for re-use. DO NOT submit partial copies of submittals for incorporation into rejected submittal packages which have been kept by the Project Manager. Provide COMPLETE copies for each review.

1.10 REVIEW

A. AEA or authorized agent will review Shop Drawings, product data, and samples and return submittals within (14) working days.

B. AEA or authorized agent will examine shop drawings for general arrangement, overall dimensions and suitability, and will return to the Contractor marked as follows:

"Submit Specified Item" - denotes that the item specified in the contract documents is required and substitutions are not acceptable.

"Approved" - denotes acceptance of the submittal.

"Approved With Corrections Noted" - denotes review is conditional on compliance with notes made on the submittal.

"Revise and Resubmit" - denotes that revisions are required in the submittal in order for the submittal to be generally consistent with the requirements of the Contract Documents. Required revisions will be identified to the Contractor. Resubmittal is required.

"Rejected" - denotes that the submittal does not meet the requirements of the Contract Documents and shall not be used in the Work. Reasons for rejection will be identified to the Contractor. Resubmittal is required.

C. Review by AEA or authorized agent of shop drawings shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is consistent with the requirements of the Contract Documents. Review of such drawings shall not relieve the Contractor of the responsibility for errors, dimensions, and detail design.

D. AEA or authorized agent review will not extend to means, methods, techniques, sequences or procedures of construction (except in the case of construction specific submittals, such as erection plans) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in with the item functions.

1.11 DISTRIBUTION

A. Duplicate and distribute reproductions of Shop Drawings, copies of product data, and samples, which bear Engineer's stamp, to job site file, record documents file, Subcontractors, Suppliers, and other entities requiring information.

1.12 SCHEDULE OF SUBMITTALS

A. Submittal Register Form to be completed by Contractor and approved by AEA prior to submittal of any items.

B. Submit shop drawings, product data and samples as required for each specification section.

C. Format.

1. Submittal schedule form as provided by AEA as outlined in Section 01 45 00 1.7.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not used

END OF SECTION

SECTION 01 42 19

REFERENCE STANDARDS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Quality assurance.

1.2 RELATED REQUIREMENTS

A. Section 00 70 00 General Conditions

1.3 QUALITY ASSURANCE

A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date for receiving bids, unless otherwise stated in the Contract Documents.

C. Obtain copies of standards when required by the Contract Documents.

D. Maintain copy at Project Site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from the Project Manager before proceeding. Local code requirements, where more stringent than referenced standards, shall govern.

F. Neither the contractual relationship, duties, nor responsibilities of the parties in Contract nor those of the Project Manager shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Contractor's quality control (assurance) program and control procedures for executing the Work.

B. Contractor's technical qualifications to be able to execute the Work in accordance with the Contract Documents.

1.2 RELATED REQUIREMENTS

A. Section 00 70 00 - General Conditions

B. Section 01 33 00 Submittal Procedures

1.3 SUBMITTALS

A. Submit a Quality Control Program for review and approval.

1.4 DESCRIPTION

A. The Contractor shall assure that all materials and completed construction conform to contract Plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. When required, the Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be used. Although guidelines are established and certain minimum requirements are specified herein and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

B. The intent of this section is to enable the Contractor to establish a necessary level of control that will:

1. Adequately provide for the production of acceptable quality materials.

2. Provide sufficient information to assure both the Contractor and the Engineer that the specification requirements can be met.

3. Allow the Contractor as much latitude as possible to develop his own standard of control.

C. The Contractor shall be prepared to discuss and present, at the preconstruction conference, his understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Quality Control Program has been reviewed by the Engineer.

No partial payment will be made for materials subject to specific quality control requirements until the Quality Control Program has been reviewed.

D. The quality control requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the acceptance testing requirements. Acceptance testing requirements are the responsibility of the Engineer.

1.5 DESCRIPTION OF PROGRAM

A. General Description

The Contractor shall establish a Quality Control Program to perform inspection and testing of each item of work for which it is required by the technical specifications, including those performed by subcontractors. This Quality Control Program shall ensure conformance to applicable parts of the contract documents (plans and specifications) with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Program shall be effective for control of all construction work performed under this Contract and shall specifically include (1) surveillance and tests required by the technical specifications, (2) other requirements of this section, and (3) any other activities deemed necessary by the Contractor to establish an effective level of quality control.

B. Quality Control Program.

The Contractor shall describe the Quality Control Program in a written document which shall be reviewed by the Engineer prior to the start of any production, construction, or off-site fabrication. The written Quality Control Program shall be submitted to the Engineer for review at least 5 calendar days before the preconstruction conference.

C. The Quality Control Program shall be organized to address, as a minimum, the following items:

1. Quality control organization;

2. Project progress schedule;

3. Submittals schedule;

4. Inspection requirements;

5. Quality control testing plan;

6. Documentation of quality control activities; and

7. Requirements for corrective action when quality control and/or acceptance criteria are not met.

D. The Contractor is encouraged to add any additional elements to the Quality Control Program that he/she deems necessary to adequately control all production and/or construction processes required by this contract.

1.6 QUALITY CONTROL AND ORGANIZATION

A. The Contractor's Quality Control Program shall be implemented by the establishment of a separate quality control organization. An organizational chart shall be developed to show all quality control personnel and how these personnel integrate with other management/production and construction functions and personnel.

B. The organizational chart shall identify all quality control staff by name and function, and shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work. If necessary, different technicians can be utilized for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the Quality Control Program, the personnel assigned shall be subject to the qualification requirements of this specification. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

C. The quality control organization shall consist of the following minimum personnel:

1. Program Administrator. The Program Administrator shall be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The Program Administrator shall have a minimum of 10 years of comparable construction experience and shall have had prior quality control experience on a project of comparable size and scope as the contract.

   The Program Administrator shall have full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the contract documents. The Program Administrator shall report directly to a responsible officer of the construction firm. The Program Administrator may supervise the Quality Control Program on more than one project provided that person can be at the job site within 12 hours after being notified of a problem.

2. Quality Control Technicians. A sufficient number of quality control technicians necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be either engineers, engineering technicians with five (5) years of experience, or experienced craftsman with qualifications in the appropriate field with a minimum of two (2) years of experience in their area of expertise and National Institute for Certification in Engineering Technologies (NICET) certification.

   The quality control technicians shall report directly to the Program Administrator and shall perform the following functions:

   a. Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by the contract documents.

b. Performance of all quality control tests as required by the technical specifications.

Engineer approval or certification at an equivalent level by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

3. Staffing Levels. The Contractor shall provide sufficient qualified quality control personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The Quality Control Program shall state where different technicians will be required for different work elements.

1.7 WORKMANSHIP AND STANDARDS

A. The Contractor's quality control program shall ensure compliance with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

B. The Contractor shall secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

C. Contractor shall comply with manufacturer's instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from the Project Manager before proceeding.

D. When required by individual Specifications section, submit manufacturer's certificate, in duplicate, that products meet or exceed specified requirements.

1.8 SUBMITTALS SCHEDULE

A. The Contractor shall submit a detailed listing of all submittals and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include:

1. Specification item number;

2. Item description;

3. Description of submittal;

4. Specification Subsection requiring submittal; and

5. Scheduled date of submittal.

1.9 INSPECTION REQUIREMENTS

A. Quality control inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by this specification.

B. Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the particular feature of work. These shall include the following minimum requirements:

1. During fabrication of Contractor provided, shop fabricated materials and structures, plant operation for material production, quality control test results and periodic inspections shall be utilized to ensure the quality of the materials and workmanship. The Quality Control Program shall detail how these and other quality control functions will be accomplished and utilized to ensure compliance with applicable codes and standards.

2. During field operations, quality control test results and periodic inspections shall be utilized to ensure the quality of all materials and workmanship. All equipment shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The Program shall document how these and other quality control functions will be accomplished and utilized.

1.10 QUALITY CONTROL TESTING PLAN

A. As a part of the overall Quality Control Program, the Contractor shall implement a quality control testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by the technical specification Item, as well as any additional quality control tests that the Contractor deems necessary to adequately control production and/or construction processes.

B. The testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

1. Specification item number;

2. Item description (e.g., Schedule 80 pipe);

3. Test type (e.g., NDT, pipe pressure test);

4. Test standard (e.g., ASTM or NACE test number, as applicable);

5. Test frequency (e.g., as required by technical specifications or minimum frequency p);

6. Responsibility (e.g., plant or field technician); and

7. Control requirements (e.g., target, permissible deviations).

C. The Engineer shall be provided the opportunity to witness quality control sampling and testing.

D. All quality control test results shall be documented by the Contractor as required by this specification and submitted to the Engineer for approval.

1.11 MANUFACTURERS' FIELD SERVICES

A. When required by manufacturer or when specified in respective Specification sections, require manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to make appropriate recommendations.

B. Require manufacturer's representative to submit written report to the Project Manager listing observations and recommendations.

C. Gradations for gravel material shall be performed at a rate of one per source or as required due to changes in material.

1.12 DOCUMENTATION

A. The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

B. These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the Engineer daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the Contractor's Program Administrator.

C. Specific Contractor quality control records required for the contract shall include, but are not necessarily limited to, the following records:

1. Daily Inspection Reports. Each Contractor quality control technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations on a form acceptable to the Engineer. These technician's daily reports shall provide factual evidence that continuous quality control inspections have been performed and shall, as a minimum, include the following:

    a. Technical specification item number and description;

    b. Compliance with approved submittals;

    c. Proper storage of materials and equipment;

d. Proper operation of all equipment;

e. Adherence to contract documents;

f. Review of quality control tests; and

g. Safety inspection.

The daily inspection reports shall identify inspections conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible quality control technician and the Program Administrator. The Engineer shall be provided at least one copy of each daily inspection report on the work day following the day of record.

2. Daily Test Reports. The Contractor shall be responsible for establishing a system which will record all quality control test results. Daily test reports shall document the following information:

a. Technical specification item number and description;

b. Test designation;

c. Location;

d. Date of test;

e. Control requirements;

f. Test results;

g. Causes for rejection;

h. Recommended remedial actions; and

i. Retests.

Test results from each day's work period shall be submitted to the Engineer prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical quality control charts. The daily test reports shall be signed by the responsible quality control technician and the Program Administrator.

1.13 CORRECTIVE ACTION REQUIREMENTS

A. The Quality Control Program shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the Quality Control

Program as a whole, and for individual items of work contained in the technical specifications.

B. The Quality Control Program shall detail how the results of quality control inspections and tests will be used for determining the need for corrective action and shall contain clear sets of rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

C. When applicable or required by the technical specifications, the Contractor shall establish and utilize statistical quality control charts for individual quality control tests. The requirements for corrective action shall be linked to the control charts.

1.14 INSPECTION BY THE ENGINEER

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

B. Inspection by the Engineer does not relieve the Contractor of performing quality control inspections of either on-site or off-site Contractor's or subcontractor's work.

1.15 NONCOMPLIANCE

A. The Engineer will notify the Contractor of any noncompliance with any of the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the Engineer or their authorized representative to the Contractor or their authorized representative at the site of the work, shall be considered sufficient notice.

B. In cases where quality control activities do not comply with either the Contractor's Quality Control Program or the contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, as determined by the Engineer, the Engineer may:

1. Require the Contractor to replace ineffective or unqualified quality control personnel or subcontractors.

2. Require the Contractor to stop operations until appropriate corrective action is taken.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 50 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 REQUIREMENTS

A. Temporary Utilities: water, sanitation, electrical, heating and communication systems.

B. Temporary Construction Facilities: Field office for the use of Contractor personnel, storage yards and buildings, worker shelters, and access roads.

C. Temporary Controls: air/water pollution controls, erosion control, and traffic control.

D. Temporary Fuel Storage and Dispensing: fuel storage, secondary containment and dispensing facilities.

1.2 RELATED REQUIREMENTS

A. Section 01 11 13 Work Covered by Contract Documents

B. Section 01 33 00 Submittal Procedures

C. Section 01 51 19 Temporary Fuel Storage and Dispensing

D. Section 01 55 26 Traffic Control

E. Section 01 57 13 Temporary Erosion and Sediment Control

1.3 DELIVERY, STORAGE, AND HANDLING OF TEMPORARY FACILITIES

A. Protect temporary facilities during delivery and storage operations.

B. Maintain temporary facilities in proper and safe condition throughout progress of the work.

1.4 SUBMITTALS

A. Submit an electronic copy of written Plan for providing temporary facilities. Submit plan prior to mobilization or a minimum of 30 days from receipt of the “Intent to Award letter”.

1. Plan shall include written description of Contractor’s proposed methods and means of providing temporary utilities during construction activities, as described in the Specifications.

PART 2 - PRODUCTS

2.1 TEMPORARY UTILITIES CONTRACTOR FURNISHED ITEMS

A. Temporary Sanitation Systems

1. Furnish and install all necessary components and systems to provide sewer and solid waste collection services at the field office. Temporary outhouses shall be self-contained units, pit privies are not acceptable.

2. Contractor furnished items include, but are not limited to, all piping, valves, fittings, structures, insulation, pumps, tanks, fixtures, tie-ins, trash receptacles, hauling operations and service agreements.

3. Contractor to provide and pay for all temporary sanitation system related components and fees.

B. Temporary Electrical Systems

1. Contractor shall coordinate with local utility to provide all electrical service necessary for completion of work. Complete necessary utility paperwork and provide minimum of 60 days' notice to local utility for hookup.

2. Contractor furnished items include, but are not limited to, all conductor, transformers, service meters and masts, distribution panels, controls, electrical and lighting fixtures, tie-ins, and service agreements.

3. Contractor shall be responsible for providing temporary power to all electrical control panels to ensure that they remain heated from the time of installation to substantial completion.

4. Contractor to provide and pay for all temporary electrical system related components and fees including hookup.

C. Temporary Heating Systems

1. Furnish and install all necessary components and systems to provide heat at the field office and worker shelters as required.

2. Contractor furnished items include, but are not limited to, all heaters, fuel tanks, piping, valves, fittings, meters, insulation, pumps, fixtures, tie-ins, and fuel hauling.

3. Contractor to provide and pay for all temporary heating system related components and fees.

D. Temporary Communication Systems (Telephone, Fax, and Internet)

1. Furnish and install all necessary components and systems to provide telephone, fax, and internet service to the field office.

2. Contractor furnished items include, but are not limited to, all phone lines, phones, fax machines, tie-ins, and service agreements.

3. Contractor to provide and pay for all temporary communication system related components and fees.

2.2 TEMPORARY CONSTRUCTION FACILITIES CONTRACTOR FURNISHED ITEMS

A. Temporary Construction Facilities (Field Office, Storage Facilities, Worker Shelters)

1. Temporary field office**:** Furnish field office building for use of Contractor personnel. Field office structure shall meet all requirements of the most current version of the IBC. Provide temporary electrical, heating, telephone, fax, and internet services at the field office.

2. Temporary storage facilities: Furnish temporary storage facilities as required to protect materials and equipment during the course of the work. Facilities shall be structurally sound and sufficiently weather tight to protect stored items in accordance with the manufacturer's recommendations.

3. Worker shelters: Worker shelters shall be provided in accordance with applicable laws and regulations.

4. Contractor to provide and pay for all temporary construction facility related components and fees.

2.3 TEMPORARY CONTROLS CONTRACTOR FURNISHED ITEMS

A. Temporary Controls

1. Furnish all gates, barricades, fences, handrails, guardrails, and security systems required for safe execution and protection of the work.

2. Furnish all Guards, markers, shields, protective clothing, hard hats, hearing protection and other equipment required by health and safety regulations for workers.

3. Furnish erosion controls in accordance with industry accepted Best Management Practices and in accordance with Section 01 57 13.

4. Furnish all required first aid and fire suppression equipment required by laws and regulations.

5. Contractor to provide and pay for all temporary controls related components and fees.

PART 3 - EXECUTION

3.1 TEMPORARY UTILITIES

A. All work relating to temporary utilities shall be arranged and implemented by the Contractor.

B. All costs associated with providing temporary utilities shall be borne solely by the Contractor including hookup.

C. Contractor shall not connect to any existing utility system unless specific written authorization from the applicable utility company is given.

1. Contractor shall provide individuals who are qualified to connect to the existing utility system and provide all necessary equipment and materials required for the connection.

2. Contractor shall at no time exceed the usage allowed by AEA's governing the utility.

3. Contractor shall remove all temporary materials and equipment upon completion of construction and repair any damage caused by installation, and restore to like new condition.

D. Water: Provide temporary water for all construction requirements and Contractor's crews. Contractor shall maintain sanitary conditions at all times and shall not violate requirements of applicable codes

E. Sanitation Facilities: Provide and maintain facilities for Contractor's employees, Subcontractors and all other onsite employer's employees. Service, clean, and maintain facilities and enclosures

F. Electricity and Lighting: Provide temporary power for all construction requirements including Contractor's field office and to ensure safe work conditions and security of site. Provide temporary lighting as required to meet all applicable safety requirements to allow erection, application or installation of materials and equipment, and observation or inspection of the work.

G. Heating: Provide temporary heating systems at the field office and other temporary construction facilities as required by laws and regulations.

H. Communication Systems: Provide temporary communication systems at the field office including telephone, fax, and internet service.

3.2 TEMPORARY CONSTRUCTION FACILITIES

A. Field Office: Contractor shall maintain an on-site field office

1. Field office shall provide sufficient working space and sanitary facilities for Contractor personnel. Provide temporary electrical, heating, water, sewer, telephone, fax and internet services at the field office.

2. Field Office shall provide a temporary workspace w/internet connections and phone for AEA, the Project Manager and other Authority Representatives.

B. Temporary Storage Yard:

1. A temporary storage yard within the community shall be provided by the Contractor for storage of products, equipment, and materials used in the construction of the project.

C. Temporary Storage Buildings:

1. Environmental control systems shall be provided that meet recommendations of manufacturers of equipment and materials stored.

