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|--|--|----------------------------------|--|---|--|--|--|
| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | | | | 1. CONTRACT ID CODE | | PAGE OF PAGES 1 2 | |
| 2. AMENDMENT/MODIFICATION NO. 0005 | | 3. EFFECTIVE DATE 07-Oct-2022 | | 4. REQUISITION/PURCHASE REQ. NO. | | 5. PROJECT NO.(If applicable) | |
| 6. ISSUED BY CODE USAED, WALLA WALLA - CONTRACTING DIV. HILLARY A. MORGAN 201 N. THIRD AVENUE WALLA WALLA WA 99362 | | W912EF | | 7. ADMINISTERED BY (If other than item 6) CODE | | See Item 6 | |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code) | | | | X | | 9A. AMENDMENT OF SOLICITATION NO. W912EF22R0015 | |
| | | | | X | | 9B. DATED (SEE ITEM 11) 18-Aug-2022 | |
| | | | | | | 10A. MOD. OF CONTRACT/ORDER NO. | |
| | | | | | | 10B. DATED (SEE ITEM 13) | |
| CODE | | FACILITY CODE | | | | | |
| 11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS | | | | | | | |
| <input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified. | | | | | | | |
| 12. ACCOUNTING AND APPROPRIATION DATA (If required) | | | | | | | |
| 13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14. | | | | | | | |
| A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. | | | | | | | |
| B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B). | | | | | | | |
| C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: | | | | | | | |
| D. OTHER (Specify type of modification and authority) | | | | | | | |
| E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office. | | | | | | | |
| 14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) The purpose of this amendment is to incorporate the changes outlined below . | | | | | | | |
| Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect. | | | | | | | |
| 15A. NAME AND TITLE OF SIGNER (Type or print) | | | | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) | | | |
| | | | | TEL: _____ EMAIL: _____ | | | |
| 15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign) | | 15C. DATE SIGNED | | 16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer) | | 16C. DATE SIGNED 07-Oct-2022 | |

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

Summary of changes for Amend - 0005
McNary Powerhouse Drainage, Unwatering, and Equalization System Rehabilitation
W912EF22R0015

1. Revised the following Specifications (See revised specification for details):
 - a. SECTION 01 11 01.00 28 SUPPLEMENTARY REQUIREMENTS
 - Revised Paragraph 1.5 TOUCH-UP PAINT.
 - b. SECTION 22 11 00.01 28 PIPING AND VALVES
 - Revised Paragraph 2.1.1 "Galvanized Steel Piping".
 - Revised Paragraph 2.2 VALVES.
 - Revised Paragraph 2.3.10 "Custom Suction Bell"

(End of Summary of Changes)

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Look-Ahead

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SECTION 01 11 01.00 28

SUPPLEMENTARY REQUIREMENTS

PART 1 GENERAL

The work covered by this section of the specifications consists of work common to more than one section of these TECHNICAL SPECIFICATIONS.

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Paint 41 (2008) Moisture-Cured Polyurethane Primer or Intermediate Coat, Micaceous Iron Oxide Reinforced, Performance-Based

SSPC SP 1 (2015) Solvent Cleaning

SSPC SP 16 (2010) Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 Safety and Health Requirements Manual

The Contractor shall be responsible for complying with the current edition and all changes posted on the web as of the effective date of this solicitation.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals having an "I" designation are for information only. Designation following the "G" or "I" designation identifies the office that will review the submittal for the Government. Submit in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Property Management Plan; G, C

Equipment List; I, C

Pre-Construction On-Site Inspection Report; I, C

Air Purity Control Program; I, C

Project Superintendent; I, C

SD-07 Certificates

Key Personnel Substitution; G, C

SD-11 Closeout Submittals

Training Manuals; G, C

1.3 DEFINITIONS

a. Qualified Person.

As defined in EM 385-1-1; "DEFINITIONS", unless otherwise specified.

b. F.O.B.

An abbreviation for free on board, which means that a vendor or consignor will deliver goods on a railroad car, truck, vessel, or other conveyance without any expense to the purchaser or consignee.

1.4 FIELD VERIFICATION OF SITE CONDITIONS

Field verify all elevations, dimensions, and coordinates of existing features indicated on the contract drawings that affect new construction. Any deviations shall be updated as per SECTION 01 78 00.00 28, CLOSEOUT SUBMITTALS, paragraphs WORKING AS-BUILT DRAWINGS.

1.4.1 Pre-Construction On-Site Inspection

Prior to start of on-site work, prepare a [Pre-Construction On-Site Inspection report](#) of existing conditions, with the Contracting Officer (KO). Document existing site conditions prior to Construction by digital photographs, and/or videos along with a descriptive narrative report. Submit to the KO within five (5) calendar days after completion, and in all cases, prior to start of on-site work.

1.5 TOUCH-UP PAINT

a. When connecting new to existing piping, touch-up paint on existing piping to remain that's been damaged due to Contractor work on this project. Existing piping is coated with toxic metals based paint. See SECTION 02 83 33.01 28 TOXIC METALS BASED PAINT REMOVAL AND DISPOSAL, and SECTION 01 57 20.00 28 ENVIRONMENTAL PROTECTION for requirements related to toxic metals based paint (including removal, handling, disposal).

b. Prepare surface to receive touch-up paint per paragraph "Surface Preparation", below. Coat per paragraph "Coating Application".

