International Boundary and Water Commission

United States and Mexico

United States Section

Design-Build Scope of Work

Retamal Dam

New Waterway Barrier Line with Anchors, Alert System, and Warning Signs

Hidalgo County, Texas

Solicitation 191BWC26Rxxxx

March 18, 2026

International Boundary and Water Commission
United States Section
Construction Management Division
El Paso, Texas

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International Boundary and Water Commission
United States Section

SCOPE OF WORK
DIVISION 00
PROCUREMENT AND CONTRACTING REQUIREMENTS

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1.3. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.4. DEFINITIONS

1.4.A. Within this Section, the following terms are used interchangeably.

1.	Bid	-	Offer	-	Proposal
2.	Solicitation	-	Request for Proposal	-	RFP
3.	Bidder	-	Offeror	-	Design-Builder

1.5. DUTY TO INQUIRE

1.5.A. Bidders shall review the full Solicitation and all Contract Documents including, but not limited to, Scope of Work, Contract Drawings, USIBWC provided data, referenced items, attachments, etc. to determine the full scope of work required.

1.5.B. If during review of these items, the Bidder finds discrepancies, omissions, conflicts, defects, errors, or ambiguities, they have a duty to inquire. The Bidder shall also inquire about items that are open to interpretation.

1.5.C. The Bidder shall inquire about items as soon as they are discovered, whether before deadline for submission of bidder questions, whether after deadline for submission of bidder questions, whether after submission of bids, or whether after Contract award.

1.5.D. If the Bidder fails to inquire, they forfeit their right to any claim based upon said discrepancies, omissions, conflicts, defects, errors, ambiguities, or items that are open to interpretation. The Bidder shall be proceeding at their own risk based upon only their unilateral interpretation.

1.5.E. The Bidder shall take no advantage of any item of which they have a duty to inquire.

1.6. INVESTIGATION OF SITE CONDITIONS

1.6.A. The Bidder, as well as their subcontractors, is urged to visit the worksite and project area to become fully aware as to the existing conditions affecting the work to be performed under the Contract Documents. A site visit will be announced during the solicitation. Each Bidder shall attend at their own expense. The Government will not pay for any site visits. This visit is intended to provide the potential Bidders the opportunity to observe site conditions and incorporate into their proposal any required work based on site conditions. The Bidder will have the opportunity to walk around during the site visit. Unless otherwise noted, no other opportunity will exist for visits to the site.

1.6.B. The Bidder shall be responsible for ensuring that all of its suppliers, manufactures and subcontractors have reviewed all applicable Contract Documents relative to their work. The Bidder shall provide all labor, material, equipment, and services not provided by the Bidder's suppliers, manufacturers, fabricators, and/or subcontractors but required for complete and operable facilities as described in the Contract Documents.

1.6.C. Bidder has the sole responsibility to make such independent investigation and examination as they deem necessary in order to satisfy themselves as to the conditions to be encountered in the performance of work and the quantities required to complete the work in accordance with the SOW.

1.6.D. The Government assumes no responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of the Bidder's officers or agents before the execution of this Contract, unless that understanding or representation is expressly stated in the Contract Documents.

1.6.E. Any failure of the Bidder to take the actions described and acknowledged in this Section will not relieve the Bidder from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work.

1.7. BID ITEMS

1.7.A. The Contract Line Item Numbers (CLIN) that shall be bid upon are identified in Section B (bid schedule) of the Solicitation.

1.7.B. The Bidder shall include all work related costs within its bid prices even if not specifically listed in the bid schedule.

1.7.C. If an error exists on the bid schedule between the CLIN total cost provided and the resultant value of the CLIN quantity multiplied by the bid unit price, the bid unit price provided shall govern.

1.8. STATEMENT OF WORK

1.8.A. The Government does not implicitly warrant performance specifications (SOW requirements) for complete accuracy or adequacy. Typical performance type requirements set forth an objective or standard to be achieved, and the successful Bidder is expected to exercise their ingenuity in achieving that objective or standard of performance, selecting the means and assuming a corresponding responsibility for that selection.

1.8.B. When a particular product or manufacturer is identified by name, but permits substitution of 'an approved equal,' such a requirement is 'performance' in nature and, as a result, carries no implied warranty.

1.8.C. The Scope of Work is written in imperative and abbreviated form. This imperative language is directed at the Design-Builder, unless specifically noted otherwise. Incomplete sentences shall be completed by inserting "shall", "the Design-Builder shall", and "shall be" or similar mandatory phrases by inference. The words "shall be" are to be placed by inference where a colon (:) is used within sentences or phrases. Except as worded to the contrary, the Design-Builder shall fulfill (perform) all indicated requirements whether stated imperatively or otherwise.

1.8.D. All equipment and facilities shall be furnished, installed, and constructed by the Design-Builder to provide the Government with complete, ready to use components, systems, and facilities. All necessary materials and work required to accomplish this are the responsibility of the Design-Builder alone, whether or not specifically stated in the Scope of Work.

1.9. BID SUBMISSION

1.9.A. Submission of a bid shall be conclusive evidence that the Bidder has reviewed, investigated, and acknowledged all items detailed in FAR 52.236-3 and listed below.

1. Conditions bearing upon transportation, disposal, handling, and storage of materials.
2. The availability of labor, water, electric power, and roads.
3. Uncertainties of weather and similar physical conditions at the site.
4. The conformation and conditions of the ground.
5. The security and safety conditions at and around the site.
6. The character of equipment and facilities needed preliminary to and during work performance.

1.9.B. Submission of a bid shall be conclusive evidence that the Bidder has reviewed all Contract Documents.

1.9.C. Submission of a bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, the character, quality, and scope of work to be performed, and the quantities of materials to be furnished.

1.9.D. Submission of a bid constitutes agreement that Bidder has provided written notice of all discrepancies, omissions, conflicts, defects, errors, ambiguities, or items that are open to interpretation discovered in the Contract Documents, that responses to these written notices are acceptable to Bidder, and that Contract Documents are sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing required work.

1.9.E. Bidder has the sole responsibility to make such independent investigation and examination as they deem necessary in order to satisfy themselves as to the conditions to be encountered in the performance of work and the quantities required to complete the work in a accordance with the Contract Documents. The Government will not award a modification or additional funds for conditions that were observable but not considered by Bidder.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION

3.1. REQUESTS FOR INTERPRETATION (DUTY TO INQUIRE)

3.1.A. Bidder shall submit requests for interpretation, questions, and other concerns about the Solicitation and Contract Documents including, but not limited to, Scope of Work, Contract Drawings, USIBWC provided data, referenced items, attachments, etc. to the Contracting Officer identified on SF-1442.

3.1.B. Such requests shall be made even if the question and answer period identified in the Solicitation has passed.

3.1.C. Failure to request interpretation prior to providing a bid shall result in the Bidder being fully responsible for any cost or time impacts involved to perform the work required.

--End of Section--

SECTION 00.23.00.01
DESIGN-BUILD PROCUREMENT DEFINITIONS

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1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulations (FAR)

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. DESIGN-BUILD DEFINITIONS

Construction Contractor	The subcontractor hired by the Design-Builder who is involved in the actual construction of the project.
Construction Drawings	The drawings provided by the Design-Builder, usually through the Designer, to accomplish construction in concert with the Technical Specifications.
Contract Documents	The Contract Documents include the Solicitation and eventual Contract, any documents provided by USIBWC identified in this Scope of Work, any documents provide with the Solicitation, all design documents produced by the Designer, all construction drawings, all Technical Specifications, and all submittals required by either the Scope of Work or the construction specifications.
Design-Builder	The Design-Builder is the entity, firm, partnership, joint venture, or organization that Contracts with the United States Section of the International Boundary and Water Commission (USIBWC) to design and construct items meeting this Scope of Work The Design-Builder may be the Designer, the Construction Contractor, and/or the project manager. The Design-Builder has full responsibility for completion of the Contract.

Designer	A subcontractor or in-house participant that leads the team furnishing the design for the project. The Designer must be registered to practice engineering in the state where the construction will occur.
Government	The Government usually refers to the USIBWC or its representatives although it can also cover DHS or other entities associated with the project.
Government Representative	The Government Representative refers to the Contracting Officer (CO) or the Contracting Officer's Representative (COR). These individuals are designated by the USIBWC to act in the capacity as the "Government Representative" as defined by the Federal Acquisitions Regulations (FAR) and shall be the final interpreter of any project issues that may arise in the course of the Work. The USIBWC's Government Representative shall be responsible for the Compliance Review of the Work.
Subcontractor	Any supplier, distributor, vendors, individual, partnership, joint-venture, or corporation who performs work, provides services, or furnishes supplies for the Design-Builder under this Contract.
Supplier or Vendor	Any individual, partnership, joint-venture, or corporation who only furnishes materials for work under this Contract. They provide no service nor perform any work onsite except for inspection of their products or training of personnel.
Technical Specifications	The construction specifications provided by the Design-Builder, in concert with the Designer, to accomplish construction of this project by their Construction Contractor.

1.6. OTHER PROJECT DEFINITIONS

1.6.A. General terms, abbreviations, and definitions are shown in Section 01.42.00.01.

1.6.B. If terms are defined in both Section 01.42.00.01 and in this Section, the definition in this Section governs.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 00.24.00.01
PROCUREMENT SCOPE

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1.2.D. Section 01.32.33.01-◊●◊●◊ Photographic Documentation

1.2.E. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.F. Section 01.35.23.01-◊●◊●◊ Safety

1.2.G. Section 01.40.00.01-◊●◊●◊ Quality Requirements

1.2.H. Section 01.52.13.01-Field Offices and Sheds

1.2.I. Section 01.57.00.01-◊●◊●◊ Temporary Controls for Work Areas

1.2.J. Section 01.57.19.01-◊●◊●◊ Temporary Environmental Controls

1.2.K. Section 01.58.00.01-Project Identification

1.2.L. Section 01.61.00.01-Common Product Requirements

1.2.M. Section 01.61.16.01-◊●◊●◊ Use of Recovered Materials and Biobased Products

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1.2.O. Section 01.74.19.01-◊●◊●◊ Construction Waste Management and Disposal

1.2.P. Section 02.01.00.01-◊●◊●◊ Existing Conditions & Facilities

1.2.Q. Section 02.21.00.01-◊●◊●◊ Surveys

1.2.R. Section 02.22.13.01-Existing Conditions Assessment

1.3. REFERENCE STANDARDS

1.3.A. Federal Emergency Management Agency (FEMA)

1. 44 CFR 65.10, Mapping of Areas Protected by Levee Systems

1.3.B. US Army Corps of Engineers (USACE)

1. EM 1110-2-1913, Design and Construction of Levees, April 30, 2000

1.3.C. United States Code (USC)

1. Davis Bacon Act (DBA), 40 USC 3141-3148

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. PROJECT GOAL

Retamal Dam is in Hidalgo County, Texas approximately 2.5 miles east of Donna Point international port of entry.

1.5.A. The final product shall be capable of or shall meet these requirements:

1. The final design for this project shall provide a waterway barrier line to include anchors, alert system, and warning signs at the Retamal Dam.
2. The design, procurement, and commissioning of the barrier system shall provide the following:
   a. Protection to the public by excluding boaters/swimmers from hazardous zones.
   b. Deflect/Contain debris to reduce intake clogging and structural impacts.
   c. Provide clear warning signs and alert system compliant with applicable safety and waterway standards.
   d. Provide adequate mooring and anchor system.
   e. Provide conspicuous marking, retroreflective elements, and lighting per applicable guidance.
   f. Enable inspection access and simple component replacement.
   g. Provide a minimum service life of 10-15 years with defined maintenance plan and corrosion protection.
   h. The system will avoid or mitigate impacts to habitants, water quality, and listed species.
   i. Provide a topographic and bathymetric survey of the dam.
   j. Provide a geotechnical investigation.
   k. Provide a Hydraulic and Hydrology (H&H) memo with design events and velocities.

1.5.B. Upon conclusion of the project, the new waterway barrier line will prevent public access to dangerous hydraulics upstream/downstream of the dam, the warning system and signage will alert the public of the danger ahead.

1.5.C. Utilities
It is the Design-Builder's responsibility to identify all existing utilities within the project limits as well as coordinating any work associated with these utilities with the utility company.

1.5.D. Permits
Refer to Section 00.31.43.01.

1.6. WORK ELEMENTS

1.6.A. The work shall include all planning, design work, coordination, permitting, labor, material, tools, equipment, construction, testing, inspection, commissioning, and all necessary general conditions, that may be reasonably inferred from the Contract Documents to provide for all work for the design and construction of a waterway barrier line to include anchors, surveys, studies, alert system, and warning signs.

1.6.B. The work shall be broken out into 2 phases.

1. Phase 1 is the Design Phase.
   The Design Phase includes, but is not limited to:
   a. Site investigation
   b. Site surveying
   c. Topographic survey
   d. Bathymetric survey
   e. H&H study and memo
   f. Any required geotechnical investigations, modeling, or testing.
   g. Design
   h. Production of construction documents (minimum of drawings and technical specifications)
   i. Production of all project reports
   j. Coordination with stakeholders
2. Phase 2 is the Construction Phase.
   The Construction Phase includes, but is not limited to:
   a. Site preparation
   b. Construction
   c. Disposal of debris and construction waste
   d. Quality control testing
   e. Commissioning

1.6.C. Each phase shall have a separate Notice to Proceed (NTP).

1.6.D. The final product shall be a 100% completed construction project (turnkey) in accordance with the Design-Build Contract, this Scope of Work, and the construction drawings and specifications.

1.7. SEQUENCE OF WORK/TIME FOR COMPLETION OF WORK

1.7.A. After receipt of the Notice to Proceed (NTP) the Design-Builder shall comply with all submittal requirements as covered under this Scope of Work.

1. **No construction shall be started, until the Government compliance confirms the required premobilization submittals.** Once the Government determines that construction may proceed, will mobilization be allowed.
2. The Government will not grant any time extension for any resubmittal required when, in the opinion of the CO, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.
3. If the Government allows the Design-Builder to proceed with limited construction based on pending minor revisions to the reviewed submittals, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

4. No payment will be made for any in-place construction until all submittals required for that portion of the work and/or required prior to the start of construction have been made, reviewed, and are satisfactory to the Government.

1.7.B. **U**nless otherwise agreed to with the COR, **mobilization and sitework shall begin within 90 days of the issuance of the Construction Notice to Proceed (NTP)**.

1. Design-Builder and Construction Contractor shall expeditiously plan and prepare their premobilization submittals and any resubmittals as well as take into account the Government's review time to meet this requirement.
2. Surveying, photographing/videotaping site, and vibration condition survey do not constitute sitework for this requirement.

1.7.C. The work under this Contract shall be completed within the timeframe specified in the Contract Provisions. Time will only stop being counted once substantial completion is achieved (Section 01.78.36.01).

1.7.D. Where FAR 52.211-10 provides specific timeframes for completion of the design, construction, and revegetation, the following shall apply:

1. Design shall be completed within the timeframe noted in FAR 52.211-10.
2. If the design is completed prior to the timeframe noted in FAR 52.211-10, the remaining days shall be applied to the construction phase. For example, if the design is completed 20 days early, 20 days shall be added to the construction timeframe.
3. If the design is completed after the specified timeframe noted in FAR 52.211-10, then the Design-Builder is behind schedule and subject to any liquidated damages or other repercussions determined by the CO. The additional time required for completion of the design shall be subtracted from the allowed construction timeframe. For example, if the design is completed 20 days late, 20 days shall be subtracted from the construction timeframe.
4. Regardless of the design completion time and the construction completion time, the timeframe noted in FAR 52.211-10 for revegetation shall begin after substantial completion has been reached.

1.8. WORK UNDER OTHER CONTRACTS

No work is anticipated to be performed at the project site under separate Contract with other Contractors during the Design-Builder's performance period.

1.9. LABOR AND STAFFING

1.9.A. The Design-Builder is responsible for determining the appropriate staffing necessary to perform the Contract work. The Design-Builder is also responsible for complying with the minimum wage and benefits requirements for each labor classification performing work on the Contract.

1.9.B. If a classification considered necessary by the Design-Builder for performance of the work is not listed on the applicable wage determination, the Design-Builder must initiate a request for approval of an additional classification along with the proposed wage and benefit rates for that classification.

1.9.C. The Contracting Officer will attach the appropriate Davis-Bacon wage determination to this Contract. The Design-Builder is responsible for all requirements of the Davis-Bacon Act.

1.10. PROJECT LOCATION

1.10.A. The work is within the United States Section of the International Boundary and Water Commission's (USIBWC) Retamal Dam, in Hidalgo County, Texas.

1.10.B. The work is located completely in the United States and Mexico.

1.11. CONFLICT ORDER OF PRECEDENCE

1.11.A. In any case where this Scope of Work conflicts with the Federal Acquisition Regulations (FAR), use the following rules of precedence.

1. In any case where FAR requirements are stricter or impose a higher standard than these Scope of Work, FAR requirements will take precedence.
2. In any case where Scope of Work requirements are stricter or impose a higher standard than FAR, Scope of Work requirements will take precedence.

1.11.B. Upon acceptance of the construction specifications and drawings by USIBWC, those documents become part of the Contract. If the construction specifications and drawings differ from this Scope of Work, the more stringent requirement will govern.

PART 2 - PRODUCTS

2.1. GOVERNMENT FURNISHED MATERIALS

1. The Government will not be furnishing any materials for this project.

2.2. PRODUCTS TO BE FURNISHED BY THE DESIGN-BUILDER

2.2.A. The Design-Builder shall provide all labor, all equipment, and all products required to execute the project.

2.2.B. All materials provided by the Design-Builder for the project shall be new (or recycled if allowed elsewhere in this SOW), high grade, free from defects, meeting the specifications herein. The minimum quality of the work shall be in accordance with the specifications herein.

2.2.C. The Design-Builder's QSM will ensure compliance confirmation and the Design-Builder's testing company will ensure that materials, equipment and work quality strictly adhere to the requirements of the construction documents.

2.2.D. Materials, equipment, and work quality not conforming to the requirements of this SOW, the construction specifications, and/or the construction drawings shall be considered defective and will be subject to rejection. Defective work material, whether in place or not, or equipment shall be removed immediately from the site by the Design-Builder, at its expense, when so directed by the COR.

2.2.E. If the Design-Builder fails to replace any defective or damaged work, materials or equipment after receiving notice, the COR may cause such work or materials to be replaced by other forces. The replacement expense shall be deducted from the amount to be paid to the Design-Builder. Defective equipment will not be allowed in the performance of any work.

2.2.F. Water for All Construction Activities.

1. The water required for all construction activities including, but not limited to, dust control (Section 01.57.19.01) and vegetation establishment shall be considered as incidental and shall be provided from a metered source that is compliance confirmed by the USIBWC.
2. Water from the Rio Grande shall not be used by the Design-Builder at any time.
3. Water use must be in accordance with Texas water law.

PART 3 - EXECUTION

3.1. SUBMITTALS REQUIRED PRIOR TO CONSTRUCTION MOBILIZATION

3.1.A. Specific specifications detail submittal requirements. The list below are the submittals required to have compliance confirmation from the COR prior to full construction mobilization and prior to starting construction activities.

1. Code of Business Ethics (Section **Error! Reference source not found.**)
2. Construction Schedule (Section 01.32.16.01)
3. Scheduler Qualifications (Section 01.32.16.01)
4. Video and Photographs of Existing Conditions (Section 01.32.33.01)
5. Submittal Register (Section 01.33.00.01)
6. Construction Accident Prevention Plan (Section 01.35.23.01)
7. Applicable AHAs to start mobilization and construction (Section 01.35.23.01)
8. Site Safety and Health Officer Qualifications (Section 01.35.23.01)
9. Construction Contingency Evacuation Plan (Section 01.35.23.01)
10. Construction Employee First-Aid and CPR Training Records (Section 01.35.23.01)
11. Design-Builder Quality Assurance Plan (Section 01.40.00.01)
12. Design-Builder QC/QA Personnel Qualifications (Section 01.40.00.01)
13. Construction Staging Area/Haul Routes/Trailer Location/Storage (Sections 01.52.13.01 and 01.57.19.01)
14. Construction SWPP Plan (Section 01.57.00.01)
15. Construction SWPP NOI (Section 01.57.00.01)
16. Resource Conservation Construction Plan (Sections 01.61.00.01, 01.61.16.01, and 01.74.19.01)
17. Construction Flood Protection Plan (Section 02.01.00.01)
18. Construction Vibration Control Plan (Section 02.22.13.01)
19. Preconstruction Condition Survey (Section 02.22.13.01)

3.1.B. The design report, survey data/report, geotechnical report, construction drawings, GIS data, and construction specifications outlined in Section 01.33.16.01 Paragraph 1.6.A. shall have reached 100% and been accepted by USIBWC.

3.1.C. The construction specifications and construction drawings shall have been added to the Contract via a no-cost modification.

3.1.D. Once these required items are complete, the Design-Builder will be allowed to mobilize their Construction Contractor and begin work within USIBWC's right-of-way (ROW).

3.2. USE OF RIGHT-OF-WAY

3.2.A. Limits

1. Construction operations shall be confined to the USIBWC ROW.

3.2.B. It is the Design-Builder’s responsibility to locate and/or verify the areas required for construction beyond the USIBWC ROW, identify the owners of the affected properties, and acquire necessary easements, prior to commencement of construction, at no cost to the USIBWC.

3.2.C. Roads serving the right-of-way, identified as such or not, owned by the USIBWC or CBP shall be clear and available to these agencies.

3.3. OCCUPANCY OF RIGHT-OF-WAY

3.3.A. Partial Government Occupancy
The Government may need to occupy the right-of-way during the entire construction period, with the exception of areas under construction. The Construction Contractor via the Design-Builder shall cooperate with the Government during construction operations to minimize conflicts and facilitate Government access. The Design-Builder needs to maintain existing access to the facility, unless otherwise indicated in the construction drawings. The Design-Builder shall provide not less than 72 hours' notice to the Government of construction activities that will affect any Government activities.

3.3.B. Government Occupancy of Completed Areas of Construction
The Government reserves the right to occupy and to place and install equipment in completed areas of the facility, before Substantial Completion, provided such occupancy does not interfere with completion of the work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total work.

3.4. SITE WORK RESTRICTIONS

3.4.A. Onsite Work Hours
The Design-Builder’s attention is directed to the Contract Provisions.

3.4.B. Facility Office Hour

1. The working hours of the adjacent USIBWC facility are 07:30 am to 04:00 pm, Monday through Friday. The Design-Builder, the Construction Contractor, and any subcontractors shall only work onsite during these proposed hours.
2. USIBWC facilities are closed during all Federal Holidays.

--End of Section--

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SECTION 00.31.00.01
PROJECT INFORMATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Measurement and Payment....1
1.4. Information Provided by the USIBWC....1
Part 2 - Products (Not Used)....2
Part 3 - Execution (Not Used)....2
--End of Section--....2

1.2. RELATED REQUIREMENTS

1.2.A. Section 00.60.00.01-◊●◊●◊ USIBWC Forms and Standard Documents

1.2.B. Section 00.73.73.01-Requirements for Sensitive But Unclassified Information

1.3. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.4. INFORMATION PROVIDED BY THE USIBWC

1.4.A. USIBWC shall provide the following project documents to the Design-Builder.

1. As-built Drawings of Retamal Dam.
2. USIBWC's standard AutoCAD border (USIBWC's CAD files and Drawing and CAD Standards link on www.ibwc.gov/resources-info/)
3. USIBWC's AutoCAD ctb file (USIBWC's CAD files and Drawing and CAD Standards link on www.ibwc.gov/resources-info/)
4. IBWC's Drawing and CAD Standards (USIBWC's CAD files and Drawing and CAD Standards link on www.ibwc.gov/resources-info/)
5. USIBWC Standard Technical Specifications Boilerplate (USIBWC's Construction Specifications Template link on www.ibwc.gov/resources-info/)
6. USIBWC shall provide the following CUI project documents to the Design-Builder after completion of a nondisclosure agreement (IBWC Form 358). See Section 00.73.73.01 for guidance on CUI data.

1.4.B. CUI items will be provided via a Sharepoint link to each Offeror requesting access to this data. The Offerors shall provide an email address along with IBWC Form 358 to the CO for this link.

1. No more than 2 Sharepoint links will be provided to each Bidder.
2. To use Sharepoint, a user must have a valid Microsoft account. If this method fails, data can be provided to the Offeror via a DVD, but there will be a delay in getting the DVD mailed to each Bidder.
3. All unsuccessful Offerors shall provide IBWC Form 358A to the CO within 7 days of being notified of their unsuccessful offer.

1.4.C. See Section 00.60.00.01 for instructions on accessing data on USIBWC's website.

1.4.D. The Design-Builder is responsible for printing copies of items provided in electronic format for their own use.

1.4.E. Any hardcopy documents provided to the Design-Builder are the property of the USIBWC and shall be returned upon completion of this project.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 00.31.13.01
PROJECT TIME CONSTRAINTS & MILESTONES

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Measurement and Payment....1
1.3. Design Milestones....1
1.4. Schedule Limitations....1
Part 2 - Products (Not Used)....2
Part 3 - Execution (Not Used)....2
--End of Section--....2

1.2. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.3. DESIGN MILESTONES

1.3.A. Required submittals include:

1. Conceptual Layout / Design Development Documents
2. 30% Design
3. 60% Design
4. 90% Design
5. Pre-100% Design
6. 100% Design

1.4. SCHEDULE LIMITATIONS

1.4.A. The complete period of performance shall include the design, including production of design and construction documents, and construction.

1.4.B. The Design-Builder shall submit the 30% design documents as stipulated under the design criteria.

1. The USIBWC shall provide comments within 28 calendar days of receipt of these deliverables and the Design-Builder shall incorporate the Government's comments prior to the next submittal.

1.4.C. The Design-Builder shall submit the 60% design documents as stipulated under the design criteria.

1. The USIBWC shall provide comments within 28 calendar days of receipt of these deliverables and the Design-Builder shall incorporate the Government's comments prior to the next submittal.

1.4.D. The Design-Builder shall submit the 90% design documents as stipulated under the design criteria.

1. The USIBWC shall provide comments within 28 calendar days of receipt of these deliverables and the Design-Builder shall incorporate the Government's comments prior to the next submittal.

1.4.E. The Design-Builder shall submit the 100% design documents of construction specifications, construction drawings, and Design Memorandum as stipulated under Design Work Requirements.

1. Initial 100% submittal shall be in electronic form only. This shall be known as the pre-100% submittal.

2. The USIBWC shall provide additional comments on the 100% deliverables in the event that the Design-Builder failed to incorporate accordingly or adequately address all of the USIBWC's 90% comments. Comments will be provided within 28 calendar days of receipt of these submittals.
3. After acceptance of the 100% submittal, then Design-Builder shall provide required hard and electronic copies of all 100% documents.

1.4.F. After completion of Phase 1, the Design-Builder shall construct the metal building.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 00.31.19.01
EXISTING CONDITION INFORMATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Measurement and Payment....1
1.3. General....1
1.4. Existing Structures....1
1.5. Existing Utilities....2
Part 2 - Products (Not Used)....2
Part 3 - Execution (Not Used)....2
--End of Section--....2

1.2. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.3. GENERAL

1.3.A. The final design shall take all existing conditions into account as well as information discovered during investigations under this Contract.

1.4. EXISTING STRUCTURES

Retamal Dam is an existing diversion structure located in Hidalgo County, Texas, approximately 2.5 miles east of the Donna Point International Port of Entry along the U.S.–Mexico border. The dam stands about 33 feet high, has a maximum bottom-slab width of 200 feet, and includes four interior piers and two abutment piers that support three radial gates. The central radial gate is 82 feet wide by 24 feet high and provides a discharge capacity of up to 20,000 cfs; its hydraulic lifting system has been replaced with an electrical system. The two side radial gates are each 40 feet wide by 29 feet high and collectively provide an additional discharge capacity of 10,000 cfs (see Figure 1).

Figure 1

1.5. EXISTING UTILITIES

1.5.A. USIBWC's records for installed utilities are often incomplete. The Design-Builder is responsible for locagates.l utilities including, but not limited to, irrigation structures, buried communication, gas, water, and electrical lines.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

--End of Section--

SECTION 00.31.24.01
ENVIRONMENTAL INFORMATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Reference Standards....1
1.4. Measurement and Payment....1
1.5. General....1
1.6. Preservation of Cultural and Natural Resources and the Environment....2
1.7. Other Considerations....2
1.8. Use of Geologic Materials on a Federally Funded Project....2
Part 2 - Products (Not Used)....2
Part 3 - Execution (Not Used)....2
--End of Section--....2

1.2. RELATED REQUIREMENTS

1.2.A. Section 01.57.00.01-◊●◊●◊ Temporary Controls for Work Areas

1.2.B. Section 01.57.19.01-◊●◊●◊ Temporary Environmental Controls

1.2.C. Section 02.21.13.01-◊●◊●◊ Cultural Resources Surveys

1.3. REFERENCE STANDARDS

1.3.A. United States Code (USC)

1. Clean Air Act, 42 USC 7401 et seq.
2. Clean Water Act (CWA), 33 USC 1251 et seq.
3. Endangered Species Act (ESA), 16 USC 1531 et seq.
4. Migratory Bird Treaty Act (MBTA), 16 USC 703 - 712
5. National Environmental Policy Act (NEPA), 42 USC 4321-4347
6. National Historic Preservation Act (NHPA), 54 USC 300101 et seq.
7. National Wildlife Refuge System Improvement Act of 1997, 16 USC 668dd
8. Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC 3001 et. seq.
9. Refuge Recreation Act, 16 USC 460k - 460k-4

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. GENERAL

1. Biological Resources
   Work should be scheduled to occur outside of the bird breeding season whenever possible.
   Migratory birds may be present within the project area; birds, nests, and eggs are to be protected and avoided during construction. The breeding and nesting season is identified in Section 01.57.19.01. If

work continues into the bird breeding/nesting season the areas proposed for disturbance shall be surveyed in order to avoid the inadvertent destruction of nests and eggs.

2. Natural Resources
Equipment cannot be parked, staged, or used under large, mature trees. Keeping equipment away from the large, mature trees will prevent incidental damage to the tree and prevent compression of the root ball.

1.5.B. Further details of environmental requirements are in Sections 01.57.00.01 and 01.57.19.01.

1.6. PRESERVATION OF CULTURAL AND NATURAL RESOURCES AND THE ENVIRONMENT

1.6.A. If the Design-Builder initiates changes to the Contract and USIBWC approves the changes, the Design-Builder is responsible for obtaining clearances and coordinating with the appropriate regulatory agencies.

1.6.B. Culturally Sensitive Areas
If a site, building, or location of historical, archaeological, educational, or scientific interest is discovered within the right of way, cease all work immediately, secure the site from further disturbance and possible vandalism, and notify USIBWC. The site, building, or location will be investigated and evaluated by USIBWC.

1.7. OTHER CONSIDERATIONS

The Design-Builder is required to ensure that all Environmental Permits, Issues, and Comments (EPIC), which are included within the Contract Documents are followed and implemented to ensure potential impacts are avoided.

1.8. USE OF GEOLOGIC MATERIALS ON A FEDERALLY FUNDED PROJECT

1.8.A. To ensure preservation of historical and archaeological data, prior to use of any soil, rock, or gravel including aggregate in concrete, the source must first be compliance confirmed by the COR to ensure compliance with Section 106 of the National Historic Preservation Act (NHPA).

1.8.B. Take no action to use or alter the proposed location until written approval for site use is received from the COR.

1.8.C. If the quarry or borrow site already provides materials for TxDOT, USACE, or other governmental agency, a copy of the environmental approvals from said agencies may be provided to the COR.

1.8.D. Include permission for Government access to any geological source locations.

1.8.E. Full details of requirements for geological materials are in Section 02.21.13.01.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

--End of Section--

SECTION 00.31.26.01
EXISTING HAZARDOUS MATERIAL INFORMATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Measurement and Payment....1
1.4. General....1
Part 2 - Products (Not Used)....1
Part 3 - Execution (Not Used)....1
--End of Section--....1

1.2. RELATED REQUIREMENTS

1.2.A. Section 00.31.24.01-Environmental Information

1.3. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.4. GENERAL

No hazardous materials, waste storage facilities, disposal sites, or spill sites have been identified within the immediate project area.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

--End of Section--

SECTION 00.31.43.01
PERMIT APPLICATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Reference Standards....1
1.3. Measurement and Payment....1
1.4. General....1
1.5. Work in Waters of the United States....1
1.6. Responsibilities....1
Part 2 - Products (Not Used)....2
Part 3 - Execution (Not Used)....2
--End of Section--....2

1.2. REFERENCE STANDARDS

1.2.A. **Error! AutoText entry not defined.**US Army Corps of Engineers (USACE)

1. Section 404 of Clean Water Act, 33 USC 1251 et seq.

1.3. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.4. GENERAL

Prior to the beginning of construction, the Design-Builder shall be responsible for researching, coordinating, obtaining, and paying all applicable fees for all permits required by Federal, state, and local entities, including, but not limited to, a specific or general stormwater permit prepared in accordance with the requirements of Stormwater Pollution Prevention Plan (SWPPP) and Texas Pollutant Discharge Elimination System (TPDES) 2018 General Permit TXR150000.

1.5. WORK IN WATERS OF THE UNITED STATES.

1.5.A. For work in the right-of-way, USIBWC will obtain any required Section 404 permits from the US Army Corps of Engineers before work begins.

1.5.B. The Design-Builder must adhere to all agreements, mitigation plans, and standard best management practices required by these permits.

1.5.C. If Design-Builder initiated changes in the construction method result in impacts to waters of the US, the Design-Builder shall have sole responsibility to obtain all required new or revised Section 404 permit and shall adhere to all agreements, mitigation plans, and standard best management practices required by these permits.

1.6. RESPONSIBILITIES

1.6.A. The Design-Builder shall be responsible for providing the proposed location of the project staging areas for compliance confirmation of the COR prior to installation of stormwater pollution prevention (SWPP) measures.

1.6.B. The Federal Government is not subject to local jurisdictions' building codes, nor is it required to obtain building permits from local jurisdictions for construction on real estate owned or controlled by the

USIBWC. However, borrow pits and other offsite locations are subject to local regulations. The Design-Builder is responsible for researching and obtaining all necessary permits for offsite work.

1.6.C. The Design-Builder shall be responsible for obtaining all necessary permits and rights of entry for all work required under this Contract.