2. Contractor shall arrange or partition to provide security of contents and ready access for inspection and inventory.

3. Combustible materials (paints, solvents, fuels, etc.) shall be stored in a well-ventilated and remote building meeting applicable safety standards.

D. Access roads:

1. Access roads, if required, shall be constructed within easements, rights-of-way, or Project limits. Alignments for new routes shall be approved by Project Manager.

2. Ground surface disturbed by access road construction shall be restored to original grade upon completion of construction.

3.3 TEMPORARY CONTROLS

A. Air Pollution Controls:

1. Minimize air pollution from construction operations.

2. Burning of waste materials, rubbish, or other debris will not be permitted on or adjacent to the site.

B. Water Pollution Controls:

1. Contractor shall not cause or permit action to occur which would cause a discharge to an existing waterway. See Section 01 57 13.

C. Erosion Control:

1. As specified in Section 01 57 13.

D. Traffic Control:

1. As specified in Section 01 55 26.

3.4 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain work areas free of waste materials, debris, and rubbish. Maintain work site in a clean, orderly and organized condition. Materials should be clearly identified, with products covered and labeled. Materials should be identified with generator (Contractor) name.

B. Collect and remove waste materials, debris, and rubbish from site periodically and dispose of in accordance with all Federal, State and local regulations.

C. Contractor shall not dispose of hazardous materials such as mineral spirits, oil, chemicals, or paint thinner at the local land fill. Provide acceptable containers for collection and disposal of waste materials, debris and rubbish.

3.5 REMOVAL OF TEMPORARY FACILITIES

A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection, with the exception of temporary bulk fuel storage.

B. Clean and repair damage caused by installation or use of temporary facilities. Restore permanent facilities used during construction to pre-construction condition.

END OF SECTION

SECTION 01 51 19

TEMPORARY FUEL STORAGE AND DISPENSING

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Requirements for maintaining code-compliant temporary fuel storage and dispensing during the construction of the new facility.

1.2 RELATED REQUIREMENTS

A. Section 01 33 00 – Submittals

B. Section 01 50 00 – Construction Facilities and Temporary Controls

1.3 REFERENCES

A. 18 ACC 75 Article 075 Secondary Containment Requirements for Aboveground Oil Storage and Surge Tanks.

B. 2009 International Fire Code.

C. API 2015 Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks.

D. 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response.

1.4 SUBMITTALS

A. Contractor shall submit a work plan for approval detailing the location and capacity of storage facilities, demonstrating code-compliance and describing procedure for dispensing and metering.

1.5 PROCEDURES

A. Contractor shall be responsible for obtaining all temporary storage location permits, permissions and all associated fees in accordance with local, State and Federal Regulations, Statutes and Laws. If the temporary storage site is located on private land, the Contractor shall obtain written permission from the property owner or owners for such temporary storage site(s) and shall furnish AEA with a copy of this permission. The written permission shall specifically provide that the property owner will not hold AEA, the City, its employees, agents, or engineers liable for use of or damage to this property.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Secondary containment and spill response equipment and materials shall be provided and stored in accordance with 33 CFR.

B. Liners must withstand 80 mile per hour winds, petroleum emersion, direct sunlight, and -40º F temperatures.

PART 2 - MATERIALS

2.1 LINERS

A. All liners must meet 18 AAC Section 370 requirements.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The temporary facilities shall be adequately protected from vandalism and unauthorized access by installing temporary fencing and appropriate signage and lighting as necessary.

B. Removal of temporary storage facility shall be in accordance Section 01 50 00 3.5 – Removal of Temporary Facilities.

END OF SECTION

SECTION 01 55 26

TRAFFIC CONTROL

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This section describes the requirements, products, and methods of execution for traffic control on this Project.

1.2 GENERAL REQUIREMENTS

A. The Contractor is responsible for traffic control to ensure safe passage of pedestrians and vehicles in and around the work area. The Contractor shall prepare, submit, implement, and maintain an acceptable Traffic Control Plan (TCP). An electronic copy of the TCP shall be delivered to the Engineer within ten (10) working days of the effective date of the Notice-to-Proceed (NTP), or five (5) working days before commencement of work, whichever is the earlier date. The Engineer will review and accept or reject the plan within five (5) working days of submission. Successive submittals will also be reviewed within five (5) working days.

B. The TCP shall include a drawing or drawings indicating the method or scheme for safely and efficiently routing traffic during construction. The TCP shall include provisions for safely routing pedestrian, bicycle, and vehicle traffic through or around the construction zone.

C. All routes utilized by the Contractor shall be identified and included in the TCP. At a minimum, the TCP shall cover the route from the barge landing to the storage yard, route from the storage yard to the Project Site, and route from the Project Site to the material source.

D. The Work shall be conducted to interfere as little as possible with public access and comply with the following requirements:

1. If for any reason it is necessary to cross, close, or obstruct roads, driveways, and walks, whether public or private, Contractor shall provide and maintain suitable and safe bridges, detours, or other temporary expedients for accommodation of public and private travel.

2. Contractor shall not block off emergency vehicle access without written permission from the Project Manager. Operations shall be conducted with the least interference to fire equipment access, and at no time prevent such access. Contractor shall furnish night emergency contact numbers to the Project Manager.

3. Contractor shall not block more than one-half the thoroughfare at any time during crossings.

4. If a closure is required, Contractor shall maintain satisfactory means of exit for persons residing or having occasion to transact business along the route of the Work.

5. If it is necessary to close off a thoroughfare or other access providing sole vehicular access to property for periods greater than 2 hours, provide written notice to each property owner affected 3 days prior to such closure. Maintenance of traffic is not required if Contractor obtains written permission from property owner and tenant of private property, or from AEA having jurisdiction over public property involved, to obstruct traffic at the designated point.

6. Contractor shall not block pedestrian or vehicle access to homes or businesses.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. The TCP may include, but not be limited to, such items as signs, portable concrete barriers, barricades, traffic cones, special signs, warning lights, portable changeable message board signs, flaggers, pilot cars, temporary roadways, and all other items required to direct traffic through or around the construction zone in accordance with these specifications, the Manual on Uniform Traffic Control Devices (MUTCD), published documents by the US Department of Transportation, the State of Alaska Traffic Manual (ATM), and the Alaska Sign Design Specifications (ASDS).

PART 3 - EXECUTION

3.1 MAINTENANCE OF TRAFFIC

A. Contractor shall perform the Work in accordance with the approved TCP, and this Specification. No Work shall occur within traveled ways, rights-of-way or easements for public access until the Contractor has implemented an approved TCP for the Work proposed. The number of signs indicated on the TCP is a minimum. If unsafe conditions occur, the Engineer or Project Manager may require additions signs/devices at no additional cost to AEA.

END OF SECTION

SECTION 01 57 13

TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

A. This project is subject to conditions, limitations, and mitigation required by local, State, and Federal permitting agencies, building codes, and stakeholders.

B. Requirements of Federal, State, and local statutes and regulations dealing with storm water, pollution, and erosion shall be strictly adhered to by the Contractor.

C. Contractor shall comply with all laws and regulations relating to prevention and control of erosion.

1.2 GENERAL

A. The Contactor is responsible for acquiring and operating within the conditions of all permits required by Local, State, and Federal permitting agencies.

B. Contractor shall implement storm water and erosion control as soon as practicable to limit the potential for sediment transport and riling of disturbed slopes and/or embankment slopes.

C. Contractor shall prepare and implement a Hazardous Material Control Plan (HMCP) for prevention of pollution from storage, use, containment, cleanup, and disposal of all hazardous material, including petroleum products related to construction activities and equipment.

D. The contractor shall make their own determination if construction activity outside of the fill limits will sufficiently disturb the native ground surface to require development and implementation of a SWPPP. If cumulative ground disturbance of more than one acre is anticipated, Contractor shall prepare, implement, and maintain a SWPPP in accordance with the Construction General Permit (CGP) for Discharge from Large and Small Construction Activities, issued by the Alaska Department of Environmental Conservation (ADEC) under the Alaska Pollutant Discharge Elimination System (APDES).

1.3 ENVIRONMENTAL PROTECTION

The Contractor shall comply with the provisions of Federal, State and local statutes, ordinances and regulations dealing with the prevention of environmental pollution and the preservation of public natural resources that may affect or may be affected by the Project. The Contractor shall familiarize himself with all such statutes, ordinances and regulations, whether listed or not.

1.4 DEFINITIONS

Repair. Mending or replacement of erosion and control measures to a degree as to meet the intended function as outlined in the ADEC's Alaska Storm Water Guide or other

recognized BMP manual, as determined by the Project Manager. Repairs to erosion control measure can result from, but is not limited to, any degradation to the items from flooding, sediment deposition, wind, and construction activities.

1.5 SUBMITTALS

A. Hazardous Material Control Plan.

Submit an electronic copy of the HMCP, to the Project Manager for approval. Submit these documents to the Project Manager at least 21 days before beginning Construction Activity. After the HMCP is approved by the Owner, the Contractor must sign and certify the approved HMCP.

B. Inspection Reports

The contractor shall submit an electronic copy of the routine inspection reports as defined in the ADEC Construction General. Reports shall be submitted to the Project Manager within 24 hours after the report is recorded.

C. Approved SWPPP, if required under Section 1.2 above.

PART 2 - EROSION, SEDIMENT, AND POLLUTION CONTROL

2.1 TEMPORARY AND PERMINENT EROSION CONTROL

A. Temporary erosion and pollution control measures that are required at Contractor-furnished sites are subsidiary.

B. Perform temporary erosion and pollution control measures that are required due to your negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or ordered by the Engineer, or for your convenience, at your own expense.

C. Permanent erosion and pollution control measures will be measured and paid for under other contract items, when shown on the bid schedule.

PART 3 - EXECUTION

3.1 EROSION CONTROL

A. Contractor shall obtain, implement, and update a SWPPP onsite as required by State and Federal Regulations.

B. Best management practices for erosion control shall be observed to prevent construction related erosion impacts to receiving waters.

END OF SECTION

SECTION 01 60 13

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Products.

B. Transportation and Handling.

C. Storage and Protection.

1.2 RELATED REQUIREMENTS

A. Section 01 45 00 Quality Control

1.3 PRODUCTS

A. Products include material, equipment, and systems.

B. Comply with Specifications and referenced standards as minimum requirements.

C. Components required to be supplied in quantity within a Specification section shall be the same, and shall be interchangeable.

D. Do not use materials and equipment removed from existing structure, except as specifically required, or allowed, by Contract Documents.

1.4 TRANSPORTATION AND HANDLING

A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.

C. Immediately on delivery, inspect shipment to assure:

1. Product complies with requirements of Contract Documents and reviewed submittals.

2. Quantities are correct.

3. Accessories and installation hardware are correct.

4. Containers and packages are intact and labels legible.

5. Products are protected and undamaged.

1.5 STORAGE AND PROTECTION

A. Handle and store materials for construction, products of demolition, and other items to avoid damage to adjacent facilities and equipment.

B. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.

C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter. Cover such material to prevent material from being blown away.

D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.

E. Provide Material Safety Data Sheets (MSDS) for all products which may produce unpleasant or noxious odors. Contractor shall provide for adequate venting if needed.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 64 00

RECEIPT OF OWNER FURNISHED MATERIALS

PART 1 - GENERAL

1.1 SUMMARY

A. This section describes receipt, unloading, transportation, storage, and handling of materials furnished by the Owner for this project. This includes the following:

TABLE 1

ITEM NUMBER	MATERIAL DESCRIPTION	QTY	UNIT	APPROXIMATE VALUE (EA UNIT)	APPROXIMATE WEIGHT/ DIMENSIONS	FOB POINT & AVAILABILITY DATE
1	3-inch SCH 80 Fusion Bonded Epoxy Coated Steel Pipe	5032	LF	$25.00	50,000 lbs 46’ x 8’ x 8’	Gambell, AK Mid-June
2	3-inch Ball Valves	4	EA	$520.00	NA	Gambell, AK Mid-June
3	3-inch Check Valves	4	EA	$365.00	NA	Gambell, AK Mid-June
4	1-inch Pressure Relief Valves	2	EA	$765.00	NA	Gambell, AK Mid-June
5	3-inch Steel Flanges	14	EA	$30.00	NA	Gambell, AK Mid-June
6	1-inch Steel Flanges	4	EA	$20.00	NA	Gambell, AK Mid-June
7	3-inch Gaskets	14	EA	$20.00	NA	Gambell, AK Mid-June
8	1-inch Gaskets	4	EA	$10.00	NA	Gambell, AK Mid-June
9	3-inch Dielectric Flange Gasket Kits	2	EA	$25.00	NA	Gambell, AK Mid-June
10	3-inch Flange Bolt Kits	16	EA	$90.00	NA	Gambell, AK Mid-June

11	1-inch Flange Bolt Kits	4	EA	$55.00	NA	Gambell, AK Mid-June
12	3-inch 90 Degree Fittings	18	EA	$31.00	NA	Gambell, AK Mid-June
13	1-inch 90 Degree Socket Fittings	6	EA	$5.00	NA	Gambell, AK Mid-June
14	1-inch Socket Weld-O-Let Fittings	4	EA	$6.00	NA	Gambell, AK Mid-June

Table Notes:

1. All other material required for the proper execution and construction of the project shall be provided by the Contractor.

1.2 DELIVERY OF OWNER FURNISHED MATERIAL

A. Material furnished by the Owner shall be delivered and transferred to the Contractor at FOB points specified in the Table above.

B. Coordinate with manufacturer for storage and acceptance receipt.

1.3 ACCEPTANCE OF OWNER FURNISHED MATERIAL

A. The Contractor shall (1) receive and accept the materials at the delivery point specified; (2) inspect all materials to confirm that the materials delivered are in good condition and the quantities are correct; and (3) execute a receipt for all materials accepted from the Owner. Delinquency in signing material receipts may result in delayed progress payments.

B. All material furnished by the OWNER shall comply with the plans and specifications. All materials which do not meet specifications or are received broken or damaged shall be culled by the Contractor and a report made to the OWNER and Engineer within 5-days of receipt of material as to the number culled and reason for culling.

C. If the OWNER fails to deliver the materials set forth in Table 1, the Contractor's sole remedy and compensation shall be an extension of time not greater than the delay. Any such time extension shall be requested in writing by the Contractor.

1.4 RECEIPT, TRANSPORTING AND STORING OWNER FURNISHED MATERIAL

A. The Contractor shall receive, transport, and protect all material in accordance with the manufacturer’s instructions. All material, which is not installed immediately upon receipt, shall be stored in accordance with the manufacturer’s instructions in a temperature controlled environment (above freezing).

B. All handling charges required for receiving, loading, unloading, hauling, transporting or storing the material shall be provided by the Contractor.

C. Any demurrage charges of or other fees incurred as a result of the Contractor not receiving, moving and storing the material shall be paid by the Contractor. If the OWNER is required to pay these fees, the fees will be deducted from the first Contractor pay request.

D. The Contractor shall provide proper equipment as necessary to load, unload, and transport OWNER furnished material. The equipment shall be rated as required to properly handle the material.

1.5 DAMAGE TO OWNER FURNISHED MATERIAL

A. Upon receipt of the materials as specified above, the Contractor shall become solely responsible for their care, transportation, storage, and protection. In the event materials are damaged, lost, stolen, or destroyed by any cause whatsoever after the Contractor has received them, their repair or replacement shall be entirely at the Contractor's expense.

B. All material replaced by the Contractor shall be equal to the material provided by the OWNER and shall meet the material purchase specifications.

1.6 STORAGE OF OWNER FURNISHED MATERIAL

A. The Contractor shall provide storage for all OWNER furnished material and shall be responsible for transporting the material to the jobsite as required to support the construction schedule.

1.7 EXCESS MATERIALS

A. All materials furnished by the OWNER in excess of those actually used in the construction of the project shall be stored in accordance with the manufacturer’s instructions until the OWNER collects them. The Contractor shall provide a complete list of excess materials to the Owner and Engineer.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 71 23.16

CONSTRUCTION SURVEYING

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This section is intended to establish a standard minimum level of acceptable field survey specifications and procedures to properly control the construction project.

B. The Contractor shall furnish all labor and materials necessary to perform all surveying and construction staking essential for the completion of construction in conformance with the drawings, specifications, and other Contract Documents. The Contractor shall perform all the necessary calculations required to accomplish the work.

C. It is the Contractor's responsibility to ensure proper survey methods and procedures are followed. The Contractor, at no additional expense to AEA, shall correct any errors resulting from the survey. Any method conflicting with these survey specifications shall be approved by the Project Manager prior to its use.

D. All survey work performed shall be under the direct supervision of a Professional Land Surveyor registered in the State of Alaska.

1.2 RELATED SECTIONS

A. Section 01 78 39 Project Record Documents

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 PROJECT CONTROL

A. General: AEA will provide reference horizontal and vertical control data to facilitate construction staking. It is the Contractor's responsibility to establish and check all survey control prior to any staking activity to ensure that the Project is properly located and constructed according to the Contract Documents. If discrepancies are found, Project Manager shall be notified separately and immediately. The Contractor is responsible for preserving and protecting all line stakes, grade stakes, reference points, and hubs. In the event of their loss or destruction the Contractor shall pay all costs for their replacement. The Contractor shall replace any monument that exists within the construction limits if it is disturbed or removed due to construction project activity. All monumentation disturbed or removed shall be replaced with the same type of monument or a monument approved by the Project Manager.

B. Horizontal Control Accuracy: The maximum permissible linear error allowed in establishing horizontal control is 1:5000 feet. The maximum error allowed in unadjusted angular closure shall be calculated by the formula "30 multiplied by the square root of N"

where the term “N” signifies the number of transit setups in the traverse and “30” signifies 30 seconds.

C. Vertical Control

1. Elevations shall originate from the datum provided in the Contract Drawings. All level circuits run to establish temporary benchmarks (TBM) shall have an accuracy no less than the value computed by the equation “0.1 feet multiplied by the square root of the distance in miles.” Foresights and backsights shall be balanced. The maximum sighting distance shall not exceed 300 feet. All leveling circuits establishing TBMs shall be adjusted using recognized standard surveying adjustment methods. Side shots to establish elevations on TBMs shall not be allowed.