1.5.1 Surface Preparation

a. Remove loose paint: Remove all loose coatings and those not adhered to the pipe surface.

b. Test paint: Using a ketone solvent soaked rag, wipe existing paint on surfaces to be touched up. If the existing paint is removed by the ketone, the coating is vinyl based and should be touched up with a vinyl paint system as specified in paragraph "Coating Application." If the existing paint is not removed by the ketone, the

coating is not vinyl based and should be touched up with Paint System 23-D as specified in paragraph "Coating Application."

c. Clean surface: Clean surfaces to be painted before applying paint. Remove deposits of grease or oil in accordance with **SSPC SP 1**, prior to mechanical cleaning. Solvent cleaning shall be accomplished with mineral spirits or other low toxicity solvents having a flash point above 100 degrees F. Clean cloths and clean fluids shall be used to avoid leaving a thin film of greasy residue on the surfaces being cleaned.

d. Surface Preparation:

1. Prepare surfaces prior to paint application using **SSPC SP 16** brush blasting, or other appropriate method.

2. Surfaces shall be dry at the time of surface preparation. Roughen all surfaces to receive paint (including existing coatings, as applicable).

3. Feather edges of existing coatings. For vinyl coatings feather edges by rubbing with steel wool soaked in vinyl paint thinner.

4. Prior to the deposition of any detectable moisture, contaminants, or corrosion, all surfaces shall be cleaned of dust and abrasive particles by brush, vacuum cleaner, and/or blown down with clean, dry, compressed air, and given the first coat of paint. See paragraph "Coating Application".

1.5.2 Coating Application

Apply coatings over prepared surfaces per Manufacturer's written instructions. Confirm color with the KO prior to purchase. Procure all coating materials (paints, thinners/solvents in a given paint system) from the same coating manufacturer. Apply each coat in accordance with the manufacturer's written instructions. Comply with the manufacturer's recommendations regarding mixing and thinning requirements, pot life requirements, dry film thickness per coat and minimum and maximum dry time between coats.

a. Vinyl coating: Overcoat vinyl coatings with Formula V-766E paint. Coat to a minimum Dry Film Thickness of 6 mils.

b. Non-vinyl coating: Overcoat all non-vinyl coatings with Paint System No. 23-D, **SSPC Paint 41**. It must be a 3-coat system plus an additional stripe coat applied by brush to all edges, corners, welds, fasteners, and other surface irregularities. Allow the stripe coat to dry as recommended by the manufacturer, prior to the application of the first full coat.

1.6 REGULAR CLEANUP AND DEBRIS DISPOSAL

With the exception of materials specifically indicated or specified to be salvaged for reuse in construction, or turned over to the Government, all wastes and demolished materials shall become the property of the Contractor and shall be removed from the job site daily in accordance with Federal, State, and local regulations. The Contractor shall furnish waste containers. All small waste containers provided by the contractor shall be

emptied daily, large bin containers shall be emptied when full or once a week.

1.7 GOVERNMENT-FURNISHED PROPERTY

Submit a [Property Management Plan](#) in accordance with FAR Clause 52.245-1 Government Property.

1.8 EQUIPMENT LIST

Furnish a complete list of all equipment to be used on the Project 30 days prior to commencement of on-site work. Submit a revised list in the event of change of equipment. Lists shall include rented equipment as well as lease-purchase or sale-leaseback equipment. The initial list and the revised lists shall indicate dates equipment is assigned to or removed from the Project and adequate identification or description of each item of equipment including manufacturer's name (abbreviated), model number, manufacturer's serial number, year of manufacture, and Contractor's assigned serial or record number.

1.9 TESTING OF EQUIPMENT

Before any machinery or mechanized equipment is put to use on the job, it shall be inspected and tested by a qualified person and determined to be in safe operating condition. Cranes or derricks shall be tested by the Contractor or a qualified testing agency in accordance with [EM 385-1-1](#). Equipment shall be large enough to safely handle proposed picks or tasks without exceeding the crane rating established by these tests.

1.10 DISPOSITION OF REMOVED MATERIALS AND EQUIPMENT

Unless otherwise specified in other sections of the specifications, all existing equipment removed and not reinstalled shall become the property of the Contractor, removed from the Project site, and disposed of in a legal manner. Materials that cannot be removed daily may be temporarily stored on-site at an approved area. Salvaged materials shall not be sold on the project site.

1.11 PROTECTION AND RESTORATION OF EXISTING FACILITIES

Reference FAR 52.236-9 Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements (Apr 1984).