1. The Design-Builder will also be required to research the need for any other required permits, based on the information available from the Contract and Scope of Work prior to the beginning of construction. For the work under this Contract, the Design-Builder shall be responsible for coordinating and obtaining all permits required by Federal, state, and local entities, unless otherwise specified within the Contract Provisions and this Scope of Work.

1.6.D. The Design-Builder shall apply and pay for all required permits. The Government is not responsible for any existing or newly introduced permits required before, during and/or after construction.

1.6.E. The Design-Builder shall be responsible for and shall give and maintain any and all notices required by applicable regulations, laws, or permitting authorities pertaining to construction of this project.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 00.60.00.01
USIBWC FORMS AND STANDARD DOCUMENTS

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Measurement and Payment....1
1.4. General....1
1.5. Forms....1
Part 2 - Products (Not Used)....3
Part 3 - Execution....3
3.1. Using PDF Forms....3
3.2. Printing....4
--End of Section--....4

1.2. RELATED REQUIREMENTS

1.2.A. Section 00.31.00.01-Project Information

1.3. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.4. GENERAL

1.4.A. Standard items are available at USIBWC's website at www.ibwc.gov/resources-info/.

1. All forms are under the link entitled USIBWC Construction Forms.
2. Posters are under the link entitled Construction Contractor Posters.
3. Drawing standards and related files are under the link entitled USIBWC's CAD files and Drawing and CAD Standards.
4. USIBWC Standard Technical Specifications are under the link entitled USIBWC's Construction Specifications Template.

1.4.B. Design-Builder shall use the most current version of each form.

1.4.C. Project specific documents are at the location noted in Section 00.31.00.01.

1.4.D. Form filenames contain a date. This date is the revision date of the form. Keeping the date in the filename can cause confusion when submitting files. Prior to submitting the forms, rename the file as suggested in this Scope of Work or as agreed to with the COR.

1.5. FORMS

1.5.A. The following USIBWC forms shall be used:

1. Form 119 Pay Estimate-Construction
2. Form 119A Contractor Pay Estimate Inventory
3. Form 119B Pay Estimate Breakdown
4. Form 146 Transmittal Form

5. Form 147 Submittal Register
6. Form 148 Log of Photographic Documentation
7. Form 149 Schedule Analysis
8. Form 150 Log of Deficiencies/Punch List
9. Form 152 Pay Item Breakdown
10. Form 153 Monthly Exposure & First Aid Report
11. Form 154 Subcontractor's Payment Breakdown
12. Form 161 Actual Weather and Working Conditions Report
13. Form 162 Record of Preparatory Phase Meeting
14. Form 163 Daily Construction Quality Control Report
15. Form 163A Equipment Mobilization/Demobilization
16. Form 164A Activity Hazard Analysis
17. Form 166 Record of Initial Phase Meeting
18. Form 204 Use of USIBWC Logo
19. Form 207 Use of AutoCad Files
20. Form 225 Use of USIBWC Key
21. Form 227 Wage Deduction Authorization
22. Form 231 Truck Owner-Operator Certification of Ownership
23. Form 232 Owner-Operator Payroll Listing
24. Form 233 Request for Information
25. Form 233A Request for Information Log
26. Form 235 Concrete Test Results Summary
27. Form 237 Nuclear Gauge Test Results
    a. The COR may allow the use of the laboratory's form if ALL of the information contained on Form 237 is included.
28. Form 238 Concrete Placement Card
29. Form 239 Schedule of Materials
30. Form 240 Nuclear Gauge Moisture Calibration
31. Form 241 Nuclear Gauge Standard Count
32. Form 243 Release of Claims
33. Form 253 Construction Closeout Checklist
34. Form 255 Certificate of Substantial Completion
35. Form 265 Safety Inspection for Cranes
36. Form 358 Nondisclosure Agreement
37. Form 358A Nondisclosure Agreement Release
38. Form 359 Hand Receipt

1.5.B. The following forms are available for use, but are not required:

1. Form 164 Weekly Toolbox Safety Meeting
2. Form 226 Statement of Labor Compliance
3. Form 228 Nonperformance Payroll Report

4. Form 264 Safety Inspection Mechanized Equipment
5. Form 266 Safety Inspection for On Highway Vehicles

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION

3.1. USING PDF FORMS

3.1.A. Providing Fillable Forms to USIBWC

1. Fillable forms shall be "printed" prior to sending to USIBWC. Printing a fillable form to pdf fixes the form data permanently so it cannot be changed. It also allows the merging of multiple pdf files without compromising form data. See Figure 1and Figure 2 as examples.
   a. Printing resolution shall not be less than 400 dpi. 1200 dpi is preferred and easily handled by Adobe Acrobat.

3.1.B. Providing Adobe Electronic Signatures to USIBWC
Whenever an Adobe digital signature is used, ensure that the file is printed to pdf afterwards. This ensures that the digital signature is locked and cannot change, but is also allows the resulting file to be combined without pdf files without errors.

3.1.C. Unless otherwise allowed by the COR or this Section, the electronic version all forms shall be used. This means that forms shall not be printed and then filled out by hand. Instead they shall be filled out electronically and then printed to pdf.

3.1.D. The following forms are allowed to be filled out by hand: 162, 164, 166, 227, 231, 237, 238, 358, and 359. Once completed by hand, they shall be scanned at no less than 400 dpi resolution and provided to USIBWC in a pdf document.

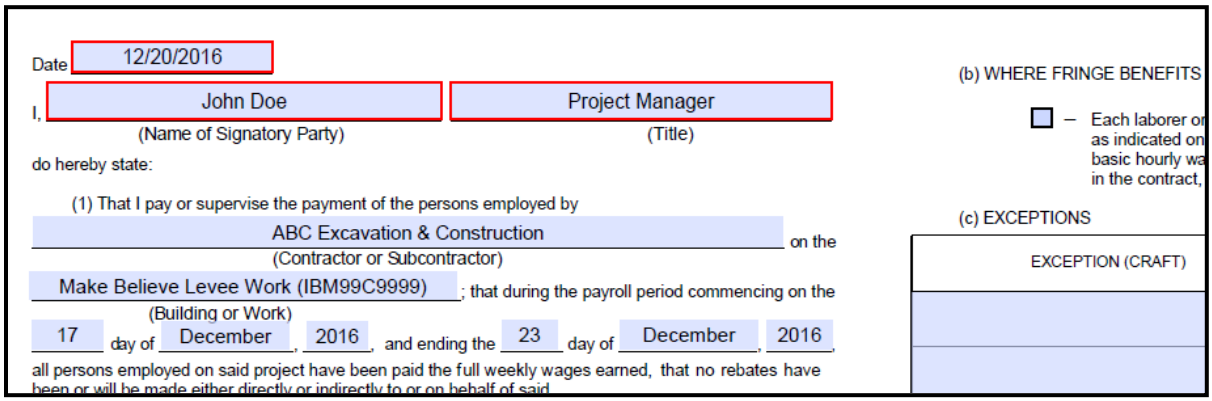
Date 12/20/2016
I, John Doe (Name of Signatory Party) Project Manager (Title)
do hereby state:
(1) That I pay or supervise the payment of the persons employed by
ABC Excavation & Construction (Contractor or Subcontractor) on the
Make Believe Levee Work (IBM99C9999) (Building or Work); that during the payroll period commencing on the
17 day of December, 2016, and ending the 23 day of December, 2016,
all persons employed on said project have been paid the full weekly wages earned, that no rebates have
(b) WHERE FRINGE BENEFITS
– Each laborer or
as indicated on
basic hourly wa
in the contract,
(c) EXCEPTIONS
EXCEPTION (CRAFT)

Figure 1 - Fillable Form (not printed)

Date 12/20/2016

I, John Doe (Name of Signatory Party) Project Manager (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

ABC Excavation & Construction (Contractor or Subcontractor) on the

Make Believe Levee Work (IBM99C9999) (Building or Work); that during the payroll period commencing on the

17 day of December, 2016, and ending the 23 day of December, 2016,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

(b) WHERE FRINGE BENEFITS

☐ – Each laborer o
as indicated on
basic hourly wa
in the contract,

(c) EXCEPTIONS

EXCEPTION (CRAFT)

Figure 2 - Printed Fillable Form

3.2. PRINTING

The Design-Builder is responsible for printing copies of items provided in electronic format for their own use.

--End of Section--

SECTION 00.70.00.01
DELIVERY OF DATA TO USIBWC

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Reference Standards....1
1.4. Measurement and Payment....1
1.5. General....1
Part 2 - Products (Not Used)....2
Part 3 - Execution (Not Used)....2
--End of Section--....2

1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.33.01-◊●◊●◊ Document Requirements

1.3. REFERENCE STANDARDS

1.3.A. Federal Risk and Authorization Management Program (FedRAMP)

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. GENERAL

1.5.A. USIBWC will perform most document transfer communications via email.

1.5.B. The Design-Builder shall send all files electronically via email whenever possible. USIBWC's email system can accept files up to 20 MB. Large files shall be transferred via online cloud servers or SharePoint.

1. Online cloud servers shall be FedRAMP compliant.
2. Files transferred through a download link via email will be treated the same as receiving the file via email.
3. Files made available via download shall be grouped in folders or zipped to allow for easy download of a large group of files at one time. However, no zipped file or folder shall exceed 500 MB in size.
4. When large groups of different files are provided such as with design submittals, include a Readme file providing a description of each file.

1.5.C. USIBWC cannot accept USB thumb drives, CD/DVD, and portable hard drives unless the COR allows their use for transfer of final closeout items. Any drives thus provided to the Government become US Government property.

1.5.D. Placing documents on an online management system (e.g. Owner Insite or ProjectWise) is unacceptable as a delivery method.

1.5.E. Direct delivery via drop off, US Postal Service, FedEx, UPS, etc. is acceptable.

1. No delivered boxes shall exceed 40 pounds.

1.5.F. Electronic files meet the requirements in Section 01.33.33.01.

1.5.G. Document files shall not be "locked" or otherwise blocked from changes. If it is imperative that a document be password protected, the password shall be provided to USIBWC.

1.5.H. Hard copies shall not be provided in 3-ring binders (except for draft specifications and O&M manuals, if required). Large, lengthy hard copies shall be grouped in expandable folders. Folders shall not exceed 3.5 inches in width.

1.5.I. Items are considered received when provided to USIBWC prior to 4:00 pm on a business day (COR's local time zone). Items received after 4:00 pm or received on a non-business day will be marked as being received on the next business day.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 00.70.13.01
PROJECT DATA

PART 1 - GENERAL

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1.2. REFERENCE STANDARDS

1.2.A. United States Code (USC)

1. 17 USC 401-402

1.3. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.4. GENERAL

1.4.A. The Government shall have unlimited rights in all data delivered under this Contract and in all data first produced in the performance of this Contract. The Government shall also have the right to limit assertion of copyright in data first produced in the performance of this Contract and to obtain assignment of copyright in that data. The Government has the right to limit the release and use of certain data.

1.4.B. All data, submittals, and pay estimates are required contractual documents and are in no way privileged nor confidential information. Design-Builder shall not state that these items are confidential business information nor state that they are not to be revealed to third parties with or without approval.

1.5. DEFINITIONS

3.1.A. "Data" means recorded information, regardless of form or the media on which it may be recorded. The term includes all technical data and testing data. The term does not include information incidental to Contract administration, such as financial, administrative, cost or pricing, management information, or computer software.

1. Data examples include, but are not limited to:
   a. The production of audiovisual works, including motion pictures or television recordings with or without accompanying sound, or for the preparation of motion picture scripts, musical compositions, sound tracks, translation, adaptation, and the like.
   b. Photographs, negatives, and slides.
   c. Histories of the respective agencies, departments, services, or units thereof.

d. Surveys of Government establishments including any associated survey data and drawings produced from such surveys.

e. Works pertaining to the instruction or guidance of Government officers and employees in the discharge of their official duties.

f. The compilation of reports, books, studies, surveys, or similar documents.

g. The collection of data containing personally identifiable information such that the disclosure thereof would violate the right of privacy or publicity of the individual to whom the information relates.

h. Investigatory reports.

i. The development, accumulation, or compilation of data, the early release of which could prejudice follow-on acquisition activities or agency regulatory or enforcement activities.

j. Designs, models, reports, surveys, submittals, plans, specifications, and drawings.

k. Any other items provided in the performance of this Contract.

1.5.B. "Unlimited rights" means the rights of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. DATA FIRST PRODUCED IN THE PERFORMANCE OF THIS CONTRACT

3.1.A. The Design-Builder shall not assert or authorize others to assert any claim to copyright subsisting in any data first produced in the performance of this Contract without prior written permission of the Contracting Officer.

3.1.B. The Design-Builder grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable, worldwide license for all delivered data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government.

3.2. DATA NOT FIRST PRODUCED IN THE PERFORMANCE OF THIS CONTRACT

The Design-Builder shall not, without prior written permission of the Contracting Officer, incorporate in data delivered under this Contract, any data not first produced in the performance of this Contract and that contain the copyright notice of 17 USC 401 or 402, unless the Design-Builder identifies such data and grants to the Government, or acquires on its behalf, a nonexclusive, irrevocable, worldwide license.

3.3. RELEASE AND USE RESTRICTIONS

3.3.A. Except as otherwise specifically provided for in this Contract, the Design-Builder shall not use, release, reproduce, distribute, or publish any data first produced in the performance of this Contract, nor authorize others to do so, without written permission of the Contracting Officer.

3.3.B. The Design-Builder shall indemnify the Government and its officers, agents, and employees acting for the Government against any liability, including costs and expenses, incurred as the result of:

1. The violation of trade secrets, copyrights, or right of privacy or publicity, arising out of the creation, delivery, publication, or use of any data furnished under this Contract.

2. Any libelous or other unlawful matter contained in such data. The provisions of this paragraph do not apply unless the Government provides notice to the Design-Builder as soon as practicable of any claim or suit, affords the Design-Builder an opportunity under applicable laws, rules, or regulations

to participate in the defense of the claim or suit, and obtains the Design-Builder's consent to the settlement of any claim or suit other than as required by final decree of a court of competent jurisdiction; and do not apply to material furnished to the Design-Builder by the Government and incorporated in data to which this clause applies.

--End of Section--

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SECTION 00.72.00.01
GENERAL CONDITIONS

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

1.2.A. Section 00.24.00.01-Procurement Scope

1.2.B. Section 00.31.13.01-◊●◊●◊ Project Time Constraints & Milestones

1.2.C. Section 01.40.00.01-◊●◊●◊ Quality Requirements

1.3. REFERENCE STANDARDS

1.3.A. FAR 52.236-23, Responsibility of the Architect-Engineer Design-Builder

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. GENERAL

1.5.A. The Design-Builder shall provide all materials, equipment, labor, and services required by the Contract Documents to design and construct the work for the Contract sum and within the Contract time during the design and construction phases respectively.

1.5.B. All project designs shall be signed and sealed by professional engineers who are licensed by the State of Texas.

1.6. PROFESSIONAL CONDUCT

1.6.A. Design-Builder is required to perform at or above the standard of care required by all associated state engineering and surveying practice acts, statues, and/or rules.

1.6.B. The Design-Builder, as an entity, as well as any individuals who sign and seal documents on the Design-Builder's behalf, shall:

1. Perform services consistent with the professional skill and care ordinarily provided by professionals practicing in the same or similar locality under the same or similar circumstances.
2. Provide designs to meet the applicable requirements of statutes, codes, regulations, rules, ordinances, and standards listed in this SOW as well as any additional requirements that should be added based upon the Design-Builder's professional opinion.

1.6.C. Conflicts/Inconsistencies
In the event of any inconsistencies within or between any parts or provisions of this SOW, any designs or construction documents provided by Design-Builder, or any applicable standards, codes, or ordinances, the Design-Builder will provide the better quality or greater quantity of services or comply with the more stringent requirement; either or both in accordance with the USIBWC's interpretation.

1.6.D. Liability

1. Notwithstanding FAR 52.236-23, Design-Builders shall indemnify and hold harmless USIBWC and its employees from and against any and all liability, claims, losses, damage, costs, expenses, and fees to the extent said liability, claims, losses, damages, costs, expenses, and/or fees are caused by the Design-Builder's acts, omissions, errors, misconducts, or negligence.
2. Errors and Omissions
Per FAR 36.608, the Government may recover costs resulting from errors, omissions, or deficiencies in designs (including construction documents and all other deliverables) provided under this SOW.

1.7. GENERAL CONTRACT ADMINISTRATION

1.7.A. The work shall be administered in accordance with the Contract requirements and this Section of the Scope of Work.

1.7.B. USIBWC shall:

1. Conduct ongoing reviews of the Design-Builder's progress in performing the work and ensure timely comments from the technical units.
2. Review the Design-Builder's invoices and pay estimates.
3. Review and evaluate the Design-Builder's requests for extension of time and supplemental agreements.
4. Coordinate/monitor the distribution of public information.
5. Provide a focal-point contact for all questions, requests, and submittals.
6. Coordinate project scheduling between the Design-Builder and USIBWC, coordinate USIBWC oversight of quality assurance/quality control (QA/QC) activities, and coordinate documentation reviews by USIBWC.
7. Other duties as agreed upon by the Design-Builder and USIBWC.

1.7.C. The Design-Builder shall:

1. Establish, furnish and maintain suitable construction office facilities in the vicinity of the project, within 50 miles, to serve as the project office for the duration of the construction phase of the project (Phase 2) .
2. Maintain an adequate staff of qualified support personnel to perform the work necessary to complete the project inclusive of experienced disciplined engineers and hydraulic engineers.
3. Establish internal accounting methods and procedures for documenting and monitoring project costs.

4. Provide project costs as required to USIBWC or to USIBWC's agent, for the purposes of monitoring Design-Build projects inclusive of cost loaded schedules.
   a. Identify design costs, project management costs (including QC/QA), and construction costs separately.
5. Establish and maintain Contract administration procedures, which shall include preparation of supplemental agreements and requests for time extensions as well as administration of subcontracts.
6. Include the complete project name and Contract number on all correspondence related to this Contract.
7. Participate in design consensus, status and team building meetings with all appropriate participants at the start, on a monthly basis during the project development period and as needed to maintain the design schedule. The Design-Builder shall act as the lead, unless otherwise directed by the USIBWC.
8. Assume complete responsibility for the accuracy and completeness of Construction Documents and related design prepared under this project.
9. Other duties as agreed upon by the Design-Builder and USIBWC.

1.7.D. Project Manager
The Design-Builder shall employ a qualified project manager.

1. The Project Manager shall be able to lead the Design-Build team and make decisions that are in the best interest of the project as well as the USIBWC. This person shall be the liaison between design and construction through completion of the Contract and they must promote a "team" approach for the project and monitor its progress.
2. The Project Manager shall stay involved, be knowledgeable about the project, perform periodic regular visits and be proactive when dealing with issues that may arise. This is a key position that requires many skills across a broad range of disciplines.
3. USIBWC reserves the right to have the Project Manager removed if, in their opinion, the Project Manager fails to meet these requirements.

1.8. PROJECT CONTROL

1.8.A. For each design item, segment, or phase of construction designated by the Design-Builder, the Design-Builder shall include the design reviews and, through day to day communications, keep USIBWC up to date on exact timing of reviews.

1.8.B. The Design-Builder shall allow USIBWC design review days, specified in Section 00.31.13.01 Paragraph 1.4, in their schedule for design review including design review of 100% designs.

1.8.C. The Design-Builder shall write and follow their QA Plan (Section 01.40.00.01).

1.8.D. The Design-Builder shall be responsible for the quality of construction and materials incorporated into the project. The Design-Builder's Quality Control/Quality Assurance (QC/QA) measures are to ensure that operational techniques and activities provide material of acceptable quality. Design-Builder sampling and testing shall be performed to control the processes and determine the degree of material compliance with the Contract Provisions.

1.8.E. The Design-Builder is responsible for the accuracy and completeness of the plans and related design prepared under this Contract and shall provide QC/QA measures defined in this Scope of Work.

1.9. USIBWC REVIEW OF DESIGN WORK

1.9.A. Government Review of Designs

1. During Government review of the provided drawings and specifications that represent the Design-Builder's design, the Government will focus on the drawings.

2. The drawings indicate to the Government the final project. The Design-Builder shall write technical specifications that ensure that the final project results in what the drawings indicate.

1.9.B. General Design Reviews

1. All designs, specifications, and drawings shall be reviewed by the Design-Builder's project team according to the QC Plan requirements.
   a. The review by the COR of the design work is only to verify that all the requirements of this Contract are adequately met. Review by USIBWC does not include detailed review or checking of design of major components and related details or the accuracy with which such designs are depicted on the plans.
   b. The Design-Builder has complete responsibility for the accuracy and completeness of the design as well as the construction documents prepared under this project.
2. USIBWC may also make periodic visits to the designer(s) offices to discuss and verify design progress and the Design-Builder's QC Plan. USIBWC shall give the Design-Builder 2 calendar days advance notice of intent to make an oversight visit.

1.9.C. Final Design Review

1. Prior to the release of final documents, the Design-Builder shall complete the review with engineers experienced in the appropriate disciplines(s).
2. The review shall verify that the documents were prepared in such a manner as to ensure that they will be acceptable to USIBWC, as well as meeting all requirements of this Scope of Work.
3. The criteria used in such review shall include:
   a. Conformity of the final documents with this Scope of Work.
   b. Conformity of the design provided with the site conditions.
   c. Verification that items called out for in the drawings are covered in the specifications.
   d. Verification that the drawings and specifications do not contradict each other.
   e. Assurance that all materials, equipment, and elements of the work provided for in such documents which shall be incorporated into the project have been provided for and designed to perform satisfactorily for the purpose intended.
   f. The appearance, organization, technical, and grammatical accuracy of such documents.
   g. Verification that such documents have been checked and signed by the drafter, designer, checker, and reviewers.
   h. Verification that such documents have been stamped, signed, and dated by the responsible registered engineer.
   i. Assurance that such documents fully provide for constructability, compatibility of materials, and conformity to acceptance criteria for inspections and tests as provided in the SOW.

1.9.D. If the USIBWC at any time determines that the work is not conforming to Contract requirements, the USIBWC reserves the right to suspend work for cause until resolution of the issue.

1.10. DESIGN WORK REQUIREMENTS

1.10.A. Upon USIBWC's written Notice to Proceed for Phase 1, the Design-Builder shall prepare the design documents for review and compliance confirmation by the COR.

1.10.B. The Design-Builder shall prepare plan drawings, plan and profile drawings, specific detail drawings required to accomplish all engineering design work as described in this Scope of Work. The drawings shall be to scale and at a scale suitable for the respective design work.

1.10.C. These design documents shall also consist of design reports, testing, and specifications needed to establish and describe the size and character of the entire Project, and allow the USIBWC to initiate

compliance reviews. The Design-Builder shall incorporate into the design documents all drawings required to construct the job.

1.10.D. The Design-Builder shall provide a design plan that does not impact the normal business operations and the normal traffic flows at the existing Retamal Dam Field Office during the proposed construction time period.

1.10.E. The Design-Builder shall provide a utilities plan that depicts existing utilities located within the Project site. The Design-Builder shall ensure that there are no utility conflicts with the proposed designs.

1. Any utility relocations or upgrades required to meet the final requirements of this project shall be incorporated into the design and perform in sufficient time to preclude delaying construction.

1.11. PHASING OF CONTRACT

1.11.A. The Design-Builder shall provide all materials, equipment, labor, and services required by the Contract Documents to construct the work for the Contract sum and within the Contract time during the construction phase. Phase 2 shall not begin until the Design-Builder has met all of the requirements under Paragraph 1.14. below.

1.11.B. Additional details about Phase 1 and Phase 2 are provided in Section 00.24.00.01.

1.12. TESTING, CERTIFICATION, AND INSPECTION

1.12.A. The Design-Builder shall:

1. Provide and be responsible for all testing, certifications, and inspections.
2. Participate in punch list inspections for substantial completion, and final completion.
3. Assist COR in reviewing test and inspection results.
4. Not authorize deviations from the Contract Documents.
5. Where applicable, performs tasks and file reports as required to Federal and state agencies.
6. Assure that all construction is in compliance with the Quality Control Plan and Specifications.

1.13. DIFFERING SITE CONDITIONS

The Design-Builder shall bear the burden of proving that a Differing Site Condition exists and that it could not reasonably have worked around the Differing Site Condition so as to avoid additional cost.

1.14. EARLY CONSTRUCTION

1.14.A. The Design-Builder's schedule and work plan shall identify the items, segments, or phases that the Design-Builder plans to release for early construction (i.e., construction that is to start prior to completion of 100% Construction Documents). Design reviews shall be conducted for items or segments of permanent construction work identified by the Design-Builder for early construction. The Design-Builder may start construction of any element of the project only after all the following bulleted items have occurred:

1. The Design-Builder has completed its design QC checks and certifies in writing that the design is ready to be released for early construction.
2. The Design-Builder’s Quality System Manager has also stated in writing that the design of the item, segment, or phase of work has been designed in accordance with Contract requirements.
3. The design has been checked in accordance with the Design-Builder’s approved Design Quality Control Plan.
4. The design has been subjected to a constructability review to determine that construction can proceed safely (from the aspects of public and worker safety).

5. The project has progressed to the point that the work may be released for early construction and not require subsequent changes in design affecting construction.
6. The responsible State of Texas licensed professional engineer has stamped, signed and dated the plans and specifications for early construction.
7. Adequate stakes, lines and grades shall have been established in the field to control the work.
8. Design-Builder has obtained all necessary permits for such work.
9. Has submitted 100% Construction/Final Construction Documents for the segment.
10. Early construction without completing all of the items listed is at the Design-Builder's own risk.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 00.73.63.01
SECURITY REQUIREMENTS

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.35.23.01-◊●◊●◊ Safety

1.3. SUBMITTALS

1.3.A. Submittals shall be transmitted by the Contractor in accordance with the requirements of Section 01.33.00.01. The Design Builder Quality System Manager (QSM) System Manager shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.3.B. Required submittals in this Section include:

1. Armed security guard licenses, if required

1.4. RECORD DOCUMENTS

1.4.A. Required documents to be provided to Government in this Section include:

1. Fingerprinting for all applicable personnel
2. Background investigation paperwork as noted below
3. Updates whenever employees are added or deleted from the work crews.

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

The project site may be exposed to vandalism, theft, or other unsafe conditions. The Design-Builder shall be responsible for providing adequate security of the project site in order to prevent vandalism and theft.

1.7. SECURITY

1.7.A. The Design-Builder is responsible for securing the worksite, equipment, and materials from vandalism and theft.

1.7.B. The Design-Builder is responsible for providing a safe worksite for their employees. The level of security required to provide a safe worksite is determined by the Design-Builder.

1.7.C. The Design-Builder shall implement a security program that:

1. Protects the work, the existing premises, and the Government's operations from theft, vandalism, and unauthorized entry.
2. Initiates a security program in coordination with Government's existing security system at mobilization.
3. Maintains the security program throughout construction duration until Contract Closeout.

1.7.D. The Design-Builder shall implement entry control to the work area that notifies people of the construction area, of PPE required, and of the dangers of entry.

1.7.E. The Government shall not be responsible for the security of any items within the work area and associated PSLs.

1.8. INSURANCE

1.8.A. When not required by the Contract clauses, the Design-Builder has the right to purchase coverage for property insurance, builder's risk insurance (including perils of wind, collapse, vandalism/malicious mischief, and theft, including theft of materials whether or not attached to any structure), and/or flood insurance or to be self-insured for these exposures.

1.8.B. The Design-Builder shall be held liable for all costs associated with losses, deductibles, and self-insurance for insurance coverages not required by the Contract clauses.

1. Losses shall include architects' and engineers' fees that may be necessary to provide drawings and specifications for the repair and/or replacement of damaged property.
2. Losses shall include appropriate supervision and quality control of all work for the repair and/or replacement of damaged property.

1.8.C. Any insurance policies purchased for work or property related to this Contract for coverages not required by the Contract clauses shall list the International Boundary and Water Commission, United States Section, as an additional insured.

1.9. DEPARTMENT OF HOMELAND SECURITY

1.9.A. In any event the staff of the US Department of Homeland Security (also known as US Customs and Border Protection (CBP)) alerts and directs any field crews to stop work in for any security reasons in the area, the Design-Builder shall consider this as top priority and fully cooperate with the directions of DHS at all times until the security alert is cleared by the DHS. In addition, the Design-Builder shall contact and coordinate with the COR for any additional steps to be taken during and after the security alert from the DHS is cleared.

1.10. PERSONNEL WORKING ONSITE

1.10.A. Site Access

All personnel requiring access to USIBWC property will be permitted entry in one of the following ways:

1. 1.Visitor: All visitors will adhere to agency visitor procedures, including checking in and out upon entry and exit of a site. All visitors require an escort unless their vetting level has been verified and

unescorted access has been approved. The Contractor will communicate all visitor access requests to the COR and/or a USIBWC security point of contact.

2. Credentialed entry: A Personal Identity Verification (PIV) credential is a government identification card that can be programmed as an access card for USIBWC property for a set period of time. PIV credentialed entry typically removes the requirement for an escort.

   The Contractor shall maintain a roster of all personnel working or having worked on the contract and provide updates whenever credentialed employees are added or deleted from the work crews.

1.10.B. Site Access Considerations

1. Any person that has an outstanding warrant, open charges, issues with their immigration status, or whose eligibility to work within the United States cannot be verified, are precluded from working onsite.
2. Workers with DUI convictions within the past year are precluded from operating any on-road or off-road equipment onsite.
3. USIBWC cannot guarantee agency personnel will be available to escort visitors at all times or without prior coordination.
4. The Contractor shall ensure that all employees working onsite are easily identifiable with a project identification card, a special hard hat color, a significantly colored piece of clothing, or another method agreeable to USIBWC.

1.10.C. Credentialing Procedures

For any non-U.S. national requiring a PIV credential:

a. The Contractor must verify employment eligibility through E-Verify
b. Immigration status must be verified through USCIS' Systematic Alien Verification for Entitlements (SAVE) system. This cannot be verified until a full background investigation is complete.
c. The employee must have a minimum of 3 years continued residency in the U.S. immediately preceding the start of Federal affiliation.

For any Contractor and/or Sub-Contractor employee that requires a PIV credential but cannot meet the credentialing standards set forth in Homeland Security Presidential Directive 12 (HSPD-12), the USIBWC may, at its discretion, choose to issue an alternative identity credential.

1.10.D. Personnel Vetting Procedures

Prior to starting work on the contract, all Contractor and/or Sub-Contractor employees that require any level of vetting must attain a favorable pre-screening determination or be found to have a previously conducted background investigation or credentialing determination that meets all federal standards and the requirements of the contract.

The specific duties, length of service on the contract, and other factors will determine the level of vetting that is required for each Contractor and/or Sub-Contractor employee that performs work for this contract. The COR in conjunction with the USIBWC Security Office will designate all Contractor and/or Sub-Contractor positions into one of the following categories:

1. Visitor. A full background investigation is not required. The USIBWC may request, at its discretion, that visitors submit fingerprints and/or other documentation for a criminal history check.
2. Full Vetting with PIV credential.
3. Full Vetting without PIV credential.

For each Contractor and/or Sub-Contractor position requiring full vetting, a risk designation shall be completed to determine if the duties performed by the position carry a low, medium, or high risk. Risk designations will be completed by the COR in conjunction with the USIBWC Security Office. Contractor and/or Sub-Contractor employees will be required to meet the background investigation level associated with the results of the risk designation.

Risk designations and corresponding background investigation levels are as follows:

1. Low risk – Tier 1 or higher
2. Medium risk – Tier 2 or higher
3. High risk – Tier 4 or higher.

It is the responsibility of the Contractor and/or Sub-Contractor employee to undergo fingerprinting and submit all requested documentation in a timely manner to meet their assigned vetting requirements.

Typically, the Government investigates personnel at no cost to the Contractor, but the expense of multiple investigations for the same position is difficult to justify. Consequently, multiple investigations for the same position may, at the Contracting Officer's discretion, justify reduction(s) in the contract price of no more than the cost of the extra investigation(s).

1.10.E. Personnel Vetting Timelines

Pre-screening – A pre-screening is an initial vetting determination that is made prior to the completion of a full background investigation. A favorable pre-screening determination allows personnel to begin work while waiting for a full background investigation to be completed and adjudicated. A pre-screening also verifies HSPD-12 standards for PIV card issuance. Once fingerprinting and documentation are submitted, pre-screening determinations can be made within 1-3 weeks for cases that reflect no derogatory information.

1. Full Tier 1 Background Investigation – May take up to 90 days for cases with no issues.
    a. The following Design Builder, Construction Contractor, and subcontractor personnel are required to pass a Tier 1 background investigation.
        i. Onsite Project Manager(s)
        ii. Quality Control System Manger(s)
        iii. Site Safety and Health Officer(s)
        iv. Surveyor(s)
        v. Design of Record
2. Full Tier 2 Background Investigation – May take up to 120 days for cases with no issues.
    a. The following Design Builder, Construction Contractor, and subcontractor personnel are required to pass a Tier 1 background investigation.
        i. Personnel updating HMI/PLC code of existing and new SCADA system components.
        ii. Personnel installing physical SCADA components.
    b. USIBWC will run no more than 5 Tier 2 level background investigations. Additional investigations shall be funded by Contractor.
3. Full Tier 4 Background Investigation – May take up to 220 days for cases with no issues.

a. The following Contractor and subcontractor personnel are required to pass a Tier 4 background investigation.

   i. Personnel that require administrator privileges for SCADA network, server, switch, or other SCADA system changes.

b. USIBWC will run no more than 3 Tier 4 level background investigations. Additional investigations shall be funded by Contractor.

1.10.F. Vetting Considerations
A favorable pre-screening determination typically permits personnel to begin work onsite. It does not, however, guarantee immediate access to all IT systems. Some system access requires the completion of the full background investigation before access is granted- SCADA being one example.

Non-U.S. nationals requiring vetting must have a minimum of 3 years continued residency in the U.S. immediately preceding the start of Federal affiliation.
Derogatory or unfavorable personnel vetting results may result in immediate removal of a Contractor and/or Sub-Contractor employee at any time.

1.10.G. All on-road vehicles shall have the name of the construction company/Contractor clearly displayed on the side of the vehicle.

1.10.H. For all background investigations (Tiers 1, 2, and 4), personnel shall complete IBWC Form 063C and OF-306. Personnel shall also provide their resume and get fingerprinted.