2. A minimum of two known benchmarks shall be used when establishing TBMs to verify correct elevation information. A sufficient number of TBMs shall be set to control the Project with a maximum spacing of 800 feet. A TBM shall not be located further than 200 feet outside the construction limits of the Project. All TBMs shall be located and be comprised of sufficient material such that their integrity will not be compromised throughout the life of the Project.

3.2 FIELD NOTES

A. The Contractor shall supply uniform, hard backed, rite in the rain survey field books. The Project Manager has the right to inspect the field books at any time during the Project. All field books shall be identified on the outside spine. Each book shall be indexed and its contents referred to by page number. The date, weather condition, survey crew personnel, and instruments used shall be shown at the beginning of each day’s notes. All field books containing field notes shall be sealed and signed by a Registered Professional Land Surveyor on the title page of each field book. Copies of all field books used in the process of work shall be submitted to the Project Manager upon completion of the work.

B. All observations shall be recorded directly into project field books. All field books shall be in pencil. All field notes and drawings shall be completed and reduced before acceptance by the Project Manager. Control sketches and traverse data shall be graphic and show measured and recorded distances. The source of record shall be stated. Stationing shall increase from the bottom of the page to the top. Notes shall be neat, legible, precise and sufficiently detailed. The Project Manager may stop all survey work until the notes are brought into conformance with this specification. A copy of each day’s field notes shall be reduced and available to the Project Manager by 12:00 PM the following workday. The Project Manager may issue a stop work order at the Contractor’s expense if the field notes are not delivered, when requested, within this time frame.

C. Erasures of errors in field books will not be accepted. A line shall be drawn through those portions of notes in error, leaving the original note legible, and the correction shall be noted above the original entry. Corrections shall be initialed by the party chief and dated. Where appropriate, a note explaining the error shall be included.

D. Failure on the part of the Contractor to keep and maintain complete and accurate field notes as required herein shall be sufficient reason to withhold payment for those items of work where survey is required. No final Project payment will be made to the Contractor until copies of the field books have been submitted to and approved by the Project Manager.

3.3 PARTY CHIEF'S DAILY DIARY

A. The survey party chief shall keep a factual daily diary of all work performed by the survey crew on this Project. The diary shall contain the following information: date, crew, type and location of work performed, work accomplished, orders from the Project Manager and signature.

B. This record shall be kept on the Project Site and submitted to the Project Manager upon request. A copy of the diary shall be submitted to AEA upon completion of the Project.

3.4 MISCELLANEOUS CONSTRUCTION STAKING

A. The Contractor shall provide sufficient stakes for the adequate control of all structures and incidental construction not specifically covered above. A staking diagram with respect to fuel line stations and measurements for pay quantities shall be maintained in the field notes. Other items such as horizontal and vertical control shall be shown in the field book and shall be governed by procedures established in previous articles of this specification.

3.5 ELECTRONIC DATA COLLECTION AND RADIAL SURVEYS

A. When electronic data collection is used for radial stakeout, the following criteria shall be maintained and submitted:

1. A standard field book containing: date, weather conditions, instrumentation used, crew, project description and sketch, listing of turning points and control points used, and other information needed to reconstruct the survey activity.

2. A printout of the unedited output from the data collector or a copy of the field book entries to include: code descriptors, horizontal circle information, vertical circle information based on zenith angle and slope distance expressed in feet. Also, a sheet containing the explanation of the codes used to identify the various shots.

3. A printout of the reduced and adjusted (ratios of error and magnitude of misclosure shown) data represented by x, y, and z coordinates, plus necessary descriptive information.

4. A plot and or line drawing showing the control points, point occupied, and the radial observations at a scale large enough to read the point number, elevation, point descriptions, and coordinates.

5. If cross sectional data is collected by radial methods a printout/plot of the following data is required:

a. Each point identified as it relates to the centerline station of alignment.

b. The distance offset from centerline of alignment.

c. The elevation and description of the shot.

d. A cross section line plot of each station with the individual shots averaged out to produce the final interpolated cross section.

e. The vertical angle and distance to the TBM's used for control and the instrument height, and the height of the prisms.

3.6 AS-BUILT SURVEYS, FIELD NOTES AND PROJECT RECORD DOCUMENTS

A. As-built survey measurements shall be recorded on a clean set of blueline drawings deemed the Project Record Documents and shall show changes and improvements which vary from the dimensions, lines, grades, locations and materials as shown on the Contract Drawings. The as-builts shall also include swing ties to all pertinent existing structures, in accordance with Section 01 78 39.

B. Survey measurements shall be taken, field notes shall be kept, and accuracies shall be attained in accordance with the specifications of this section.

C. When electronic data collection is used to obtain as-built information, the following information shall be maintained and submitted:

1. A printout of the unedited, raw data from the data collector

2. An explanation of all codes and abbreviations used

3. A printout of the x, y, and z coordinates

4. An electronic file, suitable for insertion into AutoCAD, with as-built features indicated by horizontal position, description, and elevation, based on Project coordinates.

   Electronic data collection used to obtain as-built information does not relieve the Contractor's obligation to maintain Project Record Documents or the obligation to obtain swing ties.

D. A copy of all survey field notes shall be submitted with each pay request. Pay requests shall not be processed until the survey notes are received by the Project Manager and the Project Manager is provided evidence that the Project Record Documents are current and in the required condition.

E. Project Record Documents shall be redlined and kept current. They shall be kept ready for review for when the Project Manager, at his/her option, requests that the Project Record Documents be submitted with the survey field notes for the pay request.

F. Project Record Documents shall be submitted along with a copy of the field notes to the Project Manager at the completion of construction activity, in accordance with Section 01 78 39 Project Record Documents, of these Specifications.

G. A completed FEMA Elevation Certificate (EC) FEMA form 086-0-33 shall be submitted prior to the substantial completion inspection.

END OF SECTION

SECTION 01 77 19

CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Administrative provisions for Substantial Completion and for Final Acceptance.

B. Closeout Procedures.

C. Final Cleaning.

D. Project Record Documents.

E. Warranties and Bonds.

F. Spare Parts and Maintenance Materials.

1.2 RELATED REQUIREMENTS

A. Division 00 Bidding and Contract Requirements

B. Document 00 70 00 General Conditions

C. Section 01 29 73 Schedule of Values

D. Section 01 33 00 Submittal Procedures

E. Section 01 78 39 Project Record Documents

1.3 FINAL CLEANING

A. Execute final cleaning prior to Substantial Completion inspection.

B. Use materials which will not create hazards to health or property, and which will not damage surfaces. Follow manufacturer's recommendations.

C. Remove waste, debris and surplus materials from the site.

1.4 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

1.5 PROJECT RECORD DOCUMENTS

A. Comply fully with the requirements of Section 01 78 39 Project Record Documents.

1.6 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.

B. Deliver to Project site and place in location as directed, obtain receipt prior to final payment.

1.7 WARRANTIES

A. As specified in Section 00 70 00 – General Conditions Article 12.7, Contractor shall warranty all work for a period of 1 year after substantial completion, unless longer warranty periods are specified for individual products or pieces of work.

B. As a condition precedent to Final Payment, all guaranties and warranties as specified under various sections of the Contract Documents shall be obtained by the Contractor and delivered to the Project Manager, in duplicate giving a summary of guarantees attached and stating the following in respect to each:

1. Character of Work affected.

2. Name of Subcontractors.

3. Period of Guarantee.

4. Conditions of Guarantee.

C. Delivery of said guarantees and/or warrantees shall not relieve the Contractor from any obligations assumed under any other provision of the Contract.

D. If, within any guarantee period, repairs or changes are required in connection with the guaranteed Work, which in the opinion of AEA is rendered necessary as the result of the use of materials, equipment or workmanship, which are defective, or inferior, or not in accordance with the terms of the Contract, the Contractor shall, upon receipt of notice from the Project Manager, and without expense to AEA, proceed within seven (7) calendar days to:

1. Place in satisfactory conditions in every particular all of such guaranteed Work, correct all defects therein, and make good all damages to the structure or site.

2. Make good all Work or materials, or the equipment and contents of structures or site disturbed in fulfilling any such guarantee.

E. If the Contractor, after notice, fails to comply with the terms of the guarantee, AEA may have the defects corrected and the Contractor and Contractor's Surety shall be liable for all expenses incurred in connection therewith, including Engineer's fees.

1.8 Operations and Maintenance Date (O&M Manuals)

A. Submit an electronic copy of draft O&M manuals ten (10) working days prior to Substantial Completion inspection. Revise and resubmit as necessary based on Engineer mark-ups.

B. The Engineer shall approve the draft O&M manuals for use in on-site facility training prior to completion of a Substantial Completion inspection.

C. Submit four (4) sets of final O&M manuals within 15 days of Substantial Completion inspection or date of approval of draft operations and maintenance manuals.

D. Submit data in bound 8-1/2 x 11 inch text pages, ring binders with durable plastic covers.

E. Prepare binder cover with printed title “OPERATIONS AND MAINTENANCE DATA”, title of project, and subject matter of binder.

F. Binder contents shall be divided with plastic page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

G. Contents: Prepare a table of contents for each volume, with each Product or system description identified, enclosed in a plastic text sheet sleeve, in three parts as follows:

1. Part 1: Directory, listing names, addresses and telephone numbers of A/E, Contractor, subcontractors, and major equipment suppliers.

2. Part 2: Operation and maintenance instructions, arranged by system process flow and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of suppliers. Identify the following:

    a. Significant design criteria.

    b. List of equipment.

    c. Parts list for each component.

    d. Operating instructions.

    e. Maintenance instructions for equipment and systems.

3. Part 3: Project documents and certificates, including the following:

    a. Shop drawings and Product data.

    b. Pressure test reports.

    c. Certificates.

d. Copies of Warranties and Bonds.

1.9 ON-SITE FACILITY TRAINING

A. Contractor shall conduct on-site training of the operation of the new facilities for the facility owners and/or operators. Training must be completed prior to substantial completion inspection. Notify the Project Manager fifteen (15) working days prior to training date.

B. Facility Training shall include:

1. A thorough walk through of the facility and operational components.

2. Presentation of the O&M Manuals including

i. Discussion of where the O&M Manuals will be kept

ii. Discussion of required facility maintenance

iii. Discussion of the product components

iv. Discussion of the operational procedures and troubleshooting alarms

3. Discussion of emergency spill response procedures

C. Each attendee shall demonstrate competency at transferring fuel, activating and deactivating and Emergency Shut Down, dispensing fuel, opening and closing appropriate valves for fuel delivery.

D. Training shall be approximately two (2) four (4) hour sessions. Total training duration shall be a minimum of eight hours.

1.10 SUBSTANTIAL COMPLETION SUBMITTALS

Submit the following prior to requesting a Substantial Completion Inspection:

A. Project Record Documents: Under provisions of Section 01 78 39.

B. Operation and Maintenance Data (O&M Manual): Under provisions of Section 01 77 19.

C. Spare Parts and Maintenance Materials: Under provisions of Section 01 77 19.

1.11 SUBSTANTIAL COMPLETION

A. Substantial Completion shall be considered by AEA when:

1. Written notice is provided seven (7) days in advance of inspection date.

2. List of items to be completed or corrected is submitted.

3. Equipment and systems have been tested, adjusted, balanced and are fully operational.

4. Operation of system has been demonstrated to the Project Manager.

5. Certificates of Inspection for required inspections have been submitted.

6. Project Record Documents for the Work or the portion of the Work being accepted are submitted and approved.

7. Spare parts and maintenance materials are turned over to AEA.

B. Should AEA's inspection find that the Work is not substantially complete, Project Manager will promptly notify Contractor in writing, listing observed deficiencies.

C. Contractor shall remedy deficiencies and send a second written notice of Substantial Completion.

D. When AEA finds that the Work is substantially complete the Project Manager will prepare a certificate of Substantial Completion in accordance with provisions of General Conditions.

1.12 FINAL COMPLETION

A. When Contractor considers Work is complete, submit written certification:

1. Contract Documents have been reviewed.

2. Work has been inspected for compliance with Contract Documents.

3. Work has been completed in accordance with Contract Documents, and deficiencies listed with certificate of Substantial Completion have been corrected.

4. Work is complete and ready for final inspection.

B. Should AEA's inspection find the Work incomplete, the Project Manager will promptly notify Contractor in writing listing observed deficiencies.

C. Contractor shall remedy deficiencies and send a second certification of Final Completion.

D. When AEA finds that the Work is complete, the Project Manager will consider closeout submittals.

1.13 REINSPECTION FEES

A. Should status of completion of Work require more than two re-inspections by AEA due to failure of Work to comply with Contractor's responsibility, AEA will deduct the cost of re-inspection from final payment to Contractor as provided in the Contract Documents.

B. Re-inspection fees shall not exceed $5,000 for any one re-inspection.

1.14 CLOSEOUT SUBMITTALS

A. Project Record Documents: Under provisions of Section 01 78 39.

B. Warranties and Bonds: Under provisions of Section 01 77 19.

C. Operations and Maintenance Manuals: Under provisions of Section 01 77 19.

D. Evidence of Payment: In accordance with Conditions of the Contract.

E. Certificate of Release of Liens.

F. Contractor's Statement Concerning Claims.

G. Miscellaneous

1. As-Built Construction Schedule versus Baseline Schedule.
2. Any progress photos pertinent to substantial completion/final completion.
3. Final survey notes not previously transmitted.

1.15 STATEMENT OF ADJUSTMENT OF ACCOUNTS

A. Submit final statement reflecting adjustments to Contract Price indicating:

1. Original Contract Price.
2. Previous Change Orders.
3. Changes under allowances.
4. Changes under Unit Prices.
5. Deductions for uncorrected Work.
6. Penalties and bonuses.
7. Deductions for liquidated damages.
8. Deductions for re-inspection fees.
9. Other adjustments to Contract Price.
10. Total Contract Price as adjusted.
11. Previous payments.
12. Sum remaining due.

B. AEA will issue a final Change Order reflecting all remaining adjustments to Contract Price not previously made by Change Orders.

C. See Section – 01 29 73 for minimum value for Contract Closeout Submittals.

1.16 APPLICATION FOR FINAL PAYMENT

A. Submit Application for Final Payment in accordance with provisions of the General Conditions of the Contract.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Maintenance of Record Documents and Samples.

B. Submittal of Record Documents and Samples.

1.2 RELATED REQUIREMENTS

A. Section 00 70 00 General Conditions: Record Documents.

B. Section 01 33 00 Submittal Procedures

C. Section 01 33 23 Shop Drawings, Product Data, and Samples

D. Section 01 77 19 Closeout Requirements

1.3 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. In addition to requirements in General Conditions, maintain at the site for the Authority one accurate record copy of:

1. Contract Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed Shop Drawings, product data, and samples.
6. Survey and field records.
7. Field test records.
8. Inspection certificates.
9. Manufacturer's certificates.

B. Prior to Substantial Completion, provide original or legible copies of each item maintained by Contractor as listed in 1.3.A above.

C. Delegate responsibility for maintenance of Record Documents to one person on Contractor's staff.

D. Promptly following award of Contract, secure from AEA, at no cost to the Contractor, one complete set of all Documents comprising the Contract.

E. Immediately upon receipt of job set described above, identify each Document with title "RECORD DOCUMENTS - JOB SET".

F. Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage for record documents and samples.

G. Label and file record documents and samples in accordance with section number listings in table of contents of this Project manual. Label each document "PROJECT RECORD" in neat, large, printed letters.

H. Maintain record documents in a clean, dry and legible condition. Do not use record documents for construction purposes.

I. Use all means necessary to maintain job set of Record Documents completely protected from deterioration and from loss and damage until completion of Work and transfer of recorded data to AEA.

J. Keep record documents and samples available for inspection by AEA.

K. Upon request by AEA and at time of each Application for Payment submit complete collection of record documents to Authority for review and duplication as desired.

L. Authority's approval of current status of Record Documents will be prerequisite to AEA's approval of requests for progress payments and request for final payment.

1. Prior to submitting each request for progress payment, secure AEA's approval of Record Documents as currently maintained.

2. Prior to submitting request for Final Payment, obtain Authority's approval of final Record Documents.

M. Do not use job set for any purpose except entry of new data and for review and copying by AEA.

1.4 RECORDING

A. Record information on a set of black line opaque Drawings, and in a copy of a Project manual.

B. Using felt tip marking pens or colored pencil, maintaining separate colors for each major system, clearly describe changes by note and by graphic line, as required. Date all entries. Call attention to entry by a "cloud" around area or areas affected.

C. Thoroughly coordinate all changes within Record Documents, making adequate and proper entries on each Specification Section and each sheet of Drawings and other Documents where such entry is required to properly show change or selection.

D. When a change within Record Documents is referenced to another document, such as a DC/VR, Shop Drawing or Change Order, attach a copy of the referenced document to the respective Record Drawing or Record Specification where the entry is made.

E. Contract Drawings and Shop Drawings: Legibly mark each item to record actual construction, including:

1. Measured depths of elements of foundation in relation to finish first floor datum, accurate to the nearest inch.

2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements, accurate to the nearest inch.

3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of construction.

4. Field changes of dimension and detail.

5. Changes made by modifications.

6. Details not on original Contract Drawings.

7. References to related Shop Drawings and modifications.

8. Clearly label all changes and show dimensions to establish size and location. All identifications shall be sufficiently descriptive to relate reliably to Specifications.

F. Specifications: Legibly mark each item to record actual construction, including:

1. Manufacturer, trade name, and catalog number of each product actually installed, particularly optional items and substitute items.

2. Changes made by Addenda and modifications.

G. Other Documents: Maintain manufacturer's certifications, inspection certifications, and field test records required by individual Specifications sections.