1.12 PROTECTION OF POWERHOUSE FLOORS

a. Care shall be taken to prevent damage to all floors and curbs within the Powerhouse. Protection shall include a continuous layer of oil-impervious kraft paper over the existing floor surface with joints of the kraft paper joined with an appropriate tape. In addition, tongue and groove 3/4-inch-thick Oriented Strand Board (OSB) plywood shall be installed over the craft paper at all work and storage areas. Plywood joints shall be fastened to ensure edges of plywood sheets are, and remain, flush with each other and do not pose a tripping hazard during execution of this work. Minimum nominal 2"x4" wood shall be installed along existing curb features within the contractor work areas and along perimeters of the work areas. Wood used for curb protection shall be secured in place without anchoring into the existing floors or curbs.

b. Pipe trenches shall remain accessible even if covered. All designations relating to fire protection equipment that get covered shall be marked on the temporary floor covering. Provide additional blocking and wood supports when required. Also suitably protect other surfaces of work. Damage to floors or curbs caused by the Contractor's operations shall be repaired at no additional cost to Government. Repairs shall match the surrounding area in material type, color, texture, and surface finish and are subject to approval. Work in the powerhouse shall not start until floor and curb protection is in place.

1.13 AIR PURITY CONTROL IN THE POWERHOUSE

Take all necessary precautions to maximize the control, and prevention, of all dust and fumes created by operations under this contract from escaping into the powerhouse. To the maximum extent possible, all dust and dirt shall be removed by vacuum cleaning. At least 30 calendar days prior to commencement of work in the powerhouse, submit for approval, in writing, a proposed [Air Purity Control Program](#). Air Purity Control Program shall include, but not be limited to, the following:

- (a) Adequate isolation and ventilation of air arcing, welding, burning, and grinding operations.
- (b) Provision of exhaust ducts that shall discharge outside the powerhouse structure where mechanical ventilation is used.
- (c) Controlled operation of power driven tools.
- (d) Furnishing and removing of oiled sawdust or other dust preventatives in areas that cannot be properly rendered free from excessive dusting by vacuum cleaning or other methods.
- (e) Vacuum cleaning of spaces within the work areas where dust accumulates.
- (f) Air-, electrical-, or battery-driven equipment may be used inside the powerhouse.
- (g) Internal-combustion engine powered equipment will not be permitted to operate inside the powerhouse unless exhausted to the exterior except for short periods of time (not to exceed 15 minutes in a 2 hour window) to unload materials and equipment.

Depending upon the Contractor's plant, equipment, and methods of operation, additional provisions for satisfactory air purity control will be required and shall be included in the proposed Air Purity Control Program.

1.14 DISCONNECTED OIL LINES

Anytime an oil line is disconnected by the Contractor due to work performed under this contract it shall be the Contractor's responsibility to cap the line. Oil line cap shall be rated at 125% of the pressure in the line. Contractor shall notify the KO that an oil line has been disconnected, and then document by KO witness that the disconnected oil line has been sealed to ensure no transfer of oil or water from or into the sealed line.

1.15 TRAINING

a. Provide the services of authorized start-up engineers (Manufacturer's Representatives) as necessary to provide training in programming, operation and maintenance of equipment installed under this contract. Provide training for operators and maintenance personnel prior to project operation of the newly installed equipment.

b. Provide two, eight-hour class sessions; one class for operators and maintenance personnel and one for system managers and engineers. Each class session shall include approximately 6 employees. The Government will provide for the training location.

c. In addition, provide one, eight-hour class session for approximately 6 employees to cover training requirements of SECTION 25 05 11.00 28 CYBERSECURITY, and SECTION 40 94 43.00 28 PROCESS CONTROL - PROGRAMMABLE LOGIC CONTROLLERS (PLC).

d. Submit [training manuals](#) and documentation for approval 60 calendar days prior to scheduled classes. Furnish sufficient training materials at the training classes for all students plus a minimum of three (3) copies for project files. Where audio/visual materials are used in training classes, three (3) copies of such materials shall be furnished to the Project for use in future training.

e. Training shall include hands-on training for all Project personnel in training sessions. Each attendee shall operate all controls and systems installed, or updated, as part of work on this contract.

f. It shall be the Contractor's responsibility to coordinate the training sessions with the Project to ensure minimum conflicts with ongoing Project work.

1.15.1 Digital Recording

Film the first training session of each equipment with independent function. Filmed sessions must cover all new equipment installed. Filming is not required for equipment with redundant functions; i.e. only one Unwatering Pump Motor is necessary. Two (2) copies of the filmed sessions will be provided to the Government on DVD. DVD's will have profession labels on both the DVD case and on the DVD. Labels will include the equipment covered on that training disc. Recordings will use at a minimum MPEG-2 format with a resolution of no less than 720 X 480 pixels at 29.92 frames per second. Different recording formats may be proposed by the Contractor but require approval before the Government will accept them.

1.16 [PROJECT SUPERINTENDENT](#)

The Contractor's Project Superintendent shall be on the worksite during performance of work on this contract. The Project Superintendent is required on the worksite, at all times work is being performed, until work on this contract is completed and accepted. Assign a competent superintendent as per FAR Clause 52.236-6 "Superintendence by the Contractor". Submit Superintendent name and contact information prior to start of on-site construction.

1.17 KEY PERSONNEL SUBSTITUTION

If the Contractor plans on replacing any Key personnel (Project Superintendent, CQC System Manager, or CQC staff Members) they must have the approval of the Contracting Officer. Personnel shall possess the qualifications that meet or exceed those stated in this contract for the position of the individual they are replacing. Submit qualifications of new personnel at least 15 calendar days in advance of date of replacement.