1. The forms and resume shall be completed prior to scheduling fingerprinting.
2. Tier 1 investigations may take up to 90 days. Personnel noted in Paragraph 1.10.B.1. are not allowed to work onsite unescorted until favorable completion of their background investigation.
3. favorable completion of their background investigation.
4. USIBWC cannot guarantee personnel will be available to escort applicable personnel prior to receipt of their background investigation.

PART 2 -
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

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SECTION 00.73.73.01
REQUIREMENTS FOR SENSITIVE BUT UNCLASSIFIED INFORMATION

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.3. REFERENCE STANDARDS

1.3.A. Code of Federal Regulations (CFR)

1. 22 CFR 1101, International Boundary and Water Commission, Privacy Act of 1974
2. 22 CFR 1104, International Boundary and Water Commission, Protection of Archaeological Resources

1.3.B. Executive Order (EO)

1. Classified National Security Information, EO 13526

1.3.A. National Institute of Standards and Technology (NIST)

1. NIST SP 800–53 Security and Privacy Controls for Federal Information Systems and Organizations, Rev 5, Release 5.1.1, November 7, 2023
   nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-53r5.pdf
2. NIST SP 800–88 Guidelines for Media Sanitization, Rev 1, December 17, 2014
   nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-88r1.pdf
3. NIST SP 800-171 Protecting Controlled Unclassified Information in Nonfederal Systems and Organizations, Revision 3, May 2024
   nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-171Ar3.pdf

1.3.B. United States Code (USC)

1. Homeland Security Act, 6 USC 131(c)

1.4. RECORD DOCUMENTS

1.4.A. Required documents to be provided to Government in this Section include:

1. Nondisclosure Agreements, IBWC Form 358
2. List of subcontractors and suppliers/vendors provided with CUI data
3. Nondisclosure Agreement Releases, IBWC Form 358A
4. Certification of destruction upon release of nondisclosure agreements

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

1.6.A. The work on this project contains, or may contain, Controlled Unclassified Information (CUI).

1.6.B. If CUI data is present, the Design-Builder is required to sign a nondisclosure agreement (IBWC Form 358) prior to receipt of any CUI data.

1. All companies, whether subcontractors, suppliers, or vendors, creating, reviewing, or using CUI data shall sign a nondisclosure agreement prior to being granted access.
2. The requirements of Form 358, Nondisclosure Agreement, are incorporated into and included as requirements in this Section.

1.6.C. CUI documents are to be disseminated only to those requiring the information necessary for design, construction bidding, construction coordination, or other project processes.

1.6.D. The Contractor shall ensure that their CUI System meets NIST SP 800-171.

1.7. CONTROLLED UNCLASSIFIED INFORMATION (CUI)

1.7.A. CUI data includes, but is not limited to:

1. Information not customarily in the public domain and related to the protection of critical infrastructure assets, operations, or resources, whether physical or cyber, as defined in the Homeland Security Act, 6 USC 131(c).
2. Certain information relating to the design and construction of buildings, dams, and other facilities.
3. Information illustrating or disclosing infrastructure protection vulnerabilities, or threats against persons, systems, operations, or facilities, but not meeting the criteria for classification under Executive Order 13526.

1.7.B. Examples of Sensitive But Unclassified Information

1. Buildings
   a. Location and details of security areas
   b. Risk assessments and information regarding security systems
   c. Camera locations
   d. Computer processing areas
   e. Location and details of secure functions or secure space. Examples:
      (1) Heating, ventilation, air conditioning (HVAC)
      (2) Information technology (IT) systems
      (3) Air intake vents
      (4) Water sources
      (5) Gas lines
      (6) Plumbing lines

(7) Building automation systems
(8) Power distribution systems
(9) Telephone and cable distribution systems
(10) Emergency generation equipment
(11) Uninterrupted power sources (UPS)
(12) Security and fire alarm systems
(13) Routes and annunciation panels

f. Location and type of structural framing

g. Structural analysis, including:
(1) Progressive collapse
(2) Seismic
(3) Building security
(4) Blast mitigation

h. Counterterrorism methods taken to protect the occupants and the building

2. Dams and Other Facilities
a. Cross sections of dams and/or power plants
b. Structural analysis and design details of international bridges
(1) **Load limits are not CUI.**
c. Facility valve boxes or physical equipment that control input and output to facility
d. SCADA systems

3. Locations of cultural/archaeological sites

4. Locations of endangered, threatened, or rare species

1.8. SUBCONTRACTORS, SUPPLIERS, AND VENDORS

1.8.A. The Design-Builder shall insert this clause in all subcontracts as well as supplier/vendor agreements/contracts when the items produced by the supplier/vendor falls within CUI definition or if the supplier/vendor requires CUI information in order to perform their service or produce their product.

1. Copies of all nondisclosure agreements (IBWC Form 358) shall be provided to the COR.

1.8.B. Subcontractors, suppliers, and vendors shall include any individual, partnership, company, or corporation performing work for the Design-Builder but not an employee of the Design-Builder.

1.8.C. The Design-Builder is responsible for subcontractor, supplier, and vendor control and use of CUI data.

1.8.D. The Design-Builder shall maintain a list of all subcontractors, suppliers, and vendors provided access to CUI data as well as a description of what data was provided.

1. This list shall be provided with each pay estimate submitted by the Design-Builder or when requested by the COR or CO.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. MARKING CUI DATA

3.1.A. Documents such as reports shall have:

1. The text "**CUI//CRIT**" along the top portion of the cover or first page.

2. The following mark imprinted or affixed somewhere on the cover or first page:

PROPERTY OF THE UNITED STATES GOVERNMENT.
COPYING, DISSEMINATION, OR DISTRIBUTION OF THIS
DOCUMENT TO UNAUTHORIZED RECIPIENTS IS PROHIBITED.
Do not remove this notice.
Properly destroy or return documents when no longer needed.

3. The text "**CUI//CRIT**" must be affixed to the top portion of the all pages in the document with CUI data.
   a. Only mark pages with "**CUI//CRIT**" that contain CUI data. Mark all other pages "**UNCLASSIFIED**."

3.1.B. Documents such as notes and drawings shall have "**CUI//CRIT**" along the top portion of the page and the following mark imprinted or affixed somewhere on the page:

PROPERTY OF THE UNITED STATES GOVERNMENT.
FOR OFFICIAL USE ONLY.
Do not remove this notice.
Properly destroy or return documents when no longer needed.

3.1.C. All text must be prominently labeled in bold type in a size appropriate for the document or portable electronic data storage device or both, if applicable.

1. CUI text shall be a minimum of 18 point (0.240 inch in AutoCAD). CUI shall be printed in red.
2. The statements must be in a minimum of 14 point (0.200 inch in AutoCAD) bold type or equivalent. Statement shall be printed in red.
3. To facilitate printing in red while using the USIBWC "*IBWC_B&W.ctb*" file, change color 10 to print in red and assign the CUI text to color 10. Rename "*IBWC_B&W.ctb*" to "*IBWC_B&W10.ctb*."

3.1.D. The CUI markings must be used regardless of the medium through which the information appears or is conveyed.

3.1.E. If a submittal contains CUI data, only the pages containing CUI data are required to be marked. See Section 01.33.00.01.

3.2. REQUESTS FOR INTERPRETATION

3.2.A. If the Design-Builder is unclear if items should be marked CUI, they shall request an interpretation from the COR or CO. The Design-Builder may also request interpretation as to whether items shall be removed from CUI classification.

3.2.B. The decision issued by the COR or CO shall be binding.

3.3. DESTRUCTION OF CUI DATA

3.3.A. Upon completion of this Contract, the Design-Builder shall be released from the nondisclosure agreement using IBWC Form 358A.

3.3.B. The Design-Builder shall release their subcontractors and suppliers/vendors using IBWC Form 358A.

1. The Design-Builder is responsible for releasing their subcontractors, suppliers, and vendors. Copies of these written release shall be provided as an information only submittal to the COR.
2. A copy of all Form 358As shall be provided to the COR.

3.3.C. Upon written release from the nondisclosure agreement, the Design-Builder shall certify to the CO that all data marked CUI, whether provided by USIBWC or created under this Contract, has been destroyed in a

manner to preclude recognition or reconstruction by themselves and all subcontractors and suppliers/vendors to whom the data was issued.

1. If the Design-Builder or one of their subcontractors/suppliers/vendors is required to keep copies of CUI data due to state rules/regulations or due to one of the technical requirements of the Contract (i.e., building code, regulation, etc.), then permission to keep the data shall be requested in writing from the CO. The request shall state what information will be kept, the justification for keeping the data, and the method of data storage that will be applied to ensure requirements of the nondisclosure agreement are not violated.
2. The Design-Builder or any of their subcontractors, suppliers, or vendors may provide CUI that must be retained as records to USIBWC for storage. Such data will be included with the record construction files and stored permanently. A cover letter shall be applied to the data noting the company responsible for the data and the reason for the storage of the data. Please note that the CUI classification may not prevent data stored in US Government records from disclosure via Freedom of Information Act (22 CFR 1101).

3.3.D. CUI data must be destroyed in a manner that makes it unreadable, indecipherable, and irrecoverable. Use one of the following methods:

1. NIST SP 800–53
2. NIST SP 800–88
3. Any method of destruction approved for Classified National Security Information, as delineated in 32 CFR 2001.47.

--End of Section--

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SECTION 00.90.00.01
REVISIONS, CLARIFICATIONS, AND MODIFICATIONS

PART 1 - GENERAL

1.1. SECTION INCLUDES

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1.1. Section Includes....1
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1.7. Design Revisions....2
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--End of Section--....3

1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.33.01-◊●◊●◊ Document Requirements

1.2.B. Section 01.31.00.01-◊●◊●◊ Project Coordination

1.3. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.4. GENERAL

1.4.A. While every design begins from a point where it is thought to be complete, construction inevitability shows that no design is perfect. Since revisions, clarifications, and modifications, of the design and/or construction documents are expected to occur sometime during the life of this project, this Section outlines the methodology for incorporating all changes.

1.4.B. The Design-Builder is responsible for all costs and time associated with incorporating changes, revisions, modifications, and revisions to the 100% Construction Drawings and Specifications required to incorporate work required by the Contract Documents.

1.5. DEFINITIONS USED IN THIS SECTION

Clarifications	Documents initiating changes or clarifications that have not been incorporated into the Contract by formal Contract modifications. These include Proposal Requests, Change Order Requests, and Requests for Information (RFI).
Modifications	Additions to, deletions from, or modifications of work after finalization of design or construction of the item.
Revision	A change or a set of changes that corrects or improves something. An alteration, correction, or change.

1.6. REQUESTS FOR CLARIFICATION OR INTERPRETATION

1.6.A. The Design-Builder shall establish a procedure which the Construction Contractor shall use to request clarification or interpretation of the design.

1.6.B. The process shall establish a paper trail with lines of authority for approval.

1. All design changes must be approved by the Designer of Record. Design changes that require Technical Specification and/or Drawing revisions shall be signed and stamped by a Professional Engineer.
2. Once design changes are approved by the Designer of Record, Design-Builder must attain USIBWC concurrence before changes are implemented.
3. Any changes to the design or to the final construction shall be noted in the Record Drawings.

1.6.C. The Design-Builder shall keep a record of all such requests and shall submit copies of both the requests and the subsequent responses to the COR within 2 working days of receipt.

1. The log of all requests as well as the responses shall be provided as a closeout document.

1.6.D. Request for clarification or interpretation between the Government and the Design-Builder shall be per Section 01.31.00.01 Paragraph 1.6.

1.7. DESIGN REVISIONS

1.7.A. Once 100% documents and drawings have been accepted by USIBWC, no changes may be made to those documents without the document being identified as being revised or amended.

1.7.B. Reports and specifications shall indicate the original date and the revised date.

1.7.C. Drawings shall show a revision block.

1.7.D. No document shall be shown as revised until after it is accepted by USIBWC as 100%.

1. If a design revision requires a revision or an addendum to any reports or the specifications, these documents shall indicate the original date and the revised date. Drawings shall show a revision block.
2. All revised documents shall clearly identify what has been revised. In reports, summarize this data in a list inside the front cover or just after the Table of Contents. Identify pages, paragraphs, sections, etc. that have been changed.
3. Within the document itself explain why the revision was required (e.g. Contract modification, design change, new condition, sometime missed, etc.) and how the revision affects the design.
4. In the past USIBWC has received revisions to many documents only to not know within a several hundred page document what was revised or why. Ensure that someone reading your document does not experience the same situation.

1.7.E. Prior to processing a design revision, it shall be presented to the COR.

1. Design revisions must be signed and sealed by the Designer of Record and contain document explaining the need for the revision.
2. The COR will compare the proposed revision to this SOW to ensure that the project requirements are still being met.
3. If the revision is acceptable to the COR, the Design-Builder may proceed.

1.7.F. The Design-Builder shall provide hard copies and electronic copies of any revised drawings, specifications, or reports per Section 01.33.33.01.

1.8. RECORDING CONSTRUCTION CHANGES

1.8.A. Construction changes or field changes occur when a small change in construction is required to ensure that the project is completed. These field adjustments shall be fully documented in the Record Drawings.

1.8.B. Any adjustment that changes final operation of the project or changes materials used to build the project must be processed as a design revision.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

--End of Section--

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SECTION 00.91.16.01
BID REVISIONS

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Measurement and Payment....1
1.3. General....1
Part 2 - Products (Not Used)....1
Part 3 - Execution (Not Used)....1
--End of Section--....1

1.2. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.3. GENERAL

Questions received during the Solicitation process will be posted in this Section in an effort to keep all documentation together in a single document.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

--End of Section--

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International Boundary and Water Commission
United States Section

SCOPE OF WORK
DIVISION 01
GENERAL REQUIREMENTS

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SECTION 01.20.00.01
MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
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1.2. RELATED REQUIREMENTS

1.2.A. Section 00.21.13.01-◊●◊●◊ Instructions to Bidders

1.2.B. Section 01.29.00.01-◊●◊●◊ Payment Procedures

1.2.C. Section 01.32.16.01-◊●◊●◊ Progress Schedule

1.2.D. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulation (FAR)

1. FAR Subpart 31.2, Contract Cost Principles and Procedures, Contracts with Commercial Organizations
2. FAR 52.211-18, Variation in Estimated Quantity
3. FAR 52.215-17, Waiver of Facilities Capital Cost of Money
4. FAR 52.236-2, Differing Site Conditions
5. FAR 52.243-1, Changes - Fixed Price

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. S Curve Graph and Table
2. Schedule of Values

1.5. GENERAL

1.5.A. This Section includes specifications for Measurement and Payment as they apply to the work, and includes provisions applicable to lump sum prices and unit prices, as indicated.

1.5.B. Measurement methods specified in the individual sections shall govern if they differ from methods specified in this Section.

1.5.C. Costs presented for work under this Contract shall be in line with FAR Subpart 31.2.

1.5.D. Design-Builder is responsible for using established cost accounting practices to allocate and record all costs associated with this project. Accounting records for this project shall be kept for 6 years after date of final payment.

1.5.E. See Section 00.21.13.01 for information about bid items.

1.6. SCHEDULE OF VALUES

1.6.A. The Schedule of Values prepared by the Design-Builder and compliance confirmed by the Government prior to acceptance of the first progress payment request.

1. Overhead, general, and administrative expenses, submittal preparation, escrow, bonds, profit, and other across the board markups shall be applied to each line in the Schedule of Values uniformly.
2. The sum of the Schedule of Values items listed in the breakdown estimates shall equal the Contract lump sum for each bid item.
3. An unbalanced Schedule of Values providing for overpayment to the Design-Builder for items of work to be performed first will not be compliance confirmed but shall be revised by the Design-Builder and resubmitted until acceptable to the COR. If requested by the Government, the Design-Builder shall furnish full copies of Subcontracts showing actual costs.

1.6.B. The Schedule of Values shall be consistent with the baseline progress schedule prepared by the Design-Builder in accordance with Section 01.32.16.01.

1.6.C. The Schedule of Values shall correspond to the Measurement and Payment sections in this Scope of Work.

1. CLIN 001 Schedule of Values shall include items shown in Table 1. CLIN 001 shall cover all of the design costs. Items not shown in Table 1 but associated with the design of the project shall be included in CLIN 001.
2. CLIN 002 Schedule of Values shall include items shown in Table 2. CLIN 002 shall cover all of the construction costs. Items not shown in Table 2 but associated with construction of the project shall be included in CLIN 002.
3. CLIN 003 Schedule of Values shall include items shown in Table 3. CLIN 003 shall cover all of the project closeout. Items not shown in Table 3 but associated with closing out the project shall be included in CLIN 003.

4. The Design-Builder may breakdown each item listed in these tables into subsections if they so choose. The Design-Builder may add additional items to these tables including items for additional features of work determined during design phase. The items shown are the minimum required.
5. The sections indicated are the primary specifications related to this item. Other sections may also apply to the shown item of work.

Table 1 - CLIN 001 (Design) Schedule of Values

Item Description	Primary Sections
Conceptual Layout of waterway barrier line	00.31.13.01
30% Design	
60% Design	
90% Design	
Pre-100% Design	
100% Design	

Table 2 - CLIN 002 (Construction) Schedule of Values

Item Description	Primary Sections
Mobilization	01.71.13.01
Demonstration and Training	01.79.00.01
Buoys	00.24.01
Warning Signs	00.24.01

Table 3 - CLIN 003 (Closeout) Schedule of Values

Item Description	Primary Sections
Closeout	01.77.19.01
Record Drawings	01.78.39.01
Commissioning	01.91.13.01
O&M Manuals	01.78.23.01

1.7. MEASUREMENT OF WORK COMPLETED

1.7.A. It is the Design-Builder's responsibility to measure and/or compute work completed, subject to verification by the Government, under the terms of the Contract. In computing quantities, the length, area, solid contents, number, weight, time, or percentage as specified in the Contract or the Schedule of Values shall be used. The calculations shall be clear and concise, allowing verification by Government review.

1. The basis for measurement and payment will be described in the individual Section for that item of work.
2. All data for final calculations for earthwork shall be verified by a licensed surveyor registered in the State of Texas.
3. The Design-Builder shall submit all surveys, measurements, weigh tickets, bills of lading or other documents that verify the quantities completed during construction.
4. Do not measure work outside the construction, design, or other adjusted or specified limits.

1.7.B. Estimated Quantities

1. Any estimated quantities provided in the Bid Documents are for comparative bidding only. The Government does not express or imply that the actual amount of work or materials will correspond to the estimated quantities.

2. The Design-Builder shall make no claim nor receive any compensation for anticipated profits, loss of profit, damages, or any extra payment due to any difference between the amount of work actually completed, or materials or equipment furnished, and the estimated quantities, except as allowed via FAR 52.211-18 Variation in Estimated Quantity, **if** this clause is incorporated into the Contract and applicable to the CLIN covering the work in question.
3. Completion of work in excess of Contract Unit Quantity prior to receiving a Contract Modification or other written direction from the CO is at the Design-Builder's own risk.
4. Section B of the Contract Provisions will note if FAR 52.211-18 Variation in Estimated Quantity applies to any CLINs.

1.7.C. Lump Sum
If the Contract is based on a lump sum bid prices or contains one or more lump sum items for which progress payments are to be made, the Design-Builder shall prepare and submit a breakdown estimate (Schedule of Values) covering each lump sum item to the COR for approval if progress payment(s) will be requested for the lump sum value.

1.8. MEASUREMENT OF QUANTITIES

1.8.A. Lump sum items are not measured by quantity but by percentage of work completed for progress payments. The Design-Builder shall determine how the percentage of work completed is determined in the submission of the Schedule of Values.

1. Lump sum measurement will be for the entire item, unit of work, structure, or combination thereof, as specified and as indicated in the technical section.

1.8.B. Unless otherwise indicated in these specifications, measurements for unit priced quantities shall be performed by the following methods.

1. Measurement by Weight
   Weight shall be measured on certified scale.
2. Measurement by Volume
   a. Stockpiles - Measured by cubic dimension using mean length, width, and height or thickness or measured by three dimensional volume computation from surveyed topography.
   b. Excavation and Fill Materials - Measured by cubic dimension using average end area method based upon surveyed cross sections.
3. Measurement by Area
   a. Measured by square dimension using mean length and width or radius or by actual surveyed area.
4. Linear Measurement
   Measured by linear dimension, at item centerline or mean chord, or by actual surveyed length.
5. Other
   Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the work.
6. Measurement by Each
   Measured by each instance or item provided.

1.8.C. Common Units

1. Weight shall be measured in US pounds or tons, as appropriate.
2. Length shall be measured in feet or stations (100 feet), as appropriate.
3. Height or elevation shall be measured in feet.
4. Volume shall be measured in cubic yards unless a liquid is being measured then gallons or acre-feet shall be used, as appropriate.

5. Area shall be measured in square yards or acres, as appropriate.

1.9. SCOPE OF PAYMENT

1.9.A. Compensation under the terms of the Contract shall be full payment for the work, including loss or damage arising from the nature of the work, action of the elements, or unforeseen difficulties encountered during the prosecution of the work until its final acceptance, and all risks connected with the prosecution of the work.

1.9.B. The compensation constitutes all of the payment for the completion of the work described within the Contract Documents, this Scope of Work, and the construction drawings and specifications that will be drafted by the Design-Builder. No direct or separate payment will be made for providing miscellaneous temporary or accessory works, services, Design-Builder's nor Construction Contractor's field office, project oversight, project superintendence, layout surveys, legal descriptions, monumentation, sanitary requirements, testing, safety, submittals, approval of record drawings, water supplies, power, maintaining traffic, removal of waste, security, bonds, insurance, transportation, permits, or any other requirements of the Contract Documents, construction drawings, or technical specifications. Compensation for all such services, materials, and labor shall be included in the price bid for each item in the project.

1.9.C. The compensation will be deemed to include an amount considered by Design-Builder to be adequate to cover Design-Builder's overhead and profit for the bid item.

1.9.D. Work To Be Done Without Direct Payment

1. Compensation for any portion of the work not specifically identified in the Schedule of Values or Bid Schedule is understood to be included in the price for other items, unless specified in this Scope of Work as extra or optional work.
2. No additional compensation is allowed for additional shifts or premium pay necessary to ensure that the work is completed within the time limits specified in the Contract.

1.10. MEASUREMENT AND PAYMENT FOR CHANGES IN WORK

Measurement and payment to the Design-Builder for extra work directed and incorporated by Contract modifications, performed by the Design-Builder and compliance confirmed by the Government, will be made in accordance with the provisions of the Contract and this Scope of Work.

1.11. REQUEST FOR PRICE INCREASE

1.11.A. The Design Builder does not have an implied right to receive additional compensation for unanticipated conditions.

1.11.B. Any request for an increase in any Contract Item/CLIN price shall be based on written notice delivered by the Design Builder to the CO and COR promptly and shall state the general nature of the claim.

1. Promptly:
   a. For general work, promptly means not later than 10 calendar days after the start of the event giving rise to the claim.
   b. If Differing Site Conditions (FAR 52.236-2) exist, promptly is before differing site conditions are disturbed.
   c. For items related to FAR 52.234-1, Changes, promptly is within 30 calendar days from receipt of the written change order.
   d. In no event shall the Design Builder delay notice to the CO of an event which they believe may cause an increase in price.
2. Notice of the amount of the claim with complete supporting data shall be delivered within 60 calendar days after the original notice was provided (unless the CO allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the

Design Builder's contractual justification for an increase in price as well as a written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the Design Builder is entitled as a result of such event.

3. No claim for an adjustment in any Contract Item/CLIN price will be valid if not submitted in accordance with the time requirements of this Section, of FAR 52.236-2, or of FAR 52.234-1.

1.11.C. All requests for price and/or time increases shall clearly state the basis of entitlement and the quantum being requested.

1. Entitlement
   Provide an explanation of the change, event, or circumstance giving rise to the request and the related contractual authority or remedy for which relief (usually money or time) is being sought.
2. Quantum
   Specifically list cost impacts, damages, or amounts (money or time) being sought. See Section 01.32.16.01 3.2. for details on time requests.

1.11.D. Design Builder is responsible for accounting for costs appropriately and for maintaining records, including supporting documentation, adequate to demonstrate that costs claimed have been incurred, are allocable to the Contract, and comply with established cost principles (FAR Subpart 31.2). The CO may disallow all or part of a claimed cost that is inadequately supported.

1.11.E. No item will be paid without a Contract modification.

1.12. PROGRESS PAYMENTS (LUMP SUM CLINS)

1.12.A. The Schedule of Values shall be used to prepare a progress payment (Section 01.29.00.01) request for the items, or portions of items, of the work completed during the monthly progress period.

1.12.B. As the Contract activity progresses, the Design-Builder will be paid the value based on the percentage associated with the activity in the Schedule of Values.

1.12.C. The progress payments are made to benefit the Design-Builder. These payments are made based upon preliminary deliverables, preliminary inspections, preliminary testing data, and/or preliminary surveys. Progress payments do not constitute acceptance of any portion of the work and do not reduce the Design-Builder’s liability to replace unsatisfactory work, material, or equipment.

1.12.D. No progress payment will be made when, in the judgment of the Government, the work is not proceeding in accordance with the provisions of the Contract.

1.13. INSPECTION AND PROGRESS PAYMENTS NOT A WAIVER OF CONTRACT PROVISIONS

1.13.A. No inspection, order, measurement, approval modification, payment, acceptance of work or material (including, but not limited to, acceptance of the entire work), time extension, or possession of the work or any part thereof shall be a waiver of any of the terms and conditions of the Contract, the powers reserved by the Government, or any right of the Government to damages or to reject the work in whole or part.

1.13.B. **The payment of a progress payment, or the acceptance thereof by the Design-Builder, does not constitute acceptance of any portion of the work and does not reduce the Design-Builder’s liability to replace unsatisfactory work, material, or equipment.**

1.13.C. An inadvertence or error in an approved progress payment request will not release the Design-Builder or the Design-Builder's surety from damages arising from the work covered by the compliance confirmed payment request or from enforcement of every provision of the Contract. The Government has the right to correct any error made in any progress payment.

1.13.D. No breach of this Contract shall be construed a waiver of any other or subsequent breach.

1.13.E. All remedies provided in the Contract shall be cumulative and shall be in addition to all other rights and remedies that may exist at law or in equity.

1.14. WITHHOLDINGS/DENIAL OF PROGRESS PAYMENT REQUEST

1.14.A. The Government may deny a progress payment request and/or withhold money from any progress payment to:

1. Cover any unpaid claims filed.
2. Protect the Government's interest.
3. Pay any fines levied against the work by the Government or other entities.

1.14.B. The Government may also deny a progress payment request and/or withhold money, or modify any progress payment, as necessary to protect the Government from loss due to or affecting enforcement of:

1. Defective work not remedied.
2. Stop notices filed.
3. Failure of the Design-Builder to make payments properly to Subcontractors for labor, materials, or equipment.
4. Evidence that the work cannot be completed for the unpaid balance of the Contract sum.
5. Evidence that the work will not be completed within the Contract time.
6. Damage to the Government or another Design-Builder.
7. Failure to carry out the work in accordance with the Contract.
8. Any violation or noncompliance with Design-Builder’s legal responsibilities.

1.14.C. When, under the provisions of the Contract, the Government charges any sum of money against the Design-Builder, the Government will deduct and retain the amount of such charge from a progress or final payment. If, on completion or termination of the Contract, sums due the Design-Builder are insufficient to pay the Government charges against the Design-Builder, the Government has the right to recover the balance from the Design-Builder or the Design-Builder's surety.

1.15. NONPAYMENT OF MATERIALS AND/OR CONSTRUCTION

1.15.A. Payment will not be made for any of the following:

1. Materials not surveyed as required in measurement sections of this Scope of Work.
2. Materials wasted or disposed of in manner not meeting the requirements of this Scope of Work.
3. Materials and/or construction determined as nonconforming before or after placement.
4. Materials placed beyond lines, levels, and/or limits of required work.
5. Materials remaining on hand after completion of the work, unless specified otherwise.
6. Loading, hauling, and disposing of rejected materials.
7. Materials used to repair construction.

1.15.B. If payment is made, but work is later found to not meet Contract requirements, the Government may require a refund of funds paid, stop all other payments until nonconforming work is brought into compliance, or the Government may correct the work and charge the cost to the Design-Builder.

1.16. FACILITIES COST OF MONEY

Facilities cost of money is only allowed if it is specifically identified and proposed in the cost proposal. If not included, it is an unallowable cost even if FAR 52.215-17 is not specifically included in this Contract.

1.17. LIQUIDATED DAMAGES FOR DELAY

All parties to the Contract agree that time is of the essence, and that the work shall be completed within the time stated in the Contract. The Design-Builder's failure to complete the work within the time allowed will result in damages to the Government. It is agreed that the Design-Builder shall pay to the Government the sum set forth in the Contract for each and every day's delay beyond the time prescribed in the Contract, and the Design-Builder further agrees that the Government may deduct and retain the amount thereof from any monies due or to become due the Design-Builder under the Contract.

PART 2 - PRODUCTS

2.1. BASELINE BILLING S CURVE

2.1.A. The Design-Builder shall prepare an estimate of all earnings over the life of this Contract. The estimated values shall be provided in an S Curve graph showing earnings on the y-axis and time (in months) on the x-axis.

1. This baseline S Curve and table shall be provided in Excel and pdf to the COR and be compliance confirmed prior to the first pay estimate which includes any items other than bonds and insurance.
2. Identify the end of the construction period of performance and the end of the closeout period of performance on the graph.
3. Organize the graph so that it plots no larger than ANSI B (11" x 17").
4. Values used to generate this graph shall also be provided in an Excel table.
5. The sum of the S Curve earnings shall equal the Contract total.
6. An unbalanced S Curve providing for overpayment to the Design-Builder for items of work to be performed first will not be compliance confirmed but shall be revised by the Design-Builder and resubmitted until acceptable to the COR. If requested by the Government, the Design-Builder shall furnish full copies of Subcontracts showing actual costs.

2.1.B. The S Curve shall be consistent with the baseline progress schedule prepared by the Design-Builder in accordance with Section 01.32.16.01.

2.2. PAY ESTIMATE BILLING S CURVE UPDATES

2.2.A. The Design-Builder shall submit, as part of their monthly reports and construction pay estimates, an updated S Curve graph and data table utilizing actual billed values to date. S Curve data table is the X/Y data used to create the graph. Note for each line whether estimated or actual values.

2.2.B. The Design-Builder shall show in an Excel table the changes in monthly totals between all monthly values used in the prior estimate and the values used in the compliance confirmed baseline S Curve. Significant changes in monthly values (greater than 50% shall have a narrative included explaining the change.

2.2.C. The Design-Builder shall show in an Excel table the changes in monthly totals between all monthly values used in the prior estimate and the values used in the current pay estimate. Significant changes in monthly values (greater than 50% shall have a narrative included explaining the change.

2.2.D. If the Design-Builder fails to provide S Curve updates or revisions, then a portion of the pay estimate may be retained until such corrections have been made.

2.3. SCHEDULE OF VALUES

2.3.A. Breakdown each lump sum item into component work activities used in the schedule for which progress payments may be requested. The work activities broken out within the Schedule of Values shall be integrated into and made a logical part of the construction baseline schedule submitted under this Section.

1. The total costs for the component work activities shall equal the Contract price for that lump sum item.
2. The Government may request data to verify accuracy of dollar values.

2.3.B. Do not break down unit price items. Use only the Contract price for unit price items.

2.3.C. The total cost of all items shall equal the lump sum Contract price. The Schedule of Values will form the basis for progress payments.

2.3.D. An acceptable Schedule of Values shall be agreed upon by the Design-Builder and COR before the first progress payment is processed.

PART 3 - EXECUTION

(Not Used)

--End of Section--

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SECTION 01.29.00.01
PAYMENT PROCEDURES

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

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1.2.B. Section 01.29.15.01-◊●◊●◊ Certified Payroll

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1.2.E. Section 01.32.33.01-◊●◊●◊ Photographic Documentation

1.2.F. Section 01.35.23.01-◊●◊●◊ Safety

1.2.G. Section 01.77.19.01-◊●◊●◊ Closeout Requirements

1.2.H. Section 01.78.39.01-Record Drawings

1.2.I. Section 02.21.00.01-◊●◊●◊ Surveys

1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulation (FAR)

1. FAR Subpart 31.2, Contract Cost Principles and Procedures, Contracts with Commercial Organizations
2. FAR 32.904, Determining Payment Due Dates
3. FAR 52.209-6, Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment
4. FAR 52.222-11, Subcontracts (Labor Standards)
5. FAR 52.232-5, Payments under Fixed-Price Construction Contracts

6. FAR 52.232-10, Payments under Fixed-Price Architect-Engineer Contracts
7. FAR 52.232-26 Prompt Payment for Fixed-Price Architect-Engineer Contracts
8. FAR 52.249-10, Default (Fixed-Price Construction)

1.4. RECORD DOCUMENTS

1.4.A. Required documents to be provided to Government in this Section include:

1.4.B. Required documents to be provided to Government in this Section include:

1. IBWC Form 119, Pay Estimate - Contract Performance
2. IBWC Form 119B, Pay Estimate Quantities
3. IBWC Form 147, Updated Submittal Register
4. IBWC Form 148, Log of Photographs with digital photos
5. IBWC Form 149, Schedule Analysis
6. IBWC Form 152, Pay Item Breakdown
7. IBWC Form 153, Monthly Exposure and First Aid Report (for each contractor/sub)
8. IBWC Form 154, Subcontract's Payment Breakdown
9. IBWC Form 161, Actual Weather and Working Conditions Report
10. IBWC Form 233a, Updated RFI Log
11. IBWC Form 239, Schedule of Materials, if needed
12. Updated Project Schedule (both pdf and native file with written narrative)
13. Updated S Curve with associated Excel tables
14. AutoCAD files and other Record Drawing documents
15. Survey data as applicable

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

This Section outlines the requirements for progress payments on a USIBWC Contract.

1.7. SF-1413

1.7.A. The Design-Builder shall ensure that SF-1413 forms have been provided to the COR for all subcontractors used on this project, not just for subcontractors used on the construction portion and regardless if they are covered by Davis-Bacon or not.

1.7.B. SF-1413 forms shall be provided within 14 days of signing a subcontracting agreement.

1.7.C. Failure to provide completed SF-1413 forms will result in denial of progress payments.