1.5 SUBMITTALS

A. Upon submittal of the completed Record Documents, make changes in Record Documents as required by AEA.

B. Transmit with cover letter in duplicate, listing:

1. Date.

2. Authority’s Project title and number.

3. Contractor's name, address, and telephone number.

4. Number and title of each record document.

5. Signature of Contractor or authorized representative.

C. Final Record Documents shall include both hard copies and digitally scanned copies in .pdf format (high quality grayscale scans, minimum 200 pixels/inch). Scans shall include front and back of drawings/documents where information occurs on both sides.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 94 00

DECOMMISSIONING FUEL PIPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Procedures for Cleaning and Decommissioning the Fuel Piping System.

1.2 RELATED SECTIONS

A. Section 01 11 13 Work Covered by Contract Documents

B. Section 01 33 00 Submittal Procedures

C. Appendix A – Soils Management Plan

1.3 REFERENCES

A. 18 AAC 75 Article 3 Discharge, Reporting, Cleanup, & Disposal of Oil and other Hazardous Substances.

B. 18 AAC 75 Section 370 Soil Storage.

C. 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response

D. 40 CFR Chapter I, Subchapter I – Solid Wastes, Parts 260 through 265

E. 49 CFR Subtitle B, Chapter I, Subchapter A – Hazardous Materials and Oil Transportation, and Subchapter C – Hazardous Material Regulations

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00 Submittal Procedures.

B. Provide a Health and Safety Plan which includes the Work Plan for decommissioning of fuel piping as required by this Section. The Work Plan shall include a detailed description of how the fuel will be removed, provide for the disposal of the residual fuel and liquid, and detail the process for abandoning the existing fuel piping in place.

1.5 DECOMMISSIONING AND DISPOSAL REQUIREMENTS

A. Decommission existing Gambell fuel system piping as shown on Plans and as required for new construction. Above ground piping identified for removal on the Plans or piping encountered in the excavation shall be removed and disposed of in accordance with this specification. Other piping shall be decommissioned and abandoned in place per this specification and in accordance with the approved Work Plan.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Personal Protection Equipment must be appropriate for hazardous materials encountered on the work site and meet requirements in 29 CFR Subpart I, Sections 1910.132-1910.139.

B. Contractor shall maintain a site-specific Health and Safety Plan that includes, but is not limited to:

1. List of key personnel

2. Health and Safety Risk Analysis that meets 29 CFR Subpart I, Section 1910.120(c).

3. Comprehensive Work Plan

4. Confined Space Entry Plan

5. Site Control Measures

6. Health and Safety Training Requirements

7. Standard Operating Procedures

8. Emergency Response Procedures

PART 3 - EXECUTION

3.1 PIPE DECOMMISSIONING AND DISPOSAL

A. All fuel and residual liquid shall be completely removed from existing piping in accordance with the Contractors approved Work Plan.

1. Existing Fuel Piping from Barge Header to Bulk Fuel Tank Farm: Contractor shall purge all remaining fuel and residual liquid from the existing lines, cap pipe ends, and abandon existing below grade fuel piping in place. All above grade piping shall be removed and properly disposed of offsite by the Contractor.

B. The Contractor shall contain, filter and transfer all useable fuel removed from piping to the respective entities tanks. Any unusable fuel or sludge shall be assumed to be hazardous waste and disposed of by the Contractor in accordance with this Specification.

3.2 HAZARDOUS WASTES

A. The hazardous nature of containerized sludge will be based upon composite testing performed by the Contractor in accordance with 40 CFR 261.

B. All waste that is deemed hazardous in accordance with 40 CFR 261 shall be manifested in accordance with 40 CFR 262 and shipped in accordance with US DOT 49 CFR parts 100-199 regulations. The Contractor shall use EPA Uniform Hazardous Waste Manifest, OMB No. 2050-0039, EPA form 8700-22.

3.3 FIELD QUALITY CONTROL

A. All monitoring equipment must be calibrated daily in accordance with the manufacturer's requirements.

B. The Contractor Safety Officer is responsible for implementing the OSHA requirements for worker safety on the work site. This includes, but is not limited to, confined entry, atmospheric monitoring, and proper personal protection equipment.

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Shop fabricated steel items including miscellaneous metal fabrications not part of the structural building framing system.

B. Miscellaneous metal fabrications and fasteners.

C. Hot dipped galvanized metal fabrication such as containment dike access stairs, guardrails, handrails, platform supports, tank access ladders, platforms and guardrails.

D. Other hot dipped galvanized metal fabrications where specified or indicated.

1.2 RELATED REQUIREMENTS

A. Section 01 33 00 – Submittal Procedures

B. Section 09 96 00.02 – Hot Dipped Galvanized Coatings

1.3 REFERENCE STANDARDS

A. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

E. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

F. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.

G. ASTM A325M - Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Tensile Strength (Metric).

H. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

I. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; American Welding Society.

J. AWS D1.1/D1.1M - Structural Welding Code - Steel; American Welding Society.

K. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; International Accreditation Service, Inc.

L. SSPC-Paint 15 - Steel Joist Shop Primer; Society for Protective Coatings.

M. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings.

N. SSPC-SP 2 - Hand Tool Cleaning; Society for Protective Coatings.

1.4 SUBMITTALS

A. See Section 01 33 00 – Submittal Procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

C. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

D. Welders' Certificates: Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.

E. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Fabricator must be a firm experienced in producing metal fabrications similar to those indicated for this project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

2. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

PART 2 - PRODUCTS

2.1 MATERIALS - STEEL

A. Steel Wide Flange Shapes: ASTM A992.

B. Miscellaneous Steel Sections and Plate: ASTM A36/A36M.

C. Steel Tubing: ASTM A500, Grade B cold-formed structural tubing.

D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black and hot-dip galvanized finish, as indicated.

E. Bolts, Nuts, and Washers: ASTM A325 (ASTM A325M), Type 1, galvanized to ASTM A153/A153M where connecting galvanized components.

F. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

G. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

H. Touch-Up of Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

I. GS Metals Corp. Product Grip Strut Safety Grating with fasteners and saddle clips by manufacturer: Galvanized finish.

J. Aluminum Plate Materials: ASTM B209, 5083-H321 Marine Grade Aluminum.

2.2 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Continuously seal joined members by continuous welds.

D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.3 FABRICATED ITEMS

A. Pipe Supports: Steel members, connections, and fasteners as detailed in Drawings; hot-dipped galvanized finish.

2.4 FINISHES - STEEL

A. All steel metal fabrications not part of the Pipelines shall be hot dipped galvanized as noted in the Drawings and in Section 09 96 00.02 Hot dipped Galvanized Coatings.

B. Piping shall be coated as identified in Section 09 96 00.01 Plant and Field Applied Fusion Bonded Epoxy.

C. Bollard: Bollards shall be coated with single component, moisture cure, polyurethane (SC-MC-U) zinc primer. Use single component, moisture cure, aliphatic polyurethane (SC-MC-ALIP-U) caution yellow paint for the top coats.

1. Paint bollards with one coat of primer and two top coats of caution yellow. Ensure that the surfaces are free of all oil, grease, dirt, abrasive residues, and all other foreign substances prior to application of coatings. Maintain the surface to be coated at a minimum temperature of 5 degrees F above the dew point for the duration of coating application. Adhere to these preparation requirements in addition to any requirements by the coating manufacturer. Repair any nicks, scratches, or other paint damage resulting from shipping and handling at the site.

2.5 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

3.3 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Perform field welding in accordance with AWS D1.1/D1.1M.

D. Obtain approval from Architect / Engineer prior to site cutting or making adjustments not scheduled.

3.4 TOLERANCES

A. Maximum Offset From True Alignment: 1/4 inch.

B. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Timber sleepers.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.

2. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings.

2.3 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Sleepers.

B. Dimension Lumber Miscellaneous Items: Construction or No. 2 grade lumber of any species.

C. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

D. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.4 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

2.5 METAL FRAMING ANCHORS

A. Allowable design loads, as published by manufacturer, shall meet or exceed those indicated or of basis-of-design products. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

1. Use for interior locations unless otherwise indicated.

C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.

1. Use for wood-preservative-treated lumber and where indicated.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Do not splice structural members between supports unless otherwise indicated.

C. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

D. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.

2. Use copper naphthenate for items not continuously protected from liquid water.

3.2 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION

SECTION 09 96 00.01

PLANT AND FIELD APPLIED FUSION BONDED EPOXY (FBE)

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This Specification defines the minimum requirements for the surface preparation, materials, application, and inspection of plant and field applied fusion bonded epoxy (FBE) for the exterior steel surfaces of the Alaska Energy Authority Gambell Fuel Pipelines.

1.2 RELATED REQUIREMENTS

A. Section 01 33 00 Submittal Procedures

B. Section 09 96 00.02 Hot Dipped Galvanized Coatings

C. Section 23 11 00 Facility Fuel Piping

1.3 GENERAL REQUIREMENTS

A. In this Specification, the term Coating Contractor is applicable to both the Coating Contractor that applies the plant FBE as well as the Coating Contractor that applies the field coatings as appropriate.

B. The Coating Contractor shall furnish all labor, materials, and equipment necessary for the heating, cleaning, abrasive blasting, ventilation, coating, curing, and inspection of surfaces to be coated. It is the responsibility of the Coating Contractor to perform all work in a manner meeting the requirements of all health and safety regulations applicable to the specific work site.

C. The Coating Contractor (company) shall specialize in performing the type of work described in this Specification. The Coating Contractor must have a minimum of five (5) years of recent documented experience in surface preparation and applying high-performance FBE coatings.

D. The Coating Contractor shall adhere to all pertinent owner, federal, state and local safety requirements, codes and regulations.

E. The Coating Contractor shall use the best practices of the trade, and when not in conflict with these Specifications use the applicable portions of SSPC-PA1. The Coating Contractor shall also follow NACE SP0394-2013 when not in conflict with this Specification or the Coating Manufacturer’s recommendations.

F. The Coating Contractor shall coordinate the sequence and scheduling of cleaning, coating, and inspection work to avoid conflicts with other project milestones.

G. It is the responsibility of the Coating Contractor to meet the requirements of this Specification, to use equipment capable of meeting these requirements, and to perform all inspections necessary to ensure compliance to this Specification.

H. If a conflict exists between this Specification, the referenced standards or the Coating Manufacturer's recommendations, promptly notify the Engineer in writing and the Engineer shall determine which applies. In general, the most stringent requirements will apply.

I. The Coating Contractor shall follow the safety procedures as recommended by the Coating Manufacturer and work in a well-ventilated area. The Coating Contractor shall provide, and require workers to use, impervious clothing, gloves, face shields, and all other appropriate protective clothing that is necessary to prevent eye and skin contact with the abrasive blast and coating materials.

J. The Coating Contractor shall use suitable and approved equipment for the intended purpose, the equipment shall be properly grounded and have the required safety equipment and/or devices. The equipment shall be kept in satisfactory working condition to permit proper operation.

K. The Coating Contractor shall correct any work which the Coating Inspector or Owner's Representative has determined to be non-compliant with the requirements of this Specification. Corrections for non-compliant work shall be made without additional cost to the Owner. Failure to discover or reject defective work or materials does not constitute acceptance of such work or materials.

L. The Coating Contractor shall document and maintain accurate quality control records. Records shall be kept for a minimum of five (5) years on all aspects of the coating work, including the results of all quality control testing.

M. The plant shall have an operational heater capable of removing moisture from the pipe prior to abrasive blasting and coating application.

N. Any fluidized beds must have magnets adequate to remove all iron and steel contamination from new and recycled powder.

O. The Coating Contractor shall have a laboratory with qualified personnel and the necessary equipment to perform all quality assurance tests required by this Specification and the Coating Manufacturer. Alternatively, the Coating Contractor may contract an outside laboratory to perform these tasks. All equipment must be in good working order and properly calibrated. Testing must be completed in a timely manner to avoid disrupting the production schedule.

PART 2 - PRODUCTS

2.1 PIPE

A. The Coating Contractor shall visually inspect and accept responsibility for each pipe length. Any damage, flaws, corrosion, dents, gouges, bevel damage or other defects noted shall be recorded and reported to the Owner within 24 hours.

B. All pipe shall be visually checked for external and internal contamination such as oil, grease, temporary coatings, salts, or other substances. Record the pipe condition and issue a non-conformance report that identifies all discrepancies, damage, concerns and non-conformance items for the Owner to address.

C. Proper equipment for unloading, handling, and temporary storage of pipe shall be used to avoid any damage to the pipe or pipe ends. Any pipe damaged by the coating contractor shall be repaired in accordance with the Owner's requirements at the Coating Contractor's expense.

D. Damaged and rejected pipe shall be stacked separately from undamaged pipe and clearly identified.

E. All internal Pipe Manufacturer's stencils shall be maintained, including but not limited to, length and joint/heat identification information. Any damaged stencils shall be identified and correctly replaced. After coating, markings per API requirements shall be marked on each pipe. At a minimum, markings shall include, pipe size and grade, date coated, coating sequence number, applicator, and Coating Manufacturer.

F. Pipe protective end caps shall be removed prior to any coating activities. Protective end caps (new or existing) shall be installed after the coating activities are completed.

2.2 COATING MATERIALS

A. The following coating system, or Engineer approved equal, shall be applied to achieve the specified Dry Film Thickness (DFT):

Coating System - Valspar		
Coating Type	**Coating Thickness (Mils)**	
	Minimum (DFT)	**Maximum (DFT)**
Gas Pipeline		
FBE – Pipeclad 2000 (Green)	12	16
ARO – Pipeclad 2040 Flex (Black)	12	16
Total DFT	**24**	**32**
Diesel Pipeline		
FBE – Pipeclad 2000 (Green)	12	16
ARO – Pipeclad 2040 Flex (Brown)	12	16
Total DFT	**24**	**32**

B. The Coating Contractor shall, at a minimum, obtain the following data from the Coating Manufacturer to be followed including frequency of testing for each category: gel time, density, moisture analysis, particle size, shelf-life, glass transition temperatures, and heat of reaction.

C. Coating materials shall be delivered in sealed, labeled containers bearing the Coating Manufacturer's name, brand designation, specification number, batch or lot number, color, and date of manufacture.

D. Coating materials beyond manufacturer's shelf life limits shall not be used.

E. Do not tint, shade, or modify the coating in any way.

F. All coating material shall remain in unopened and in the original Coating Manufacturer's containers until required for use and shall be stored as per the Coating Manufacturer's recommendations. Any damaged containers found with seal broken or leaking shall not be used.

2.3 ABRASIVE BLASTING MEDIA

A. Use dry, neutral pH, hard abrasives of angular configuration that are free of oil, dust, clay, or other foreign material. Do not recycle blasting abrasive.

B. The abrasive blast media shall meet the following minimum requirements:

1. Contain less than 1% free silica.

2. Be free of harmful quantities of toxic materials.

3. Contain less than 20 ppm of water soluble chlorides.

4. Contain less than 200 ppm of water soluble sulfates.

5. Be of the proper size and material to provide the Coating Manufacturer's required surface profile.

C. The Blast Media Manufacturer shall provide written certification, to be submitted to the Engineer, that the blast media meets the minimum requirements of this specification.

2.4 PHOSPHORIC ACID PRE-WASH

A. The Coating Contractor shall perform a phosphoric acid pre-wash for all pipe to be coated. The minimum concentration of phosphoric acid in the pre-wash solution shall be in accordance with the Coating Manufacturer's recommendations. Deionized or reverse osmosis water shall be used. The maximum concentration shall be in accordance with the Coating Manufacturer's recommendations. The dwell time, pre-heat temperature range, pH of the mixture and the pH of the wet pipe surface after rinse, and the rinse pressure and effectiveness shall all follow the Coating Manufacturer's recommendations and NACE SP0394-2013.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. The pipe shall be uniformly pre-heated to remove all moisture, prior to abrasive blasting activities. The pipe surface shall be at least 5°F above the dew point during abrasive blast cleaning and inspection.

B. The pipe surface shall be free of all oil, grease, chlorides and other foreign materials detrimental to the coating process. Any oil, grease, chlorides or other contaminants shall be removed by solvent cleaning, pressure washing, and/or steam cleaning prior to abrasive blast cleaning.

C. All steel surfaces to be coated shall be prepared to a near-white metal finish by abrasive blasting, per SSPC-SP 10 standards. Cleanliness shall be determined by visual comparison with SSPC VIS-1. The compressed air that is used shall be clean and dry in accordance with ASTM D4285.

D. The anchor pattern or surface profile shall be of a sharp, jagged (angular) nature as opposed to a “peened” pattern. The surface profile shall be between 2.5-5 mils. The surface profile shall be measured in accordance with NACE SP0287-2016/ASTM D4417.

E. Following abrasive blasting, the Coating Contractor shall remove all spent abrasive, scale, dust and debris from the surface to be coated. The external surface shall be inspected for slivers, gouges and other surface imperfections. Imperfections shall be ground or filed. Pipe with steel defects shall be recorded and a non-conformance report shall be issued. If the anchor pattern is damaged by burnishing over an area of six square inches or a total accumulative ground area of more than two square feet, then the surface shall be re-blasted.

F. In the event corrosion occurs after the completion of the surface preparation or if the pipe has not been coated within two hours of cleaning, the surface shall be re-cleaned to a near-white metal cleanliness (SSPC-SP 10). The internal surface of the pipe shall be blown free of all foreign materials and/or blast media, into a dust collector, using clean dry air.

G. The Contractor shall legally dispose of used abrasive in accordance with all Owner, federal, state and local requirements and regulations.

3.2 COATING APPLICATION

A. At no time during the entire coating process shall any part of the pipe be heated to a temperature in excess of 500°F. Pipe heated above this temperature shall be subject to rejection and the Coating Contractor shall be liable for the cost of pipe. Heating must be continuous and uniform. Heat temperatures shall be continuously monitored and shall follow the Coating Manufacturer’s recommendations. The pipe shall be maintained at temperatures and time durations recommended by the Coating Manufacturer throughout the entire coating curing process.