1.18 POST AWARD MEETINGS

1.18.1 Pre-Work Meeting

Within fourteen (14) calendar days after receipt of Notice to Proceed, attend a Pre-Work Meeting. Senior Level members of the Contractor's staff involved with this contract shall participate in this meeting to discuss the overall contract requirements. **The Government will lead this meeting** and take the meeting minutes.

1.18.2 Pre-Initial Project Schedule On-Site Schedule Review

See SECTION 01 32 01.00 28 PROJECT SCHEDULE, paragraph "Pre-IPS Submission On-Site Schedule Review" for information.

1.18.3 On-Site Coordination Meeting

a. Within 45 calendar days after receipt of Notice to Proceed, the Contractor shall attend a Coordination meeting at the Project site. Key members of the contractor staff shall attend this meeting including the Quality Control (QC) System Manager, Site Safety and Health Officer (SSHO) and any other members determined by the Government to be required.

b. Topics will include, but not be limited to the following:

1. General Project overview and sequencing of work.
2. Contractor orientation to Drainage and Unwatering Systems and operations.

c. Anticipate 8 hours for the On-Site Coordination Meeting.

1.18.3.1 Minutes

Contractor is responsible for taking the meeting minutes. Send minutes electronically within 48 hours of the meeting to the Government's Project Engineer, Quality Assurance Representative, and Resident Engineer.

1.18.4 Pre-Construction Meeting

Coordinate with the Contracting Officer and establish the date of the Pre-Construction Meeting. The meeting will be held at the Project site at least one (1) week prior to mobilizing to the job site. **The Contractor shall lead the Pre-Construction Meeting** discussing the Contractor's plan on executing the work at the project site, schedule, required clearances and timeframe for them, and plan for implementing safety and quality control. The Government will have key members from the Project staff to discuss environmental and clearance issues. Key members of the contractor staff shall attend this meeting including the Quality Control (QC) System

Manager, Site Safety and Health Officer (SSHO) and any other members determined by the Government to be required.

1.18.4.1 Minutes

Contractor is responsible for taking the meeting minutes and shall send them electronically within 48 hours of the meeting to the Government's Project Engineer, Quality Assurance Representative, and Resident Engineer.

1.18.4.2 Demobilizing And Remobilizing

Anytime the Contractor demobilizes from the site and remobilizes at a later date, another Pre-Construction Meeting shall be held and shall follow the requirements listed above.

1.18.5 RMS Orientation Meeting

a. An RMS (Resident Management System) Orientation Meeting will be held within Fifteen (15) calendar days after receipt of Notice to Proceed. See SECTION 01 45 01.00 28 RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM) for additional information. Orientation meeting will be at District Headquarters, and may occur in conjunction with, but not at the same time as, the Pre-Work meeting. Coordinate meeting date and time with the Contracting Officer a minimum of 7 calendar days prior to the meeting.

b. At a minimum, the Contractor's RMS-CM Administrator and QC system manager shall attend the RMS Orientation meeting. A Government Representative will lead the orientation. Anticipate the following at the meeting:

1. Allow for a maximum 4 hour duration.

2. Cover the following topics, at a minimum, in RMS Contractor Mode (CM):

- i. Contractor use of RMS (CM) system.

- ii. Contractor Data.

- iii. Quality Control Reports.

- iv. Submittals.

- v. RFIs.

- vi. Payment.

3. Receive a follow-up handout/guide for reference on the above items.

c. Contractor employees shall bring a computer with Wi-Fi capability (to gain access to the Internet), with RMS pre-loaded.

d. The RMS Orientation Meeting is required for Contractors with no prior RMS experience. The RMS Orientation Meeting, is optional, but may be requested, for all other Contractors.

1.19 WEEKLY PRODUCTION MEETINGS

During all fabrication and onsite construction work, hold a weekly production meeting to brief the Government on the status of the project.

a. Use the attached "Weekly Meeting Agenda" and discuss all elements of this agenda.

b. Provide a three (3) week 'look ahead'. The "Look-Ahead" shall be generated in P6 and then copied into Excel for more detail (see look-ahead examples at the end of this section).

1. Describe all planned construction activities, on-site and off-site over the next three (3) weeks.

2. ENSURE these activities align to the overall construction SCHEDULE submitted under PROJECT SCHEDULE.

3. RECORD any changes to the Project Schedule AND INCLUDE IN the next scheduled update.

c. Key members of the Contractor's staff including the Quality Control System Manager and the SITE SAFETY AND HEALTH OFFICER shall attend.

d. The Quality Control System Manager shall discuss all QC aspects outlined in SECTION 01 45 04.00 28 CONTRACTOR QUALITY CONTROL.

e. The Government reserves the right to require any person from the Contractor's staff such as the Project Manager, Engineer, Scheduler or Key Subcontractor Personnel to attend the meeting.

1.19.1 Construction Progress Photos

a. During on site construction activities record construction progress with weekly progress photographs. Submit digital photographs weekly for use at the WEEKLY PRODUCTION MEETING. Photographs provided are for unrestricted use by the Government.