1.8. USIBWC PAYMENT PROCESSING

1.8.A. The Design-Builder shall submit an electronic copy of their pay estimates to the Invoice Processing Platform (IPP) at www.ipp.for.fiscal.treasury.gov. The Design-Builder's progress payment request is not officially received by the Government until submitted to IPP.

1. The Design-Builder will be required to create an account on IPP and submit their pay estimates through this program.

2. Pdf copies of all pay estimates shall be concurrently emailed to the CO, COR, and construction inspector upon submission to IPP.

1.8.B. IPP is limited and does not allow the Government to make corrections, take deductions, or assign retainage. Therefore, the Design-Builder shall make the following changes to their pay estimate prior to submittal to IPP:

1. Per FAR 52.232-10(b) if the CO notifies the Design-Builder that withholding is to be taken on design work.
2. Per FAR 52.232-5(e) if the CO notifies the Design-Builder that retainage is to be taken on construction work.
3. If deductions are required, the COR will provide the Design-Builder with the deduction amount. Deductions are required for reimbursement to the Government. This is usually for Government provided utilities or for inspection overtime.
4. Per FAR 52.232-10(b) to ensure adequate protection of the Government for remaining design work and deliverables, the COR may limit full payment on some CLINs.
5. Per FAR 52.232-5(e) once work is substantially complete to ensure adequate protection of the Government for remaining construction punch list items and deliverables, the COR may limit full payment on some CLINs.
6. Per FAR 52.232-27(e)(2) if the Design-Builder has taken retainage or withholdings from a subcontractor.
7. Payments submitted to IPP without the correct retainage and/or deductions shall be rejected until these amounts have been corrected in the IPP submission.

1.8.C. Per FAR 32.904 (b)(1)(ii)(B), the constructive acceptance for the Design-Builder's work covered by a submitted pay estimate shall be 7 days from receipt of a proper pay estimate to the Government.

1. This shall allow USIBWC time to ensure that all documents required to be submitted with the pay estimate covering the billing period in question have been provided, are complete, and do not contain any errors. These documents are required per the terms of this SOW to complete the items of work for which the Design-Builder is requesting a progress payment.
2. This constructive acceptance is only applicable to FAR 32.904 and in no way constitutes acceptance of any portion of the work and does not reduce the Design-Builder’s liability to replace unsatisfactory work, material, or equipment.
3. Project acceptance does not occur until the items in Section 01.77.19.01 have been completed.

1.8.D. All pay estimates submitted shall be numbered in IPP with the last 5 digits of the Contract number, underscore, and the 2 digit item number (e.g. C0008_03). A pay estimate resubmitted to IPP shall include a letter (e.g. C0008_03A) immediately after the 2 digit number.

1. Pay estimate numbers shall start at '1' and increase by 1 for each item submitted.
2. The pay estimate number on all of the IBWC forms, shall just be the number noted above without the Contract number.

1.8.E. Liquidated Damages and Work Past Contractual End Date

1. If the Contractor fails to perform within the time allocated within this Contract, the Government has the right to apply liquidated damages (see Section 01.20.00.01 Paragraph 1.17.). IPP prevents USIBWC from paying for work performed outside of the time limits of the Contract. In this situation, USIBWC will provide a bilateral no cost modification extending the Contract period of performance **solely** for the purpose of processing payments as work progresses. Such modification shall not negate the liquidated damages and shall not result in an extension of the applicable work period.

2. After substantial completion has been reached, punch list items may be worked on. This work may extend past the contractual completion date. Similar to Paragraph 1.8.E.1., a bilateral no cost extension may be required to process pay estimates.

1.8.F. Please note that USIBWC usually cannot accept pay estimates the last 2 weeks of September and the first week of October because of the end of the fiscal year. Coordinate your pay estimates around this time period.

1.9. PROGRESS PAYMENTS

1.9.A. Per FAR Clause 52.232-5 Payments under Fixed-Price Construction Contracts, the Government shall make progress payments monthly as the work proceeds on estimates of work accomplished.

1.9.B. The Government Inspector and the Design-Builder's QSM or Construction Contractor QCSM shall meet prior to the Design-Builder's submittal of their pay estimate and discuss billable quantities/percentage of work completed. It is expected that the Inspector and the Design-Builder will reach concurrence on the billable items. Once billable items are agreed upon, both individuals shall sign the Draft 119B. Both parties shall keep copies of the signed document for their records.

1.9.C. After billable items are agreed upon but prior to submission of the pay estimate to IPP, the Design-Builder shall submit a full pay estimate package to COR for review. Any comments or corrections noted by the COR shall be addressed in the pay estimate package. Corrections to the pay estimate shall be provided to the COR for verification before submission to IPP. Once all comments have been addressed, the pay estimate may be submitted to IPP.

1. A draft review will ensure the pay estimate package submitted to IPP will not require rejection and will assist in determining any retainage and/or deductions required for the pay estimate.

1.9.D. Costs presented for work shall be in line with FAR Subpart 31.2.

1.10. USIBWC PAY ESTIMATE PROCEDURES

1.10.A. The pay estimate procedures shall be discussed in detail with the Design-Builder at the Preconstruction Conference. The Design-Builder shall submit complete pay estimate packets including all required supporting documents in order to receive timely payments. A complete pay estimate includes all of the items detailed in this Section.

1. Only send the following items to IPP at www.ipp.for.fiscal.treasury.gov, the COR, and the CO:
   a. IBWC Form 119, Pay Estimate - Contract Performance
   b. IBWC Form 119B, Pay Estimate Quantities
   c. IBWC Form 152, Pay Item Breakdown
   d. IBWC Form 154, Subcontract's Payment Breakdown
   e. IBWC Form 239, Schedule of Materials, if needed
   f. Supporting paid invoices if billing for stored materials on Form 239
2. In a separate email, send the complete pay estimate to the COR, the Government Inspector, and the CO. The complete pay estimate shall contain:
   a. IBWC Form 119, Pay Estimate - Contract Performance
   b. IBWC Form 119B, Pay Estimate Quantities
   c. IBWC Form 152, Pay Item Breakdown
   d. IBWC Form 154, Subcontract's Payment Breakdown
   e. IBWC Form 239, Schedule of Materials, if needed
   f. Supporting paid invoices if billing for stored materials on Form 239
   g. IBWC Form 153, Monthly Exposure and First Aid Report (for each contractor/sub)
   h. IBWC Form 161, Actual Weather and Working Conditions Report

i. Updated Project Schedule (both pdf and native file with written narrative)
j. IBWC Form 149, Schedule Analysis
k. IBWC Form 148, Log of Photographs with digital photos
l. IBWC Form 233a, Updated RFI Log
m. IBWC Form 147, Updated Submittal Register
n. Updated S Curve with associated Excel tables
o. AutoCAD files and other Record Drawing documents
p. Survey data to support billed unit prices

1.10.B. IBWC Form 119A-Contractor Payment Estimate Inventory
This is an optional form. The form provides a checklist of all items required for a complete pay estimate. It is available as an aid in making sure all items of your pay estimate are provided.

1.10.C. Cover Letter
The cover letter shall include the Contract number, Contract name, pay estimate number, pay estimate period, and total earnings to date. The cover letter shall also include the full amount requested along with any pertinent information related to this pay estimate. The cover letter shall include a list of retention held by the Design-Builder from each subcontractor and supplier. The list shall include pay estimate number, retention for this period, releases for this period, and total retention.

1.10.D. IBWC Form 119-Payment Estimate-Contract Performance
IBWC Form 119 is the Design-Builder's invoice to the Government. All other forms provided are backup data. The Design-Builder shall verify that the header data is correct and then sign this form to certify that this is a valid payment against the Contract.

1.10.E. IBWC Form 119B-Pay Estimate Quantities
All Contract Line Items (CLINs) shall be listed on Form 119B. When partial payments are required for lump sum items, the billable work defined in the compliance confirmed Schedule of Values (Section 01.20.00.01) shall be listed instead of the lump sum CLIN.

1. This form is what is used by the Government to pay the Design-Builder. This report needs to be accurate and up-to-date.
2. Whenever possible, the Design-Builder shall bill in whole number increments.
3. Place the words "stored materials" in the CLIN/work description for which stored materials have been billed. Additionally, verify that when stored materials have been completely incorporated into the project, that the words "stored materials" are deleted.
4. Design-Builders often want to charge a unit of "1" with a unit price matching the invoice for stored materials. This is incorrect. A line item's unit price cannot change; this is a Contractual value. The unit must be adjusted so that "unit" times "unit price" = "invoiced amount." Many times, this results in irregular units carried out to several decimal places.

1.10.F. IBWC Form 152-Pay Item Breakdown
The same CLINs/work items shall be listed on Form 152 as on Form 119B. All columns shall be filled out to represent the current project status.

1. Place the words "stored materials" in the CLIN/work description for which stored materials have been billed. Additionally, verify that when stored materials have been completely incorporated into the project, that the words "stored materials" are deleted.

1.10.G. IBWC Form 154-Subcontractors' Payment Breakdown

1. The Design-Builder must fill out this form in its entirety. The Design-Builder shall ensure that SF-1413s have been provided to the COR for all subcontractors used on this project and that subcontractors have been checked against the Government's debarment list.

2. FAR 52.222-11 requires that all subcontractors, at any tier, are required to submit fully executed SF-1413s upon award of a subcontract.
3. FAR 52.209-6 requires Design-Builders to verify that they are not entering into subcontracts in excess of $30,000 with subcontractors who have been debarred, suspended, or proposed for debarment by the Federal Government.
4. Do not include suppliers on this form; only include subcontractors.

1.10.H. IBWC Form 239-Schedule of Materials

This form is only required in a pay estimate if the Design-Builder is requesting or has requested payment for stored materials. It is a general policy of USIBWC to allow payment for stored materials which will be incorporated into the final work provided that the materials are properly stored at the worksite, have been addressed by a submittal evidencing compliance with the Contract, and are supported by invoices indicating the project (by name or Contract number), material description, quantity, and cost of each type of material.

1. All materials to be authorized for payment, both onsite and off, must be inventoried and be accounted for continuously until incorporated into the work.
2. The Design-Builder must submit copies of invoices and other evidence of payment with the initial request for payment of stored materials.
3. The CLINs/work being billed for stored materials on Forms 119B and 152 must have the words "stored materials" placed in the CLIN/work description.

1.10.I. IBWC Form 153-Monthly Exposure and First Aid Report

1. A separate Form 153 shall be submitted for the Design-Builder and for every subcontractor on the jobsite. This is required for all Contract periods when workers are onsite. See Section 01.35.23.01 for additional details on this form.
2. Subcontractor forms shall be signed by an authorized party of each subcontractor.

1.10.J. IBWC Form 161-Actual Weather and Working Conditions Report

Weather days documentation is to be performed each month as part of the pay estimate processing. The Design-Builder and the Government Inspector should agree on the number of adverse weather days each month. Upon acknowledgment of the Construction Notice to Proceed and continuing throughout the end of the Contract on a monthly basis, the Design-Builder shall record actual adverse weather days on a calendar day basis (including weekends and holidays).

1. The Contractual basis for granting time extensions due to inclement weather is in Contract Clause 52.249-10, entitled Default (Fixed-Price Construction). Administration of the Default Clause is prescribed in Time Extensions for Unusually Severe Weather. This special condition provides a listing of monthly anticipated adverse weather calendar days for the geographical location of the project. For each month, the number of adverse weather calendar days are to be noted on the documentation form until the number of anticipated calendar weather days is expended. After the anticipated calendar days are expended, then adverse weather working days are recorded as lost days due to weather. At the end of the monthly documentation, this total number of working days lost (due to adverse weather) is converted on the record form into calendar days for granting a time extension. The conversion factor is determined as a ratio of the number of days in a week (7) to the number of workdays in a week. For example, if a Design-Builder works a normal 5-day workweek, the conversion factor is 7/5; if a Design-Builder works a 6-day workweek, the conversion factor is 7/6.
2. The "Ant. Delay" line of IBWC Form 161 shall be filled in with the Monthly Anticipated Adverse Weather Calendar Days as listed in Contract clause entitled Time Extensions for Unusually Severe Weather.

3. In recording whether a day is lost due to adverse weather, it is important to realize that a whole day is lost if work is prevented for 50% or more of the day and the work is critical to timely completion of the project (i.e., critical path work).
4. For each month, the number of adverse weather calendar days are to be noted on the documentation form until the number of anticipated calendar weather days is expended. After the anticipated calendar days are expended, only adverse weather working days are recorded as lost days due to adverse weather. At the end of the monthly documentation, this total number of working days lost (due to adverse weather) is converted on the record form into calendar days for granting a time extension. If justified a time extension due to adverse weather, the COR will forward the documentation record to the CO. The Design-Builder cannot assume that just because IBWC Form 161 is completed that these days are automatically added to the Contract. A Contract modification must occur before the time is officially added to the Contract.

1.10.K. Progress Schedule

An updated schedule shall be submitted with the Design-Builder's pay estimate. Section 01.32.16.01 3.2 details the requirements of the Schedule. This schedule is not considered to be a submittal.

1. The date to be used for calculating progress shall be the last work day of the pay estimate period.

1.10.L. IBWC Form 149-Schedule Analysis

Complete this form using data from your updated progress schedule and the project's compliance confirmed baseline schedule.

1.10.M. Construction Photos and IBWC Form 148-Log of Photographic Documentation

1. Photos shall be correctly named per Section 01.32.33.01 2.2.C.
2. All photos provided by the Design-Builder shall be accurately listed.
3. The photographs, files, and Form 148 are not considered to be a submittal.
4. See Section 01.32.33.01 3.2 for more details.

1.10.N. IBWC Form 233A-RFI Log

A complete and up-to-date RFI log shall be submitted with the Design-Builder's pay estimate. Section 01.31.00.01 details the requirements of the RFI log. This RFI log is not considered to be a submittal.

1. The RFI log shall be current through the last day of the pay estimate period.

1.10.O. IBWC Form 147-Submittal Register

A complete and up-to-date submittal register shall be submitted with the Design-Builder's pay estimate. If separate submittal registers are kept for submittals to USIBWC and construction submittals to the Design-Builder, both submittal registers shall be submitted. Section 01.33.00.01 details the requirements of the submittal register. This submittal register is not considered to be a submittal.

1. The submittal register shall be current through the last day of the pay estimate period.

1.10.P. Updated S Curve

An updated S Curve graph with associated Excel tables shall be submitted with the Contractor's pay estimate. Section 01.20.00.01 details the requirements of the S Curve and tables. This S Curve is not considered to be a submittal.

1.10.Q. Record Drawings

Record Drawings shall be kept up to date. The Design-Builder shall submit cross sections per Section 02.21.00.01 3.3.B, a copy of the current AutoCAD files that include up to date survey data, and any applicable pdfs with their pay estimates and shall make available all hardcopy notes, drawings, and write ups detailing items that will be included in the Record Drawings. Section 01.78.39.01 has more details.

1.10.R. Survey Data

When measurement and payment requires surveyed quantities, provide up to date surveyed quantities signed and stamped by a surveyor.

1.10.S. Other Documents
The Design-Builder shall ensure that all Daily Quality Control Reports (IBWC Form 163) from both the Design-Builder and the Construction Contractor, Preparatory Inspection Checklists (IBWC Form 162), Initial Inspection Checklists (IBWC Form 166), Weekly Toolbox Safety Meetings (IBWC Form 164), Concrete Test Results Summaries (IBWC Form 235), Concrete Placement Cards (IBWC Form 238), and other safety, environmental, and quality control test reports have been provided to the COR for the time period covered by the pay estimate. Failure of the Design-Builder to submit required quality control, safety, and environmental data to the Government can result in retainage by the Government of up to 10% of the pay estimate.

1.11. FINAL PAYMENT

The Government shall pay the final amount due to the Design-Builder under this Contract after the completion and acceptance by the Government of all work, after the Design-Builder submits a final pay estimate, and after the Design-Builder submits a release of all claims against the Government (reference FAR 52.232-5(h)).

1.12. IPP NOTES

1.12.A. Some Contractors have had issues getting IPP to show the correct billing amounts on lump sum CLINS. Here are two tricks that Contractors have mentioned often work:

1. Reverse the Amount and the Quantity
   It defaults to quantity of "1" and the unit price is the total of the line item (e.g. 1,555,555.00). Instead of trying to figure out the "decimal amount" to bill the current pay estimate, reverse it with the quantity at "1,555,555.00" and a unit price of "1.00."
2. Percent to Bill
   You can adjust the dollar amount once you put in the "percent you want to bill," but you have to always have to double check to see if it goes back to the original calculated amount.

1.12.B. If you still cannot get the correct billing amount to show in IPP, you will need to contact the IPP help desk.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

--End of Section--

SECTION 01.29.15.01
CERTIFIED PAYROLL

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

1.2.A. Section 00.60.00.01-◊●◊●◊ USIBWC Forms and Standard Documents

1.2.B. Section 01.33.33.01-◊●◊●◊ Document Requirements

1.3. REFERENCE STANDARDS

1.3.A. Code of Federal Regulations (CFR)

1. 29 CFR Parts 1, 3, 5, 6, 7, 10, and 13

1.3.B. Executive Order (EO)

1. Equal Employment Opportunity, EO 11246
2. Establishing Paid Sick Leave for Federal Contractors, EO 13673

1.3.C. Federal Acquisition Regulation (FAR)

1. FAR 22.403-2 Wages, Fringe Benefits, and Overtime
2. FAR 22.403-6 Department of Labor Regulations Involving Construction
3. FAR Subpart 22.21 - Establishing Paid Sick Leave For Federal Contractors

1.3.D. United States Code (USC)

1. Age Discrimination in Employment Act of 1967, 29 USC 634
2. Americans with Disabilities Act (ADA) of 1990, 42 USC 12101 et seq.
3. Title VII of the Civil Rights Act of 1964, 42 USC Chapter 21
4. Contract Work Hours and Safety Standards Act (CWHSSA), 40 USC 3701-3708

5. Copeland "Anti-Kickback" Act, 18 USC 874
6. Davis Bacon Act (DBA), 40 USC 3141-3148
7. Fair Labor Standards Act Of 1938 (FLSA), 29 USC 201, et. seq.
8. Family and Medical Leave Act, 29 USC Chapter 28
9. National Labor Relations Act, 29 USC 151-169
10. Occupational Safety and Health Act (OSHA) of 1970, 29 USC Chapter 15
11. Section 503 of the Rehabilitation Act of 1973, 29 USC 701
12. Vietnam Era Veterans' Readjustment Assistance Act of 1974, 38 USC 4212

1.4. RECORD DOCUMENTS

1.4.A. Required documents to be provided to Government in this Section include:

1. Certified payrolls for all contractors and subcontractors onsite that fall under Davis Bacon Act.
2. IBWC Forms 227, Wage Deduction Authorization

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

1.6.A. This Section is used to promote procurement with responsible sources who comply with labor laws. Labor laws are designed to promote safe, healthy, fair, and effective workplaces.

1.6.B. Work on this project shall meet the labor regulations delineated in FAR 22.403-6 which includes Title 29, Subtitle A, Code of Federal Regulations, Parts 1, 3, 5, 6, 7, 10, and 13.

1.6.C. Work on this project shall meet the labor law requirements of:

1. Age Discrimination in Employment Act of 1967
2. Americans with Disabilities Act (ADA) of 1990
3. Title VII of the Civil Rights Act of 1964
4. Contract Work Hours and Safety Standards Act (CWHSSA)
5. Copeland "Anti-Kickback" Act
6. Davis Bacon Act (DBA) including Construction Wage Rate Requirements under 40 USC Chapter 31 and under 29 CFR Parts 1, 3, and 5
7. Fair Labor Standards Act Of 1938 (FLSA)
8. Family and Medical Leave Act
9. National Labor Relations Act
10. Occupational Safety and Health Act (OSHA) of 1970
11. Section 503 of the Rehabilitation Act of 1973
12. Vietnam Era Veterans' Readjustment Assistance Act of 1974
13. 29 CFR Parts 1, 3, and 5
14. Equal Employment Opportunity, EO 11246
15. Establishing Paid Sick Leave for Federal Contractors, EO 13673

1.7. DEFINITIONS

1.7.A. The term "laborer or mechanic" is defined in 29 CFR 5.2(m) and includes at least those workers whose duties are manual or physical in nature (including those workers who use tools or who are performing the work of a trade), as distinguished from mental or managerial. The term laborer or mechanic includes apprentices, trainees, helpers, and, in the case of contracts subject to the Contract Work Hours and Safety Standards Act, watchmen or guards. The term does not apply to workers whose duties are primarily administrative, executive, or clerical, rather than manual. Working foremen who devote more than 20% of their time during a workweek to mechanic or laborer duties, and who do not meet the criteria of 29 CFR Part 541, are laborers and mechanics for the time so spent.

1.7.B. The term "site of the work" is defined in 29 CFR 5.2(l) and includes the physical place or places where the work called for in the Contract will remain and any other site where a significant portion of the work is constructed, provided that such site is established specifically for the performance of this project.

1.8. PROJECT WAGES

1.8.A. Wages equal to or exceeding the Contract's DBA wages shall be paid to all laborers and mechanics working at the site of work.

1.8.B. Wages equal to or exceeding the current Federal minimum wage shall be paid to all workers performing work on or in connection with this Contract. "In connection with" this Contract has been defined by DOL as performing at least 20% of their hours in any given week related to this Contract.

1.8.C. The Design-Builder shall be aware that the Federal minimum wage is often higher than many DBA labor categories. The Design-Builder shall pay the higher of the Federal minimum wage or the Davis-Bacon wage rate.

1.8.D. The Design-Builder shall also be aware that the Federal minimum wage, unlike the DBA wage, can only be met through paid wages and not by any payments as defined in FAR 22.406-2(a)(2) or (a)(3) to bona fide plans or programs.

1.8.E. The Design-Builder shall also be aware that the Federal minimum wage is adjusted each calendar year. The new rate is usually published in September to become effective in January. While DBA wage rates remain constant throughout the life of the Contract, the Design-Builder is required to abide by the new Federal minimum wage that is published each year.

1.9. CERTIFIED PAYROLLS

1.9.A. All payrolls shall meet the requirements of the Davis-Bacon Act (DBA), the Fair Labor Standards Act (FLSA), the Contract Work Hours and Safety Standards Act (CWHSSA), and the Copeland "Anti-Kickback" Act in effect at the time this Contract was executed as well as the current Federal minimum wage.

1. The FAR now references "Construction Wage Rate Requirements" or "Wage Rate Requirements (Construction)" where it previously referenced DBA. Construction Wage Rate Requirements are covered by 40 USC Chapter 31. DBA is 40 USC Chapter 31 Subchapter IV.
2. References to DBA in this Scope of Work shall incorporate "Construction Wage Rate Requirements" and "Wage Rate Requirements (Construction)."

1.9.B. The Design-Builder shall submit weekly, for each week in which any construction work is performed, a copy of all payrolls. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly submittals. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number).

1. Payrolls shall be numbered consecutively for each week.

2. All weeks shall be accounted for with payroll reports from the first payroll to the final payroll.

1.9.C. The required weekly payroll information may be submitted in any form desired. The Design-Builder is responsible for the submission of copies of payrolls by all Subcontractors. Optional Form WH-347 is a Wage and Hour form available to Design-Builders on www.dol.gov/whd/forms/wh347.pdf.

1. During weeks in which no construction work is performed by the Design-Builder or any Subcontractors, a Nonperformance Payroll Report (IBWC Form 228) may be submitted in lieu of WH-347 or certified payroll report.

1.9.D. Each payroll submitted shall be accompanied by a Statement of Compliance, signed by the Design-Builder, Subcontractor, or their agent who pays or supervises the payment of the persons employed under the Contract or applicable Subcontract. This Statement of Compliance is why the payroll is usually referred to as "certified payroll."

1. The Design-Builder may use IBWC Form 226 (Statement of Labor Compliance) to fulfill this requirement.

1.9.E. Department of Labor's (DOL) administrative policy excludes bona fide owner-operators of trucks who are independent Design-Builders from DBA/CWHSSA provisions concerning their own hours of work and rate(s) of pay. These truck "owner-operators" must be reported on weekly payrolls but the payrolls do not need to show the hours worked or rates: only the notation "Owner-operator." Note that any laborers or mechanics, including truck drivers, employed by the owner-operator/independent Design-Builder are subject to DBA/CWHSSA provisions in the usual manner.

1. The Design-Builder shall complete IBWC Form 232, Owner-Operator Payroll Listing, for all owner-operator trucks on the jobsite each week.
2. Each owner-operator shall complete an IBWC Form 231. These forms shall be provided to the COR the first week that any owner-operator is on the site.

1.10. PAYROLL DEDUCTIONS

1.10.A. The Design-Builder must submit IBWC Form 227 with the first payroll of any Davis-Bacon covered employee prior to taking deductions from their wages.

1.10.B. The following deductions from Davis-Bacon wages are allowed by law:

1. Deductions for social security or federal or state income tax withholding.
2. Deductions for bona fide prepayment of wages.
3. Deductions for court ordered payments.
4. Deductions for contributions to fringe benefit plans, provided that the deduction is not prohibited by law, that it is either voluntarily consented to by the employee in writing in advance of the time the work is done or provided for in a collective bargaining agreement, that no profit or other benefit is obtained by the Design-Builder and that the deduction serves the convenience of the employee.
5. Deductions for purchase of US savings bonds when voluntarily authorized by the employee.
6. Deductions to repay loans or to purchase shares in a credit union.
7. Deductions voluntarily authorized for contributions to organizations such as the Red Cross, United Way, or similar charitable organizations.
8. Deductions to pay union initiation fees and membership dues, not including fines or special assessments, provided that a collective bargaining agreement provides for such deductions and the deductions are not otherwise prohibited by law.
9. Deductions for the reasonable cost of board, lodging, or other facilities.
10. Deductions for the cost of safety equipment purchased by the employee if such equipment is not required by law to be furnished by the employer, if such deduction is not prohibited by FLSA or

other law and if the cost on which the deduction is based does not exceed the actual cost to the employer.

1.11. PAID SICK LEAVE

Under Executive Order 13706 and detailed in FAR Subpart 22.21, all employees covered by FLSA or DBA, including employees exempt from FLSA's minimum wage and overtime provisions, are to be paid a minimum of 1 hour of sick leave for every 30 hours worked on, or in connection with, this Contract.

1.12. BORROW PITS

1.12.A. The Design-Builder is notified that DOL considers borrow pits opened specifically for and dedicated to USIBWC projects that are located near the project to be included in the definition of "site of work."

1.12.B. Commercial borrow pits or material suppliers that are open to the public prior to the bid opening are not included in the site of work.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. CERTIFIED PAYROLLS

3.1.A. The Design-Builder shall submit weekly a copy of all payrolls and shall submit copies of IBWC Forms 227 to the COR. These files shall be submitted as electronic, pdf, copies. The Design-Builder shall ensure that the electronic copies are legible and that they meet Section 00.60.00.01 3.1 and Section 01.33.33.01 1.9.B.5.

3.1.B. Payrolls for each week by each contractor and subcontractor as well as IBWC Form 227 shall all be submitted in separate pdf files.

3.1.C. Use consistent naming for like documents. Once the filename for a file type has been established, do not change it. Recommended filename terms include:

1. Contractor Name CPR ### WE 12-13-2022.pdf for payrolls.
2. Last Name, First Name Form 227 191BWCxxCxxxx 20221213.pdf for Form 227. Date shall be date form was signed.

--End of Section--

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SECTION 01.31.00.01
PROJECT COORDINATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

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1.1. Section Includes....1
1.2. Related Requirements....1
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1.4. Measurement and Payment....1
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1.6. Design-Builder's Responsibilities....2
1.7. Professional Conduct....2
1.8. Stakeholders....3
1.9. Requests for Information (RFI)....3
Part 2 - Products (Not Used)....4
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1.2. RELATED REQUIREMENTS

1.2.A. Section 00.90.00.01-◊●◊●◊ Revisions, Clarifications, and Modifications

1.2.B. Section 01.32.16.01-◊●◊●◊ Progress Schedule

1.2.C. Section 01.41.00.01-Regulatory Requirements

1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulation (FAR)

1. FAR 52.236-23, Responsibility of the Architect-Engineer Contractor

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. COORDINATION

1.5.A. Contract operations shall be coordinated to ensure efficient and orderly progress of each part of the work. In addition to a Project Manager, the Design-Builder shall provide other administrative and supervisory personnel as required for proper coordination and administration of the work.

1.5.B. The Design-Builder’s Project Manager shall be available to the Government during business hours, as well as in emergencies. Other coordination responsibilities and activities required to be provided by the Design-Builder includes the following:

1. The Design-Builder shall be responsible for ascertaining the nature and extent of any simultaneous, collateral, and essential work by others. The Government, its workers and Design-Builders and others, shall have the right to operate within or adjacent to the Construction site to perform such work.
2. In accordance with the provisions and timeframes stated in Section 01.32.16.01, the Design-Builder shall submit to the COR a proposed project schedule. This schedule shall be in the form as

described in Section 01.32.16.01 and shall reflect all coordination efforts of the work under this Contract.

3. It is the Design-Builder's sole responsibility to coordinate with Border Patrol, landowners, and utility owners, who are affected by the Design-Builder's activities for access, schedule, and progression of work throughout the project duration in order to provide continuous access to the affected owners and obtain uninterrupted access within the project area.

1.5.C. After award of the Contract, the Design-Builder shall not remove or exchange personnel identified in their proposal unless employment with the Design-Builder ceases, they are unavailable due to a medical emergency, or they are requested to be replaced by the Government. Replacement can only take place after written approval from the CO.

1.5.D. The Design-Builder shall notify the construction inspector and the COR within 24 hours of any personnel changes in the Project Superintendent, Project Manager, any Field Superintendents, any Quality Control Managers, or any Safety and Health Officers.

1.6. DESIGN-BUILDER'S RESPONSIBILITIES

The Design-Builder is fully responsible for meeting all requirements of this Contract including the construction specifications and drawings. The duty to meet these requirements is not delegable.

1.7. PROFESSIONAL CONDUCT

1.7.A. The Design-Builder, the Designer of Record, and all subcontractors are required to perform at or above the level required by all associated state engineering and surveying practice acts, statutes, or rules.

1.7.B. The Design-Builder, as an entity as well as any individuals who sign and seal documents on the Design-Builder's behalf, shall:

1. Perform services consistent with the professional skill and care ordinarily provided by professionals practicing in the same or similar locality under the same or similar circumstances.
2. Meet all of the applicable requirements of statutes, codes, regulations, rules, ordinances, and standards listed in Section 01.41.00.01 1.7 as well as any additional requirements that should be added based upon the Design-Builder's professional opinion.

1.7.C. Conflicts/Inconsistencies
In the event of any inconsistencies within or between any parts or provisions of this SOW, any designs or construction documents provided by Design-Builder, or any applicable standards, codes or ordinances, the Design-Builder will provide the better quality or greater quantity of services or comply with the more stringent requirement; either or both in accordance with the USIBWC's interpretation.

1.7.D. Liability
Notwithstanding FAR 52.236-23 (Responsibility of the Architect-Engineer Contractor), Design-Builder shall indemnify and hold harmless USIBWC and its employees from and against any and all liability, claims, losses, damage, costs, expenses, and fees to the extent said liability, claims, losses, damages, costs, expenses, and/or fees are caused by the Design-Builder's acts, omissions, errors, misconducts, or negligence.

1.7.E. Right of Entry

1. Once this Contract is active, the Design-Builder has the right to enter into USIBWC's ROW. The Design-Builder shall coordinate with the COR about site limitations and access.
2. While Right of Entry statutes and regulations in many states allow surveyors and engineers the right to enter upon the lands and waters of the state, of private persons, and of private and public corporations for the purpose of making surveys, inspections, examinations, and maps, the Design-Builder shall make every attempt to contact said persons, corporations, and state agencies prior to entry to maintain a professional level of public relations.

3. If said entry onto other property results in damages to crops, property, or persons, the Design-Builder is fully responsible for repair and reparation of damages at no expense to the Government.

1.8. STAKEHOLDERS

1.8.A. The Design-Builder shall coordinate as necessary with Department of Homeland Security.

1.9. REQUESTS FOR INFORMATION (RFI)

1.9.A. The Contract Documents are prepared with great care, but no set of documents are perfect. When it is necessary to confirm the interpretation of a Contract item or to secure a documented directive or clarification from the Government in order to continue work, the Design-Builder shall prepare and submit a Request for Information (RFI).

1. Whenever possible, details and clarifications shall take place at the lowest level possible, indicating via discussions, meetings, and emails.
2. Requests for documents shall not be submitted under the RFI process.
3. RFIs between the Design-Builder and any of their contractors/subcontractors shall be handled per Section 00.90.00.01 Paragraph Section 1.6.

1.9.B. All RFIs shall be provided to the COR and Government Inspector in pdf with a scan of the signed original or including an electronic signature. RFIs without a signature will not be accepted.

1.9.C. Content of the RFI
The RFI shall be detailed on IBWC Form 233 and shall include a detailed, legible description of item needing interpretation and the following:

1. Project name
2. Date
3. Name of Design-Builder
4. RFI number, numbered sequentially
5. Section number, title and related paragraphs, as appropriate
6. Drawing number and detail references, as appropriate
7. Field dimensions and conditions, as appropriate
8. Design-Builder's suggested solution(s)
   If Design-Builder's solution(s) impact the Contract Time or the Contract Sum, Design-Builder shall state impact in the RFI.
   a. If the suggested solution is a design or drawing revision, documentation meeting Section 00.90.00.01 Paragraph 1.7. shall be provided.
9. Design-Builder's signature
   RFIs without a signature will not be accepted by the COR.
10. Attachments
    Include drawings, descriptions, measurements, photos, product data, shop drawings and other information necessary to fully describe items needing interpretation. Supplementary drawings prepared by Design-Builder shall include dimensions, thicknesses, structural grid references and details of affected materials, assemblies, and attachments.

1.9.D. Government Action

1. The COR will review each RFI, determine action required, and return a response to the Design-Builder within 5 business days.

2. If the Design-Builder submits more than four RFIs within a 72 hour period, the Government will add an additional 2 days to each RFI review for all RFIs that the Government has in possession at said time. The Design-Builder shall note this as part of their bid and will incorporate this rule within their baseline progress schedule and subsequent progress schedule updates.