B. The coatings shall be applied in accordance with SSPC-PA1, the Coating Manufacturer’s recommendations, NACE SP0394-2013, and this Specification. Coatings shall not be applied to surfaces that are not cleaned as specified.

C. The coatings shall be applied in accordance with the Coating Manufacturer’s recommendations and approved parameters. The Coating Contractor shall, at a minimum, obtain the following information from the Coating Manufacturer: phosphoric acid pre-wash recommendations, application temperature range, laboratory test

requirements, shelf-life of the material, material storage requirements, and application temperature range to be followed.

D. The Coating Contractor shall leave a 2-inch minimum, 3-inch maximum cutback (non-coated, but abrasive blasted, pipe surface area) at each pipe end for future welding activities.

E. The coating of the weld areas shall be performed in the field per this Specification. During the coating of the girth welds, the plant-applied coating shall be feathered and coated to achieve the proper coating thickness.

F. The coatings shall be applied before any flash rusting or blooming occurs. If flash rusting or blooming occurs, the pipe shall be rejected and re-blasted. The Coating Contractor shall apply coatings to be free of film characteristics or defects that would adversely affect the performance or appearance of the coating system.

G. The use of recycled epoxy powder shall be permitted if the recycle system automatically and continuously blends the recycled powder with a minimum of 80% new powder in the delivery system. Recovered powder shall not be used. The system shall include fluid bed magnets, which are checked at least once per shift, and an operational filter system with no coarser than an 80-mesh screen.

H. All coating damage, field repairs and defects disclosed by visual or coating inspections shall be repaired by the Coating Contractor in a manner complying with this Specification and the Coating Manufacturer's recommendations.

1. Repaired areas shall overlap the parent coating by a minimum of 0.50 inches.

2. Areas 0.25 inches in diameter and less may be repaired with the Coating Manufacturer's recommended hot-melt stick (Pipeclad Patch 970P) or two-component catalyzed epoxy coating patch kit (Pipeclad Patch 970G).

3. Areas greater than 0.25 inches in diameter and less than 10 inches in length (including the field weld areas) may be repaired with Pipeclad Patch 970G or Pipeclad 5000. Pipeline tape wrap or heat shrink sleeves shall not be used.

4. Areas greater than 10 inches in length or a maximum repair area greater than 36 square inches for each pipe shall require stripping of the coating system and re-application of the coatings.

5. Aboveground pipe shall be coated with Pipeclad 5000 (green, 24-32 DFT) and Pipeclad UV Protect (green for diesel and white for gas 2-4 DFT). Coating application shall follow the Coating Manufacturer's recommendations.

I. All coated pipe shall be carefully handled, loaded and stacked in a manner to prevent damage to the pipe and coating system during shipping.

1. The proper type and number of separators will be utilized.

2. The separators shall be evenly spaced along the pipe and in no case shall any length of pipe have fewer than three separators.

3. Coated pipe stored on wood timbers shall be free of any gravel, nails, grit or other material that could damage the pipe and coating system.

3.3 QUALITY CONTROL AND COATING INSPECTION

A. The services of an in-house or third-party Coating Inspector(s) is required (plant and field). The Coating Inspector shall have free access to all stages of the storage, material handling, surface preparation and coating process. The Coating Inspector shall be a certified NACE Level III Coatings Inspector. The Coating Inspector shall have a minimum of five (5) years' documented recent experience inspecting FBE coatings.

B. It is the responsibility of the Coating Contractor to coordinate all surface preparation and coatings activities with the Coating Inspector. The Coating Inspector shall be on-site 100% of the time while surface preparation or coating application work is being performed to monitor the work and to record and report on all the requirements identified in these specifications and those recommended by the Coating Manufacturer. The Coating Inspector shall audit the work at each stage of the coating/surface preparation process, perform tests at each stage of the process, and inspect the finished product. Any test not meeting the requirements specified shall be re-performed at the Coating Contractor's expense. Should test(s) yield results which do not meet the requirements of this Specification, the Coating Contractor shall re-coat deficient areas and perform additional testing as directed by the Engineer at no additional cost to the Owner.

C. The entire coating system shall be inspected to the requirements identified by this Specification, the Coating Manufacturer's recommendations, and NACE SP0394-2013. Holiday detection testing shall conform to the Coating Manufacturer's recommendations. If a conflict exists between this Specification, the referenced standard or the Coating Manufacturer's recommendations, promptly notify the Engineer in writing and the Engineer shall determine which applies. In general, the most stringent requirements will apply.

D. Conduct the following quality control inspections and tests listed below. *Note: Tests and inspections recommended by the Coating Manufacturer and the referenced standards shall also be followed.* Frequencies provided below are minimums; additional testing may be necessary. The Coating Inspector has the authority to increase the testing frequencies when needed.

Plant Required Inspections	**Minimum Frequency**
Air Quality	Twice Daily
Inspection Prior to Blasting	Every Joint
Verify Water Quality	Daily
Verify Acid Strength	Each Mixed Batch
pH Effectiveness After Rinse	Every Joint
Abrasive Quality	Every 4 Hours

Inspect Pipe for Contaminants Prior to Blasting (Chlorides, Oil, Grease, etc.).	Every Joint
Inspection of Pipe After Blasting	Every Joint
Verify Surface Profile	Every Joint
Verify Pre-heat Prior to Coating	Every Hour
Verify Coating Thickness	Every Joint
Holiday Testing	Every Joint

E. The cleanliness of the steel surface shall be verified by the Coating Inspector using comparators, per SSPC-VIS 1.

F. The surface profile shall be determined by the Keane-Tator Surface Profile Comparator, Clemtex Anchor Pattern Standards, or Testex Tape in accordance with NACE SP0287-2016/ASTM D4417.

G. All abrasive blast and coating materials shall be inspected for conformance to this Specification.

H. Dry film thickness measurements shall be performed in accordance with SSPC-PA2.

I. Every joint of pipe shall be inspected for holidays (coating defects), using high-voltage holiday detection equipment per the Coating Manufacturer's recommendations, prior to leaving the plant and prior to burial in the ditch. The holiday detector shall be calibrated, at a minimum, prior to each shift. Holiday testing shall not be performed while the coating temperature is above 190°F. All holidays shall be repaired in accordance with this Specification.

J. For plant applied FBE coatings, destructive testing shall be performed on production samples to test the applied coating. One production sample is required from each shift. Destructive tests and evaluations shall follow the Coating Applicators quality assurance/quality control program and test methods. At a minimum, tests shall include cathodic disbondment, flexibility and hot water soak tests and microscopic evaluations. The test results and evaluations shall be included in the Coating Inspectors final report.

K. Daily coating inspection reports are required and shall be submitted electronically to the Owner and Engineer within 24 hours of the day they were performed.

L. The Coating Inspector shall submit an electronic final report to the Owner and Engineer within one month of completion of the coating activities (both plant and field applied coatings). The final report(s) shall be compiled of all test data, photographs, inspection checklists, daily reports, and a summary stating that the coating system was applied in accordance with this Specification.

END OF SECTION

SECTION 09 96 00.02

HOT DIPPED GALVANIZED COATINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Work includes providing all labor, equipment, plant, transportation, supplies, materials, and engineering to provide galvanized coatings on all steel members, sections, fabricated assemblies, and hardware specified on the Plans.

B. This specification applies to but is not limited to:

1. Pipe supports, clamps, and associated hardware.

2. Steel members, sections, plates, and fabrications.

3. Nuts, bolts, washers, exposed to the atmosphere.

4. All other components exposed to the atmosphere and not specified as painted.

1.2 RELATED REQUIREMENTS

A. Section 01 33 00 Submittal Procedures

B. Section 05 50 00 Metal Fabrications

C. Section 09 96 00.01 Plant and Field Applied Fusion Bonded Epoxy (FBE)

D. Section 23 11 00 Facility Fuel Piping

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. No later than 3 weeks prior to galvanizing, submit an electronic of a Certificate of Compliance which states that all galvanizing complies with ASTM A 123 or A 153 as appropriate, and the requirements set forth herein.

1.4 QUALITY ASSURANCE

A. Inspection shall be carried out at the galvanizer's plant by a Contractor's representative, or at some other place as agreed between Contractor, fabricator, and galvanizer. The Authority reserves the right to reject unacceptable galvanizing at the Project site. Inspection rights and privileges, procedures, and acceptance or rejection of galvanized steel material shall conform to ASTM A 123 or A 153 as applicable. Inspections and tests shall include the following:

1. Visual examination of samples and finished products.

2. Tests to determine weight or mass of zinc coating per square foot of metal surface.

1.5 TRANSPORT, STORAGE, AND HANDLING

A. Galvanized articles shall be loaded and stored as follows to prevent the formation of wet storage stain:

1. The articles shall be stacked or bundled to allow air between the galvanized surfaces during transport from the supplier. Additionally the material shall be loaded in such a manner that continuous drainage could occur.

2. In storage, the articles shall be raised from the ground and separated with strip spacers to provide free access of air to most parts of the surface. They shall also be inclined in a manner which will give continuous drainage. Under no circumstances shall galvanized steel be allowed to rest on cinders or clinkers; neither shall it be stored on wet soil or decaying vegetation.

PART 2 - PRODUCTS

2.1 STEEL MATERIALS

A. Structural steel to be galvanized shall conform to Section 05 50 00 Metal Fabrications.

2.2 ZINC FOR GALVANIZING

A. Zinc for galvanizing shall conform to ASTM B 6.

PART 3 - EXECUTION

3.1 FABRICATION

A. Structural steel shall be fabricated generally in accordance with Class (I, II, or III) guidelines as shown in Recommended Details for Galvanized Structures as published by the American Hot Dip Galvanizers Association, Inc.

B. Fabrication practices for products to be galvanized shall be in accordance with the applicable portions of ASTM A 143, A 384 and A 385, except as specified herein. Care shall be taken to avoid fabrication techniques, which could cause distortion or embrittlement of the steel. Before fabrication proceeds, the Project Manager shall be notified of potential warpage problems, which may require modification in design.

C. All welding slag and burrs shall be removed prior to delivery to the galvanizer.

D. Holes and/or lifting lugs to facilitate handling during the galvanizing process shall be provided at positions as agreed between the designer, fabricator, and galvanizer.

E. Unsuitable marking paints shall be avoided and unwanted grease, oil, paint, and other deleterious material shall be removed prior to fabrication.

F. Surface contaminants and coatings which would not be removable by the normal chemical cleaning process in the galvanizing operation shall be removed by the fabricator using blast cleaning or some other method.

3.2 SURFACE PREPARATION

A. Surfaces to be galvanized shall be pre-cleaned utilizing a caustic bath, acid pickle and flux. Alternatively, the steel shall be near white blast cleaned to SPCC – SP10 and fluxed.

3.3 GALVANIZING

A. Steel members, fabrications, and assemblies shall be galvanized after fabrication, but prior to shipment, by the hot dip process in accordance with ASTM A 123.

B. Bolts, nuts, washers, and iron and steel hardware components shall be galvanized in accordance with ASTM A 153. Nuts and bolts shall be supplied in accordance with ASTM A 307, F 3125, A 394 and A 563, as applicable.

C. Products shall be safeguarded against steel embrittlement in conformance with ASTM A 143.

D. All articles to be galvanized shall be handled in such a manner as to avoid any mechanical damage and to minimize distortion.

E. Design features which may lead to difficulties during galvanizing shall be pointed out prior to dipping.

F. The composition of metal in the galvanizing bath shall not be less than 98.0% zinc.

3.4 COATING REQUIREMENTS

A. Weight: The weight and thickness of the galvanized coating shall conform with paragraph 6.1 of ASTM A 123 or Table 1 of ASTM A 153, as appropriate.

B. Surface Finish: The galvanized coating shall be continuous, adherent, as smooth and evenly distributed as possible and free from any defect that is detrimental to the stated end use of the coated article.

C. The integrity of the coating shall be determined by visual inspection and coating thickness measurements.

D. Where slip factors are required to enable friction grip bolting, these shall be obtained after galvanizing by suitable treatment of the faying surfaces in accordance with the latest edition of the Specification for Structural Joints Using ASTM F 3125 or A 490 Bolts as approved by the Research Council on Structural Connections of the Engineering Foundation.

E. Adhesion: The galvanized coating shall be sufficiently adherent to withstand normal handling during transport and erection.

3.5 WELDING

A. Where galvanized steel is to be welded, adequate ventilation shall be provided. If adequate ventilation is not available, supplementary air circulation shall be provided. In confined spaces a respirator shall be used.

B. Welding shall be performed in accordance with the American Welding Society publication D19.0-72, Welding Zinc Coated Steel.

C. All uncoated weld areas shall be touched up.

3.6 TOUCH UP AND REPAIR

A. Mechanical Damage

Areas damaged by welding, flame cutting, or during handling, transport or erection shall be repaired by one of the following methods whenever the damage exceeds 3/16" in width:

1. Cold Galvanizing Compound

a. Surfaces to be reconditioned with zinc-rich paint shall be clean, dry, and free of oil, grease and corrosion products.

b. Areas to be repaired shall be power disc sanded to bright metal. To ensure that a smooth reconditioned coating can be effected, surface preparation shall extend into the undamaged galvanized coating.

c. Touch-up paint shall be an organic cold galvanizing compound having a minimum of 94% zinc dust in the dry film.

d. The paint shall be spray or brush applied in multiple coats until a dry film thickness of 8 mils minimum has been achieved. A finish coat of aluminum paint shall be applied to provide a color blend with the surrounding galvanizing.

e. Coating thickness shall be verified by measurements with a magnetic or electromagnetic gauge.

2. Zinc Based Solder

a. Surfaces to be reconditioned with zinc-based solder shall be clean, dry and free of oil, grease and corrosion products.

b. Areas to be repaired shall be wire brushed.

c. Heat shall be applied slowly and broadly close to, but not directly onto the area to be repaired. The zinc-based solder rod shall be rubbed onto the heated metal until the rod begins to melt. A flexible blade or wire brush shall be used to spread the melt over the area to be covered. The zinc based solder shall be applied in a minimum thickness of 2 mils.

d. Coating thickness shall be verified by measurements with a magnetic or electromagnetic gauge.

B. Wet Storage Stain

Any wet storage stain shall be removed by the galvanizer if formed and discovered prior to leaving the galvanizer's plant. Wet storage stain shall be removed before installation so that premature failure of the coating will not occur. Wet storage stain shall be removed as follows:

1. The objects shall be arranged so that their surfaces dry rapidly.

2. Light deposits are to be removed by means of a stiff bristle (not wire) brush. Heavier deposits are to be removed by brushing with a 5% solution of sodium or potassium dichromate with the addition of 0.1% by volume of concentrated sulfuric acid. This is to be applied with a stiff bristle brush and left for about 30 seconds before thoroughly rinsing and drying. Alternatively a proprietary product such as Oakite Highlite, or equal, which is intended for this purpose, may be used according to manufacturer’s recommendations.

3. A coating thickness check must be made in the affected areas to ensure that the zinc coating remaining after the removal of wet storage stain is sufficient to meet or exceed the requirements of the specification.

END OF SECTION

SECTION 10 44 16.13

PORTABLE FIRE EXTINGUISHERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Provide fire extinguishers at locations indicated in the project drawings.

1.2 REFERENCES

A. UL "A" Building Materials Directory.

B. NFPA No. 10 Fire Extinguishers, Portable.

C. NFPA No. 30 Flammable and Combustible Liquid Code.

PART 2 - PRODUCTS

2.1 EXTINGUISHERS

A. Manufacturer: Larsen's Manufacturing Co., 7421 Commerce Lane, N.E., Minneapolis, MN 55432, (612) 571-1181, or approved equal.

B. Extinguisher shall have a minimum rating of 3-A, 40-B:C and a 20 lb. capacity. Fire rating in accordance with NFPA No. 10 and No. 30.

1.	Gasoline Fires:	Class III Hazard; BC
2.	Fuel Oil Fires:	Class II Hazard; BC
3.	Wood, Paper and All Above	Class I, II, or III; ABC

C. Extinguisher Brackets: Larsen's Manufacturing Co., bottom support, quick release strap-buckle type.

PART 3 - PART 3 EXECUTION

3.1 INSTALLATION

A. Mount top of extinguishers 3 to 4 feet above ground, pavement, or floor.

B. Fasten extinguisher brackets securely to structure. Provide additional brackets, uni-strut, fasteners, and components as required. All miscellaneous hardware shall be hot dip galvanized.

END OF SECTION

SECTION 11 80 00

SPILL RESPONSE EQUIPMENT

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This section includes procurement of required spill response equipment and furnishing and installing one standard size steel shipping container (conex) for storing this equipment (20' x 8').

1.2 RELATED REQUIREMEMTS

A. Section 01 33 00 – Submittal Procedures

1.3 REFERENCES

A. United States Department of Labor, Occupational Safety and Health Administration (OSHA):

1. 29 Code of Federal Regulations (CFR) 1910

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00 Submittal Procedures.

B. Submit manufacturer's data for all spill response equipment and supplier for each item. Group item by supplier.

C. Submit standard manufacturer's data, pictures, and standard shop drawings for each container provided. Unless otherwise indicated, alternate manufacturers will be acceptable so long as they supply similar equipment with the same quality and performance.

1.5 GENERAL

A. The Contractor is responsible for providing spill response equipment as specified and in accordance with this Section. The Contractor shall be responsible for all work and equipment associated with procuring, shipping, handling and storing the specified equipment.

B. Place all spill response equipment inside overpack drums. Provide the required number of overpack drums to securely contain all materials. Permanently label all overpack drums with "Spill Response Equipment" with a minimum of 3" high letters. Securely attach a laminated manifest to the outside of each drum listing all of the materials contained within.

C. Place overpack drums, and any equipment and materials too large to fit in overpack drums, neatly inside the spill response container (conex) in their final position.