1. Photos shall be submitted at the end of each work week.

2. Furnish digital photographs, Utilize JPEG file format for all photograph and image files.

3. Provide full-color photos with photo resolution of not less than 4 megapixels and not more than 12 megapixels. Photos shall show the sequence and progress of work.

4. Take a minimum of 20 digital photographs each week throughout the entire project.

b. Ensure that the photographs are digitally dated. Log shall be furnished for each photograph that records the following information:

1. Photograph number (the specific format should be tied to the filename of the electronic photograph).

2. Date the photograph was taken.

3. A brief description of the location, what the photograph

depicts, and the orientation of the view.

1.19.2 Minutes

The Contractor shall be responsible for taking the meeting minutes and shall send them electronically within 24 hours of the meeting to the Government's Project Engineer, Quality Assurance Representative, and Resident Engineer.

1.20 ADDITIONAL MEETINGS

Record the minutes of all meetings, including all conference calls, that occur between the Contractor and Government. Send minutes electronically within 24 hours of the meeting to the Contracting Officer for concurrence. E-mail subject line shall include project name and meeting topic.

1.21 PARTNERING

1.21.1 General

The Government intends to encourage the foundation of a cohesive partnership with the Contractor and its subcontractors by informally partnering this contract. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance with the intent to achieve a safe completion of the work - within budget, on schedule, and in accordance with plans and specifications. This partnership would be bilateral in makeup and participation will be totally voluntary. If Partnering is pursued, meetings would be held as identified in the following paragraph.

1.21.2 Partnering Meetings

Within 30 calendar days of receipt of Notice to Proceed, the initial partnering meeting will be scheduled, if the meeting is requested by the Contractor. The Contractor's key personnel will attend a face-to-face partnering meeting (typically one day in duration) together with key Government personnel, to discuss project goals and communication. Follow-up meetings will be held periodically, as required, throughout the duration of the contract, as agreed to by the Contractor and the Government. The Government will facilitate the meeting.

1.22 RED ZONE MEETING

a. Within one (1) month of completing the project or when the project is 80 percent completed, the Contractor shall set up and lead a Red Zone meeting. The Contractor shall contact the Contracting Officer to Schedule this meeting. The Government's representative will include the Contracting Officer, key personnel from the Project, Project Engineer, Quality Assurance Representative, and Resident Engineer. The key people from the Contractor shall be, at a minimum, the Project Superintendent, Quality Control System Manager, Scheduler, key subcontractors personnel, and Project Manager.

b. The purpose of this meeting is to develop an overall schedule for all activities required by both the Government and Contractor and to complete the project through commissioning and final acceptance. The Government will come prepared with all their activities, key dates, and durations for all work required by the Government to complete the

project. The Contractor shall provide the same information for all of their activities. The Contractor's scheduler shall input all of this information into the Contractor's project schedule during the meeting.

c. This schedule shall be updated weekly, or as needed, based on the information from the weekly production meetings for both the Government and Contractor activities.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

-- End of Section --

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 - 3.4.2 Pipe Labels

ATTACHMENTS:

McNary Piping Color Marker Identification and Label Scheme

-- End of Section Table of Contents --

SECTION 22 11 00.01 28

PIPING AND VALVES

PART 1 GENERAL

1.1 SCOPE

This section specifies the materials and workmanship standards applicable to the fabrication, assembly, installation, and testing of the various items of piping work. These requirements are in addition to those contained in other sections or indicated on the drawings.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M (2020; Errata 1 2021) Structural Welding
Code - Steel

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B1.20.1 (2013; R 2018) Pipe Threads, General
Purpose (Inch)

ASME B16.3 (2016) Malleable Iron Threaded Fittings,
Classes 150 and 300

ASME B16.42 (2016) Ductile Iron Pipe Flanges and
Flanged Fittings, Classes 150 and 300

ASME B16.5 (2020) Pipe Flanges and Flanged Fittings
NPS 1/2 Through NPS 24 Metric/Inch Standard

ASME B16.21 (2016) Nonmetallic Flat Gaskets for Pipe
Flanges

ASME B16.34 (2017) Valves - Flanged, Threaded and
Welding End

ASME B31.3 (2016) Process Piping

ASME B31.9 (2017) Building Services Piping

ASME B40.100 (2013) Pressure Gauges and Gauge
Attachments

ASTM INTERNATIONAL (ASTM)

ASTM A 53 (1997) Pipe, Steel, Black and Hot-Dipped,
Zinc-Coated Welded and Seamless

| | |
|-------------------|---|
| ASTM A 105/A 105M | (2005) Carbon Steel Forgings for Piping Applications |
| ASTM A 516/A 516M | (2004) Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service |
| ASTM A536 | (1984; R 2014) Standard Specification for Ductile Iron Castings |
| ASTM A123/A123M | (2017) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products |
| ASTM A320/A320M | (2015) Standard Specification for Alloy/Steel and Stainless Steel Bolting Materials for Low-Temperature Service |

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

| | |
|------------|--|
| ASME A13.1 | (2020) Scheme for the Identification of Piping Systems |
|------------|--|