1.9.E. RFI Log

The Design-Builder shall prepare and maintain IBWC Form 233a, RFI log, organized by RFI number to be reviewed at every weekly meeting and submitted with the Design-Builder's completed pay estimate. The RFI log will contain, at a minimum, the following:

1. Project name
2. Name and address of Design-Builder
3. RFI number including RFIs that were dropped and not submitted.
4. RFI description
5. Date the RFI was submitted
6. Date Government response was received
7. Identification of related Construction modification, Claim, Proposal Request, or other disposition, as appropriate.

1.9.F. Misuse of RFI Process

In the event the Design-Builder misuses the RFI process by requesting information that is already available from the Contract Documents or by repeatedly making the same or similar inquiry where only the location varies, the COR will deduct one hundred and fifty dollars ($150) from the Contract amount to cover the cost of processing the RFI.

1.9.G. Requests for information, interpretation, or clarification between the Construction Contractor and the Design-Builder shall be handled per 00.90.00.01 1.6.

1.9.H. Approved or agreed to design revisions shall be handled per Section 00.90.00.01 Paragraph 1.7.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

--End of Section--

SECTION 01.31.19.01
PROJECT MEETINGS

PART 1 - GENERAL

1.1. SECTION INCLUDES

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.32.16.01-◊●◊●◊ Progress Schedule

1.2.B. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.C. Section 01.40.00.01-◊●◊●◊ Quality Requirements

1.2.D. Section 00.31.13.01-◊●◊●◊ Project Time Constraints & Milestones

1.3. RECORD DOCUMENTS

1.3.A. Required documents to be provided to Government in this Section include:

1. Meeting Minutes
   Design-Builder shall take minutes at all project meetings except for preconstruction meeting and weekly coordination meetings.

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. GENERAL

1.5.A. The Design-Builder, the COR, or the CO may schedule project meetings at any time.

1.5.B. All project meetings, unless otherwise indicated, shall be scheduled and conducted at the project site or the local USIBWC Office.

1. Progress meetings shall be held at the project site or the Construction Contractor's office.
2. Design discussion meetings may be held via teleconference, via video conference, or in person.

3. If the COR, CO, and Design-Builder all agree, instead of holding a meeting onsite or at the USIBWC Office, a meeting may be held via teleconference or via video conference.

1.5.C. When USIBWC schedules a meeting, the COR shall inform participants, others involved, and individuals whose presence is required, of date and time of each meeting. The COR shall prepare the meeting agenda and distribute to all invited attendees.

1.5.D. When the Design-Builder schedules a meeting, the Design-Builder shall inform participants and others involved and individuals whose presence is required, of date and time of each meeting. The Design-Builder shall prepare the meeting agenda and distribute to all invited attendees.

1.5.E. The Design-Builder shall be responsible for keeping minutes of the discussions and agreements achieved. The meeting minutes shall be distributed to everyone concerned within 7 calendar days of the meeting.

1. Minutes shall be distributed in Word format for review.
2. Provide all meeting participants 4 to 7 business days for review. After all comments have been collected finalize minutes in pdf format to all attendees.
3. Clearly label minutes as "DRAFT" and "FINAL."
4. The Design-Builder is not required to keep minutes at any construction meetings attended under 1.10 below.

1.5.F. The following meetings are anticipated and the Design-Builder shall identify them in the Schedule:

1. Design Kick-Off Meeting
2. Scoping Meeting
3. 60% Design Presentation
4. Preconstruction Conference
5. Construction Progress Meetings

1.5.G. While it is always preferred for people to meet in person, upon agreement with the COR, meetings may be held only or concurrently via video conference.

1.6. DESIGN KICKOFF MEETING

1.6.A. After award of the Contract, the COR will coordinate with the Design-Builder to schedule a Design Kickoff Meeting. The meeting shall take place prior to the beginning of any design work.

1.6.B. The Kickoff Meeting will be held at USIBWC Lower Rio Grande Field Office, 325 Golf Course Road, Mercedes, Texas.

1.6.C. The purpose of the meeting is to introduce project personnel and review responsibilities and procedures. The Design-Builder shall provide a copy of the current Schedule as specified under Section 01.32.16.01.

1.6.D. The Design-Builder shall reach an understanding with the Government regarding the design requirements of the project as stated is this scope of work. This understanding shall be documented by the Design-Builder in writing and approved by the CO after the Design-Kickoff Meeting.

1.6.E. Attendees

1. Design-Builder's Project Manager
2. Design-Builder's QSM
3. COR
4. USIBWC Field Office Representative
5. USIBWC ESD Representative
6. USIBWC COND Representative

7. It is recommended that Design-Builder's designers, subcontractors, suppliers, and other concerned parties also attend the conference. The Design-Builder may invite anyone they wish to this meeting. All participants at the conference shall be familiar with the project and authorized to conclude matters relating to the work.
8. All participants at the conference shall be familiar with the project and authorized to conclude matters relating to the work.

1.6.F. Agenda
Discussion of items of significance that could affect the work and project, including the following:

1. Introduction/designation of key personnel and their duties.
2. Review of the current draft schedule, phasing, critical work sequencing and long-lead items.
3. Review of minimum design requirements.
4. Review of USIBWC final product requirements.
5. Review of procedures for handling and processing field decisions, modifications, RFIs, testing and inspection, applications for payment and submittals.
6. Preparation of deliverable documents.
7. Use of right-of-way.
8. Work restrictions.
9. USIBWC and other's occupancy requirements.
10. Responsibilities for temporary facilities and controls.
11. Construction waste management and recycling.
12. Field office, parking, work areas and storage areas.
13. Equipment and materials deliveries and priorities.
14. Safety and first aid.
15. Security.
16. Maintenance of project site.
17. Working hours.

1.6.G. Meeting Minutes
The Design-Builder will record the discussions of the meeting and distribute the minutes.

1.7. SCOPING MEETING

1.7.A. After the Kickoff Meeting, but before the Design-Builder progresses much beyond conceptual designs, a Scoping Meeting shall be held.

1.7.B. The meeting is intended to facilitate the complete sharing of project ideas and information. The Design-Builder shall be prepared to discuss conceptual designs while USIBWC and stakeholders shall be prepared to discuss project concerns, limitations, and objectives.

1.7.C. Attendees include, but are not limited to:

1. All Stakeholders
2. Design-Builder's Designer(s) of Record
3. Design-Builder's Project Manager
4. COR
5. USIBWC Field Office Representative
6. USIBWC ESD Representative

7. USIBWC COND Representative

1.7.D. The Design-Builder is responsible for scheduling this meeting and for creating all agendas and minutes.

1. The Design-Builder shall coordinate with all attendees to determine a reasonable date for holding this meeting.

1.7.E. The meeting shall be held at USIBWC's local Mercedes field office.

1.8. 60% DESIGN PRESENTATION

1.8.A. The Design-Builder shall organize a design submittal presentation.

1.8.B. The Design-Builder shall provide the 60% deliverables a few days before this meeting to immediately after this meeting. Any other timeframe will result in USIBWC requiring longer than the stated review days in Section 00.31.13.01.

1.8.C. Attendees include, but are not limited to:

1. All Stakeholders
2. Design-Builder's Designer(s) of Record
3. Design-Builder's Project Manager
4. COR
5. USIBWC Field Office Representative
6. USIBWC ESD Representative
7. USIBWC COND Representative

1.8.D. The Design-Builder is responsible for scheduling this meeting and for creating all agendas and minutes.

1. The Design-Builder shall coordinate with all attendees to determine a reasonable date for holding this meeting.

1.8.E. The meeting shall be held at USIBWC's Mercedes local field office.

1.9. PRECONSTRUCTION CONFERENCE

1.9.A. A preconstruction conference shall be scheduled by the COR prior to the start of construction. Unless another date is agreed to with the Design-Builder, the preconstruction conference shall be within 15 calendar days after Government issuance of Construction Notice to Proceed.

1.9.B. The preconstruction conference will be held at USIBWC Lower Rio Grande Field Office, 325 Golf Course Road, Mercedes, Texas.

1. The purpose of the meeting is to introduce project personnel and review responsibilities and procedures required during construction.
2. The Design-Builder shall provide a copy of the current Schedule as specified under Section 01.32.16.01.

1.9.C. Attendees
All participants at the conference shall be familiar with the Contract and construction requirements and authorized to conclude matters relating to the work. Attendees shall include, at a minimum:

1. Authorized representatives of the Government (including the COR and Inspector)
2. USIBWC Field Office Representative
3. USIBWC ESD Representative
4. USIBWC COND Representative
5. Design-Builder’s Project Manager

6. Design-Builder's QSM
7. Design-Builder's Construction QA Manager
8. Construction Contractor's Project Manager
9. Construction Contractor's Site Superintendent
10. Construction Contractor's QCSM
11. Major subcontractors, suppliers, or other concerned party representatives, as appropriate

1.9.D. Agenda
Discussion of items of significance that could affect the work and project, including the following:

1. Introduction/designation of key personnel and their duties
2. Review of the current schedule, phasing, critical work sequencing, long-lead items
3. Review of procedures for handling and processing field decisions
4. RFIs
5. Testing and inspection
6. Applications for payment
7. Submittals
8. Preparation of record documents
9. Use of right-of-way
10. Work restrictions
11. USIBWC and other's occupancy requirements
12. Responsibilities for temporary facilities and controls
13. Construction waste management and recycling
14. Parking, work areas, and storage areas
15. Equipment and materials deliveries and priorities
16. Safety and first aid
17. Security
18. Maintenance of project site
19. Working hours

1.9.E. Meeting Minutes
The Government will record the discussions of the meeting and distribute the minutes.

1.10. QUALITY CONTROL COORDINATION MEETING

1.10.A. Per Section 01.40.00.01 1.15, this meeting is usually held immediately after the Preconstruction Conference. If the meeting is held at a separate time, it will be held at Texas USIBWC Lower Rio Grande Field Office at 325 Golf Course Road, Mercedes, Texas or the project site.

1.10.B. The purpose of the meeting is to discuss the project's quality control system. During the meeting, a mutual understanding of the QC system details shall be developed.

1.10.C. Attendees shall include, at a minimum:

1. Authorized representatives of the Government (including the COR and Inspector)
2. USIBWC Field Office Representative
3. USIBWC ESD Representative
4. USIBWC COND Representative

5. Design-Builder’s Project Manager
6. Design-Builder's QSM
7. Design-Builder's Construction QA Manager
8. Construction Contractor's Project Manager or Owner
9. Construction Contractor's Site Superintendent
10. Construction Contractor's QCSM
11. Construction Contractor's SSHO

1.10.D. Meeting Minutes
The Government will record the discussions of the meeting and distribute the minutes.

1.11. PROGRESS MEETINGS

1.11.A. The COR will schedule weekly progress meetings once the Construction Contractor has mobilized onsite. The Inspector or the COR will conduct and issue minutes of the meetings. Meeting minutes will become official Contract correspondence. The Government may call other meetings on an "as needed" basis.

1.11.B. The meetings shall include, at a minimum:

1. Authorized representatives of the Government (including the COR and Inspector)
2. Design-Builder’s Project Manager
3. Design-Builder's QSM
4. Design-Builder's Construction QA Manager
5. Construction Contractor's Project Manager
6. Construction Contractor's Site Superintendent
7. Construction Contractor's QCSM

1.11.C. The purpose of these meetings shall be to analyze the progress of the work, resolve conflicts, and in general coordinate the operation of all organizations active at the project site.

1.11.D. Work production versus the current schedule, environmental issues, submittal status, RFIs, punch list (Form 150), deficiencies (Form 150), pay estimates, certified payroll, daily QC reports, work progress since the prior meeting, upcoming work plan with Construction Contractor's look ahead schedule, and any other items of note will be discussed.

1.11.E. All meetings will be held at the project site, the Design-Builder's field office, Texas USIBWC Lower Rio Grande Field Office at 325 Golf Course Road, Mercedes, Texas, or other mutually agreed upon location.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 01.32.16.01
PROGRESS SCHEDULE

PART 1 - GENERAL

1.1. SECTION INCLUDES

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.20.00.01-◊●◊●◊ Measurement and Payment

1.2.B. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulation (FAR)

1. FAR 52.236-15, Schedules for Construction Contracts

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Design Baseline Schedule
2. Construction Baseline Schedule
3. Qualifications of Scheduling Personnel

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. DESCRIPTION / PURPOSE

1.6.A. Pursuant to the Contract clause entitled "Construction Program" and FAR 52.236-15, Schedules for Construction Contracts, the Design-Builder shall prepare a schedule which shall reflect completion of all work under this Contract and shall include allotted time for all related activities (design and construction) by other agencies within the allotted Contract period.

1.6.B. The first compliance confirmed schedule that properly shows all activities within the allotted period shall be the baseline schedule. Separate design and construction baseline schedules are required.

1. A compliance confirmed baseline schedule shall not later be found defective simply because it did not follow all requirements in this Section.

1.6.C. The schedules shall be prepared using the Critical Path Method (CPM). The schedules shall show the actual planned sequence and duration for all work required to complete this project. The schedules are required to assure adequate planning and execution of the work and to assist the Government in appraising the reasonableness of the proposed schedule and evaluating progress of the work both before and during the design and construction phases.

1. Construction jobsite mobilization will not be permitted to take place by the Design-Builder until the construction baseline schedule is compliance confirmed by the Government.

1.7. SCHEDULE REQUIREMENTS

1.7.A. Schedule submittals for compliance confirmation shall include half sized pdf file and the schedule file in the native format of the scheduling software.

1. Half sized sets shall be ANSI B (11" x 17"). The schedule shall be drawn so that half sized sets are fully legible and that diagrams and notes can be clearly understood.
2. Whenever the schedule requires more than one sheet of paper, regardless of size, each sheet shall have fully identified columns, rows, titles, and dates.
3. All abbreviations shall be defined.
4. Each schedule shall show a revision date.

1.7.B. The monthly schedule update shall include 1 half size schedule (pdf) and an electronic native file.

1.8. QUALIFICATIONS OF SCHEDULING PERSONNEL

1.8.A. The Design-Builder shall identify a scheduler who will be dedicated to the project.

1. The scheduler shall have 4 years or more of verifiable experience preparing and utilizing CPM schedules.
   a. All experience shall be with the preferred scheduling software.
2. The Design-Builder's scheduler shall have a minimum of 40 hours of scheduling training.
3. Qualifications of the scheduler shall be submitted to the COR for compliance confirmation.

1.8.B. The Government reserves the right to require the Design-Builder to make changes in scheduling personnel to obtain an accurate, workable schedule.

1.8.C. Should the Design-Builder require a change in scheduler during the project, the Design-Builder shall notify the Government immediately and provide qualifications of the replacement scheduler to the COR for compliance confirmation.

1.9. FLOAT

1.9.A. Float is not time for the exclusive use or benefit of either the Government or the Design-Builder, but must be used in the best interest of completing the project on time.

1.9.B. The Government shall not be responsible for any delays nor for the Design-Builder's extended overhead if delay time can be absorbed in float. Nor shall the Government be responsible for payment for any delays or for Design-Builder's extended overhead which exceed total float unless the delay is government-caused. The Government shall only be responsible for government-caused delays to the extent they exceed total float without the presence of any concurrent non-government-caused delay.

1.9.C. A delay to activities with available float is considered a non-critical delay. Neither party is entitled to a time extension or to extended overhead unless a critical delay, or the accumulation of non-critical delays, caused by the other party impacts the project's critical path.

1.10. SCHEDULE RESTRICTIONS

1.10.A. Many portions of this Scope of Work require specific work be completed prior to the next portion of work commencing (e.g. surveying). Other portions require time limits before moving to next portion of work (e.g. concrete curing). The project schedule shall take all of these restrictions into account.

1.10.B. Failure to take all schedule restrictions into account or failure to schedule work as required in this Scope of Work shall be a non-government-caused delay.

PART 2 - PRODUCTS

2.1. DESIGN SCHEDULE REQUIREMENTS

2.1.A. Design Baseline Schedule

1. A complete Design Baseline Schedule and schedule of anticipated monthly earnings shall be submitted.
   a. If requested by the Government, the Design-Builder shall participate in a review and evaluation of the proposed schedule by the Government. Any revisions necessary as a result of this review shall be submitted for compliance confirmation within 7 calendar days of the review.
   b. Failure to include any work item required for performance of this Contract shall not excuse Design-Builder from completing all work within applicable completion dates, regardless of Government's compliance confirmation of the schedule.
2. Upon compliance confirmation of the Design Baseline Schedule, save the schedule as a baseline and update on a monthly basis. The design progress schedule update will be used to evaluate the Design-Builder's monthly pay estimate.
3. Establish procedures for monitoring and updating Design Schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
4. Progress shall be determined by work performed not by items billed.

2.1.B. Design Baseline Schedule Preparation
Prepare a list of all activities required to complete the work. The Design Baseline Schedule shall include all planned work activities and sequences and show work completion within the number of calendar days specified in the Contract.

1. Activities
   a. Indicate the estimated duration, sequence requirements, and relationship of each activity in relation to other activities.

b. Describe each activity on the schedule using:
   (1) A logical activity number utilizing an alphanumeric designation system tied to the sequence of work.
   (2) A concise description of the work represented by the activity.
   (3) An activity duration in whole calendar days.

2. Organize the activities so that plots no larger than ANSI B (11" x 17") of the schedule may be produced.

3. Critical Path Activities
   Clearly and accurately identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.

4. The Design Baseline Schedule as developed shall show the sequence and interdependence of activities required for complete performance of the work.
   a. Ensure all work sequences are logical and the Design Baseline Schedule shows a coordinated plan of the work.
   b. Show a predecessor and successor for each activity.

5. Timeframe
   Proposed duration assigned to each activity shall be the Design-Builder's best estimate of time required to complete the activity considering the scope and resources planned for the activity.
   a. Incorporate designs, surveys, Government review of designs, and other activities that may affect the completion of the Contract in the schedule.
   b. Show a beginning date, ending date, and duration in number of calendar days for each activity.
   c. Show float for each work activity.

6. Constraints
   Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of work is affected.

7. Milestones
   Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, 30% Design, 60% Design, 90% Design, Pre-100% Design, or other items as determined by the Design-Builder.

2.2. CONSTRUCTION SCHEDULE REQUIREMENTS

2.2.A. Construction Baseline Schedule
Prepare Construction Baseline Schedule using a computerized, resource-loaded, time-scaled CPM network analysis diagram.

1. A complete Construction Baseline Schedule shall be submitted within 7 calendar days after the Construction Notice to Proceed is issued.
   a. If requested by the Government, the Design-Builder shall participate in a review and evaluation of the proposed schedule by the Government. Any revisions necessary as a result of this review shall be submitted for compliance confirmation within 7 calendar days of the review.
   b. Failure to include any work item required for performance of this Contract shall not excuse Design-Builder from completing all work within applicable completion dates, regardless of Government's compliance confirmation of the schedule.

2. Upon compliance confirmation of the Construction Baseline Schedule, save the schedule as a baseline and update on a monthly basis. The construction progress schedule update will be used to evaluate the Design-Builder's monthly pay estimate.

3. Establish procedures for monitoring and updating construction progress schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.

4. Progress shall be determined by work performed not by items billed.

2.2.B. Construction Baseline Schedule Preparation
Prepare a list of all activities required to complete the work. The Construction Baseline Schedule shall include all planned work activities and sequences and show Contract completion within the number of calendar days specified in the Contract.

1. Activities
   a. Indicate the estimated duration, sequence requirements, and relationship of each activity in relation to other activities.
   b. Describe each activity on the schedule using:
      (1) A logical activity number utilizing an alphanumeric designation system tied to the sequence of work.
      (2) A concise description of the work represented by the activity.
      (3) An activity duration in whole calendar days.
2. Organize the activities so that plots no larger than ANSI B (11" x 17") of the schedule may be produced.
3. Critical Path Activities
   Clearly and accurately identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
4. Processing
   Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract time.
5. The Construction Baseline Schedule as developed shall show the sequence and interdependence of activities required for complete performance of the work.
   a. Ensure all work sequences are logical and the Construction Baseline Schedule shows a coordinated plan of the work.
   b. Show a predecessor and successor for each activity.
6. Resource loading of each activity shall include all personnel by labor category and equipment type and capacity proposed to complete the activity in the duration shown. Resource loading may be accomplished on the graphical schedule or may be provided in a separate narrative.
7. Consider seasonal weather conditions in planning and scheduling all work influenced by high and low ambient temperatures, wind, or precipitation to ensure completion of all work within the Contract time.
   a. Ensure that weather days as listed in Contract clause "Time Extensions for Unusually Severe Weather" are included in the schedule.
8. Timeframe
   Proposed duration assigned to each activity shall be the Design-Builder's best estimate of time required to complete the activity considering the scope and resources planned for the activity.
   a. Incorporate major material procurements, known utility relocations, and other activities (submittals, Government review of submittals, anticipated weather delays, final inspections, etc.) that may affect the completion of the Contract in the schedule.
   b. Show a beginning date, ending date, and duration in number of calendar days for each activity.
   c. Show an estimated production rate per calendar day for each work activity.
   d. Show float for each work activity.
9. Constraints
   Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of work is affected.

10. Milestones
    a. Include milestones indicated in the Contract Documents in schedule, including, but not limited to:
    b. Construction Notice to Proceed
    c. Substantial Completion
    d. Completion of major items
    e. Completion of items of which beginning work on other items is dependent
    f. Other items as determined by the Design-Builder

2.2.C. Baseline Schedule Construction Percent Work Complete Table

1. The Design-Builder shall prepare a table showing the total scheduled percentages of work complete over the construction period of performance based on the baseline progress schedule. The values shall be provided in an Excel table showing project scheduled percentage per month.
    a. Identify the required completion date for the construction period of performance in the table.
    b. Construction percent complete shall equal 100% by the required construction completion date.
2. The table shall be submitted with the baseline progress schedule prepared by the Design-Builder.
3. The percentages in this table shall be used to fill out the baseline values in IBWC Form 149 Schedule Analysis that is required with each pay estimate.
4. If the baseline progress schedule is revised during construction period of performance, a new table shall be provided with revised schedule percent of work complete over the remaining period of performance.

2.3. RECOVERY SCHEDULE

2.3.A. When periodic schedule update indicates the work is 21 days or more calendar days behind the current accepted schedule, a separate recovery schedule indicating means by which Design-Builder intends to regain compliance with the schedule must also be submitted.

1. Design-Builder shall indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

2.3.B. The CO may determine that a recovery schedule is required when the Design-Builder falls behind the baseline schedule for any period of time.

2.4. LOOK AHEAD SCHEDULES

2.4.A. The Design-Builder shall provide weekly, biweekly, or three week look ahead work schedules at every weekly progress meeting.

2.4.B. Look ahead schedules are not required to be CPM schedules. They are meant to show short term, real time actions in the field. They also provide a record for the Design-Builder to aid in the updating of the Construction schedule for each pay estimate.

1. Look ahead schedules may be created with a spreadsheet, a word processor, project management software, etc.
2. It is not required that the qualified scheduler create the look ahead schedules. Often the project manager or site superintendent is a better source for these schedules.
3. Look ahead schedules shall not be cost loaded.

2.4.C. The look ahead schedule shall be used to facilitate and take notes on discussions held during the progress meeting.

2.4.D. Hardcopy printouts of these look ahead schedules shall be provided to all attendees of the meeting.

2.4.E. A pdf copy (color, if appropriate) shall be provided to the Government Inspector and COR within 3 days of the meeting.

3.2. PAY ESTIMATE SCHEDULE UPDATES

2.4.F. Updated Progress Schedule

1. The Design-Builder shall submit, as part of their pay estimate, a report of the actual progress by updating the schedule(s).
   a. The Design-Builder shall, indicate on the schedule those activities that were added, updated, or revised. For items taking place prior to the last work day of the pay estimate period, actual dates shall be entered.
   b. Updates causing changes in the detailed schedule diagram shall be noted on the summary schedule diagram and a revised issue of the affected portions of the detailed schedule diagram shall be furnished along with the schedule.
   c. The date to be used for calculating progress shall be the last work day of the pay estimate period.
   d. The progress report shall show the activities or portion of activities completed during the reporting period and their total value as basis for the Design-Builder's periodic request for payment.
      (1) Indicate actual completion percentage for each activity.
   e. The progress report shall state the percentage of the work actually completed and scheduled as of the report date and the progress along the critical path in terms of days ahead or behind the Contract completion dates.
   f. If the project is behind schedule, progress along other paths with total float equal to or less than the number of days that the project is behind schedule shall also be reported.
2. Narrative
   a. The Design-Builder shall submit a narrative report with the updated schedule which shall include, but not be limited to,
      (1) A description of the current and anticipated problem areas.
      (2) Delaying factors and their impact
      (3) A list of those activity numbers that were added, updated, or revised
      (4) An explanation of the corrective actions taken or proposed.
   b. If the schedule update shows a late finish date after the Contract completion date, at a minimum, include the following in the narrative with your submission:
      (1) Any known delays.
      (2) Actions that will be taken to get back on schedule.
      (3) Pending modifications.
      (4) Impediments or constraints affecting progress.
3. If the Design-Builder fails to provide schedule updates or revisions, then a portion of the monthly payment may be retained until such corrections have been made.

2.4.G. Schedule Revisions

1. Required Revisions
   If, as a result of the monthly schedule update, it appears the currently accepted Baseline Schedule no longer represents the actual prosecution and progress of the work, the CO will request, and the Design-Builder shall submit, a revision to the Baseline Schedule. The Design-Builder may also request reasonable revisions to the currently accepted Baseline Schedule in the event the Design-Builder's planning for the work is revised. Accepted revisions will be incorporated into the currently accepted Baseline Schedule for the next monthly schedule update.

2. Procedure
   If revision to the current compliance confirmed baseline schedule is contemplated, the Design-Builder or CO shall so advise the other in writing at least 7 calendar days prior to the next pay estimate, describing the revision and reasons for the revision. Government-requested revisions will be presented in writing to the Design-Builder, who shall respond in writing within 7 calendar days.

PART 3 - EXECUTION

3.1. DESIGN-BUILDER REQUESTED BASELINE SCHEDULE REVISION

3.1.A. If after compliance confirmation of the Construction Baseline Schedule, the Design-Builder desires to make changes in the method of operating and scheduling, the Design-Builder shall notify the Government in writing stating the reasons for the change. If the Government considers these changes to be major, the Government shall require the Design-Builder to revise and submit for compliance confirmation, without additional cost to the Government, the entire affected portion of the schedule, to show the effect on the entire project.

1. A change shall be considered major if the time estimated to be required or actually used for an activity or the logic of sequence of activities is varied from the original plan to a degree that there is a reasonable doubt, in the opinion of the Government, as to the effect upon the Contract completion date or dates.
2. Changes which affect activities with adequate float time shall be considered minor changes, except that an accumulation of minor changes shall be considered a major change when their cumulative effect, affects the Contract completion date.
3. The effect of minor changes on the logic shall be shown on the monthly update and described fully in the narrative progress report.

3.1.B. Reports
Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.

3.2. TIME IMPACT ANALYSIS FOR CONTRACT MODIFICATIONS, CHANGES, DELAYS, AND DESIGN-BUILDER REQUESTS

3.2.A. When submitting a proposal in response to a letter request for proposal (RFP) for accomplishing revised work, the Design-Builder shall include in that proposal a schedule for determining the effect of the proposed change on the Contract time or schedule. When changes in the work are found to necessitate issuance of a Notice to Proceed (issued under a unilateral modification) prior to cost proposal submission and/or settlement to avoid delay and additional expense, the Design-Builder shall furnish the Government suggested changes to the schedule logic and/or duration time estimates of all activities affected by the modification within 10 calendar days from the Notice to Proceed. These revisions will be submitted for concurrence of the Government prior to inclusion in the schedule. In the event the Design-Builder does not furnish the suggested schedule logic changes or an agreement cannot be reached, the Government will direct the Design-Builder as to the specific schedule logic changes and/or duration time estimate changes to be entered into the schedule logic and used in all subsequent progress reports until such time that the

time has been settled or until actual dates supersede the estimated dates. Inclusion in the network and use of revised logic and/or duration time estimates for updating, whether furnished by the Design-Builder or the Government, will not be construed as extensions of time to the dates required in the Contract.

3.2.B. The above-mentioned changes are for the purpose of keeping the schedule up to date to reflect the work to be accomplished and to include the best time estimates for work yet to be done. If it becomes necessary for the Government to furnish the suggested logic and/or duration time revisions because of the Design-Builder's failure to furnish acceptable data on time and if the Design-Builder has any objections to the data furnished by the Government, the Design-Builder shall advise the Government promptly, in writing, of such objections fully supported by the Design-Builder's own counter-plan. However, the Design-Builder will continue to use the revisions suggested by the Government for progress reports until such time as the Government may approve alternate data. If the Design-Builder fails to submit, in writing, the objections to the revisions along with supporting data and counter-plan within 14 calendar days after the date such suggested revisions were furnished by the Government, the Design-Builder will be deemed to have concurred with the Government's suggested logic/duration time changes. The changes then will be the basis for equitable adjustment of the time for performance of the work.

3.2.C. Requirements
When Contract modifications or changes are initiated, delays are experienced, or the Design-Builder desires to revise the currently accepted Construction Schedule, the Design-Builder shall submit to the CO a written time impact analysis illustrating the influence of each modification, change, delay, or Design-Builder request on the Contract time.

3.2.D. Time Extensions

1. Activity delays, which result in projecting a late completion date, shall not automatically mean that an extension of the Contract time is warranted or due the Design-Builder. It is possible that a modification, change, or delay will not affect existing critical path activities or cause non-critical activities to become critical. A modification, change, or delay may result in only absorbing a part of the available total float that may exist within an activity chain of the Schedule, thereby not causing any effect on the Contract time. Time extensions will be granted in accordance with the terms of the Contract.
2. Extension of the Contract time will be granted only to the extent the equitable time adjustments to the activity or activities affected by the modification, change, or delay exceeds the total (positive or zero) float available on a particular activity.

3.2.E. Procedure
Time impact analysis shall be submitted within the time period stated in Section 01.20.00.01 1.11., or the time period designated under the clauses entitled Changes or Default. In cases where the Design-Builder does not submit a written request for extension of time and a time impact analysis within the designated time, it is mutually agreed that the particular modification, change, delay, or Design-Builder request does not require an extension of the Contract time. Upon acceptance, the time impact analysis shall be incorporated into the currently accepted Baseline Schedule at the next monthly schedule update.

3.2.F. Contract Modifications
For each proposed Contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall Baseline Schedule.

--End of Section--

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SECTION 01.32.33.01
PHOTOGRAPHIC DOCUMENTATION

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.29.00.01-◊●◊●◊ Payment Procedures

1.3. REFERENCE STANDARDS

1.3.A. United States Code (USC)

1. United States Copyright Act, 17 USC 101

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Preconstruction video recording with IBWC Form 148
2. Preconstruction photos with IBWC Form 148
3. Completion of construction photos with IBWC Form 148

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Construction photos as provided with pay estimates with IBWC Form 148

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GENERAL

1.7.A. This Section includes administrative and procedural requirements for the following:

1. Existing condition images and video recording.
2. Periodic construction images.
3. Completion of construction images.

1.7.B. All photographs, aerials, slides, prints, negatives, video recordings, reports, documents, data, or other materials produced pursuant to this Contract shall be considered "work-made-for-hire" within the meaning and purview of Section 101 of the United States Copyright Act, 17 USC 101 and the Government shall be the copyright owner thereof and of all aspects, elements, and components thereof in which copyright protection might subsist.

PART 2 - PRODUCTS

2.1. VIDEO RECORDINGS

2.1.A. Video recordings shall be MPEG-4/MP4 (H.264) or AVI (uncompressed 4:2:2) encoding using high definition (minimum 1080p) video cameras. QuickTime mov files are not acceptable.

2.1.B. Recordings shall have clear and succinct narrative or captioning.

2.1.C. All video recordings must include metadata (catalogue information) to include the date and time of recording, the name of the area being documented, the project name, direction of travel, the viewing side, project number, project name, Contract number and description, and name or company of photographer.

2.1.D. The date and time shall appear in the upper or lower left hand corner of the picture, for example:

1. Time: 08:35:15 (using 24 hour clock time)
2. Date: 09/18/2002. (date format MM/DD/YYYY)

2.1.E. Each video file shall have a unique name.

1. Filenames shall start with the date of the video in the format of YYYYMMDD.
2. Use underscores "_" instead of blanks in the filename.
3. Include basic description of project feature recorded after date in filename.
4. The entire filename shall not exceed 30 characters, excluding .mp4.

2.1.F. Each video shall be identified with name of photographer, date, time, and length of video, location of video, orientation, direction of travel, and description of video.

2.2. PHOTOS

2.2.A. Photographs shall be in color and provided as a tiff or jpg file.

2.2.B. All photographs shall be taken with digital cameras. The digital camera files must be captured as 8 megapixel files or greater with a minimum pixel array of approximately 3,266 pixels by 2,450 pixels.

2.2.C. Any dates or other information overlayed by the digital camera shall not encroach on the subject of the photo. Ensure that the photo can be used with that information cropped out.

2.2.D. Except for adding tags, submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

2.2.E. Each photograph file shall have a unique name.

1. Filenames shall start with the date of the photo in the format of YYYYMMDD.
2. Use underscores "_" instead of blanks in the filename.
3. Include basic description of project after date in filename.
4. The entire filename shall not exceed 30 characters, excluding .jpg/tiff.

2.2.F. Each photograph shall be identified by a photo number, name of photographer, project name, date and time of photograph, location of photographer, orientation, and description of photograph.

1. The above captioned information shall be detailed on IBWC Form 148.

2.2.G. Include tags (metadata) in the image file. Tags shall include, but not be limited to:

1. Contract Number
2. Project Name
3. Construction Contractor's and Design-Builder's Name
4. Retamal Dam

PART 3 - EXECUTION

3.1. PRECONSTRUCTION VIDEO AND PHOTOGRAPHS

3.1.A. The preconstruction video shall thoroughly document all structures within the worksite, as well as any adjacent areas which could possibly be disturbed during construction.

3.1.B. The Design-Builder shall ensure that preconstruction conditions of any existing structures, located within the construction limits and/or in immediate vicinity of the construction limits but outside of the construction limits, which belong to either USIBWC or neighboring property owners are documented.

3.1.C. The Design-Builder shall also ensure that all haul roads prior to use on this project as well as any borrow sites are thoroughly documented.

1. Any damage to haul roads during construction for which the Design-Builder did not submit preconstruction videos, will be assumed to be caused by the Design-Builder's operations.