D. All equipment shall be new unless otherwise indicated.

PART 2 - PRODUCTS

2.1 SPILL RESPONSE EQUIPMENT

A. The following list of Spill Response Equipment shall be provided by the Contactor.

Quantity	Item/Description
Absorbent Material and Containers, as provided by Unitech of Alaska or equal	
3	95 Gallon Poly Screw Top Over-pack Spill Kit Drums to Include:
1 ea.	55 Gallon Metal Open-top Drum
2 ea.	Absorbent roll, min. 30” x 140’ or comparable
2 ea.	White, Oil Specific Sorbent Pads, 16” x 20” or comparable, 100 pieces ea.
2 ea.	Yellow, Universal Sorbent Pads, min. 16” x 20” or comparable, 100 pieces ea.
13 ea.	Absorbent Boom, min. 4” by 40’ or comparable
2 ea.	Absorbent Sweep, 19” by 100’ or comparable
Personal Protective Equipment	
4 pr.	Gloves, Nitrile AF18 Chem-Resist, Pairs
4 pr.	Tyvek Suits, XL Polyethylene Coated
4 pr.	Vented Safety Goggles
4 pr.	Hardhats
Recovery Equipment	
1	2-inch portable centrifugal pump, gas-powered, UL listed petroleum pump. Marlow Petro-Guard Model 2AM32-P or equal with 2” camlocks
1	Absorbent Wringer for fuel recovery
1	Smart Ash Burner
1	Discharge Hose with 2” camlocks, 100’ total length
1	Suction Hose with 2” camlocks, 50’ total length
2	Non-Sparking Shovel
2	Rake
1 roll	Garbage/Waste Disposal Bags
Fuel Storage Tank Water Removal Equipment	
1	Fuel-rated Hand Pump for water removal with 25’-50’ hose
1	55 Gallon Water Scrubber with pillows and loose media
6	Tubes of Water Finding Paste

Quantity	Item/Description
Miscellaneous	
5	Fire Extinguishers, Portable, Type 3A-40BC
2	Padlocks, keyed-alike for storage site
10	Zip Tie
2	Caution Barricade Tape Roll
1	Emergency Response Guide

B. Product substitutions must be approved by the Engineer.

C. Absorbent material can be natural or synthetic.

PART 3 - EXECUTION

3.1 INSTALLATION.

A. Coordinate the location and Placement of the spill response container (conex) with ANICA Inc. personnel.

END OF SECTION

SECTION 23 11 00

FACILITY FUEL PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes fuel piping system materials, equipment, supports, and accessories for installation of barge header fuel piping system. The intent of this specification, along with other specifications, and the accompanying Contract Drawings is to provide a complete and workable facility with complete systems as shown, specified and required by applicable codes.

1.2 RELATED REQUIREMENTS

A. Section 01 33 00 Submittal Procedures

B. Section 01 33 23 Shop Drawings, Product Data, and Samples

C. Section 05 50 00 Metal Fabrications

D. Section 09 96 00.01 Plant and Field Applied Fusion Bonded Epoxy

E. Section 09 96 00.02 Hot Dipped Galvanized Coatings

1.3 PERFORMANCE REQUIREMENTS

A. Minimum Working-Pressure Rating: Unless otherwise indicated, minimum pressure requirement for fuel piping is 150 psig.

B. Design Service Conditions: All pipeline system components shall be rated for the following service conditions:

1. Fluids: Gasoline and Diesel fuel

2. Operating temperature range: -50° F to 120° F

C. Any referenced standards that do not comply with these service conditions shall be brought to the Engineer's attention immediately.

1.4 REFERENCED STANDARDS

A. The standards listed below form a part of this specification to the extent referenced.

ASME B16.5 Flanges and Flanged Fittings

ASME B16.9 Factory-Made Wrought Steel Butt welding Fittings

ASME B16.11 Forged Fittings, Socket-Welding and Threaded

ASME B31.3 Chemical Plant and Petroleum Refinery Piping

ASME BPV IX Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications

ASTM A53 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless

ASTM A105 Forgings, Carbon Steel, for Piping Components

ASTM A106 Seamless Carbon Steel Pipe for High-Temperature Service

ASTM A234 Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures ASTM D3035 Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter

ASTM A320 Alloy-Steel and Stainless Steel Bolting for Low-Temperature Service

ASTM D3350 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

1.5 SUBMITTALS

A. Submit under provisions of Section 01 33 00 Submittal Procedures.

B. Shop Drawings: Indicate assembly, required clearances, and location and size of field connections.

C. Product Data: Provide manufacturer's literature and data indicating rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.

D. Manufacturer's Installation Instructions: Indicate rigging, assembly, and installation instructions.

E. Welding Procedure Qualification Records (PQRs) and Welding Procedure Specification.

F. Pipe coating process and schedule.

G. Inspection and Testing Procedures and Results.

1.6 DELIVERY, STORAGE AND HANDLING

A. Contractor is responsible for protection of all material, equipment, and apparatus provided from damage during transportation, storage, and installation processes.

B. Material, equipment, or apparatus damaged because of improper storage or protection will be rejected and replaced at Contractor’s expense.

PART 2 - PRODUCTS

2.1 GENERAL

A. Materials shall be new unless otherwise specified. All items of the same type shall be of the same manufacturer.

2.2 PIPE

A. The pipe shall be owner-provided and installed in accordance with this specification.

B. Steel Pipe: All steel pipe shall be Schedule 80, Black, Seamless, ASTM A53 or ASTM A106. 3”pipe shall be provided in double random lengths (42’ nominal).

C. Steel Pipe nipples: ASTM A53 carbon steel, threaded schedule to match adjoining piping.

2.3 PIPE FITTINGS

A. Steel Pipe

1. Elbows, tees, and reducers shall be Schedule 80, ASTM A234 wrought carbon steel butt welding type, except where noted.

2. Flanges shall be ANSI class 150 lbs., ASTM A105 weld neck type. Bore shall match the pipe in which the flange is installed.

3. Gaskets shall be spiral wound metallic, Lamons Spiral Seal style WR or equal and rated for -50°F service.

4. Dielectric gaskets shall be non-conductive, fuel rated full face fiber gaskets with nylon bushings and washers, Calpico EQDW or equal.

5. All flanged fittings, including valves, shall have flange nuts and bolts meeting the requirements of ASTM A320, B8, Class 2, Stainless Steel (Low Temperature ANSI 304 Strain Hardened).

6. Pipe and Fittings shall be full penetration butt welded. Fittings smaller than 2" may be ASTM A105 forged steel socket weld fittings, 3000 pound minimum. Threaded fittings are not allowed except where shown on the drawings, or required for connection to specified equipment.

7. Provide flanged connections or unions to allow removal of individual components.

2.4 PIPE COATING SYSTEM

A. Above / Below Grade Fuel Pipe and Pipe Joints: Above grade and below grade fuel pipe and pipe joints shall be coated in accordance with Section 09 96 00.01 Plant and Field Applied Fusion Bonded Epoxy (FBE).

2.5 VALVES

A. All valves shall be factory coated with approved epoxy coating for corrosion resistance.

B. Check Valves: Carbon steel, ANSI Class 150 lbs., raised face flanged, swing check valve suitable for the service conditions. Crane No. 147, no substitutes. Check valves at the barge line connection of the marine header shall be carbon steel, ANSI Class 150 lbs., raised face flanged, outside lever and weight check valve suitable for the service conditions.

C. Ball Valves (Flanged): ANSI class 150 lbs., Cast carbon steel body, stainless steel ball, Teflon seat and stuffing box seals, lockable lever handle, raised faced flanged. All materials shall be suitable for the service conditions. NACE MR-01-75 Conformance and fire safe per API 607. PBV C-5410-31-2236-FT-NL, no substitutes. Pad locks shall be provided for all ball valves.

D. Pressure Relief Valves: Flanged, carbon steel body pressure relief valve. 2-inch valves set at 95 psi. 1-inch valves set at 75 psi. Hydro-seal Model No. 30FL1CV-00 for 2" and 1FLAXV-00- for 1", or approved equal.

2.6 EQUIPMENT NAME AND OPERATIONAL TAGS

A. Material: 2-inch diameter brass plate with 3/16-inch diameter hole drilled to secure to component as described in Section 3.2 of this Specification.

B. Lettering shall be stamped with the following information:

1. Name and Operational Tags: Provide name and operational tags for all valves in accordance with the valve schedules in the Contract Drawings.

2. Tags shall include component ID (e.g. TP-1, BV-15), normal operating condition (normally open or closed), component owner and any additional information required for proper operation.

2.7 MISCELLANEOUS PIPING ACCESSORIES

A. Quick Connect Couplings: Aluminum body cam and groove fitting with dust cap. Male fitting with ANSI 150-pound class flanged, MPT, or FPT connection, as shown, 150 psig minimum working pressure. PT Coupling or approved equal.

B. Cam Lock Couplings: Aluminum body cam and groove male fittings with FPT connection, 150 psi minimum working pressure. Provide dust cap with Buna-N seal for each fitting provided. PT couplings or equal.

C. Dry break coupling: Aluminum body cam and groove fitting with dust cap with ANSI 150-pound class flanged, MPT, or FPT connection as shown on the Contract Drawings. 150 psig minimum working pressure. Each dry break coupling to include dust caps and appropriate adapters to connect to standard camlock fittings of the same size. PT Coupling Maxi-Dry Series MD20A or approved equal.

D. Flex Fitting: ANSI class 150 lbs., stainless steel annular corrugated inner hose with stainless steel double braided cover, MPT ends with 18" live length, unless shown otherwise. Pressure test at 110 psi and provide certification for each flex. Metraflex SST, or approved equal.

E. Utility Markers: Continuous glass fiber and resin reinforced marker, one-piece, vandal and vehicle impact resistant. Provide Carsonite CUM 375 or approved equal.

2.8 PIPE SUPPORTS

A. All pipe supports, clamps, fittings, and hardware shall be Hot Dip Galvanized in accordance with Section 09 96 00.02 Hot Dipped Galvanized Coatings.

B. Support strut: Cold formed mild steel channel strut, hot dipped galvanized finish and slotted back unless specifically indicated otherwise.

1. Standard strut: 12 gauge, 1-5/8 inch by 1-5/8 inch, Unistrut P1000T (HG), or approved equal.

2. Double strut: 12 gauge, 1-5/8 inch by 3-1/4 inch, Unistrut P1001 (HG), or approved equal.

3. Post Base: 1-5/8 inch by 1-5/8 inch, Unistrut P1887 (HG), or approved equal.

4. Single Strut: 12 gauge, 1-5/8 inch by 1-3/8 inch, Unistrut P3000 (HG), or approved equal.

5. Deep Strut: 12 gauge, 3-1/4 inch by 1-5/8 inch, Unistrut P5000 (HG), or approved equal.

6. Shallow strut: 14 gauge, 1-5/8 inch by 13/16 inch, Unistrut P4100T (HG) or approved equal.

7. Solid back strut: For welding to tanks or structures, 12 gauge, 1-5/8 inch by 1-5/8 inch, unfinished black steel, Unistrut P1000 (PL), or approved equal.

C. Provide galvanized carbon steel fitting, brackets, channel nuts and accessories designed specifically for use with supplied strut.

D. Pipe Clamps: Galvanized carbon steel two-piece pipe clamp designed to support pipe tight to strut. Unistrut P1117E-EG and P1119E-EG or approved equals.

E. Pipe Straps: Carbon steel two-hole pipe strap. Unistrut P2558 (EG), no substitutes.

F. Fasteners:

1. Bolts, nuts and washers: Galvanized or zinc plated carbon steel unless stainless steel is specifically shown. Stainless steel shall be: Type 316L.

2. Lags: Hot dipped galvanized steel unless stainless steel is specifically shown. Stainless steel shall be: Type 316L.

PART 3 - EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment with flanges or unions as shown in the Contract Drawings.

D. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

3.2 INSTALLATION

A. Steel Pipe

1. Install in accordance with manufacturer's instructions and applicable codes and standards.

2. Route piping in an orderly manner and maintain gradient.

3. Group piping whenever practical at common elevations.

4. Install piping to allow for expansion and contraction without stressing pipe, joints or connected equipment. Install valves to allow full operation without obstruction of operating handle.

5. Perform welding in accordance with ASME BPV, IX and API 1104. Welding procedures shall be submitted and approved. Visually inspect weld joints in accordance with API 1104. Welder shall be certified for the approved procedure and welder certification shall be submitted and approved.

6. Make threaded joints using pipe joint compound applied to the male threads. Hercules Grip, no substitution.

7. Coat flange gaskets with anti-seize compound prior to assembly.

8. Provide non-conducting dielectric connections wherever jointing dissimilar metals. Provide dielectric flange kits at all transitions between aboveground and buried piping.

9. Support piping and equipment as shown on the drawings using specified supports and fasteners. If not detailed on the drawings, support from structural members with pipe hangers, clamps or pipe straps specifically intended for the application. Do not support piping from connections to equipment. Provide piping supports spaced per the following table.

Pipe Size	Maximum Support spacing
1-1/2 inch	9 ft
2 inch	10 ft
2-1/2 inch	11 ft
3 inch	12 ft
4 inch	14 ft

10. Provide piping supports as shown and as required to adequately support piping. Touch up all cut ends and damaged surfaces of galvanized steel and zinc plated supports and fasteners with spray-on cold galvanizing compound ZRC, or approved equal.

11. Do not use stainless steel in contact with galvanized supports.

12. Provide clearance for installation of insulation and access to valves and fittings.

13. Label contents of all piping in accordance with ASTM A13.1.

14. Fasten name and operational tags on or adjacent to component with double safety wire or other approved means.

3.3 UTILITY MARKERS

A. Utility markers shall be installed at 100 foot intervals along the center line of the fuel pipeline and at the edge of drivable surfaces, trails, or roads. Markers shall be clearly visible and out of the way of vehicles and pedestrians.

B. Above Grade Pipe: Install utility markers every 50 feet along the pipe or as shown on the drawings.

3.4 TESTING

A. Before operating any equipment or systems, make thorough check to determine that systems have been flushed and cleaned as required and equipment has been properly installed, lubricated, and serviced in accordance with factory instructions.

B. Steel Pipe:

1. Isolate and pressure test each run of piping with compressed air at 125 psig minimum pressure for a minimum of one hour. Provide blind flanges, threaded caps or plugs at each end of the test section as needed. Test 100% of welds visually for leaks with a leak detection solution. Do not conceal pipe joints before pressure testing is complete. Isolate equipment and components rated for lesser pressures so as not to damage these.

2. Pressure test piping system again after all equipment is installed at 75 psi for a minimum of one (1) hour, or the maximum rated pressure of the

weakest component, whichever is less. Test 100% of welds and pipe joints for leaks with a leak detection solution. Piping system shall maintain pressure for one hour minimum.

3. Notify Project Manager in writing seven (7) days in advance of pressure tests. Project Manager shall be present at all testing. Pressure testing performed without Project Manager present will be rejected, unless prior written approval is received from Project Manager.

4. Pressure shall be maintained for sufficient time to complete the visual inspection of all joints but shall be not be less than one (1) hour.

5. Care shall be taken to ensure that these pressures are not applied to vented tanks.

6. Submit written procedures for testing, including test pressures, equipment to be used and items to be tested.

7. Cut out, reweld and retest all leaking welded joints. Repair any leakage found and retest until system proves leak-free. Retesting after the repair of defects shall be performed at no cost to AEA.

8. Certified test results shall be submitted to the Project Manager for approval.

9. Test certification shall include gauge pressure, air temperature, time, date, witness, and pipeline identification.

END OF SECTION

SECTION 31 20 00

EARTH MOVING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This section describes general requirements for all types of earthwork and is applicable to all earthwork required on the Project.

B. IMPORTANT NOTES:

1. Dewatering low areas and depressions present along the pipe alignment will be required.

2. Due to ground water fluctuation and the depth of excavation, dewatering trenches should be anticipated.

3. Contaminated materials are anticipated to be encountered. Contractor shall provide a Qualified Environment Professional (QEP) and other personnel as required with the training and equipment necessary and required by State and Federal regulations to safely work, handle, monitor, and document contaminated materials in accordance with the Soils Management Plan Included in Appendix A.

1.2 RELATED REQUIREMENTS

A. Section 23 11 00 Facility Fuel Piping

1.3 PROTECTION

A. Protect equipment and vehicular traffic from trenches and excavations by providing adequate barricades and signage.

B. Protect excavation side-slopes or adjacent structures by providing adequate back-slopes, shoring, bracing or other methods required to prevent failure of the excavations or existing soils.

C. Protect all above and below ground utilities.

D. Notify the Engineer of unexpected sub-surface conditions.

E. Grade top perimeter of the excavation to prevent surface water runoff from entering the excavation.

F. Provide for dewatering of the trench where ground water is encountered.

G. Appropriate Personal Protection Equipment will be used to protect workers from work site hazards.

H. The Contractor is responsible for meeting the OSHA requirements for worker safety on the work site.

1.4 QUALITY CONTROL ASSURANCE

A. Testing Procedures and Methods:

1. Earthwork Quality Control Assurance testing procedures and methods shall be in accordance with Paragraph 3.10 Field Quality Control

2. Other testing procedures and methods referenced in individual specification sections.

B. Quality Control Monitoring:

1. Contractor shall secure and pay for all required quality control monitoring. Contractor shall utilize Engineer approved, accredited, independent laboratory and trained field personnel for all required testing.

2. Provide test results and documentation as required in Paragraph 1.5 Submittals of this specification.

3. Fill material placed prior to Engineer approval is at the sole risk of the Contractor. Material not meeting requirements shall be removed and replaced at Contractor's expense.

C. Minimum documentation requirements are indicated in Paragraph 3.10 Field Quality Control.

1.5 SUBMITTALS

A. Submittals shall be made in accordance with the General Conditions, Division 1, and this Section.

B. Provide the following submittals:

1. Name of proposed independent accredited testing laboratory and field observation subconsultant.

2. Format of proposed laboratory and field observation forms.

3. Laboratory results of gradation tests for each fill type to be used on the Project.

4. If the Contractor changes the source and/or stockpile from which materials are obtained, gradation test reports for these new sources shall be submitted to the Engineer.