AMERICAN WATER WORKS ASSOCIATION (AWWA)

| | |
|------------------|--|
| AWWA C110/A21.10 | (2012) Ductile-Iron and Gray-Iron Fittings for Water |
| AWWA C116/A21.16 | (2015) Protective Fusion-Bonded Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray Iron Fittings |
| AWWA C213 | (2015) Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines |
| AWWA C515 | (2009) Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service |
| AWWA C606 | (2015) Grooved and Shouldered Joints |

ASTM INTERNATIONAL (ASTM)

| | |
|-----------------|--|
| ASTM A312/A312M | (2019) Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes |
|-----------------|--|

INTERNATIONAL CODE COUNCIL (ICC)

| | |
|-------------------|------------------------------------|
| ICC Plumbing Code | (2012) International Plumbing Code |
|-------------------|------------------------------------|

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)

| | |
|------------|---|
| MSS SP-25 | (1998) Standard Marking System for Valves, Fittings, Flanges and Unions |
| MSS SP-110 | (2010) Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and |

Flared Ends

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals having an "I" designation are for information only. When used, a designation following the "G" or "I" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Identification Tags; G, C

Valve Operator Color Schedule; G, ME

SD-02 Shop Drawings

Piping Drawings; G, ME

SD-03 Product Data

Resilient Seat Wedge Gate Isolation Valves; G, ME

Silent Check Valves; G, ME

Double Wafer Check Valve; G, ME

Unwatering Discharge Plug; G, ME

Ball Valves; I, ME

Equalizer Valve Packing; I, ME

Spare Equalizer Valves; I, ME

Miscellaneous Piping Materials; I, ME

SD-06 Test Reports

Water Piping Test Plan; G, ME

Discharge Piping Weld Test; I, ME

1.4 QUALITY ASSURANCE

Plumbing systems including fixtures, equipment, materials, installation, and workmanship shall be in accordance with the ICC Plumbing Code (referred to herein as Plumbing Code) except as modified herein. In the Plumbing Code the advisory provisions shall be considered to be mandatory, as though the word "shall" had been substituted for the word "should" wherever it appears; reference to the "authority having jurisdiction," the Administrative Authority, the Plumbing Official, and the Design Engineer shall be interpreted to mean the Contracting Officer.

1.5 PIPING DRAWINGS

The Contractor shall submit Piping Drawings for the pump discharge and inlet pipes, pump columns as well as all replaced drainage piping.

Drawings shall consist of plans drawn to scale, with elevations, sections and details to show clearly the location (by dimension to pertinent building features) of all piping. This includes but is not limited to, details of connections and size and type of piping and valves, all support types and locations, pipe thrust restraints, sway braces, and appurtenances.

PART 2 PRODUCTS

2.1 WATER PIPING

2.1.1 Galvanized Steel Piping

Steel pipe, unless otherwise specified, shall be galvanized steel pipe conforming to **ASTM A 53**, Type S, Grade B, seamless pipe. For all nominal pipe sizes flanged connection and fittings shall be used according to **ASME B16.5** and **ASME B16.42** class 150 as applicable, unless noted otherwise. For nominal pipe sizes less than 4 inches in diameter that cannot be flanged due to existing conditions threaded connections and fittings shall be used according to **ASME B16.3** class 150, unless noted otherwise. Fabricated piping shall be "hot-dip" galvanized in accordance with **ASTM A123/A123M** after all welding is complete. All welding and repairs to galvanizing shall be done according to **05 50 14.00 28 METALWORK-~~AND METAL FABRICATION~~STRUCTURAL METAL FABRICATIONS**.

2.1.2 Stainless Steel Piping

Stainless steel pipe shall meet the requirements of **ASTM A312/A312M**, seamless, Grade TP304, TP304L, TP316, or TP316L, Schedule 10S with dimensions conforming to **ASME B31.9**.

2.2 VALVES

Generally, valves shall conform to **ASME B16.34** as applicable or unless specified otherwise. Valves of nominal sizes equal to or greater than 4 inches in diameter shall have flanged end connections conforming to **ASME B16.42** class 150. Valves of nominal sizes less than 4 inches in diameter shall have threaded end connections according to **ASME B16.3** class 150 with a union on all but one side of the valve, or solder end connections for connections between bronze valves and copper tubing. All new valves shall be provided with means to lock them in both the open and closed positions. Contractor shall verify the existing dimension of all valves over 6 inches in diameter to confirm new replacement valves will fit within the existing space per SECTION **01 11 01.00 28 SUPPLEMENTARY REQUIREMENTS**, paragraph FIELD VERIFICATION OF SITE CONDITIONS. Unless otherwise specified, all valves must be coated per manufacture's standard recommendations for intended use.