3.1.D. The Design-Builder shall obtain as many digital photos as necessary of existing structures prior to project construction to assess extent of damage if need for repair or replacement of the existing structures arises during or after the project construction. If damages or alternation to these structures are found to be caused by any construction activity as part of this Contract, the Design-Builder shall ensure that the structure is repaired or replaced to the original conditions at no cost to USIBWC.

1. Before commencement of any work take color digital images of project site and surrounding properties, including existing items to remain during construction, from different vantage points.
2. Flag excavation areas and/or construction limits before recording construction images.
3. Take images to show existing conditions adjacent to construction site before starting the work.
4. Take images of existing buildings and other structures either on or adjoining property to accurately record physical conditions at start of construction.
5. If any area/structure is covered with weeds or debris, additional photos and video shall be taken once the site has been cleaned up.

3.1.E. The Design-Builder shall submit an electronic copy of all photographs along with IBWC Form 148 to identify each photograph as described above. Provide IBWC Form 148 in both Excel and pdf formats.

3.1.F. The Design-Builder shall submit an electronic copy of all videos.

3.2. CONSTRUCTION PHOTOGRAPHS

3.2.A. General
Take digital images using the maximum range of depth of field, and that are in focus, to clearly show the work. Images with blurry or out-of-focus areas will not be accepted.

1. Maintain index with each set of construction images that identifies the number, date, time, and description for each.

3.2.B. The Design-Builder shall submit a set of at least 20 color photographs for each month of construction to the Government indicating the relative progress of the work.

1. Photos shall be submitted in color in electronic (jpg or tiff) format
2. Taking of photographs shall proceed at issuance of Design Notice to Proceed, before the commencement of construction operations, and shall be submitted to the Government with each monthly pay estimate.
3. If more than 20 photographs are submitted with the monthly pay estimate, the Design-Builder will not be paid any additional costs. The COR reserves the right to reject any photograph that is not clear or definitive. If rejection of a photograph causes the Design-Builder's submitted number of photos to fall below ten, the pay estimate may be rejected.

3.2.C. Select vantage points to show status of construction and progress since last images were taken.

3.2.D. The Design-Builder shall submit IBWC Form 148 to identify each photograph as described above. Provide IBWC Form 148 in both Excel and pdf formats.

3.2.E. See Section 01.29.00.01 for additional information about photos submitted with pay estimates.

3.3. COMPLETION OF CONSTRUCTION IMAGES

3.3.A. After completion of construction, retake photos of existing buildings and other structures either on or adjoining property to accurately record physical conditions at end of construction. Ensure that all structures photographed prior to construction are re-photographed at the end of construction.

3.3.B. Ensure that all structures photographed prior to construction are re-photographed at the end of construction.

3.3.C. Take a complete set of photos showing the completed project.

3.4. ADDITIONAL IMAGES

3.4.A. COR may issue requests for additional images, in addition to periodic construction images specified. Additional images shall be provided at no additional cost to the Government.

1. Where feasible, 3 days' notice will be given, where feasible.
2. In emergency situations, take additional images within 24 hours of request.
3. Circumstances that could require additional images include, but are not limited to, the following:
   a. Immediate follow-up when onsite events result in construction damage or losses.
   b. Images to be taken at fabrication locations away from project site.
   c. Substantial Completion of a major phase or component of the work.
   d. Extra record images at time of final acceptance.

--End of Section--

SECTION 01.33.00.01
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1. SECTION INCLUDES

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1.2. RELATED REQUIREMENTS

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1.1.B. Section 00.70.00.01-◊●◊●◊ Delivery of Data to USIBWC

1.1.C. Section 00.73.73.01-Requirements for Sensitive But Unclassified Information

1.1.D. Section 01.33.33.01-◊●◊●◊ Document Requirements

1.1.E. Section 01.33.16.01-Design Submittals

1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulation (FAR)

1. FAR 52.236-21, Specifications and Drawings for Construction

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements herein. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Design Phase Submittal Register
2. Construction Phase Submittal Register

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

1.6.A. The Design-Builder shall provide all materials and perform all work required for furnishing submittals to the Government, in accordance with the FAR clause 52.236-21 entitled "Specifications and Drawings for Construction" and the requirements in this Contract.

1.6.B. All submittals shall be submitted electronically to the COR for review. The submittal shall include the Transmittal Form (IBWC Form 146) along with the submittal data.

1. All submittals except for photos and videos shall be provided as pdf documents.
2. See Section 01.33.33.01 for requirements of pdf documents submitted to USIBWC.

1.6.C. The CO or COR may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective technical specifications.

1.6.D. Units of weights and measures used on all submittals are to be the same as those used in the construction drawings and specifications.

1.6.E. Each submittal is to be complete in sufficient detail to allow ready determination of compliance with Contract requirements.

1.6.F. Design-Builder's Quality System Manager (QSM) is to check and approve all items prior to submittal to the COR and then sign and date IBWC Form 146 indicating Design-Builder approval.

1.6.G. Submittals requiring Government compliance confirmation are to be scheduled and compliance confirmation received prior to the acquisition of the material or equipment covered thereby.

1.7. SUBMITTAL TYPES

1.7.A. This project contains two separate types of submittals:

1. DB Type
   Submittals that the Design-Builder provides to USIBWC for compliance confirmation. These include all submittals listed in this Scope of Work unless otherwise noted.
2. CC Type
   Submittals that the Construction Contractor provides to the Design-Builder. The Design-Builder is responsible for reviewing these submittals to ensure that they meet the Scope of Work, the 100% drawings, and the 100% construction specifications. The COR is provided a copy of all of these submittals.

1.7.B. For the most part, these types of submittals are handled the same. The review of the submittals is slightly different for each type.

1. DB Type
   COR provides review and compliance confirmation. All DB Type submittals shall be marked as 'Government Review' in the submittal register.
2. CC Type
   Design-Builder provides review and approval. COR will note if the submittal does not meet Contract requirements. If this is the case, the submittal must be resubmitted to the Government correcting the deficiencies. All CC Type submittals shall be marked as 'Information Only' in the submittal register.

1.8. DEFINITIONS

1.8.A. Submittals

1. The word "submittals" shall be interpreted to include shop drawings, data, manuals, certifications, samples, color chips or charts, brochures, schedules, photographs, and other items furnished by the Design-Builder or Construction Contractor for review, information, and other purposes. Specific submittal requirements are identified in each technical specification, if required for that section.
2. Submittal also means an initial submittal, a resubmittal, or an addendum/change to a compliance confirmed submittal.

1.8.B. Shop Drawings

1. The term "shop drawings" as used herein shall include detailed design calculations signed and stamped with the seal of a professional engineer as specified in the Specifications or as noted on the Contract Drawings, at the Design-Builder's expense.
2. Shop drawings include fabrication and installation drawings, material and parts lists, graphs, test data, operating instructions, and other items as specified or shown which shall include but not necessarily be limited to:
   a. Drawings and/or catalog information and cuts.
   b. Anchor bolt templates, mounting instructions and mounting design calculations as required per the Contract.
   c. Other technical, installation and maintenance data as applicable.
   d. Unloading and handling methods and storage requirements.
   e. Paint or coating submittal showing type of paint or coating and the mils thickness of coating system used.
   f. Drawings showing Design-Builder field verifications illustrating all field dimensions.
3. Shop drawings shall be provided at full scale, i.e. their original drawing size. Do not shrink the paper/page size. Rebar shop drawings shall not be provided at smaller than 11"x17".

1.8.C. Variation

1. Variation, deviation, or change are used interchangeably with submittals. They reference an item not meeting a Contract requirement as written.
2. Variations include, but are not limited to, type of material, size of material, engineering property of a material, manufacturer, installation method, etc.

1.8.D. Record Documents

1. Record documents are items furnished by the Design-Builder for project records. These are not submittals and do not require a Form 146. The Design-Builder may use or the COR may require the use of Form 146, but the submittal number shall be left blank.
2. The COR will return any record documents to the Design-Builder if they are incomplete or fail to meet the Contract requirements.

1.9. SUBMITTAL PACKAGE REQUIREMENTS

1.9.A. Separate Submittals

1. A separate Transmittal Form (IBWC Form 146) shall be used for each specific item, class of material, work plan (e.g. safety plan, QC plan, seeding plan), or equipment for which a submittal is required.
2. Submittals on various items or multiple shop drawings using a single submittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so

functionally related that expediency indicates review of the group or package as a whole. Just because products are used on the same item, does not automatically make them functionally related.

a. Examples of allowable items within a single submittal include concrete mix information, cement product data, and admixture product data or vehicular guardrail W-rail product data, metal post product data, and offset block product data.

3. Items sharing common features may share the same base submittal number. For example, roadway aggregate could be submittal 044-A while crushed aggregate base is submittal 044-B even though these items are covered under different specification sections. Likewise combining concrete joint materials, waterstops, etc. together in a single submittal is not appropriate, but including them under the same submittal number is.

1.9.B. The Transmittal Form (IBWC Form 146) shall contain the following:

1. The date the submittal was provided to the Government.
2. The name of the project.
3. The Contract number.
4. The submittal number.
5. The section number and paragraph number.
6. The name of the Design-Builder.
7. A description of items submitted including numbers and titles.
8. Identification as either a new submittal, a resubmittal, or an addendum/change to a prior submittal.
9. A mark noting if the submittal contains a variation from the Contract requirements.
10. The Design-Builder QSM's name and signature certifying that the Design-Builder QSM has reviewed the submittal and coordinated the work of all trades involved and that the item of work is in strict conformance with the Contract.

    a. The Design-Builder's signature of certification shall constitute a representation that all quantities, dimensions, construction criteria, materials, performance criteria, and similar data have been verified and that the submittal fully meets the requirements of the Contract.

1.9.C. Each submittal shall be numbered consecutively with a unique number.

1. Submittals shall be numbered with next available (whole) number.

    a. The submittal number shall be a three digit number. It shall not include any project numbers, section numbers, or anything other than the three digit number.

2. When submittal is resubmitted, has an addendum submitted, or has a change submitted, the original number shall have a letter added. For example, if the original submittal was number 012; a resubmittal would be 012-A. Any other resubmittals, addendums, or changes would then be 012-B, 012-C, etc.
3. No two submittals shall have the same submittal number.

1.9.D. Each submittal shall accurately and distinctly present the following:

1. All working and erection dimensions.
2. Arrangements and sectional views.
3. Necessary details, including complete information for making connections between work outside the project or to be performed by others and work under this Contract.
4. Kinds of materials and finishes.
5. Parts lists and description thereof.

1.9.E. Each report, drawing, or submittal item shall include:

1. Document date and submittal number.
2. Project name, USIBWC Contract number, and Project title.
3. Detailed Contract Section number and paragraph number.
4. Name of Design-Builder and Subcontractor, if applicable.
5. Name of supplier and manufacturer.
6. Relation to adjacent structure or material.
7. Field dimensions, clearly identified.
8. Standard, code, test, or Contract references.
9. Identification of deviations from the Contract.
10. Design-Builder's stamp, initialed or signed, dated, and certification of review of submittal, certification of field measurements, and compliance with Contract.
11. Location at which the equipment or material is to be installed; location shall mean both physical location and location relative to other connected or attached material.
12. Design-Builder's or Supplier's title.
13. Drawing Number.

1.9.F. If the Design-Builder is requesting a variation, provide a separate sheet clearly identifying the variation(s) proposed, the applicable SOW reference, Contract Drawing, or Specification Section number, and an explanation of why the variation is being requested.

1. Construction Contractor requested variations shall be reviewed by the Designer of Record. Only upon written acceptance by the Designer of Record will variation be considered by USIBWC.

1.9.G. The Design-Builder shall submit only complete sets of material/information for review. The Design-Builder shall check and approve all submittals prior to transmitting them to the COR to determine if they comply with requirements of the Contract.

1.9.H. If submittal information contains CUI data as noted in Section 00.73.73.01, the pages containing the data shall be marked per Section 00.73.73.01 3.1.

1. Manufacturer's data, catalog sheets, and other general information shall not be marked CUI. Only items specific to this project such as drawings, wiring diagrams, or system set up data shall be marked. For example, if a generator submittal contains IBWC Form 146, the manufacturer's product data sheet, and a line drawing indicating how the generator will be connected to the facility for emergency power. Only the drawing is required to be stamped CUI.

1.9.I. All items submitted shall be the most recent versions. Do not submit old manufacturer's data.

1.9.J. Manufacturer's data for commercial products or equipment, such as catalog cut sheets, shall be clearly marked to indicate the item(s) to be furnished. The data shall be sufficiently comprehensive to identify the manufacturer's name, type, model, size, and characteristics of the product or equipment and fully demonstrate that the product or equipment meets the requirements of the Contract.

1.9.K. Stock or standard drawings will not be accepted for review unless full identification and supplementary information is shown thereon in ink or typewritten form.

1.9.L. Material Certifications
Submittals for each type of material mentioned for each section shall include test results performed on that material for this Contract, along with a letter certifying compliance with the Contract.

1.9.M. Redundant data shall not be submitted within a submittal or across multiple submittals.

1.9.N. Items already submitted for compliance confirmation under one submittal number shall not be resubmitted under another submittal number. Items addressed more than once within this Scope of Work or within the construction specifications shall only be submitted once.

1.10. GENERAL GOVERNMENT SUBMITTAL REVIEW AND PROCEDURES

1.10.A. The Design-Builder shall submit a submittal in accordance with requirements herein.

1. The COR will stamp IBWC Form 146 with "A-Compliance Confirmed," "B-Compliance Confirmed as Noted," "C-Examined and Returned for Correction," "D-Incomplete submittal," or "E-Unacceptable." The Transmittal Form with a USIBWC response letter will be emailed to the Design-Builder at an address designated by the Design-Builder.
2. If a drawing or data is stamped "C-Examined and Returned for Correction," "D-Incomplete submittal," or "E-Unacceptable," the Design-Builder shall make the necessary corrections and resubmit as required above. The IBWC Form 146 transmitting the corrected documents shall indicate that the documents comprise a resubmittal.
3. The COR will return unchecked any submittal which does not contain complete data on the work and full information on related matters. The time required for review of submittals furnished as specified herein will begin after the COR receives complete sets of the submittal.

1.10.B. If the submittal shows departure from the requirements of the Contract, the Design-Builder shall make specific mention on the Transmittal Form (IBWC Form 146) and provide details on a separate sheet as noted in Paragraph 1.9.F., otherwise confirmation of compliance of such submittals by the COR shall not constitute compliance confirmation of the variation. Any variation not noted by the Design-Builder on IBWC Form 146 may cause rejection of the work. Compliance confirmation of the submittal shall refer to the subject matter thereof only and not to any structure, material, equipment or apparatus shown or indicated.

1.10.C. Government Review Time

1. Except as otherwise provided in this Contract for specific submittals, the Government will require 14 calendar days for review of each submittal or resubmittals. This review period will begin the date after the submittal(s) are received by the COR and will extend through the date of return mailing to the Design-Builder. This review period will apply to each separate submittal or resubmittal whether compliance is confirmed or returned for revision.
   a. Submittals shall be noted as received per Section 00.70.00.01 Paragraph 1.5.I.
2. During the period of December 14 through December 28, Design-Builder should expect longer than usual review times. The Government will require up to 21 calendar days for review of submittals provided during this time period. Design-Builder shall properly plan submission of submittals in advance of this time period. If the Design-Builder submits more than 2 submittals during the period of December 12 and December 13, the Government will consider the third and each additional submittal thereafter as being received on December 14.
3. If the COR uses time in excess of the above stated number of calendar days for review of any submittal or resubmittal, additional time, not to exceed the excess time, will be added to the time allowed the Design-Builder for completion of the work affected by such excess time, to the extent it is demonstrated that the excess time caused a delay. If the COR's review of two or more separate submittals or resubmittals is late and results in concurrent calendar days of excess time, such days will be counted only once in computing an extension of the completion date. Further, if the Design-Builder fails to make submittals within the time period specified in this Contract and thus precludes the COR from reviewing such submittals within the foregoing 14 calendar day period, then the Design-Builder shall not be entitled to an extension of time allowed for completion of the work.

1.10.D. The review of submittals will only be for compliance with the information given in the Contract and shall not extend to means, methods, sequences, techniques, or procedures of construction or to safety precautions or programs incidental thereto unless also covered in the Contract. The review shall in no way relieve the Design-Builder of responsibility for errors or omissions contained therein, nor shall such review operate to waive or modify any provision contained in the Contract.

1.10.E. Submittals are not reviewed for final construction dimensions. Fabricating dimensions, quantities of material, applicable code requirements, and other requirements shall be the Design-Builder's responsibility.

1.10.F. Resubmittals

1. Submittals that require changes or revisions shall be revised and resubmitted for review and shall indicate changes and revisions made.
2. Revised documents shall have an updated document date.
3. All requirements specified for the initial submittal shall apply to any resubmittals required.
4. Unless otherwise specified, the Design-Builder shall submit all resubmittals within 14 calendar days after the Design-Builder has received the COR's comments.

1.10.G. After a submittal has been reviewed, no change in brand or manufacture will be permitted by the COR unless satisfactory written evidence is presented that manufacturer cannot make scheduled delivery of material, or that the material delivered has been rejected and substitution of suitable material is an urgent necessity.

1.10.H. Fabrication or delivery of any items shall not commence before the COR has reviewed the pertinent submittals and returned copies to the Design-Builder marked to indicate "A-Compliance Confirmed" or "B-Compliance Confirmed as Noted." It shall be the responsibility of the Design-Builder to coordinate the timing of the submittals with the necessary lead time for equipment deliveries and the construction schedule.

1.10.I. The term "or equal" shall be understood to indicate that the "equal" product is the same or better than the product(s) named and/or specified in the detailed section in function, performance, integrity, reliability, quality and general configuration. Where the Design-Builder proposes to submit an "equal" item, the installation of which will require any redesign of the structure, partitions, foundations, piping, ductwork, wiring, or of any other part of the project, all such redesign and all new design drawings and detailing required shall be prepared by and stamped with the seal of a Registered Professional Engineer licensed in the State of Texas at the Design-Builder's expense and shall be submitted to the COR for review in accordance with the Contract. Where the use of an "or equal" item(s) require modifications, involving a change in quantity of material and equipment from that specified or indicated in the Contract, the Design-Builder shall bear the total expense of such changes.

1.10.J. All submittals, shop drawings, and data, after review and processing by the COR, shall become a part of the Contract and the work shown or described shall be performed in conformity with these documents.

1.11. DB TYPE SUBMITTAL REVIEW AND PROCEDURES

1.11.A. The procedure for review of submittals shall be as follows:

1. The Design-Builder shall submit a submittal in accordance with requirements herein.
2. The COR will review and stamp IBWC Form 146 with "A-Compliance Confirmed," "B-Compliance Confirmed as Noted," "C-Examined and Returned for Correction," "D-Incomplete submittal," or "E-Unacceptable." The Transmittal Form with a USIBWC response letter will be emailed to the Design-Builder by the COR.
3. If a drawing or data is stamped "C-Examined and Returned for Correction," "D-Incomplete submittal," or "E-Unacceptable," the Design-Builder shall make the necessary corrections and

resubmit complete package to COR. The IBWC Form 146 transmitting the corrected documents shall indicate that the documents comprise a resubmittal.

4. If any corrections, other than those noted by the COR, are made on items to be resubmitted, such changes shall be pointed out by the Design-Builder upon resubmittal.
5. The Design-Builder shall revise and resubmit the submittal as required, until full compliance thereof is obtained.
6. Costs for processing additional copies of submittals shall be borne by the Design-Builder.

1.11.B. If the submittal shows departure, deviation, or variance from the requirements of the Contract, the Design-Builder shall make specific mention on the Transmittal Document (IBWC Form 146) and provide details on a separate sheet as noted in Paragraph 1.9.F., otherwise confirmation of compliance of such submittals by the COR shall not constitute compliance confirmation of the variation. Any variation not noted by the Design-Builder on IBWC Form 146 may cause rejection of the work.

1.11.C. After a submittal has been reviewed, no change in brand or manufacture will be permitted unless satisfactory written evidence is presented to and accepted in writing by the COR that manufacturer cannot make scheduled delivery of material, or that the material delivered has been rejected and substitution of suitable material is an urgent necessity.

1.11.D. Fabrication or delivery of any items shall not commence before the COR has reviewed the pertinent submittals and returned copies to the Design-Builder marked to indicate "A-Compliance Confirmed" or "B-Compliance Confirmed as Noted." It shall be the responsibility of the Design-Builder to coordinate the timing of the submittals with the necessary lead time for equipment deliveries and the project schedule.

1.12. CC TYPE SUBMITTAL REVIEW AND PROCEDURES

1.12.A. The Design-Builder shall establish procedures for the Construction Contractor to provide CC Type submittals to them for review. Only when the submittal is provided to the COR (Paragraph 1.12.E. below) is it required to be presented on Form 146. Design-Builder and Designer of Record documents shall be as they see fit to record receipt and review.

1.12.B. The Design-Builder shall be responsible for the quality of construction and materials incorporated into the project. The Design-Builder's quality assurance and quality control measures are to ensure that operational techniques and activities provide material of acceptable quality.

1.12.C. The Design-Builder Construction QA Manager is responsible for review and approval (compliance confirmation) of all submittals identified in the construction specifications.

1.12.D. USIBWC shall be provided with a copy of all CC Type submittals. Electronic copies shall be provided within 3 working days of receipt by the Design-Builder.

1.12.E. The Design-Builder shall provide a copy of their submittal review documentation to the COR when it is presented to the Construction Contractor.

1. Submittal review documentation shall include review by the Designer of Record. See Section 01.33.16.01 Paragraph 1.7.

1.12.F. If the submittal shows departure, deviation, or variance from the requirements of the Contract, the Design-Builder shall make specific mention on the Transmittal Document (IBWC Form 146) and provide details on a separate sheet as noted in Paragraph 1.9.F. Acceptance of change by Designer of Record does not constitute acceptance of change by USIBWC. All variations must be confirmed by COR.

1.12.G. USIBWC reserves the right to review any submittal for compliance with the Contract, this SOW, and the construction documents. It is not USIBWC's intention to provide compliance review of the construction submittals since this is the Design-Builder's responsibility.

1. If during USIBWC's submittal review, it is determined that the submittal meets the Contract, this Scope of Work, and the construction documents, the COR will stamp IBWC Form 146 with "Design-Build Contract Submittal - No exceptions noted" and return the submittal to the Design-Builder.
2. If during USIBWC's submittal review, it is determined that the submittal does not meet the Contract, this SOW, or the construction documents:
   a. The Design-Builder shall be fully responsible for the schedule impacts and costs of revisions caused by the Design-Builder’s failure to maintain compliance with Contract requirements.
   b. The COR will stamp IBWC Form 146 with "C-Examined and Returned for Correction," "D-Incomplete submittal," or "E-Unacceptable" and return the submittal to the Design-Builder.
3. The review of submittals by USIBWC will only be for compliance and shall not extend to means, methods, sequences, techniques, or procedures of construction nor to safety precautions or programs incident thereto unless also covered in the Contract.
4. The review of submittals by USIBWC shall not relieve the Design-Builder or the Construction Contractor of responsibility for the accuracy of such submittals, nor for the proper fitting and construction of the work.

1.12.H. The construction specifications shall clearly state any requirements for construction submittals.

1. The Design-Builder will set the time required for their review of construction submittals.
2. The COR is still allowed up to 14 days to review construction submittals for compliance.
3. Electronic copy requirements include 1 pdf of the submittal.
4. These are the minimum Government requirements for submittals. The Design-Builder may establish more stringent requirements for their processing of construction submittals.

1.12.I. If the Design-Builder uses time in excess of the established number of calendar days (in the construction specifications) for review of any submittal, no additional time will be added to the time allowed for completion of the work affected by such excess time. It is the Design-Builder's responsibility to manage the project and the Construction Contractor to ensure the timeliness of submissions and responses.

1.12.J. No work called for by the submittals shall be performed by the Construction Contractor until compliance has been confirmed by the Design-Builder and the submittal has been provided to the COR.

1.12.K. After a construction submittal has been reviewed and approved by the Design-Builder and confirmed to meet Contract requirements by COR, no change in brand or manufacture will be permitted unless satisfactory written evidence is presented that manufacturer cannot make scheduled delivery of material, or that the material delivered has been rejected and substitution of suitable material is an urgent necessity.

1. If this change requires deviation from the construction specifications or drawings, the Designer of Record shall concur with the proposed change.

1.12.L. All submittals, shop drawings, and data, after review and approval by the Design-Builder, shall become a part of the Contract and the work shown or described shall be performed in conformity with these documents.

1.13. SUBMITTAL REGISTER

1.13.A. The Submittal Register shall include all submittals.

1.13.B. The Design-Builder shall provide the proposed Submittal Register (IBWC Form 147) to the COR. Additionally, the Submittal Register shall reflect the following information, as available, for each submittal:

1. Submittal numbers
2. Reference to the applicable construction specification that requires the submittal
3. Description of items submitted
4. Type of submittal
5. If submittal is for Design-Builder review or information only
6. The dates the Construction Contractor proposes to furnish the submittals
7. The dates the materials, equipment, etc., are needed at the worksite
8. The date submittals are prepared by the Construction Contractor
9. The date the submittal is provided to the Design-Builder
10. The code (A, B, C, D, or E) or approval given to the submittal by the Design-Builder
11. The date that the submittal is returned to the Construction Contractor
12. Additionally, the Design-Builder shall modify IBWC Form 147 to include the following columns:
    a. The date the submittal is provided to the COR
    b. The code (A, B, C, D, or E) given to the submittal by the Government
    c. The date that the submittal is returned to the Design-Builder

1.13.C. The Design-Builder shall coordinate the preparation of the Submittal Register with the schedule and shall allow 14 calendar days for Government review.

1. The Design-Builder shall keep the Submittal Register up to date. A correct, updated Submittal Register shall be maintained at the worksite.
2. The submittal register shall not be interpreted as relieving the Contractor of its obligation to comply with the Contract for the items listed on the submittal register.

1.13.D. The initial Submittal Register shall include a complete list of expected submittals, but only those submittals identified in Section 00.24.00.01 3.1 shall have numbers applied. All other submittals shall simply be shown in a list without numbers.

1. Submittals shall be assigned the next free, one-up number available when they are submitted. If done properly, no gaps in numbering shall occur.

1.13.E. If the Design-Builder finds that items originally placed on the Submittal Register are no longer required, these items shall be deleted from the Submittal Register.

1. The submittal number corresponding to any deleted item is then available for use at a later date.
2. No submittal number that has already been used may be deleted from the Submittal Register.

1.13.F. The Design-Builder shall, every 30 calendar days, update the Submittal Register and shall submit a copy of the revised and/or updated Submittal Register to the COR. This date shall coincide with the monthly pay estimate date. The Design-Builder shall indicate on the Submittal Register those submittals/resubmittals that were added, updated, or deleted.

1. The submittal register shall list items by their submittal number.

1.14. SUBMITTAL ADDRESS

1.14.A. The Design-Builder shall transmit all submittals to the COR electronically whenever possible. If items must be delivered, they shall be sent to the following address:

International Boundary and Water Commission-US Section
USIBWC-LRG Field Office
325 Golf Course Road
Mercedes, TX 78570

1.14.B. This address may be changed based upon the field office location of the COR.

1.15. SCHEDULING

Coordinate scheduling, sequencing, preparing, processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential resubmittal of requirements.

1.16. ADDITIONAL SUBMITTAL PROCESSING COSTS

1.16.A. It is expected that the information required for each item shall be complete on the first submittal. In the event that a second submittal is required, the Design-Builder's submittal shall be complete and shall have addressed all requirements for acceptability.

1.16.B. Costs associated with the review of submittals where review is performed on any third and subsequent submittals shall be borne by the Design-Builder. The Design-Builder will be billed for these costs by the Government. Costs due may be deducted from any progress payments due the Design-Builder by the Government.

1.16.C. Costs shall be determined as follows:

C = (DLC) (ODC)
Where:
C = Cost for additional reviews.
DLC =Loaded Direct Labor Cost (hours spent on review x hourly rate of reviewer)
ODC =Other Direct Costs (Travel, subsistence, etc.)

1.16.D. The additional submittal processing costs shall apply and will be assessed against the Design-Builder for Design-Builder submittals made to replace and/or substitute products, materials and/or equipment previously submitted by the Design-Builder and compliance confirmed by the Government.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

--End of Section--

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SECTION 01.33.16.01
DESIGN SUBMITTALS

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1.2. RELATED REQUIREMENTS

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1.2.C. Section 00.31.24.01-Environmental Information

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1.2.K. Section 01.78.36.01-◊●◊●◊ Warranties

1.2.L. Section 01.78.39.01-Record Drawings

1.3. REFERENCE STANDARDS

1.3.A. Construction Section Institute (CSI)

1. MasterFormat 2020

1.3.B. Federal Geographic Data Committee (FDGC)

1. Federal Geographic Data Committee's Content Standard for Digital Geospatial Metadata (CSDGM), version 2, FGDC-STD-001-1998

1.3.C. International Organization for Standardization

1. ISO 19115-1:2014 Geographic Information-Metadata - Part 1: Fundamentals, December 2016
2. ISO 19115-2:2009 Geographic Information-Metadata - Part 2: Extensions for Imagery and Gridded Data, September 27, 2010

1.3.D. International Boundary and Water Commission (IBWC)

1. USIBWC's Drawing and CAD Standards

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. PROJECT RELATED CORRESPONDENCE

1.5.A. All project related correspondence shall include the Contract number in the subject line.

1.5.B. The Design-Builder shall furnish written and electronic (pdf's) documentation of communications between the Design-Builder and any party pertaining specifically to this project to USIBWC for their records within 7 calendar days of the communication.

1.5.C. The Design-Builder is responsible for recording and distributing to the participants the minutes of all meetings pertaining to this project within the timeframe detailed in Section 01.31.19.01.

1.6. REQUIRED DELIVERABLES

1.6.A. Design deliverables include, but are not limited to:

1. Monthly Reports (Paragraph 1.8. below)
2. Design Report (Paragraph 1.9. below)
3. Survey Report including all Survey data, field notes, and calculations (Paragraph 1.10. below and Section 02.21.00.01)
4. Geotechnical Report (Paragraph 1.11. below)
5. Construction Drawings (Paragraph 1.12. below)
6. GIS Data (Paragraph 1.13. below)
7. Construction Specifications (Paragraph 1.14. below)
8. Construction Documents (Paragraph 1.15. below)
9. Meeting Minutes (Section 01.31.19.01)
10. Design Project Schedule (Section 01.32.16.01)
11. Schedule of Values (Section 01.20.00.01)
12. Design-Builder's QA Plan (Section 01.40.00.01)

1.6.B. Construction submittals are detailed throughout Division 01.

1.6.C. All deliverables/submittals shall be in accordance with Section 01.33.33.01.

1.7. DESIGNER OF RECORD

1.7.A. The Design-Builder shall employee a licensed, qualified engineer and/or engineering firm to provide the design for this project. The licensed engineer who signs the construction specifications and the set of construction drawings shall be known as the Designer of Record.

1.7.B. Once the construction documents have been accepted by USIBWC, the Design-Builder shall not change the Designer of Record without COR approval. Only extreme situations such as acts of God, death, etc., will be considered as valid situations for changing the Designer of Record.

1.7.C. The Designer of Record shall be responsible for oversight and review of all Record Drawings, construction changes, and modifications to the construction documents.

1.7.D. All submittals shall be reviewed and accepted by the Designer of Record as well as by the Design-Builder's QSM.

1.8. MONTHLY REPORT

1.8.A. The Design-Builder shall submit a monthly report on or before the third of each month.

1. If the third of the month falls on a Saturday, Sunday, or Federal holiday, the report shall be due the next business day.

1.8.B. The report shall be submitted to the CO and COR and shall address the following:

1. Major Accomplishments
2. Updated Project Schedule
3. Items Completed to Date
4. Problems and Proposed Solutions
5. Issues with Contractual Requirements
6. Issues with Meeting the Deliverable Dates/Delays
7. Design-Builder’s Proposed Action to Remediate the Delays
8. RFI Log (Design-Builder's RFIs to USIBWC)
9. RFI Log (Design-Builder's Internal RFIs)
10. Itemized Billing to Date
11. Billing S-Curve Updates (Section 01.20.00.01)
12. As construction activities begin, the Monthly Report shall include all logs noted in Section 01.40.00.01 Paragraph 1.12.F.

1.8.C. Do not include meeting minutes in the monthly reports.

1.8.D. Reports shall be provided in both pdf and Word formats.

1. An updated version of all logs that are maintained by the Design-Builder shall be provided in your pdf monthly report file as attachments in their native file format (e.g. Word, Excel, etc.).
2. An updated version of the schedule shall be provided in your pdf monthly report file as an attachment in its native file format (e.g. Primavera, MS Project, etc.).
3. An updated version of the Billing S-Curve shall be provided in your pdf monthly report file as an attachment in its native file format (Excel).
4. A minimum of 10 photographs are required in the corresponding monthly report for every time the Design-Builder goes to the site. Each photograph shall be identified by a photo number, name of photographer, project name, date and time of photograph, location of photographer, orientation of photograph, and description of photograph. The above captioned information shall be detailed

within the report with the pdf photos and shall be provided on IBWC Form 148. Include the image file (JPG or TIFF) of each photo and Form 148 in both Excel and pdf.

5. Font: Times New Roman 12 point
6. Paper Size: ANSI A (8½" x 11") portrait but can include ANSI D (11" x 17") sheets fan folded to 8-1/2" x 11"

1.8.E. A template for monthly construction management reports is provided in the link Construction management Services Templates and Guidance on USIBWC's website at www.ibwc.gov/resources-info/. It is not a requirement for this Contract's monthly reports to follow this format (it is aimed at our construction management task orders), but the information is provided to aid the Design-Builder in the amount of detail required.

1.9. DESIGN REPORT

1.9.A. The Design-Builder shall be required to submit a Design Report that addresses the following for the design of this project and all respective structural components. Each design discipline shall have a different section in the Design Report however, the Design Report is a standalone document from all other deliverables.