5. Catalog and manufacturer's data sheets for proposed compaction equipment.

6. Dewatering plan.

7. Compaction Documentation Report.

C. Additional Testing:

1. All testing necessary for the Contractor to locate acceptable source material for the Project shall be provided by the Contractor at no additional cost to the Owner.

2. During construction, the Owner/Engineer may elect to have further gradation and compaction observation or testing completed on the materials being furnished by the Contractor. This testing shall be at the expense of the Owner. The Contractor shall provide material samples as may be necessary to complete this testing and these material samples shall be furnished from material available on the Project site or from the Contractor's source and/or supplier.

1.6 MATERIAL SOURCES

A. The Contractor shall coordinate as necessary with the material source property owners, shall acquire all necessary permits and/or material sales agreements, and shall pay required fees, royalties, and other costs associated with pit access and material extraction.

B. The Contractor shall be responsible for all costs associated with locating, procuring, and transporting, testing, storing, placing, and compacting fill material. The Owner is not responsible for fill lost during transportation or subsidence.

1.7 CLASSIFICATION OF EXCAVATION

A. General. Excavation specified shall be done on a classified basis, in accordance with the following designations and classifications:

1. **Unsatisfactory Material.** Material that does not meet the testing requirement for satisfactory material. Material containing vegetable or organic matter, such as muck, peat, organic silt, or sod is considered unsatisfactory for use in embankment construction.

2. **Satisfactory Material.** Satisfactory material may be obtained from classified Usable Excavation or borrow. The Engineer will approve material as "satisfactory" for use in embankment when the material meets the following criteria:

a. Sand, rock, gravel, silt, and other inorganic material;

b. Gradation of 100% by weight passing 6 inch screen; and

c. Comprise any materials classified by ASTM D 2487 as GW, GP, GM, GP-GM, GW-GM, SW, SP, SM, SW-SM, SP-SM, SP-SC, ML. ML materials shall not be used under roads or driveways.

d. The Engineer may, in their discretion, approve oversize material as “satisfactory” for use in embankment when the material is well graded with an even distribution of rock sizes, and can be compacted with a minimal amount of voids.

3. **Usable Excavation.** Usable excavation shall include the excavation of satisfactory materials re-used on the site in fills or backfills.

4. **Unusable Excavation.** Unusable excavation shall include the excavation and disposal of all materials not re-used on the site, including surplus satisfactory material and unsatisfactory materials. Materials that do not comply with the requirements for usable excavation materials are unusable excavation materials. Unusable excavation materials also include man-made fills; trash; refuse; and material classified as unsatisfactory which contains root and other organic matter or frozen material. The Engineer shall be notified of any contaminated materials. Material that is contaminated by hazardous substances, including fuel or oil, in greater quantity than state and federal standards may be considered unsatisfactory and unsuitable for use. See Appendix A.

PART 2 - PRODUCTS

2.1 EXCAVATION

A. Complete all excavation regardless of the type, nature or condition of the materials encountered as shown on the drawings and/or at the Engineer’s direction.

B. Satisfactory materials excavated from the project area shall be considered Usable Excavation.

C. Unsatisfactory materials excavated from the project area shall be considered Unusable Excavation.

D. Contaminated material encountered shall be handled and managed in accordance with Gambell Header Soils Management Plan, see Appendix A.

2.2 FILL MATERIAL

A. Fill Material shall meet the requirements for material types listed below.

1. Fill from Usable Excavation:

a. Fill from usable excavation shall be placed anywhere Coarse Gravel Fill (Borrow) is shown on the Plans.

2. Pipe Bedding:

a. Pipe Bedding material shall consist of aggregate containing no muck, frozen materials, roots, sod or other deleterious matter and with a plasticity index not greater than 6 as determined by ATM 204 and ATM 205.

b. Pipe Bedding material shall conform to the following gradation as determined by ATM 304:

U.S. Standard Sieve Size	Percent Passing, by Weight
1 inch	100
No. 4	40 – 100
No. 40	5 – 50
No. 200	0 – 10

3. Coarse Gravel Fill (Borrow):

a. Coarse Gravel Fill shall consist of granular sands and gravels that are free of silts, organics, debris, ice, excess moisture and other deleterious material conforming to the following gradation as determined by ATM 304:

U.S. Standard Sieve Size	Percent Passing, by Weight
3 inch	100
3/8 inch	60 – 90
No. 10	5 – 30
No. 200	0 – 10

PART 3 - EXECUTION

3.1 GENERAL

A. Vehicles and equipment shall be restricted to traveling within the project area and established roads, unless otherwise approved by the Engineer.

B. Safety: The Contractor shall be solely responsible for making all excavations in a safe manner. Provide appropriate measures to retain excavation sideslopes and prevent sloughing to ensure that persons working in or near the excavation are protected.

C. Earthwork safety, excavation slope stability, and dewatering will be the responsibility of the Contractor.

D. Contact local utilities to locate all existing underground utilities in the vicinity prior to beginning excavation.

E. Maintain and protect the existing utilities that may pass through the work area.

F. Carefully lay out work to minimize disruption and damage to existing structures.

G. Perform all work in accordance with OSHA requirements. Barricade open excavations to prohibit public entry.

H. Notify Engineer of any discrepancies between Contractual requirements and site conditions prior to start of Work.

I. Maintain subgrade, backfill and embankment areas or lifts open until compaction documentation is complete and requirements are met, or approval is secured from the Engineer.

J. Any work covered up prior to completion of compaction documentation and achieving compaction requirements or Engineer's approval shall be excavated and reconstructed at Contractor's expense.

K. Work in inclement weather at Contractor's risk. Any materials which become unstable as the result of improper moisture content, improper selection of techniques, equipment, or operations during inclement wet weather shall be replaced at Contractor's expense.

L. Excavations and embankment shall be accomplished in such a manner that drainage is maintained at all times. Any areas not graded to drain shall be kept free of standing water by pumping if necessary.

M. The Contractor shall provide for the proper maintenance of traffic flow and accessibility as may be necessary, and shall also make adequate provisions for the safety of property and persons.

N. No separate payment for any excavation shall be made. All excavation shall be incidental to the Bid Item being performed.

3.2 GENERAL EXCAVATION

A. The Contractor shall perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified. Satisfactory excavated materials shall be transported to and placed in fill or embankment within the limits of the work. Unsatisfactory materials encountered within the limits of the work shall be excavated below grade and replaced with satisfactory materials as directed. Such excavated material and the satisfactory material ordered as replacement shall be included in excavation. Surplus satisfactory excavated material not required for fill or embankment shall be disposed of as unusable excavation, unless otherwise indicated on Drawings. Unsatisfactory excavated material shall be disposed of as unusable excavation. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times. Material required for fill or embankment in excess of that produced by excavation within the grading limits shall be obtained from Coarse Gravel Fill.

B. Drainage. Provide for the collection and disposal of surface and subsurface water encountered during construction. Completely drain construction site during periods of construction to keep soil materials sufficiently dry. The Contractor shall grade the construction area to provide positive surface water runoff away from the construction activity and/or provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide fill from usable excavation. It is the responsibility of the Contractor to assess the soil and ground water conditions presented by the plans and specifications and to employ necessary measures to permit construction to proceed.

C. Dewatering. Groundwater flowing toward or into excavations shall be controlled to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation and to eliminate interference with orderly progress of construction. Control measures shall be taken by the time the excavation reaches the water level in order to maintain the integrity of the in situ material. While the excavation is open, the water level shall be maintained continuously, at least 2 feet below the working level. Operate dewatering system continuously until construction work below existing water levels is complete. Contractor shall provide a dewatering plan and any permits required for dewatering operations.

D. Stockpiles. Stockpiles shall be kept in a neat and well drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be cleared, grubbed, excavated satisfactory and unsatisfactory materials shall be separately stockpiled. Stockpiles of satisfactory materials shall be protected from contamination which may destroy the quality and fitness of the stockpiled material. If the Contractor fails to protect the stockpiles, and any material becomes unsatisfactory, such material shall be removed and replaced with satisfactory material from approved sources at no expense to the Owner.

E. Underground Utilities. Movement of construction machinery and equipment over pipes and utilities during construction shall be at the Contractor's risk. Perform work adjacent to non-owner utilities as indicated in accordance with procedures outlined by utility company. Report damage to utility lines or subsurface construction immediately to the Engineer.

3.3 GROUND SURFACE PREPARATION

A. General Requirements. Sloped surfaces steeper than 1 vertical to 4 horizontal shall be stepped or benched so that the fill material will bond with the existing material. Ground surfaces shall be plowed, disked, or otherwise broken up to a depth of 6 inches; pulverized; moistened or aerated as necessary; thoroughly mixed; and compacted to a dense and unyielding surface and no further settlement or consolidation occurs with subsequent passes. Compaction shall be accomplished by vibratory compactors or other approved equipment. The prepared ground surface shall be scarified and moistened or aerated as required just prior to placement of fill to assure adequate bond between embankment material and the prepared ground surface.

B. Frozen Material. Fill shall not be placed on a foundation which contains frozen material, or which has been subjected to freeze-thaw action. This prohibition encompasses all foundation types, including the natural ground, all prepared subgrades (whether in an excavation or on an embankment) and all layers of previously placed and compacted earth fill which become the foundations for successive layers of earth fill. All material that freezes or has been subjected to freeze-thaw action during the construction work, or during periods of temporary shutdowns, such as, but not limited to, nights, holidays, weekends, winter shutdowns, or earthwork operations, shall be removed to a depth that is acceptable to the Engineer and replaced with new material. Alternatively, the material will be thawed, dried, reworked, and recompacted to the specified criteria before additional material is placed. The Engineer will determine when placement of fill shall cease due to cold weather. The Engineer may elect to use average daily air temperatures, and/or physical observation of the soils for his determination. Fill material shall not contain frozen clumps of soil, snow, or ice.

3.4 UTILIZATION OF EXCAVATED MATERIALS

A. Unusable excavation and unsatisfactory materials removed from excavations shall be disposed of off-site in Contractor provided approved locations. Satisfactory material removed from excavations shall be used, where practicable, in the construction of fills, embankments, subgrades, and for similar purposes. No satisfactory excavated material shall be wasted without specific written authorization.

3.5 FILLS FROM USABLE EXCAVATION

A. Fills from Usable Excavation. Fills from usable excavation shall be constructed from satisfactory materials free of organic or frozen material. The material shall be placed in successive horizontal layers of loose material not more than 12 inches in depth unless otherwise approved by the Engineer. Place layers in the deepest portion of the fill first and progress in layers approximately parallel to the horizontal. Each layer shall be spread uniformly on a soil surface that has been moistened or aerated as necessary, and scarified or otherwise broken up so that the fill will bond with the surface on which it is placed. After spreading, each layer shall be plowed, disked, or otherwise broken up; moistened or aerated as necessary; thoroughly mixed; and compacted to a dense and unyielding surface and no further compaction or consolidation occurs with subsequent passes. Compaction shall be accomplished by vibratory compactors or other approved equipment.

3.6 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Engineer, reshape, and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

3.7 EXCAVATION FOR UTILITY TRENCHES

A. General. Excavation shall be performed to the lines and grades indicated. Excavated material not required or not satisfactory for backfill shall be removed from the site. Grading shall be done as may be necessary to prevent surface water from flowing into the excavation, and any water accumulating shall be removed to maintain the stability of the bottom and sides of the excavation. Unauthorized over excavation shall be backfilled in accordance with paragraph 3.8.

3.8 UTILITY TRENCH BACKFILLING AND COMPACTION.

A. Trench Excavation Requirements. The trench shall be excavated as recommended by the manufacturer of the pipe to be installed.

1. Bottom Preparation. The bottoms of trenches shall be accurately graded to provide uniform bearing and support for the bottom quadrant of each section of the pipe. Bell holes shall be excavated to the necessary size at each joint or coupling to eliminate point bearing. Stones of 2 inches or greater in any dimension, or as recommended by the pipe manufacturer, whichever is smaller, shall be removed to avoid point bearing.

2. Removal of Unsatisfactory Material. Where unsatisfactory material is encountered in the bottom of the trench, such material shall be removed to the depth directed and replaced to the proper grade with select granular material. When removal of unstable material is required due to the Contractor's fault or neglect in performing the work, the resulting material shall be excavated and replaced by the Contractor without additional cost to the Owner.

3. General. Backfill material shall consist of satisfactory material, and select granular material, as required. Backfill shall be placed in layers not exceeding 6 inches loose thickness for compaction by hand operated machine compactors, and 12 inches loose thickness for other than hand operated machines, unless otherwise specified. Compact each lift with a minimum five (5), slow passes with the compactor. Continue compaction until each lift achieves a dense and unyielding condition and continued compaction effort does not increase the density of each lift.

4. Trench Backfill. Trenches shall be backfilled to the grade shown. The trench shall be backfilled to a minimum of 3 feet above the top of pipe prior to performing the required pressure tests.

5. Replacement of Unsatisfactory Material. Unsatisfactory material removed from the bottom of the trench or excavation shall be replaced with Satisfactory Material placed in layers not exceeding 12 inches loose thickness.

6. Bedding and Initial Backfill. Bedding and initial backfill shall be material and thickness as shown on the Drawings. Initial backfill material shall be placed and compacted with approved tampers to a height above the pipe as shown on the Drawings. The backfill shall be brought up evenly on both sides of the pipe for the full length of the pipe. Care shall be taken to ensure thorough compaction of the fill under the haunches of the pipe. Install warning tape as shown on the Drawings.

7. Final Backfill. The remainder of the trench shall be filled with material as detailed on the Drawings.

8. Backfill shall be placed and compacted in accordance with 3.8.3 of this Section. Compaction by water flooding or jetting will not be permitted.

9. Frozen Material. Fill shall not be placed on a foundation which contains frozen material, or which has been subjected to freeze-thaw action. This prohibition encompasses all foundation types, including the natural ground, all prepared subgrades (whether in an excavation or on an embankment) and all layers of previously placed and compacted earth fill which become the foundations for successive layers of earth fill. All material that freezes or has been subjected to freeze-thaw action during the construction work, or during periods of temporary shutdowns, such as, but not limited to, nights, holidays, weekends, winter shutdowns, or earthwork operations, shall be removed to a depth that is acceptable to the Engineer and replaced with new material. Alternatively, the material will be thawed, dried, reworked, and re-compacted to the specified criteria before additional material is placed. The Engineer will determine when placement of fill shall cease due to cold weather. The Engineer may elect to use average daily air temperatures, and/or physical observation of the soils for his determination. Embankment material shall not contain frozen clumps of soil, snow, or ice.

B. Drainage shall be maintained during trench excavation and backfill in accordance with Paragraph 3.2, Subparagraph B of this Specification.

C. Dewater trenches is accordance with Paragraph 3.2 Subparagraph C of this Specification.

D. Underground Utilities. Movement of construction machinery and equipment over pipes and utilities during construction shall be at the Contractor's risk. Perform work adjacent to non-owner utilities as indicated in accordance with procedures outlined by utility company. Report damage to utility lines or subsurface construction immediately to the Owner’s Representative.

3.9 MAINTENANCE

A. As necessary, Contractor shall water the site to control dust.

B. Contractor shall protect newly graded areas from traffic and erosion and keep free of trash and debris.

C. Contractor shall repair and re-establish grades in settled, eroded, and rutted areas as directed by the Project Manager.

D. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact in accordance with these Specifications prior to further construction.

E. All open excavations shall be adequately signed and barricaded to protect the public.

3.10 FIELD QUALITY CONTROL

A. The Contractor shall hire an independent firm to observe and document compaction efforts. The following information shall be documented and provided to the Engineer for all fill placed:

1. Location and elevation of fill placed.
2. Thickness of fill lift placed.
3. Classification of material placed and associated gradation test.
4. Number of passes to achieve compaction.
5. Equipment used for compaction.
6. Date.
7. Name of qualified staff documenting compaction.

B. Documentation shall be provided to the Engineer daily for each lift of fill placed.

C. Documentation shall be divided into sublots no bigger than 50 linear feet per lift for trench fills and 50 cubic yards for embankment fills.

D. Within 7 days of completion of fill activities, the independent observation firm shall provide a Compaction Documentation Report that includes a copy of all daily observation reports. The report shall include a statement that all fill materials were placed and compacted in accordance with the requirements of the specifications.

E. Notify the Engineer at least 24 hours in advance of trench backfilling operations to allow for inspection. Failure to obtain inspection prior to placement of backfill may be cause for rejection of installed buried pipelines and placed fills.

F. Owner Testing: Owner may, at his option, use a testing agency to perform field and laboratory testing to verify compliance with requirements of this Section.

END OF SECTION

SECTION 32 31 13

CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Chain-link fence framework, fabric, and accessories.

2. Excavation for post bases and concrete footings for posts.

3. Chain link gates and related hardware.

B. References:

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

ASTM A 90	Tests for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.
ASTM A 116	Specification for Zinc-Coated (Galvanized) Steel Woven ire Fence Fabric.
ASTM A 123	Specification for Zinc (Hot- Dip Galvanized) Coatings on Iron and Steel Products.
ASTM A 392	Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
ASTM F 567	Specification for Installation of Chain Link Fence.
ASTM A 570	Specification for Hot-Rolled Carbon Steel Sheet and Strip, Structural Quality.
ASTM A 572	Specification for High-Strength Low-Alloy Columbium-Vanadium Steels of Structural Quality.
ASTM A 824	Specification for Metallic-Coated Steel Marcelled Tension Wire Use with Chain Link Fence.
ASTM F 669	Specification for Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fence.
ASTM F 668	Specification for Poly (Vinyl Chloride) (PVC) Coated Steel Chain Link Fence Fabric.
ASTM F 900	Specification for Industrial and Commercial Swing Gates.
ASTM F 1083	Specification for Pipe, Steel, Hot-Dipped Zinc Coated

(Galvanized) Welded, For Fence Structures.

ASTM F 1234 Specification for Protective Coatings on Steel Framework for Fences.