2.2.1 Resilient Seat Wedge Gate Isolation Valves

Resilient Seat Wedge Gate valves shall conform to **AWWA C515**. Valves shall have a ductile iron body, stainless steel stem, bronze mounted trim, bolted bonnet and EPDM rubber encapsulated ductile iron wedge. Each valve shall be provided with a non-rising stem and a geared handwheel operator with chain for valves located more than 6 feet above the floor. For valves located at EL 176 and 207 provide the necessary shaft extensions and operator base as shown on plans. Shaft segments, couplings, bushings and operator base shall be provided per manufactures recommendation. Shaft supports for draft tube valves shall be supplied per valve manufacturer's

specifications to maintain shaft alignment and be anchored to wall per SECTION 05 05 20.00 28 POST-INSTALLED ANCHORS IN CONCRETE. Valves shall open when turned counter-clockwise. Valves operators shall be color code as follows, normally open green, normally closed red and anything else yellow. The Contractor shall submit the following product data:

Resilient Seat Wedge Gate Isolation Valves

Valve Operator Color Schedule

NOTE: Penstock Drain valves shall be Resilient Seat Wedge Gate Isolation Valves.

2.2.2 Equalizer Valves

Supply two spare equalizer valves for direct replacement of existing 24 inch 100s Stockholm 150 OWG valves. Spare valves must be resilient seat wedge gate valves. Spare equalizer valves shall be on-site prior to start of construction work.

Spare Equalizer Valves

2.2.2.1 Equalizer Valve Packing

Supply and install new stem packing for all existing equalizer valves. Equalizer valves are vintage 1952, 24 inch 100s Stockholm 150 OWG. Submit product data from packing manufacturer showing the design of the new custom packing will work with existing valves.

Equalizer Valve Packing

2.2.3 Silent Check Valves

The check valve shall be a silent type check valve and begin to close as forward flow diminishes and be fully closed at zero flow velocity preventing flow reversal and resultant water hammer or shock. The valve body shall be constructed of ductile iron meeting ASTM A536 class 150. The valve shall be provided with flanges according to ASME B16.42 class 150. The Contractor shall submit the following product data:

Silent Check Valves

2.2.4 Double Wafer Check Valve

Double wafer check valve will consist of a double flap springs assisted design, Buna-N O-ring seal, and cracking pressure of not more than 0.3 psi. The valve body shall be constructed to meet ASME Class 150. The valve shall be of lug body design or be provided with flanges according to ASME B16.42 class 150. All internal working components such as pins, hinge and wafer shall be stainless steel. The Contractor shall submit the following product data:

Double Wafer Check Valve

2.2.5 Unwatering Discharge Plug

- a. The Unwatering Discharge Plug shall be installed into the unwatering 18 inch discharge pipe located in the tailrace at elevation

260. Contractor must first remove the broken 18 inch flapper valve. Plug shall be blind flange with 3 inch air snorkel. The snorkel shall reach a minimum elevation of 275 when installed and terminate in a goose neck configuration. Air snorkel shall be made out of schedule 40 steel pipe. Supply 18 inch gasket to ensure a good seal between blind flange and pipe. Contractor shall verify the condition of the embedded flange prior to plug fabrication during the fish ladder outage of 2023. The contractor shall submit the following shop drawing:

Unwatering Discharge Plug

b. After removal from the Unwatering Discharge pipe, the Unwatering Discharge Plug will become property of the Government. Turn the plug over to the Contracting Officer after removal. Dispose of broken flapper valve.

2.2.6 Ball Valves

Ball valves for pipe sizes less than 2.5 inches shall conform to the requirements of MSS SP-110 full port design, copper alloy. Valves shall have two-position lever handles.

2.3 MISCELLANEOUS PIPING MATERIALS

Supply all needed pipe fitting materials to include, but not limited to: bolts, nuts, gaskets, etc. Re-use of such materials is prohibited. Submit product data for all miscellaneous piping materials.

2.3.1 Flanges and Gaskets

Flanged fittings, including flanges, bolts, nuts, bolt patterns, etc., shall be in accordance with ASME B16.5 Class 150 and shall have the manufacturer's trademark affixed in accordance with MSS SP-25. Flange material shall conform to ASTM A 105/A 105M. Blind flange material shall conform to ASTM A 516/A 516M. Bolts shall conform to ASTM A320/A320M. Flange gaskets shall be full face flat type gaskets conforming to the requirements of ASME B16.21. Flange gaskets for the collection piping in the drainage sump, and EL 207 Gallery piping with flange connection to concrete, shall be Nitrile rubber suited for non-potable water service and resistant to a wide range of oils, greases and other lubricants. Flange gaskets for the pump discharge piping shall be suited to non-potable water service with galvanized piping.

2.3.2 Mechanical Couplings

Mechanical couplings for use with grooved ends are acceptable for piping 8 inch diameter and less. Provide pipe ends grooved by roll grooving or with welded-on adapters and cut grooves in accordance with AWWA C606. Provide grooves as recommended by the coupling manufacturer.

2.3.3 Threaded Fittings

Threaded fittings shall be made of galvanized malleable iron and conform to the requirements of ASME B16.3 class 150. Threaded joints shall have American Standard taper pipe threads conforming to ASME B1.20.1.

2.3.4 Expansion Joints

Expansion joints shall be made of EPDM with galvanized carbon retention

rings sized to match piping. Joints shall have a minimum working pressure of 115 psi. Contractor shall verify size of each joint needed.

2.3.5 Flanged Coupling Adapter

Adapter body shall be per ASTM A536 Grade 65-45-12. Flange shall meet AWWA C207 Class D and per ANSI B16.1 Class 125 with O-ring material being NBR (Buna-N). Coupling gasket to meet ASTM D2000.