1. Narratives
   a. Narratives serve to explain the design intent and to document assumptions and decisions made during the design process. Like drawings and specifications, narratives are an important permanent record of the project design. Drawings and specifications are a record of what systems, materials, and components the project contains; narratives shall record why they were chosen.
   b. The narrative of each submittal (i.e., 30%, 60%, 90%) may be based on the previous submittal, but it must be revised and expanded at each stage to reflect the current state of the design.
2. Calculations
   a. Manual and/or computer based calculations shall accompany narratives to support technical analysis. Each set of calculations shall start with a summary sheet, which shows all assumptions, referenced applicable codes and standards, and lists the conclusions.
   b. Calculations shall include engineering sketches as an aid to understanding by reviewers.
   c. The calculations for each submittal shall be cumulative, so that the final submittal contains all calculations for the project.
   d. Calculations submitted at early stages of the project must be revised appropriately to reflect the final design.
   e. Calculations must refer to code, paragraph of code used, standards, and reference books used for specific portion of calculation. Refer to drawing number where the results of the calculations have been used. Example: number and sizes of rebar used in reinforced concrete members.
3. Design Loads
   a. Final design criteria.
   b. Final loads.
   c. Loading conditions and critical cases.
4. Structural Analysis
   Provide structural analysis of all structural components either within or affected by the final design elements.
   a. Embankment Protection
      (1) Demonstrate that no appreciable erosion of the structure can be expected during the design flood, as a result of either currents or waves.

(2) Demonstrate that anticipated erosion will not result in failure of the levee embankment or foundation directly or indirectly through reduction of the seepage path and subsequent instability.

(3) The factors to be addressed in such analyses include, but are not limited to: Expected flow velocities (especially in constricted areas), expected wind and wave action, impact of debris, slope protection techniques, duration of flooding at various stages and velocities, embankment and foundation materials, levee alignment, bends, and transitions, and levee side slopes.

b. Foundation and Structural Stability

(1) The analyses provided shall evaluate expected seepage during loading conditions associated with the design flood and shall demonstrate that seepage into, through, or under the foundation or structure will not jeopardize structural or levee stability.

(2) The factors that shall be addressed in the analyses include: Depth of flooding, duration of flooding, foundation/structural geometry and length of seepage path at critical locations, foundation/structural materials, subgrade compaction, other design factors affecting seepage (such as drainage layers), and any other design factors affecting foundation/structural stability.

(3) Foundation stability analysis during dry periods, flood periods, and rapid draw down must be addressed.

c. Settlement

(1) This analysis must address subgrade loads, compressibility of subgrade soils, age of the structure, and construction compaction methods.

(2) Identify if settlement of the structure will negatively affect the ability to protect the anchor foundation.

(3) Detailed settlement analysis using procedures such as those described in the USACE manual, "*Soil Mechanics Design - Settlement Analysis*" (EM 1100–2–1904) must be submitted.

5. Construction

a. Describe utility conflicts. Provide utility contact information and details of the size and type of utility. Provide recommendations of how utility conflict should be resolved.

b. Note any area where construction is required outside of USIBWC's ROW. Explain why this is required as well as the contact information and ownership information of the property in question.

c. Note long lead time items and items that may be difficult to obtain.

d. Note sole source items and justification for the sole source.

e. Note items that require specialty contractors or safety hazards.

f. Provide estimated time of construction as well as rationale for this time, i.e. time of year limitations, number of crews, material availability, production rate of equipment, etc.

g. The Design-Builder shall provide a design plan that does not impact the normal business operations and the normal traffic flows at the existing Retamal Dam site during the proposed work period.

6. Existing Structures and Utilities

a. Include inventory of all existing structures within the project. Inventory shall include the condition, photos, description, and survey data..

b. The Design-Builder shall ensure that there are no utility conflicts with the proposed designs.

7. Survey Information

a. Provide information explaining what survey was performed, to what detail/level survey was completed, who performed the survey, dates of survey, coordinate system used, geoid used, equipment used, benchmarks used, grid to ground conversion factor, accuracy, identification

of any RTK, VRS, or other geodetic reference systems used, OPUS solutions, and survey units used.

b. Detailed data shall be presented in a separate survey report.

8. Assumptions
Any and all assumptions used during the design process must be fully documented in the Design Report.

9. Performance Criteria
As part of the development of concepts through construction documents there must be a check of project performance criteria as noted Section 00.24.00.01 Paragraph 1.5.

10. Statement of Compliance
The design report shall contain a statement by the Design-Builder that the design provided, which is detailed in the construction drawings and specifications, fully meets the requirements of Section 00.24.00.01 Paragraph 1.5 and Section 01.41.00.01 Paragraph 1.5.E.

1.9.B. Report Figures

1. Figures within reports shall be made into informational drawings when they contain project data that is applicable to stand alone outside of the report they are in.
2. USIBWC drawing numbers will be assigned to these figures upon acceptance of the 100% document.

1.9.C. Report Security Requirements
If it is determined that the Design Report or any appendices contain CUI information, then the document must be marked per Section 00.73.73.01 Paragraph 3.1.

1.9.D. Electronic Copies

1. Reports shall be provided in single pdf file including all appendices. The Word file shall also be provided.
2. Pdf file shall be fully bookmarked to each Chapter/Section and Appendix.
3. Font: Times New Roman 12 point
4. Paper Size: 8-1/2" x 11" portrait but can include 11" x 17" sheets fan folded to 8-1/2" x 11"

1.9.E. Final 100% Document
The final Design Report shall be signed and stamped by a professional engineer licensed to practice in the State of Texas.

1.9.F. Reference Documents

1. Do not include reference documents such as reports and studies within the Design Report unless they were written as part of the design process.
2. Items used as part of the design, but not produced during design shall be included as a list of references. As an example, just like it would be inappropriate to include USACE EM 1110-2-1913 within the Design Report it is also inappropriate to include a USIBWC report on levee inspections.
3. Excerpts from references may be included as appropriate.

1.10. SURVEY DATA/REPORT

1.10.A. The Design-Builder shall ensure that a complete, accurate log of all control, and survey work as it progresses is maintained.

1.10.B. The Design-Builder shall ensure that all survey data shall be in accordance with recognized professional surveying standards.

1. All original field notes and computations shall be recorded by all surveyors in the Design-Builder furnished field books and shall be signed by a registered surveyor.
2. The completeness and accuracy of all survey work and the completeness and accuracy of the survey records, including the field books, shall be the responsibility of the Design-Builder.
   a. Failure to organize and maintain survey records in a professional manner to allow reasonable and independent verification of all calculations by the Government and to allow reasonable identification by the COR of all elevations, dimensions and grades of the work shall be cause for rejection of the survey records, including the field books.
3. Illegible notes or data, or erasures on any page of the field books will also be considered sufficient cause for rejection of part or all of the field book.
4. Corrections by ruling or lining out errors will be satisfactory only if initialed by the surveyor.
5. Copied notes or data will be permitted. Survey notes shall be legible and shall be scanned into pdf format.

1.10.C. Survey drawings shall show USIBWC EOF names/numbers along their associated boundaries. Other documents used to establish USIBWC's ROW shall also be identified.

1.10.D. Survey data shall be fully available in the AutoCAD files and shall be provided in comma delimited ASCII file.

1. The data shall be identified (point number, northing, easting, elevation, description), the coordinate system, datum, and date of survey shall be noted as well as the name of the individual/company who performed the survey.
2. All 3D data shall be exported from the AutoCAD file. This includes, but is not limited to: points, surfaces, profiles, cross sections, and boundaries. Appropriate dxf, xml, cvs, etc. files shall be provided for this data.

1.10.E. All field notes, associated records, calculations, and survey data shall be submitted.

1.10.F. Final 100% Document
The final Survey Data shall be signed and stamped by a professional surveyor licensed to practice in the State of Texas.

1.11. GEOTECHNICAL REPORT

1.11.A. The Design-Builder shall be required to submit a Geotechnical Report that addresses the following for the design of this project and all respective structural components.

1. Narratives
   a. Narratives serve to explain the geotechnical investigation intent and to document assumptions and decisions made during the design process. Like drawings and specifications, narratives are an important permanent record of the project design. Drawings and specifications are a record of what systems, materials, and components the project contains; narratives shall record why they were chosen.
   b. The narrative of each submittal (i.e., 30%, 60%, 90%) may be based on the previous submittal, but it must be revised and expanded at each stage to reflect the current state of the design.
2. Maps
   Maps must be provided showing the location of all boreholes and sampling.
3. Design Loads
   a. Final design criteria.
   b. Final loads.

c. Loading conditions and critical cases.

4. Test Results
All test results shall be provided within an appendix of the report. If the tests are performed by the same company producing the Geotechnical Report, then the professional engineer stamp on the report can cover the tests. If laboratory testing is performed by another company, all test results must be stamped by a professional engineer licensed to practice in the State of Texas.

5. Assumptions
Any and all assumptions used during the geotechnical testing and design process must be fully documented in the Geotechnical Report.

6. If risk allocation statements are required, give clear, precise statements that have only one reasonable interpretation.

1.11.B. Report Figures

1. Figures within reports shall be made into informational drawings when they contain project data that is applicable to stand alone outside of the report they are in.

2. USIBWC drawing numbers will be assigned to these figures upon acceptance of the 100% document.

1.11.C. Report Security Requirements
If it is determined that the Design Report or any appendices contain CUI information, then the document must be marked per Section 00.73.73.01 Paragraph 3.1.

1.11.D. Electronic Copies

1. Reports shall be provided in single pdf file including all appendices. The Word file shall also be provided.

2. Pdf file shall be fully bookmarked to each Chapter/Section and Appendix.

3. Font: Times New Roman 12 point

4. Paper Size: 8-1/2" x 11" portrait but can include 11" x 17" sheets fan folded to 8-1/2" x 11"

1.11.E. Final 100% Document
The final Geotechnical Report shall be signed and stamped by a professional engineer licensed to practice in the State of Texas.

1.11.F. Reference Documents

1. Do not include reference documents such as reports and studies within the Geotechnical Report unless they were written as part of the design process.

2. Excerpts from references may be included as appropriate.

1.12. DRAWINGS

1.12.A. The Design-Builder shall prepare all drawings required to accomplish the design as described in this Scope of Work. The drawings shall be drawn to scale and shall be shown at a scale suitable for the respective design work.

1.12.B. USIBWC's "*Drawing and CAD Standards*" shall be used to create all drawings.

1. Per USIBWC's "*Drawing and CAD Standards*" Subsection 4.5.B., use USIBWC-COND as the USIBWC office in the drawing border.

1.12.C. Drawings shall be created using USIBWC's standard border and USIBWC's ctb file.

1. These items are available on USIBWC's website in link USIBWC's CAD files and Drawing and CAD Standards at www.ibwc.gov/resources-info/.

2. USIBWC's ctb file forces all plotting details to be placed in the layers. This was fully intended because ctb files are always lost over time and CAD files do not print correctly without them. If all plotting information is within the file's layers, then the drawing will print correctly without the ctb file.

1.12.D. All drawings shall be produced and provided in AutoCAD.

1. All 3D data and objects shall be fully available.
2. Guidance on providing files to USIBWC is provided in the USIBWC's "*Drawing and CAD Standards*" section entitled "Contractor Drawing Deliverables."
3. See Section 01.33.33.01 for additional AutoCAD requirements.

1.12.E. Construction Drawing Size

1. Drawing borders in AutoCAD shall be ANSI D size (22"x34").
2. Drawings shall be plotted to pdf at ANSI D size (22"x34") for full size and ANSI B size (11" x 17") for half size.
   a. Both sizes shall be provided for all submittals.

1.12.F. Informational Drawing Size

1. USIBWC AutoCAD drawing borders are available for ANSI A (8½" x 11") in both vertical and horizontal alignments and in ANSI B/D.
2. The Design-Builder shall choose the appropriate size for the data being presented.

1.12.G. Additional AutoCAD File Requirements

1. Whenever AutoCAD files are submitted, all cross referenced files shall be provided.
   a. All cross referenced files shall be saved with relative paths.
   b. Cross referenced files shall not be nested. For example cross referenced drawing A1 may not contain a cross reference to drawings A2 and A3.
2. Once drawings have been finalized and accepted by USIBWC, two copies of the drawings shall be made. One copy shall contain all of the files and xrefs in their set file structures. The other copy shall have all of the xrefs bound to the files; these bound files shall be able to stand alone without any supporting files.
3. All AutoCAD files shall be georeferenced and contain metadata.
4. AutoCAD files shall not contain official engineer's seals/stamps.
5. Survey points shall be present as AutoCAD points, not as block references.
6. Drawing items shall be associated to correct layers. Layers shall have meaningful names or shall have a document provided that details what each layer contains.
7. All files shall be audited prior to submitting to USIBWC.
8. Files shall be purged to only include current data. All unused items shall be removed from the drawing.

1.12.H. All 3D data shall be exported from the AutoCAD file. This includes, but is not limited to: points, surfaces, profiles, cross sections, and boundaries. Appropriate dxf, xml, cvs, etc. files shall be provided for this data.

1.12.I. The title/cover sheet, if used, for the drawings shall not contain a space for signatures of USIBWC personnel. USIBWC does not sign a Design-Builder's drawings.

1.12.J. Except for rare exceptions, abbreviations shall be shown without periods.

1.12.K. Provide an AutoCAD file with a complete profile of the whole project and with all of the cross sections used on the project.

1.12.L. Plan and Profile Drawing

1. Profiles
   a. Profiles shall show all existing structures and utilities drawn to scale.
2. Plan View
   a. The Plan View shall, at a minimum, include current site topography.
   b. All buildings and structures within 20 feet of USIBWC's ROW shall also be shown on the Plan View. These are not required to be surveyed. The locations of these buildings and structures may be gathered from aerial photography, but they shall be verified by visual observation.

1.12.M. Cross Section Drawings

1. At a minimum, cross sections shall be provided for:
   a. Any areas where construction may be difficult or confusing.
   b. Up to 10 additional locations as determined by USIBWC during project reviews.

1.12.N. USIBWC Drawing Numbers

1. The Design-Builder shall provide a spreadsheet with the Design-Builder's drawing number, the principal feature, and the sub feature as shown in the border of each drawing.
2. USIBWC drawing numbers will be assigned to all Design-Builder drawings upon acceptance of the pre-100% document.
3. If additional drawing numbers are required at any point, the spreadsheet shall be resubmitted with the new drawing information and the COR will assign additional numbers.
4. Any index drawings provided shall show both the Design-Builder's drawing number and the USIBWC drawing number.

1.12.O. Drawing Security Requirements
If it is determined that the drawings contain CUI information, then the document must marked per Section 00.73.73.01 Paragraph 3.1.

1.12.P. All ANSI D drawings shall be legible when printed at half size (ANSI B size 11" x 17"). All ANSI A drawings shall be legible when printed at full size.

1.12.Q. Electronic Copies

1. Construction drawings shall be submitted in a single pdf file instead of as separate files for each drawing.
2. Pdf section files shall be fully bookmarked to each drawing section.
3. Both AutoCAD and pdf files shall be provided for the 90%, pre-100%, and 100% submittals.
4. Separate pdf drawing files shall be provided at both true full scale (22"x34") and a true half scale (11"x17").

1.12.R. Prefinal Drawings

1. Prefinal drawing are drawings produced at varying design levels intended for review. This includes design drawings, construction drawing, informational drawings, and conceptual type drawings.
2. All drawings shall indicate that they are not final by stating the percent design (e.g. 30%, 60%),"draft," or that they are for review.
3. The drawing data shall be updated with each drawing version.
4. It shall be clear when looking at a drawing whether it is a prefinal or final version.

1.12.S. Final Drawings

1. The final drawings shall be signed and stamped by a professional engineer licensed to practice in the State of Texas.
2. Informational drawings that are within reports are not required to be signed if the report itself is signed. However, the drawing shall indicate the full report title, report author, and report date in the location where a PE stamp would usually be located.
3. Final versions of preliminary drawings that will not be moved to a final design (e.g. conceptual or alternatives) shall include the name and registration number of the responsible engineer, a statement that the drawings are not for construction, and a statement of their purpose in the location where a PE stamp would usually be located.

1.13. GIS DATA

1.13.A. GIS Data to be submitted

1.13.B. Geospatial data shall be contained in an ESRI file geodatabase.

1. All data and layers shall be properly identified.
2. All data attribute columns and data shall contain meaningful names. Acronym use is acceptable only if an accompanying Microsoft Word or PDF document completely describes the acronyms.

1.13.C. A Word or pdf file shall be included with the GIS data explaining the data's use and content as well as the Contract number, Design-Builder's name, Design-Builder's address and phone number, and the project name. While the metadata will contain all relevant information, this file is meant as a quick "abstract" of the data.

1.13.D. Metadata

1. All geospatial data shall have complete metadata.
2. Metadata shall meet or exceed requirements in Federal Geographic Data Committee's Content Standard for Digital Spatial Metadata (CSDGM) or ISO 19115-1 and -2, Geographic Information-Metadata.
3. The National Geospatial Data Assets (NGDA) Metadata Guidelines provides links and guidance on creating metadata.
4. Metadata shall include Contract number and project name.
5. Access Constraints: None
6. Use Constraints: None
7. Include accuracy data including:
   a. Attribute Accuracy
   b. Horizontal Positional Accuracy Report
   c. Vertical Positional Accuracy Report
8. Point of Contact and Distributor Contact
   a. Contact Organization: US Section of International Boundary and Water Commission
   b. Contact Position: GIS Office
   c. Address: 4191 N Mesa
   d. City: El Paso
   e. State: Texas
   f. Postal Code: 79902
   g. Contact Voice Telephone: (915) 832-4160
9. Originator and Metadata Contact information shall be that of the Design-Builder.

1.14. CONSTRUCTION SPECIFICATIONS

1.14.A. Format of Technical Specifications

1. Technical Specifications shall be produced according to the 2020 edition Construction Section Institute (CSI) division format.
   a. Individual specifications shall be broken out into these sections. All specifications shall include these sections in the same order. If a section is blank within a given section, it may be deleted.
      (1) Include minimum product requirements
      (2) Provide product source QC and certifications including testing results.
      (3) Include required quality control testing frequency.
   b. Every paragraph shall be numbered
   c. Figures and tables shall be numbered consecutively through the document so that no two items have the same number: i.e., there cannot be two Table 2s.
   d. Each page shall be numbered.
   e. Technical Specifications shall be bound and include a table of contents. Appropriately sized 3-ring binders are acceptable for binding.
   f. The specifications must include any appropriate Construction Contractor instructions edited to this project's specific requirements.
   g. Unless otherwise noted in this SOW, the Design-Builder is responsible for approving all construction submittals.
   h. Technical Specifications shall be formatted for double sided printing.

1.14.B. Reference Standards

Referenced codes, standards, specifications, etc. shall have their issue date and/or information identifying the version required. Simply stating "latest revision or edition" is unacceptable.

1. If anything other than the most recent version of any standard is being referenced within the specifications, detail in the Design Report why that version is being referenced otherwise it is assumed that you failed to update your standards.

1.14.C. Writing Specifications

1. The Design-Builder is responsible for providing technical specification sections edited to reflect the project design intent and these requirements.
2. Technical specifications shall be performance based whenever possible.
3. The Design-Builder is responsible for the editing of all specification sections, including all Government furnished guide sections, to reflect the project design intent and these requirements.
   a. Providing unedited specifications to USIBWC as a deliverable will be grounds for rejection of the deliverable.
   b. This includes failure to follow template directions regarding colored text.
4. Group work requirements into one section. For example, do not have welding specifications in miscellaneous metalwork, metal structures, and vehicle gates. Combine all welding requirements into one welding specification. This allows easy access and also eliminates conflicting requirements.
5. Technical specifications must be carefully coordinated with drawings to ensure that everything shown on the drawings is specified and that no contradictions exist between the documents.
6. Long paragraphs shall be avoided. Specific requirements shall be separated into their own paragraph to aid in reading the specifications.

7. Tailor the specifications to the site and the project. Simplifying the specifications to what actually needs to be covered allows the Design-Builder to easily follow the requirements. Having to wade through pages of irrelevant data can cause the needed requirements to be lost.
8. Section language that is not applicable to the project shall be deleted.
9. Do not duplicate language that is written into reference standards unless it is notable. For example, the UFGS for gabions is almost word for word identical to ASTM A975 which all gabions need to meet. Simply state that gabions need to meet ASTM A975 instead of repeating pages of product requirements.
10. Verify that editions/revisions of referenced standards/publications are current or are specifically addressing an older version on purpose.
11. Write out inch/inches and foot/feet. Using ', ", in., or in can become confusing when reading the specifications. Other units may be abbreviated if they are defined and if the use of the abbreviation is not confusing.
12. When specifying riprap, include both weights and sizes (nominal diameter in inches).

1.14.D. USIBWC Standard Technical Specifications

1. The Design-Builder is not required to use USIBWC's specification template. The file is available as a reference.
   a. This file is available as a Microsoft Word macro-enabled template (IBWC Specs Boilerplate 20YYMMDD.dotm) on USIBWC's website in link USIBWC's Construction Specifications Template link on www.ibwc.gov/resources-info/.
   b. The Design-Builder may use the specifications in this template, but shall ensure that they meet the design requirements and have been edited to fit this project.
   c. Directions are provided with the template. Follow the template directions.

1.14.E. Specification Requirements

1. Specifications shall be based upon ASTM or other nationally recognized standards organization (e.g. ASCE, ASME, UL, NFPA, etc.).
   a. Materials shall not be identified by code compliance. Use material requirements instead.
      (1) For example, instead of epoxy meeting ICC-ES or ACI 308, provide ASTM C881 compliance with minimum bond strength (ASTM C882), minimum compressive strength (ASTM D695), and minimum tensile strength (ASTM D638), as applicable.
      (2) See Brand Name Section 01.33.33.01 Paragraph 1.7 for guidance on listing product requirements, performance characteristics, physical functions, or salient characteristics.
   b. QC tests shall be based upon ASTMs whenever possible.
      (1) Alternate tests may be listed (e.g. AASHTO or DOT) if the alternate test is the same as the ASTM test. The alternative test shall note in its description that it is the same as ASTM test X### to ensure repeatability.
   c. Do not copy a standard verbatim within the specifications.
2. DOT specifications shall not be used although DOT requirements may be. For example, TxDOT Item 420, Concrete Substructures, cannot be used as a specification or as a blanket reference, but the requirements from TxDOT Item 420 can be incorporated into a specification section.
3. Do not identify materials as a DOT type. Use material requirements instead.
   a. For example, instead of TxDOT 247 (flex base), list the gradation, LL, PL, PI, etc. of the required gravel.

1.14.F. Formatting Specifications

1. Section shall be formatted in a professional manner.
   a. Full justification shall not be used.

2. All pages, except for the covers, shall be in the same font and same font size.

1.14.G. Document Security Requirements
If it is determined that the Construction Specifications contain CUI information, then the document must marked per Section 00.73.73.01 Paragraph 3.1.

1.14.H. Electronic Copies

1. Specifications shall be made available in both Microsoft Word and in pdf.
2. The pdf file shall be created directly from Word. Scanned copies of anything other than the cover page with stamps and signatures are not acceptable.
3. The pdf file shall be bookmarked to each Division and each Section.
4. Construction specifications shall be submitted in a single electronic file instead of as separate files for each Division.
5. Font: Times New Roman 11 point
6. Paper Size: 8-1/2" x 11" portrait but can include 11" x 17" sheets fan folded to 8-1/2" x 11"

1.14.I. Final 100% Document
The final Technical Specifications shall be signed and stamped by a professional engineer licensed to practice in the State of Texas.

1.15. CONSTRUCTION DOCUMENTS

1.15.A. Construction documents include the construction specifications and drawings as well as all items listed here.

1.15.B. Preconstruction Meeting and Construction Documentation
The Design-Builder is responsible for obtaining, maintaining, and monitoring for compliance all documents and records required in the Contract provisions. Prior to start of construction work, an orientation meeting shall be held between the Design-Builder, the Construction Contractor, and USIBWC to address documentation requirements.

1.15.C. Design-Builder's and Construction Contractor’s Daily Report
The Design-Builder shall maintain daily records of construction activities in the form of a Design-Builder's Daily Report and a Construction Contractor’s Daily QC Report. Together they shall provide a complete word picture of the project, covering both the normal work process and anything unusual that occurs on the project.

1.15.D. Construction Contractor's and Design-Builder’s Record of Safety
The Design-Builder shall maintain a record of all safety meetings, incidents, near misses, and accidents.

1.15.E. Materials Certification
The Design-Builder shall submit a materials certification package to USIBWC which contains a checklist and supporting documentation for all materials used on the project. The supporting documentation shall consist of a summary of all documentation practices utilized for material acceptance and explanations of any deficiencies noted on the checklist.

1. Material certifications shall ensure that all items meet the Buy American Act (41 USC 10a - 10d).
2. If applicable, the material certifications shall note items meeting LEED or recyclable content.

1.15.F. Design-Builder Construction Survey
Copies of all survey calculations, notes, and data, including grade books and cross section notes, shall be kept and provided to USIBWC when requested and turned over to USIBWC upon completion of the project.

1.15.G. Other Records

Other records are comprised of all relevant construction records. These records shall be attached to the daily reports. Examples of these records include but are not limited to the following:

1. Quantity delivery tickets
2. Material acceptance test reports
3. Concrete placement records
4. Source of materials documentation
5. Prints of shop drawings
6. Grade books

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. 30% MINIMUM DESIGN SUBMITTAL REQUIREMENTS

3.1.A. Design Report

1. The Design-Builder shall detail in a report their proposed or conceptual design for the project.
2. The report shall provide information on:
   a. Survey performed.
   b. Structures and utilities found within the project area.
   c. Background on why the design being proposed was chosen. Include comparisons to other alternatives considered.
   d. Written and tabular comparative review of the proposed design with respect to the resource areas shown in the project environmental documents.
   e. Materials to be used in construction.
   f. Anticipated construction items with long lead times and items that are difficult to obtain.
   g. Anticipated construction concerns including specialty contractors or safety hazards.

3.1.B. Design-Builder Certification

The Design-Builder shall certify in writing that the project to date has been designed in compliance with the Contract, industry standards, and all applicable requirements in this Section 01.41.00.01.

3.1.C. USIBWC Comments

1. The USIBWC will provide comments on the 30% design submittals within the timeframe detailed in Section 00.31.00.01. Following receipt and review of USIBWC's comments, the Design-Builder shall provide a memorandum on their letterhead noting if they agree or disagree with the comments within 14 calendar days of receipt of comments.
2. USIBWC may request additional information from the Design-Builder on comments where they disagree. Following receipt of this information, USIBWC and the Design-Builder shall meet to discuss the comments and reach concurrence.

3.2. 60% MINIMUM DESIGN SUBMITTAL REQUIREMENTS

3.2.A. All 60% submittals shall build upon the 30% submittals aiming toward final products that meet Section 00.24.00.01 Paragraph 1.5. The 60% submittal shall include all required design information to finalize any pending decisions, alternatives, or options for the structures and site.

3.2.B. Design Report
The report shall provide information on:

1. Describe any utility conflicts. Provide utility contact information and details of the size and type of utility. Provide recommendations of how utility conflict should be resolved.
2. Note any area where construction is required outside of USIBWC's ROW. Explain why this is required as well as the contact information and ownership information of the property in question.

3.2.C. Survey Data and Report

3.2.D. Geotechnical Report

3.2.E. Drawings

1. All drawings produced to date shall be provided for USIBWC review.
2. All AutoCAD files with their cross referenced files shall be provided.
3. Drawings shall be provided in bookmarked pdf files in both full and half size.
4. Drawings shall be sufficient to show construction steps and procedures as well as the final product.
5. All required drawings for construction shall have been started.
6. Drawings critical for implementation of the design shall be complete or almost complete whereas less critical drawings may be further behind.

3.2.F. GIS Data

3.2.G. Technical Specifications
The Design-Builder shall provide all other technical specification expected to be required to complete construction.

3.2.H. Design-Builder Certification
The Design-Builder shall certify in writing that the project to date has been designed in compliance with the Contract, industry standards, and all applicable requirements in this Section 01.41.00.01.

3.2.I. Documents Revised from 30% Submittal

1. The changes to all documents, except drawings, from the 30% submittal shall be clearly indicated. Text can be shown in a different color, items can be highlighted, or Microsoft Word "track changes" may be used.
2. A list or spreadsheet shall be provided detailing the changes made to each drawing.

3.2.J. USIBWC Comments

1. The USIBWC will provide comments on the 60% design submittals within the timeframe detailed in Section 00.31.00.01. Following receipt and review of USIBWC's comments, the Design-Builder shall provide a memorandum on their letterhead noting if they agree or disagree with the comments within 14 calendar days of receipt of comments.
2. USIBWC may request additional information from the Design-Builder on comments where they disagree. Following receipt of this information, USIBWC and the Design-Builder shall meet to discuss the comments and reach concurrence.

3.3. 90% MINIMUM DESIGN SUBMITTAL REQUIREMENTS

3.3.A. All 90% submittals shall build upon the 60% submittals aiming toward final products that meet Section 00.24.00.01 Paragraph 1.5. The 60% submittal shall include all required design information to finalize any pending decisions, alternatives, or options for the structures and site.

3.3.B. Design Report

3.3.C. Survey Data and Report

3.3.D. Geotechnical Report

3.3.E. Drawings

1. All drawings produced to date shall be provided for USIBWC review.
2. Drawings shall be provided in bookmarked pdf files in half size.
3. Drawings shall be sufficient to show construction steps and procedures as well as the final product.
4. All AutoCAD files with their cross referenced files shall be provided.

3.3.F. GIS Data

3.3.G. Technical Specifications
The Design-Builder shall provide all technical specifications required to complete construction.

3.3.H. Any additional documents produced during the design of this project.

3.3.I. Design-Builder Certification
The Design-Builder shall certify in writing that the project to date has been designed in compliance with the Contract, industry standards, and all applicable requirements in this Section 01.41.00.01.

3.3.J. Documents Revised from 60% Submittal

1. The changes to all documents, except drawings, from the 60% submittal shall be clearly indicated. Text can be shown in a different color, items can be highlighted, or Microsoft Word "track changes" may be used.
2. A list or spreadsheet shall be provided detailing the changes made to each drawing.

3.3.K. USIBWC Comments

1. The USIBWC will provide comments on the 90% design submittals within the timeframe detailed in Section 00.31.00.01. Following receipt and review of USIBWC's comments, the Design-Builder shall provide a memorandum on their letterhead noting if they agree or disagree with the comments within 14 calendar days of receipt of comments.
2. USIBWC may request additional information from the Design-Builder on comments where they disagree. Following receipt of this information, USIBWC and the Design-Builder shall meet to discuss the comments and reach concurrence.

3.4. PRE-100% DESIGN SUBMITTAL REQUIREMENTS

3.4.A. All drawings, specifications, construction schedule, and other documents enumerated in above for inclusion in the 90% completed submittals shall be further developed by Design-Builder in sufficient detail as to be deemed 100% complete and buildable. No new items, features of work, drawing details, or drawing sections should in the pre-100% submittal. All pre-100% submittals shall meet the full requirements of this SOW.

3.4.B. Design Report

3.4.C. Survey Data and Report

3.4.D. Geotechnical Report

3.4.E. Drawings

1. Drawings shall be provided in bookmarked pdf files in both full and half size.
2. All AutoCAD files with their cross referenced files shall be provided.

3.4.F. GIS Data

3.4.G. Technical Specifications

3.4.H. Any additional documents produced during the design of this project.

3.4.I. Design-Builder Certification
The Design-Builder shall certify in writing that the project to date has been designed in compliance with the Contract, industry standards, and all applicable requirements in this Section 01.41.00.01.

3.4.J. Documents Revised from 90% Submittal

1. The changes to all documents, except drawings, from the 90% submittal shall be clearly indicated. Text can be shown in a different color, items can be highlighted, or Microsoft Word "track changes" may be used.
2. A list or spreadsheet shall be provided detailing the changes made to each drawing.

3.4.K. Initial 100% submittal shall be in electronic form only. This shall be known as the pre-100% submittal.

1. USIBWC Comments
   a. The USIBWC will provide comments on the pre-100% submittals within the timeframe detailed in Section 00.31.00.01. Following receipt and review of USIBWC's comments, the Design-Builder shall provide a memorandum on their letterhead noting if they agree or disagree with the comments within 14 calendar days of receipt of comments.
   b. The purpose of the pre-100% Design Submittal is to ensure all the 90% comments and any pending comments from previous submittals are resolved and incorporated into the construction documents prior to Design-Builder reproducing and distributing all the required hardcopies This submittal should be just a cursory review. However, additional comments or concerns may surface. Acceptance of any submittal at all does not relieve the Design-Builder to fully comply with the Contract requirements.
   c. If additional comments or concerns surface during this review, the USIBWC will provide comments within the timeframe detailed in Section 00.31.00.01. Following receipt and review of USIBWC's comments, the Design-Builder shall provide a memorandum on their letterhead noting if they agree or disagree (i.e. concur/non-concur) with the comments 14 calendar days of receipt of comments.
   d. USIBWC may request additional information from the Design-Builder on comments where they disagree. Following receipt of this information, USIBWC and the Design-Builder shall meet to discuss the comments and reach concurrence.

3.4.L. Design-Builder may be required to make several pre-100% submittals until all USIBWC comments are resolved. Only revised documents are required to be re-submitted through subsequent "pre-100%" submittals.

3.5. 100% DESIGN SUBMITTAL REQUIREMENTS

3.5.A. All 100% submittals shall meet the full requirements of this SOW.

3.5.B. Upon concurrence of all USIBWC comments from prior pre-100% submittal, all documents shall be finalized.

1. Update dates to reflect final changes on all documents.
2. USIBWC will provide drawing numbers for all drawings. Incorporate these numbers into the USIBWC drawing border.
3. Only after acceptance of the 100% submittal, the Design-Builder shall provide required hard and electronic copies of all 100% documents.

3.5.C. Provide final 100% versions of all documents and data.

1. Design Report
2. Survey Data and Report
3. Geotechnical Report

4. Drawings
   a. Drawings shall be provided in bookmarked pdf files in both full and half size.
   b. All AutoCAD files with their cross referenced files shall be provided.
5. GIS Data
6. Technical Specifications
7. Any additional documents produced during the design of this project.

--End of Section--

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SECTION 01.33.33.01
DOCUMENT REQUIREMENTS

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1.2. RELATED REQUIREMENTS

1.2.A. Section 00.24.00.01-Procurement Scope

1.2.B. Section 01.33.16.01-Design Submittals

1.2.C. Section 01.32.33.01-◊●◊●◊ Photographic Documentation

1.2.D. Section 01.41.00.01-Regulatory Requirements

1.3. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.4. REQUIREMENTS FOR ALL DELIVERABLES

1.4.A. All deliverables shall be dated with month, day, and year, including subparts and appendices. All years shall be shown as four digit value.