C. Chain Link Fence Manufacturer's Institute (CLFMI):

CMFMI PM Product Manual.

1.2 SUBMITTALS

A. Product Data: Submit product data for fabric, posts, accessories, fittings, and hardware.

B. Shop Drawings: Show components, materials, dimensions, sizes, weights, and finishes of components. Include plans, gate elevations, sections, details of post anchorage, attachment, bracing, and other required installation and operational clearances.

C. Concrete Mix Design: Submit proposed mix design for concrete for review prior to commencement of work. Include product data for concrete admixtures.

D. Assurance/Control Submittals:

1. Certificates: Manufacturer’s certificate certifying that Products meet or exceed specified requirements.

2. Qualification Documentation: Submit documentation of experience indicating compliance with specified qualification requirements.

1.3 WARRANTY

A. Special Warranty: Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN LINK FENCE MATERIALS

A. Conform to CLFMI Product Manual.

B. Chain Link Fence Fabric: Fencing fabric shall be 9-gauge, 2-inch mesh, and shall be hot-dip galvanized at a rate of 1.2 ounces per square foot when tested.

C. Steel Framing:

1. Type I: ASTM F 1083 Schedule 40, standard weight galvanized steel pipe, welded construction, minimum yield strength of 25 ksi; coating conforming to ASTM F 1234 Type A on pipe exterior and interior.

2. Type II: ASTM F 669, cold-formed and welded galvanized steel pipe with minimum yield strength of 50 ksi ; coating conforming to ASTM F 1234 Type B on pipe exterior and interior.

2.2 CHAIN LINK FENCE ACCESSORIES

A. Tension Wire: 7 gage steel, metallic-coated coil spring wire, in accordance with ASTM A 824, located at the bottom of fence fabric.

B. Wire Ties: 9 gage galvanized steel.

C. Post Brace Assembly: Manufacturer's standard adjustable brace at end and gate posts and at both sides of corner and pull posts, with horizontal brace located at mid-height of fabric. Use same materials as top rail for brace, and truss to line posts with 0.375 inch diameter rod and adjustable tightener.

D. Post Tops: Galvanized steel, weather tight closure cap for tubular posts, one cap for each post.

2.3 CHAIN LINK FENCE GATES

A. Gate Hardware:

1. Swinging Gate Hardware:

a. Hinges: Provide 2 (each) 4”x 2” bulldog hinges per gate leaf.

b. Latch: Forked type or plunger bar type to permit operation from both sides of gate, with padlock eye.

2.4 CHAIN LINK FENCE AND GATE FINISHES

A. Galvanize as follows:

1. Fabric: Not less than 1.2 oz zinc per square foot.

2. Framing: Not less than 1.8 oz zinc per square foot.

2.5 CONCRETE MIXTURES

A. The minimum mix requirement for fence and gate post concrete shall be as set forth below:

1. Compressive strength: Not less than 3,000 psi at 28 days.

2. Slump: Between 2 and 4 inches.

3. Cement Content in Sacks/Cu. Yd.: Between 5.5 and 6.5.

4. Entrained Air: Between 4 and 7 percent.

5. Coarse Aggregate: AASHTO No. 4 and 67.

6. Fine Aggregate: AASHTO M-6

PART 3 - EXECUTION

3.1 CHAIN LINK FENCE INSTALLATION

A. Install fence in accordance with ASTM F 567 unless otherwise indicated on the drawings.

B. Install gates in accordance with ASTM F 900 unless otherwise indicated on the drawings.

C. Space line posts 10 feet 0 inches on center maximum, unless otherwise indicated on Drawings.

D. Line or Brace Posts:

1. Install line or brace posts as shown in the fence details included in the plans.

E. Corner or Gate Posts:

1. Install corner or gate posts as shown in the fence details included in the plans.

F. Center Rails: Provide center rails where indicated. Install in one piece between posts and flush with post on fabric side, using offset fittings where necessary.

G. Brace Assemblies: Install braces so posts are plumb with rod in tension.

H. Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on security side of fence, and anchor to framework so fabric remains in tension after pulling force is released.

I. Stretcher Bars: To secure end, corner, pull, and gate posts, thread through or clamp to fabric 4 inches on center and secure to posts with metal bands spaced 15 inches on center.

J. Tie Wires:

1. Use 9 gage preformed steel twist ties such as East Twist Ties manufactured by L+C Enterprises or equal. Clasp pipe and fabric firmly with ends twisted two full turns. Bend wire ends to minimize hazards to persons or clothing.

2. Tie fabric to line posts with wire ties spaced 15 inches on center. Tie fabric to rails and braces with wire ties spaced 24 inches on center. Manufacturer's standard procedure will be accepted if of equal strength and durability.

K. Fasteners: Install nuts for tension bands and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

L. Gates: Install gates plumb, level, and secure for full opening without interference. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

3.2 CHAIN LINK FENCE CONSTRUCTION

A. Site Tolerances:

1. Maximum Variation from Plumb: 1/4 inch.

2. Maximum Offset from True Position: 1 inch.

3. Locate fencing components completely within site boundaries. Do not infringe adjacent property lines.

4. Distance from Ground: 1 inch, maximum.

END OF SECTION

SECTION 33 05 26.13

SIGNAGE

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This section covers the furnishing and installation of signs at the bulk tank farm, and marine header.

B. The Contractor shall furnish all signs and fasteners.

1.2 RELATED REQUIREMENTS

A. Section 01 33 00 – Submittal Procedures

1.3 REFERENCES

A. International Fire Code (IFC), Sections 3404.

B. National Fire Protection Association, No. 704

C. State of Alaska, Department of Transportation, “Standard Specification for Highway Construction” and “Standard Drawings Manual”.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00 Submittal Procedures.

B. Submit shop drawings of all signs, including height and width as well as sign thickness. Indicate background color and text color, text information (i.e. height and stroke) proposed for each sign.

C. Submit manufacturer’s data and standard colors for vinyl backgrounds and letters.

D. Submit one (1) sample for approval of each type of fastener used to install, hang or otherwise fasten signs.

PART 2 - PRODUCTS

2.1 GENERAL

A. Signs shall be provided in the locations indicated in the Contract Drawings.

B. Signs posted shall be constructed of 0.08” minimum aluminum plate. Warning signs shall be white non-reflective letters on a red non-reflective background. Informational signs shall be black non-reflective letters on a white non-reflective background, unless otherwise indicated.

C. Lay out letters such that no letters touch or overlap, and all words are clearly readable.

D. Signs and letters shall be sized as indicated on the Contract Drawings.

E. Provide 3M series 255 High Performance vinyl letters on 3M 3650-10 white vinyl background, or as appropriate for the application.

PART 3 - EXECUTION

3.1 GENERAL

A. Install in accordance with IFC flammable and combustible liquid signage standards, and NFPA 704.

B. Signs shall be conspicuously mounted and easily read.

C. Where signs are fastened to fences, the fasteners used shall be steel hog rings or stainless steel wire ties.

END OF SECTION

Appendix A – Soils Management Plan

BGES, INC.

ENVIRONMENTAL CONSULTANTS

BARGE HEADER
GAMBELL, ALASKA

ADEC CONTAMINATED SITE
FILE NUMBER 660.38.002
HAZARD ID 1959

SOILS MANAGEMENT PLAN

APRIL 2020

Submitted to:

Kara Kusche
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, Alaska 99501

Submitted by:

BGES, INC.
1042 East 6th Avenue
Anchorage, Alaska 99501
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LIST OF FIGURES (at end of Work Plan)

1.0 INTRODUCTION

BGES, Inc. (BGES) is pleased to present this Soils Management Plan for the Alaska Department of Environmental Conservation's (ADEC) review and approval for managing potentially contaminated soil that could be encountered during the installation of new gasoline and diesel fuel pipelines between the barge header and the tank farm in Gambell, Alaska; hereafter referred to as the subject property. This Soils Management Plan is part of the project specifications for the Gambell Barge Header Design project being conducted for the Alaska Energy Authority. The pipeline installation activities are anticipated to occur during the summer of 2020. The project consists of installing approximately 2,000 feet of piping in Gambell, Alaska (Figures 1 and 2). A Qualified Environmental Professional (QEP) as defined by the ADEC will implement this Soils Management Plan for managing potentially contaminated soil. The QEP will provide direct field supervision for the tasks presented in this work plan, in the event that contaminated media are encountered.

The purpose of this document is to outline the steps that will be taken in the event that any evidence of contamination is encountered during pipeline installation activities; specifically, to properly document the location of any contaminated soils if they are encountered during replacement of the pipelines.

2.0 BACKGROUND

The Barge Header site is located on the northern beach of Gambell, Alaska, on the northwestern portion of Saint Lawrence Island. Benzene was detected in the drinking water well at the Gambell Elementary School in 1992, and the source of contamination was suspected to be the fuel pipelines on the subject property. The pipelines were subsequently abandoned in place and new pipelines were installed. At that time, soil contamination was documented in two locations along the original pipeline. Benzene concentrations in the school well were below the ADEC cleanup criterion in 1993, and the well was abandoned in 1995. The school has since been connected to the municipal water system. A 10,000-gallon diesel spill was reported during a fuel transfer from a barge in 1997; however, the ADEC could not verify this report. Both sets of existing pipelines were removed in 2004 during site upgrades, and no additional evidence of contamination was documented. Although there were data gaps regarding the presence of contamination on the subject property, the ADEC determined that there was no unacceptable risk to human health or the environment and granted site closure with institutional controls on September 5, 2007. The institutional controls, which remain in place, include requiring approval from the ADEC prior to removal and/or disposal of soil or groundwater to an off-site location and notifying the ADEC prior to installing groundwater wells. The ADEC must also be notified prior to disturbing media at a contaminated site. This Soils Management Plan will be presented to the ADEC to satisfy this requirement.

3.0 SCOPE OF WORK

Based on the information presented above, we have developed this Soils Management Plan for managing potentially contaminated soils (if encountered) in an environmentally appropriate manner.

3.1 Management of Soils During Project Activities

According to the bid specifications for the Gambell Barge Header Design project, the contractor will excavate trenches adjacent to the existing pipelines to approximately 4 feet below grade. The new pipelines will be installed approximately 3 feet from the existing pipelines, which will be abandoned in place. Additionally, two portions of the new pipeline will be installed above the existing grade within depressions, and local fill material will be used to bury those sections of piping. The fill material will be acquired from Sivuqaq, Inc. (the local native corporation). The project does not include off-site transportation or disposal of any soil from the subject property.

In the event that any evidence of contamination is encountered during excavation activities, a QEP will mobilize to the site to perform characterization of the soils as outlined below.

The potentially-contaminated soils will be screened using a photoionization detector (PID). The PID will be calibrated prior to use with 100 parts per million (ppm) isobutylene calibration gas. Excavated soil will be placed adjacent to the trench from where it was excavated. Soil samples will also be collected using clean, stainless-steel spoons for heated headspace readings with the PID by placing the soils in sealed plastic bags; labeling the bags with appropriate identification information; agitating the bags for approximately 15 seconds, and allowing the bags to warm to at least 40 degrees Fahrenheit. Within no less than 10 minutes and no greater than one hour of collection, the bags will again be agitated, the probe of the PID will be inserted into the bags, and the greatest reading associated with each bag will be recorded in the field notebook.

The excavation of any contaminated soils (if encountered) will be limited to only that which must be removed to facilitate installation of the new pipelines. Upon installation of the new pipelines, all soil, including contaminated soil, will be placed back in the trenches as backfill in accordance with the ADEC's Technical Memorandum titled *Managing Petroleum-Contaminated Soil, Water, or Free Product during Public Utility and Right-of-Way Construction and Maintenance Projects,* dated September 2018. As such, all contaminated soil will be returned to the location and depth from where it originated and will be covered with at least 2 feet of clean fill. Additionally, the locations of any contaminated soil will be documented with global positioning system (GPS) coordinates.

In the event that excess contaminated soils cannot be returned to the trench (because of displacement from the pipeline), the excess material will be stockpiled on-site for characterization and disposal. Obviously contaminated and potentially contaminated soils that are excavated will be placed on top of, and covered (when left overnight), with a 6-mil or thicker liner, in accordance with ADEC regulations for short-term storage of contaminated soils as specified in 18 AAC 75.370. The ADEC Project Manager and Alaska Energy Authority will be immediately consulted to determine the appropriate course of action, which will likely include preparation of a work plan for characterization and disposal of the stockpiles.

According to the Gambell Barge Header Design project drawings, the pipeline will be installed no less than approximately 2 feet above the mean high water line; thus groundwater is not anticipated to be encountered during the pipeline installation activities. However, if contaminated groundwater and/or free product are encountered during project activities, the contractor will halt operations and the ADEC Project Manager and Alaska Energy Authority will be immediately consulted to determine the appropriate course of action.

3.2 Reporting

In the event that contaminated soils are encountered during this project, a detailed report documenting the field activities will be prepared. The report will include a narrative description of the field activities, a discussion of field screening results, and field notes. In addition, figures showing the approximate locations of the trenches, the identified contamination, soil stockpiles, and field screening results will be included in the report. Photographs taken before, during, and after the field activities will also be included.

4.0 PROJECT AUTHORIZATION

For your convenience, we have provided an authorization block below, that can be signed and returned to BGES, indicating your authorization to proceed with the project as described above. If you have any questions or require additional information, please do not hesitate to contact us.

BGES, INC.

Prepared by:

Rose Pollock
Environmental Scientist II

Reviewed By:

Robert N. Braunstein, C.P.G., P.G.
Principal Geologist

Work Plan Approval:

The ADEC has reviewed this Soils Management Plan for the pipeline replacement activities at the Barge Header in Gambell, Alaska and hereby provides its approval with the following modifications/additional comments, if applicable:

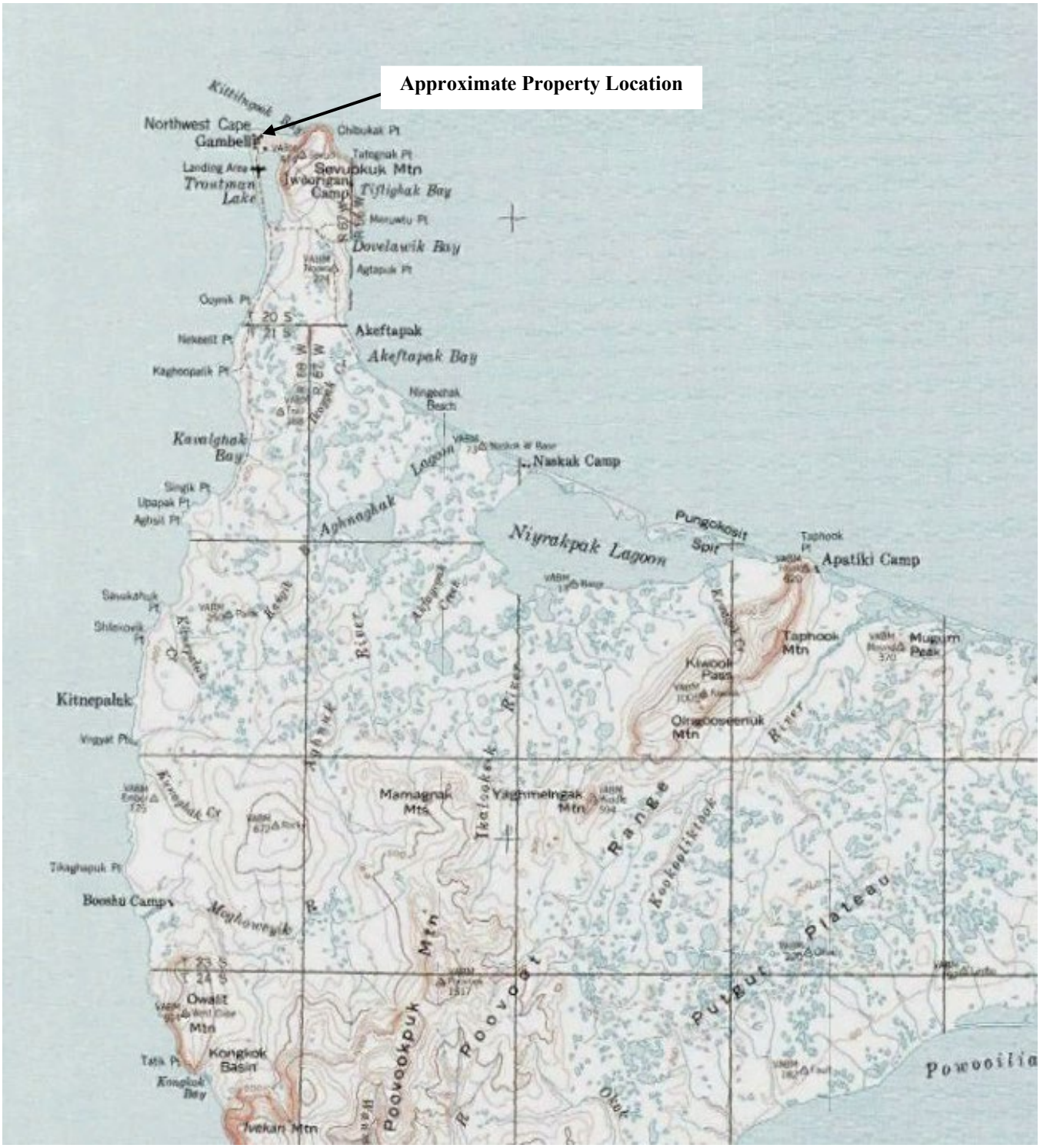
_____

_____

_____

_____ _____

Signature, ADEC Project Manager Date



Source: USGS Topo View ©

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Approximate Scale in Miles

Barge Header
Gambell, Alaska
Property Vicinity Map

BGES, INC.	**April 2020**	**Figure 1**

Source: Google Earth Pro® 2013

0 500 1,000

Approximate Scale in Feet

N

Barge Header
Gambell, Alaska
Site Location Map

BGES, INC. | **April 2020** | **Figure 2**