2.3.6 Welded Outlets

Where indicated branches in pipe spools shall be made using welded branch outlets. Outlets shall be designed for their intended purpose and made of a material compatible with the pipe spool. Outlets shall be formed to allow a full penetration weld between the pipe spool and outlet. Outlets shall be sized to match the branch pipe size.

2.3.7 Pressure Gauges

Pressure gauges shall be installed as indicated. Gauges shall be of the pressure indicating dial type, glycerin filled with an elastic element. Gauges shall conform to the minimum requirements of ASME B40.100. Gauges shall have a minimum 6 inch diameter face and be equipped with an isolation valve.

2.3.8 Offset Pipe Clamps

Offset pipe clamps in the drainage sump shall be stainless steel to match the material of the pipe which they support and be of the size required to fit the pipe supported. Material shall be minimum 1/4" by 1-1/2" for 4" pipe and minimum 1/4" by 2" for 6" pipe.

2.3.9 Draft Tube Drain Tee

Draft tube drain tee's shall be class 150 conforming to AWWA C110/A21.10 and coated per AWWA C116/A21.16.

2.3.10 Custom Suction Bell

The suction bells shall be fabricated according to the plans, meeting ASTM A 53 and, along with its support piping, be coated in accordance with AWWA C213. Flange connection shall be per ASME B16.5. Suction bell shall be fabricated and inspected per SECTION ~~05-50-14.00~~ 05 50 14.00 28 STRUCTURAL METAL FABRICATIONS.

2.3.11 Drainage Header Clean Out

The drainage header cleanout must be coated in accordance with AWWA C213.

PART 3 EXECUTION

3.1 INSTALLATION

Installation of plumbing systems including piping, equipment, materials, and workmanship shall be in accordance with the ICC Plumbing Code, except as modified herein. Plastic piping shall not be permitted.

3.1.1 Pipe Plug Installation

The unwatering pipe plug shall be installed prior to removal and replacement of the 18 inch unwatering pump isolation gate valve. Plug to be removed immediately after installation of the isolation valve.

3.1.2 Piping Joints

Installation of pipe and fittings shall be made in accordance with the manufacturer's recommendations. Mitering of joints for elbows and notching of straight runs of pipe for tees will not be permitted. Joints shall be made up with fittings of compatible material and made for the specific purpose intended.

3.1.2.1 Threaded

Only male pipe threads shall be coated with graphite or with an approved graphite compound, or with an inert filler and oil, or shall have a polytetrafluoroethylene (PTFE) tape applied.

3.1.2.2 Unions and Flanges

Unions, flanges and mechanical couplings shall not be concealed in walls, ceilings, or partitions. Unions shall be used on pipe sizes less than 4 inches; flanges shall be used on pipe sizes 4 inches and larger.

3.2 FIELD QUALITY CONTROL

3.2.1 Inspections

Prior to initial operation, inspect piping system for compliance with drawings, specifications, and manufacturer's submittals.

3.2.2 Field Testing

Each system shall be tested as in service in order to demonstrate compliance with the contract requirements before final acceptance of the work. Perform the following tests in addition to the tests specified in the Plumbing Code, except as modified herein. The results of each test shall be submitted in report form. Defects in the work shall be corrected by the Contractor, and tests repeated until work is in compliance with contract requirements. All corrections and subsequent testing shall be done at no additional cost to the Government. The Contractor shall furnish water, electricity, instruments, connecting devices, and personnel for performing tests.

3.2.2.1 Water Piping Test Plan

Hydrostatically test piping systems in accordance with ASME B31.3. Vent or flush air from the piping system. Pressurize system for 10 minutes with water at one and one-half times design working pressure of the pump, then reduce to design working pressure and check for leaks and weeps. Contractor shall submit a test plan for approval. No rupture, cracking or permanent distortion of any part of the pump shall be observed in a test when hydrostatically tested at the required pressure. The Contractor shall submit the following:

Water Piping Test Plan

3.3 WELD TESTING

Test unwatering and drainage pump discharge piping welds in accordance with the AWS D1.1/D1.1M ultrasonic test (UT) method.

Discharge Piping Weld Test

3.4 IDENTIFICATION SYSTEMS

3.4.1 Identification Tags

Identification tags made of engraved laminated plastic or engraved anodized aluminum shall be installed on all valves. Tags shall be 4-1/2 inch wide by 3-1/2 inch tall, and marking shall be stamped or engraved. If the tag is indoors and protected from UV light it can be a plastic tag, if the tag is in an exterior or exposed to UV light then the tag shall be engraved anodized aluminum. Indentations for tags should be green on white with white lettering. Information on the tag shall include the valve ID #, description, location, elevation. Tags shall be attached to valves with two corrosion resistant cables or clamp on fasteners. Submit identification tag template and valve list prior to tag fabrication.

3.4.2 Pipe Labels

All piping shall have labels in accordance with ASME A13.1. Drainage and Unwatering Sump discharges are considered drains. See attached McNary Piping Color Marker Identification and Label Scheme.

-- End of Section --

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