1.4.B. All deliverables shall clearly note the percent design that they represent.

1. All reports submitted prior to the accepted 100% documents shall note "DRAFT" within their title and within either the header or footer of each page.
2. All drawings submitted prior to the accepted 100% version shall clearly note that they are draft or incomplete and "not for construction."

1.4.C. Figures and tables shall be numbered consecutively through each document so that no two items have the same number: i.e., there cannot be two Table 2 or Detail 5. This includes attachments and appendices.

1.4.D. Each page shall be numbered.

1.4.E. Prior to the accepted 100% documents, reports may contain line numbers or other temporary numbering on each page to aid in commenting during reviews.

1.4.F. The use of "he," "his," "he/she," or "himself" shall be avoided. If pronouns are required, use "they," "their," or "themselves."

1.4.G. General references to "owner" are not allowed. In general these should be changed to "COR" although at times "USIBWC" is more correct. Direct references to the owner of a structure that passes through USIBWC property are allowed.

1.4.H. The following items are one word and shall be used as one word within all documents:

1. bypass
2. cutoff
3. daylight
4. dewater
5. eastside
6. jobsite
7. landside
8. noncompliance
9. offsite
10. onsite
11. overchute
12. pinhole
13. preapproved
14. preconstruction
15. preexisting
16. proactive
17. riverside
18. sidewalk
19. stormwater
20. subgrade
21. topsoil
22. wastewater
23. wasteway
24. waterway
25. waterstop
26. westside

1.4.I. Units
US standard units of inches, feet, pounds, and degrees Fahrenheit shall be used.
US standard units of inches, feet, pounds, and degrees Fahrenheit shall be used as the primary units, but all values shall be shown with metric units of centimeters, meters, Newtons, and degrees Celsius as secondary units. See Section 00.24.00.01 for guidance on stationing to be used.

1.4.J. Coordinates shall be formatted with commas or spaces every three decimal places to the left of the decimal point for all numbers exceeding 999. For example, 15 548 540.4586 or 15,548,540.4586.

1.4.K. Regulatory Requirements
The Design-Builder shall meet the applicable requirements of all documents listed in Section 01.41.00.01.

1.5. REQUIREMENTS FOR ALL REPORTS

1.5.A. Reports and plans (e.g. Safety Plan, QC Plan, Stormwater Pollution Prevention Plan) provided to the Government as submittals shall be provided in pdfs with recognizable text (i.e. searchable pdf). Recognizable text is searchable by character or words.

1.5.B. Reports are inclusive of their appendices. Standalone documents (those that carry their own PE stamp such as a geotechnical report) shall never be an appendix to another report. Minor items, tests, and designs that are stamped separately from the main report may be included as appendices.

1.5.C. Reports, including all appendices, shall not duplicate table, figure, and chart names or numbers. For example, the main report may have a Figure 2 so Appendix A cannot also have a Figure 2. An easy way to ensure that this does not happen is to name all appendix items with the appendix nomenclature (e.g. Figure A-2 or Chart A2-3).

1.5.D. If appendices of reports use the same or similar paragraph/section numbering, precede the appendix paragraph/section numbers with the appendix name (e.g. A-5.0 or C-3.2.1). This ensures that cross references within the report are not misunderstood.

1.5.E. All reports generated under this Contract shall follow established technical/scientific writing styles such as 2014 IEEE-SA Standards Style Manual, CSE Scientific Style and Format 8th Edition, MLA Handbook 8th Edition, or USGS' Suggestions to Authors of the Reports of the United States Geological Survey.

1. References cited within the reports shall follow the Geological Society of America's Reference Guidelines and Examples available at www.geosociety.org/documents/gsa/pubs/GSA_RefGuide_Examples.pdf.
2. Technical reports usually only list cited references. If you choose to list all of your sources, cited and uncited, then cited sources shall be listed under 'References' while uncited sources shall be listed under 'Bibliography' or something similar. Do not list sources twice.
3. Clearly note that your references, and bibliography if applicable, include the appendices.

1.6. RELATIONSHIP BETWEEN DRAWINGS AND SPECIFICATIONS

1.6.A. Drawings shall show the following types of information, as appropriate:

1. Location of the work
2. Details and dimensions
3. The exception for placing type/quality of materials, design requirements, and other items that are normally specification only information is on a "note" drawing (general or structural) whereby critical data for the design is presented with the assumption that the specifications are no longer with the as-built drawings. Contractor should list strengths of materials, types of materials, design standards, codes used, design requirements, loading limits, etc. so that others may review drawings years later and know exactly what the design basis or requirements were. Special care shall be taken to ensure that these data are consistent with the specifications.
   a. Bridge/culvert loading shall always be shown.
   b. Minimum and maximum fill over pipes and culverts shall be provided.

1.6.B. Specifications shall describe the following types of information, as appropriate:

1. Type and quality of materials
2. Quality of workmanship,
3. Methods of fabrication, installation, and construction
4. Testing requirements
5. Alternates and options
6. Method of measurement and payment

1.6.C. In preparing drawings and specifications, the question often arises as to whether a particular instruction should be placed in the specifications, shown in the form of notes on the drawings, or both.

1. As a rule, information should not be included in both the specifications and the drawings. Covering requirements in multiple places often leads to ambiguities or conflicts, especially if information is changed in one location but not the other.
2. Drawing notes should be used when it is necessary to communicate and clarify information that cannot be represented by a particular drawing or detail alone, and the information cannot be highlighted advantageously in a specification.
3. If the instructions apply to only one particular item, drawing notes may be appropriate. For example, if only one connection requires a high strength bolt, a note to that effect should be placed beside the detail for that connection. If instead, all field connections are to be high strength bolts tightened to a specific tension; this information would be better suited to a specification, as it would then be unnecessary to repeat this information on all affected drawings.
4. Drawing notes may also be appropriate if it is necessary to highlight specific information (e.g., references to existing underground utilities, dimensional clarifications, work zone limitations related to noise or dust, locations of suitable soil, etc.) that could otherwise go unnoticed in a specification.
5. Drawing notes are not a specification and should not be used to revise or in lieu of the specifications. Drawing notes may refer a Construction Contractor to the appropriate specification section.

1.7. BRAND NAME

1.7.A. The use of brand name products anywhere within the technical specifications or construction drawings is not allowed unless a sole source justification is provided.

1. This includes statements such as: Simpson Strong-Bolt 2 or equal.
2. This also includes listing multiple brand name products. The product requirements, performance characteristics, physical functions, or salient characteristics shall be listed, not their names.
3. If all product requirements, performance characteristics, physical functions, and/or salient characteristics are listed, the Design-Builder may list brand name products which fully meet these requirements.
   a. Listing products does not negate requirements to provide submittals showing items meet Contract requirements.

1.7.B. Since Federal procurement must be open to all available items, without preference, the Design-Builder shall provide detailed technical requirements instead of simply calling out a brand name item.

1. Technical requirements include, but are not limited to: material composition, material strength, bonding capacity, and ASTM standards.
2. Performance requirements are allowable if they can reasonably be tested during construction. Samples of performance requirements include, but are not limited to: compaction, compressive strength of concrete, and paint thickness.

1.7.C. The Design-Builder shall take care that during the writing of the product requirements that they become so narrow that only one brand name product can fulfill them. This backdoor method of choosing a brand name (sole source) product is not allowed.

1.7.D. Sole Source Justification
The Design-Builder shall include in their Design Report a section which addresses why a specific brand name product shall be used. The section must include details as to why this is the only product to be used and why no other item will satisfy the project requirements.

1. The justification should indicate that the use of such item is essential to the Government's requirements, thereby precluding consideration of a product manufactured by another company.
2. Each justification shall contain sufficient facts and rationale to justify the use while ensuring that that the anticipated cost to the Government will be fair and reasonable.
3. A description of the market research conducted and the results shall be provided.

1.8. HARDCOPY DOCUMENT FORMAT

1.8.A. Number of Hardcopies
Unless otherwise allowed by the COR, 5 copies of all deliverables shall be provided.

1.8.B. Construction Drawings

1. Print drawings single sided.
2. Provide printed halfsize, ANSI B (11" x 17") drawings.
3. Printed on a minimum 20 pound white engineering bond paper, printed at a minimum of 400 dots per inch resolution, single sided.
4. Bind drawings in easy to use thicknesses.
5. Allowable bindings include:
   a. Spiral binding.
   b. Comb binding.
   c. 3 Chicago screws with strip binding.
   d. 4 staple bind with black strip binding.
6. Provide clear plastic cover and rear cover stock or plastic cover.

1.8.C. Construction Specifications

1. Print specifications double sided.
2. Bind separate from drawings. Appropriately sized 3-ring binders are acceptable for binding.
3. Paper Size: 8-1/2" x 11" portrait but can include 11" x 17" sheets fan folded to 8-1/2" x 11"

1.8.D. Reports

1. Print all reports double sided.
2. Provide each report in a separate binding.
3. Paper Size: 8-1/2" x 11" portrait but can include 11" x 17" sheets fan folded to 8-1/2" x 11"

1.9. ELECTRONIC DOCUMENT FORMAT

1.9.A. Electronic Document Submittal

1. Filenames, including the names of all directories, shall not exceed 75 characters.
   a. This is critical for copying the files to other locations since any network or hard drive name extends the filename. Windows allows filenames up to 260 characters, but this includes the directory names where the files are stored. When subdirectory in subdirectory is used over and over, the filenames become very long, very quickly. The Design-Builder shall ensure that filenames and directory names are short but descriptive to ensure that files can be readily copied.

1.9.B. Document files shall not be "locked" or otherwise blocked from changes. If it is imperative that a document be password protected, the password shall be provided to USIBWC.

1.9.C. Software Requirements

1. Text Files
   MS Word 2016 or newer for text documents
2. Presentation Files
   MS PowerPoint 2016 or newer for presentations
3. Spreadsheet Files
   MS Excel 2016 or newer for spreadsheets
4. Image Files
   Image files shall meet Section 01.32.33.01.
5. PDF Files
   a. Whenever possible, files shall be saved/printed as pdfs instead of scanned as pdfs.
      (1) "Print" to pdf with a minimum resolution of 600 dpi, but 1200 or 2400 dpi is preferred for text documents.
   b. Pdf files that contain form fields shall be "printed" to pdf prior to submittal to USIBWC. Printing the file to pdf locks the data and prevents the form field from being changed.
   c. Pdfs shall include valid electronic signatures or they shall be scans of the original documents.
      (1) Valid electronic signatures include digital signatures created through the pdf program or inserted scans of a true signature. By submitting an item using either of these items, the CM Contractor is certifying that the signature is valid.
   d. Embed all fonts used in the pdf files.
   e. Per USIBWC's "*Drawing and CAD Standards*" the minimum resolution for drawings generated from AutoCAD is 1200 dpi.
   f. Color documents shall be scanned in color. NCR pages that are other than white (e.g. all yellow or all pink) are not considered color documents and shall be scanned in grayscale or black and white. Black and white is preferred.
   g. The minimum scanning resolution shall be:
      (1) 400 dpi for color and grayscale
      (2) 600 dpi for black and white
   h. The Design-Builder shall ensure that the electronic copy is legible.
   i. PDFs shall be bookmarked to all sections, appendices, etc.
   j. Provide data/information within the pdf itself. Do not use "attachments" within a pdf file. Do not use a pdf portfolio.
   k. Pdfs shall be sized at ANSI A (8½" x 11"), ANSI B (11" x 17"), or ANSI D (22" x 34") unless the original is another size, then the pdf shall be the size of the original document.
6. Drawing Files
   a. AutoCAD 2022 Civil 3D or newer shall be used for drawing files.
   b. All other references to AutoCAD within this document refer to Civil 3D version.
   c. At this time, USIBWC will not accept drawings in Revit.
7. GIS Data
   Geospatial data shall be contained in an ESRI file geodatabase that is compatible with the ArcPro 3.0 or newer.
8. DVD/CDs
   All CD/DVDs shall be labeled with the Project Name, Contract Number, general contents, and Design-Builder's name.

1.9.D. Report Drawings and Figures

1. All figures (images, drawings, photos, and similar items) used in reports and project documents shall be clear. These items shall be of sufficient resolution to provide non-blurry images in the final pdfs and printed documents.
2. If requested by USIBWC, the Contractor shall provide the image used to create the figure.
3. Drawings included in reports shall be provided no smaller than ANSI B (11"x17") when they were originally larger than ANSI B.
4. See Section 01.33.16.01 Paragraphs 1.12.F., 1.12.R., and 1.12.S. for additional information about drawings used in reports.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

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SECTION 01.35.23.01
SAFETY

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

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1.2.B. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.C. Section 01.40.00.01-◊●◊●◊ Quality Requirements

1.3. REFERENCE STANDARDS

1.3.A. American National Standards Institute (ANSI)

1. ANSI Z117.1-2022 Safety Requirements for Confined Spaces

1.3.B. Code of Federal Regulations (CFR) / Occupational Safety and Health Administration (OSHA)

1. 29 CFR 1904, Recording and Reporting Occupational Injuries and Illnesses
2. 29 CFR 1910, Occupational Safety and Health Standards
3. 29 CFR 1926, Construction Standards

1.3.C. Federal Acquisition Regulation (FAR)

1. FAR 52.236-2, Differing Site Conditions
2. FAR 52.243-4, Changes

1.3.D. National Fire Protection Association (NFPA)

1. NFPA 1006-2021, Standard for Technical Rescuer Professional Qualifications, with TIA through 21-1
2. NFPA 1981-2019, Standard on Open-Circuit Self-Contained Breathing Apparatus (SCUBA) for Emergency Services, with TIA 19-1
3. NFPA 2500-2022, Standard on Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services, with TIA through 22-4

1.3.E. Occupational Safety and Health Administration (OSHA)

1. OSHA Instruction TED 01-00-015 [TED 1-0.15A], Section V

1.3.F. United States Army Corps of Engineers (USACE)

1. USACE Safety and Health Requirements Manual, EM 385-1-1, November 30, 2014

1.3.G. United States Code (USC)

1. Consumer Product Safety Act, 15 USC 2051-2089
2. Federal Hazardous Substances Act, 15 USC 1261-1278

1.4. SAFETY REFERENCES

1.4.A. The Design-Builder shall comply with all provisions of the "*US Army Corps of Engineers Safety and Health Requirements Manual*," EM 385-1-1 and with all applicable regulations of the Occupational Safety and Health Administration (OSHA), 29 CFR 1910, Occupational Safety and Health Standards and 29 CFR 1926, Construction Standards.

1. The USACE EM 385-1-1 can be obtained from www.publications.usace.army.mil/Portals/76/EM 385-1-1 _EFFECTIVE 15March2024.pdf or procured by the Design-Builder from the US Government Printing Office, Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250 7954. Limited copies may be obtained from your local USACE office.
2. The OSHA 29 CFR 1910 and 29 CFR 1926 can be accessed at www.osha.gov or www.govinfo.gov/app/collection/CFR.

1.4.B. Toolbox safety meeting resources include, but are not limited to:

1. The Center for Construction Research and Training (CPWR) at www.elcosh.org.
2. OSHA Safety and Health Topics at www.osha.gov/SLTC.

1.5. SUBMITTALS

1.5.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.5.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Accident Prevention Plan
2. Activity Hazard Analyses
3. Site Safety and Health Officer (SSHO) Qualifications
4. Safety Data Sheets (SDS), if required
5. Hazardous or Toxic Agent Inventory, if required
6. Excavation/Trenching Plan, if required
7. Crane and/or Hoisting Equipment Operator Qualifications, if required
8. Rigger Qualifications, if required
9. Signal Person Qualifications, if required
10. Crane and/or Hoisting Equipment Inspection Records, if required
11. Crane and/or Hoisting Equipment Load Testing Record, if required
12. Employee First-Aid and CPR Training Records
13. Contingency Evacuation Plan
14. Equipment Operator Certifications

1.6. RECORD DOCUMENTS

1.6.A. Required documents to be provided to Government in this Section include:

1. Safety Inspections of Jobsite and Equipment
2. Weekly Toolbox Safety Meetings
3. Logs/Minutes of Other Safety Meetings
4. Safety Logs
5. Incident and Accident Reports
6. IBWC Form 153

1.7. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.8. GENERAL

1.8.A. The Design-Builder shall provide and maintain work environments and procedures which will safeguard the public, Government personnel, construction personnel, property, materials, supplies, and equipment exposed to construction operations and activities.

1.8.B. The Design-Builder is responsible for ensuring that the jobsite is free from safety and health hazards and shall ensure that its employees, as well as those of its subcontractors, are competent and adequately trained in all safety and health aspects of the job.

1.8.C. The Government considers the Design-Builder to be the "controlling authority" for all jobsite safety and health of the subcontractors. The Design-Builder is responsible for informing their subcontractors of the safety provisions under the terms of the Contract and the penalties for noncompliance, coordinating the

work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out.

1.9. NONCOMPLIANCE

1.9.A. The Design-Builder is responsible for being cognizant of and ensuring compliance with the requirements set forth in this Section. Such responsibility shall apply to both the Design-Builder's operations and those of the Design-Builder's subcontractors.

1.9.B. When violations of the safety and health requirements contained in these Contract Documents or safety standards are called to the Design-Builder's attention by the Government, the Design-Builder shall immediately correct the condition to which attention has been directed. Such notice, either oral or written, when served on the Design-Builder or the Design-Builder's representative(s), shall be deemed sufficient.

1. In the event the Design-Builder fails or refuses to promptly comply with the compliance directive issued above, the Government may issue an order to stop all or any part of the work. When satisfactory corrective action is taken, an order to resume work will be issued.
2. The Design-Builder shall not be entitled to any extension of time nor to any claim for damage or to additional compensation by reason of either the directive or the stop order.
3. Failure of the Government to order discontinuance of any or all of the Design-Builder's operations shall not relieve the Design-Builder of the Design-Builder's responsibility for the safety of personnel and property.

1.10. ACCIDENT PREVENTION PLAN (APP)

1.10.A. Prior to the initiation of work at the jobsite, the Contractor shall submit a site specific safety plan, incorporated herein by reference as Accident Prevention Plan (APP), to the COR for review and compliance confirmation with the standards referenced above.

1. The APP may be an abbreviated plan per 2014 EM 385 1 1.
2. If trenching, confined spaces, critical lifts, cranes, or other dangerous activities are involved, an abbreviated plan cannot be used.
3. Do not include your company's regular safety plan. Prepare a site specific plan that addresses the issues in this Contract.

1.10.B. Jobsite mobilization will not be permitted until the APP has been compliance confirmed by the COR.

1. Understanding that the APP is submitted prior to work starting and that some project-specific information is not yet known (e.g., subcontractors to be used, type of fall protection to be used at a certain point in time, specific cranes or other load handling equipment (LHE) to be brought on site, etc.), the known information shall be provided in the initial APP.
2. Additional information shall be added to the APP and compliance confirmed prior to the corresponding preparatory phase meeting.

1.10.C. Once work begins, changes to the compliance confirmed APP shall be made with the knowledge and concurrence of the COR, project superintendent, SSHO, and quality control manager. Should any hazard become evident, stop work in the area, secure the area, and develop a plan to remove the hazard. Notify the COR within 24 hours of discovery. In the interim, take all necessary action to restore and maintain safe working conditions to safeguard onsite personnel, visitors, the public, and the environment.

1.10.D. After any accident or mishap:

1. Applicable APP Plans, Programs, and Procedures shall be reviewed and updated if appropriate.
   a. The Contractor shall either resubmit revised APP Plans, Programs, and Procedures or submit statement that APP has been reviewed and that no changes are required.

2. Reviews and submittals shall be completed within 14 calendar days of the accident or mishap.

1.11. ACTIVITY HAZARD ANALYSIS (AHA)

1.11.A. Prior to the initiation of work at the jobsite, the Contractor shall submit site specific Activity Hazard Analysis (AHA), to the COR for review and compliance confirmation with OSHA standards and EM 385-1-1.

1.11.B. AHAs shall be developed for each Definable Feature of Work (DFOW, see Section 01.40.00.01 Paragraph 1.14) and shall be specific to the work being performed on this project. Having the employees who perform the work aid in developing the AHAs is extremely advantageous.

1. IBWC Form 164A shall be used for all AHAs.
2. Only 1 AHA shall be provided for each DFOW. AHAs shall be updated whenever better working practices or additional hazards are identified.
3. At a minimum, AHAs shall include: DFOW, Contract number, date prepared, indication if AHA is new or updated/revised, location, name and title of person who prepared AHA, name and title of person who reviewed AHA, PPE required, job steps, hazards, controls, equipment to be used, training requirements, competent/qualified personnel names, safety inspection requirements, and any applicable notes.
4. Competent and Qualified Personnel
   a. Personnel must have capability to identify hazards. Provide training certificates and/or resume to show person has met qualifications for competent or qualified person.
   b. Electrical, fall protection, confined spaces, powered industrial trucks (i.e. forklifts), and ATVs require training within the last 3 years.
   c. USIBWC will not accept any training certificates more than 10 years old.
   d. For competent persons, provide letter of authority signed by Construction Contractor authorizing the competent person to take prompt corrective action to eliminate unsanitary, hazardous, or dangerous working conditions.
5. Subcontractors may create AHAs but all project AHAs shall be reviewed by Construction Contractor's SSHO or Construction Contractor's corporate safety officer.

1.11.C. For every job step in an AHA, list the specific hazards and related mitigation control measures. Do not lump all hazards and mitigation control measures together; they must be related to a specific job step.

1.11.D. Jobsite work will not be permitted until all the applicable AHAs have been compliance confirmed by the COR.

1. AHAs shall be submitted and compliance confirmed before a preparatory phase meeting for work on the associated DFOW is held.

1.11.E. After any accident or mishap:

1. Applicable AHAs shall be reviewed and updated if appropriate.
   a. The Contractor shall either resubmit revised AHA or submit statement that AHA has been reviewed and that no changes are required.
2. Reviews and submittals shall be completed within 14 calendar days of the accident or mishap.

1.12. EQUIPMENT OPERATORS

1.12.A. Unless noted are qualifications and submittals under other SOW Sections, provide evidence of operator training, certifications, and licensing.

1.12.B. Machinery and Mechanized Equipment

1. Equipment operators must be trained and evaluated by persons who have the applicable and appropriate knowledge training and experience.
2. Examiners must be independently certified. Certification by external, independent organizations is preferred.
3. All qualification/licensing of equipment operators by examiners must include, at a minimum, the requirements of EM 385-1-1 Chapter 18, the manufacturer's instructions and recommendations, as well as observation of a practical operating examination on the equipment.

1.12.C. Powered Industrial Trucks (PITs)

1. Train operators according to 29 CFR 1910.178, including both classroom and practical operation. Employees must be trained on the same type of truck they will be expected to use on the job. Training shall indicate the applicable PIT class.
2. The employer must certify that the operator has been trained and evaluated as required by the standard. The certification must include the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.
3. Refresher training in relevant topics must be conducted at least once every 3 years, including an evaluation of each PIT operator's performance. In addition, refresher training must be provided when any of the following conditions exist:
   a. The operator has been observed to operate the vehicle in an unsafe manner.
   b. The operator has been involved in an accident or near miss.
   c. The operator has received an evaluation that reveals that the operator is not operating the PIT safely.
   d. The operator is assigned to drive a different type of PIT.
   e. A condition in the workplace changes in a manner that could affect safe operation of the PIT.

1.12.D. All Terrain Vehicles (ATVs)

Operators must complete an accredited ATV training course prior to operation of the vehicle.

1.12.E. UTVs

Operators must be familiar with the use of all controls and understand proper moving, stopping, turning, and other operating characteristics of the vehicle. Operators must review all training materials provided by the manufacturer and be trained according to the manufacturer's instructions including: basic riding tips from the manufacturer's published literature for each vehicle, reading terrain, climbing hilly terrain, descending a hill, traversing a slope, riding through water, cargo carriers and accessories, loading and unloading, troubleshooting, and proper preventative maintenance.

1.12.F. In-House Trainers for PITs and ATVs

1. If in-house trainers are used, they must be certified by an accredited organization. Trainers must perform at least 1 training session every 3 years to maintain certification. If the accrediting agency requires the trainer to return for refresher training to maintain certification, this requirement is in addition to the training session taught every 3 years.
2. When in-house trainers are used, include a copy of their certification as well as the equipment operators'.

1.13. REPORTING REQUIREMENTS

1.13.A. For OSHA recordable accidents, the Construction Contractor shall conduct a suitable investigation and complete the OSHA Form 300, latest edition.

1. A copy of OSHA Form 300, the accident investigation, clearance or review of any medical personnel, any police reports, and any other pertinent information shall be provided to the COR within 5 calendar days of the accident.
2. A copy of all OSHA notifications, communications, citations, and/or reports shall be provided to the COR within 2 business days of receipt or transmission by the Design-Builder/Construction Contractor.
3. The CO and the COR shall be considered Government representatives as detailed in 29 CFR 1904.40. As such, they have full access to all records that must be kept under Part 1904.
4. Any recommended changes to the APP or AHAs shall be submitted as normal Contract submittal revisions.

1.13.B. To reduce the potential for recurrence, the Design-Builder/Construction Contractor shall conduct investigation into the cause of any mishaps. This investigation shall also evaluate the APP and associated AHAs and determine if revisions are required.

1. A copy of the accident investigation, clearance or review of any medical personnel, any police reports, and any other pertinent information shall be provided to the COR within 2 weeks of the mishap.
2. Any recommended changes to the APP or AHAs shall be submitted as normal Contract submittal revisions.

1.13.C. Notification

The Design-Builder shall notify the COR within 4 hours of any accident meeting the definition of OSHA recordable occupational injury of illness, any accident where property or equipment has sustained greater than one hundred dollars ($100) in damage, or any accident in which an employee receives first aid or medical care. Initial notification shall include:

1. The Construction Contractor’s name
2. Contract number (191BWCxxCxxxx)
3. Name of activity being performed
4. Specific location where incident occurred
5. Date and time of incident
6. Names of personnel injured
7. Extent of property damage, if any
8. Brief description of incident (to include type of construction equipment used, personal protective equipment used, etc.)

1.13.D. Accident Reporting Definitions

1. Jobsite

   In regards to notifications and reporting requirements, the jobsite shall include, but not be limited to:

   a. All areas where work under this Contract take place.
   b. The Construction Contractor's local offices, yards, warehouses, and storage areas.
   c. Any borrow pits.
   d. Adjacent land on which USIBWC has an easement.
   e. Adjacent land either owned or leased by the Design-Builder, Construction Contractor, or USIBWC.

f. Any haul roads or project access roads which are not on a public roadway.
   (1) When haul roads cross a public roadway, accidents at the location of the crossing are considered part of the jobsite.

g. When Construction Contractor employees are driving water trucks and haul trucks the jobsite shall include load pick up and drop off locations whether the driver has to exit the vehicle or not.

2. Mishap
A mishap includes an OSHA recordable occupational injury/illness, property/equipment damage exceeds one hundred dollars ($100), or an employee receives first-aid, medical care, or time off. The Design-Builder may include near misses in their mishap reporting.

3. OSHA Recordable Accident
   a. Death (29 CFR 1904.7(b)(2))
   b. Days away from work (29 CFR 1904.7(b)(3))
   c. Restricted work to transfer to another job (29 CFR 1904.7(b)(4))
   d. Medical treatment beyond first aid (29 CFR 1904.7(b)(5))
   e. Loss of consciousness (29 CFR 1904.7(b)(6))
   f. A significant injury or illness diagnosed by a physician or other licensed health care professional (29 CFR 1904.7(b)(7))

1.13.E. Evidence Preservation
For OSHA recordable accidents, the Construction Contractor shall preserve PPE, slings, rigging, and/or construction materials pertinent to the accident until the Government has provided written notification to the Design-Builder that they can be destroyed, reused, or recycled. The Construction Contractor may preserve said items on their own accord after release by the Government.

1.13.F. Monthly Exposure Report
Monthly exposure reporting on IBWC Form 153 is required to be attached to all pay estimates. This report is a compilation of employee hours worked for each month for all site workers, both prime and subcontractor. A separate IBWC Form 153 shall be completed for each contractor and subcontractor on the jobsite. Each subcontractor must sign their own form; neither the Design-Builder nor the Construction Contractor shall sign exposure reports for the subcontractors.

1.13.G. OSHA Citation and Violations
The Design-Builder shall ensure that a copy of each OSHA citation, OSHA report, and Construction Contractor response is provided to the COR within 48 hours of receipt or mailing. The Design-Builder shall ensure that all violations and citations are promptly addressed and that written corrective actions are provided to the COR.

1.13.H. Accidents, injuries, or mishaps involving certified or licensed operators shall be reported to the certifying/licensing organization within 30 days. A copy of this notification shall be provided to the COR.

1. Upon request, the Design-Builder or the Construction Contractor shall release any all records pertaining to the operator and the incident in question to said organization.

1.14. SITE SAFETY AND HEALTH OFFICER QUALIFICATIONS AND DUTIES

1.14.A. The Design-Builder shall ensure that the Construction Contractor hires and maintains a Safety and Health Officer (SSHO) at the jobsite at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement.

1. The Construction Contractor may submit qualifications for an alternate SSHO. If an alternate SSHO has been accepted then either the primary SSHO or the alternate shall be at the jobsite at all times during construction.

1.14.B. The Design-Builder may employee their own Safety and Health Officer who will provide safety oversight of the construction project.

1.14.C. All Safety and Health Officers must meet the following requirements:

1. A minimum of 5 years safety work on similar projects.
2. A 30 hour OSHA construction safety class or equivalent within the last 5 years.
3. An average of at least 20 hours of formal safety training each year for the past 5 years. In other words, SSHO shall have at least 100 hours of safety training within the last 5 years.
4. Competent person training as needed.

1.14.D. SSHO Duties

1. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the daily quality control report.
2. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and subcontractors.
3. Maintain applicable safety reference material on the worksite.
4. Attend the preconstruction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
5. Implement and enforce accepted APP and AHAs.
6. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. Post a list of unresolved safety and health deficiencies on the safety bulletin board.
7. Ensure subcontractor compliance with safety and health requirements.
8. Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

1.14.E. All Safety and Health Officers shall have the authority to stop unsafe work. Provide a letter of designation that includes specific authority to stop work.

1.14.F. The Government reserves the right to require replacement of any Safety and Health Officer in order to maintain a safe construction site.

1.15. LANGUAGE

For each work group that has employees who do not speak English, the Design-Builder shall ensure that bilingual foreman, who are fluent in English and in the language of the workers, are used. The Design-Builder will implement the requirements of USACE EM 385-1-1, paragraphs 01.B.01, 01.B.02 and 01.C.03 through these foremen.

1.16. BULLETIN BOARD

1.16.A. General

The Design-Builder shall ensure that a weather-tight bulletin board is installed and maintained, for the duration of the construction phase of the Contract, at the project site. The information on the bulletin board shall be accessible to all Contract workers at all times, including non-work hours.

1.16.B. Information to be Displayed

The following shall be posted on the bulletin board and shall be maintained by the Design-Builder or the Construction Contractor in a legible condition for the duration of the Contract:

1. Department of Homeland Security, Office of Inspector General, Hotline Poster.

2. The "OSHA It's the Law" Poster (OSHA 3165)
3. The EEO "Know Your Rights" Poster
4. "Employee Rights under the Fair Labor Standards Act" Poster (WH 1088)
5. "Paid Sick Leave for Federal Contractors" Worker Rights under Executive Order 13706 Poster (WH 1090)
6. "Federal Minimum Wage for Contractors" Worker Rights under Executive Order 14026 Poster (WH 1091)
7. "Employee Rights under the Davis-Bacon Act" Poster (WH 1321)
8. "Employee Rights and Responsibilities under the Family and Medical Leave Act" Poster (WH 1420)
9. Notice of "Employee Polygraph Protection Act" Poster (WH 1462)
10. "Your Rights under USERRA" Poster
11. Notice of "Employee Rights under the National Labor Relations Act" Poster
12. Pay Transparency Nondiscrimination Provision Poster
13. The Contingency Evacuation Plan map noting the required meeting areas.
14. The Contingency Evacuation Plan points of contact for local law enforcement and/or Border Patrol.
15. A map denoting the route to the nearest emergency care facility.
16. Emergency phone numbers.
17. The schedule of minimum wage rates for the Contract as required by the Davis-Bacon Act.
18. Copies of the most up-to-date AHAs shall be mounted on or adjacent to the bulletin board.
19. A copy of the most up-to-date APP shall be mounted on or adjacent to the bulletin board.
20. A copy of the Contractor’s equal employment policy.

1.16.C. Availability
The posters specified above can be obtained from USIBWC's website under link 'Posters' (see Section 00.60.00.01) or from the associated Federal Government websites.

1.17. HAZARDOUS OR TOXIC AGENTS

1.17.A. A hazardous or toxic agent is any chemical which is a physical/health hazard per 29 CFR 1910.1200.

1. Hazardous and toxic agents DO NOT INCLUDE any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (CPSA) and Federal Hazardous Substances Act (FHSA), respectively, where the employer can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended.
2. CPSA covers any article, or component part thereof, produced or distributed for sale or use of a consumer in or around a residence, a school, in recreation, or otherwise.
3. FHSA pertains to labeling common household products or products that could otherwise be brought in or around a residence due to purchase, storage, or use.

1.17.B. The Construction Contractor shall provide to the Design-Builder a copy of the Safety Data Sheets (SDS aka MSDS) for each hazardous or toxic agent that the Construction Contractor plans to use for any portion of the work required by this Contract. Compliance confirmation must be received from the COR prior to bringing any hazardous chemicals to the jobsite.

1. Employees shall have access to all SDSs.

2. Applicable information contained in the SDS shall be incorporated in appropriate AHAs.
3. USIBWC encourages contractors to have SDS available to their employees for all items used on the project, but only those for hazardous or toxic agents shall be submitted to USIBWC.

1.17.C. The HazCom portion of the APP shall address the storage and use of all hazardous or toxic agents.

1.17.D. A Hazardous or Toxic Agent Inventory shall be provided and shall include the following information:

1. Explanation of how the agents are to be used on the project.
2. For emergency response purposes, approximate quantities (e.g., liters, kilograms, gallons, pounds) that are onsite or will be on site at any given time shall be provided for each material.
3. A site map will be attached to the inventory showing where inventoried substances are stored.
4. The inventory and site map will be updated annually at a minimum, but as frequently as necessary to ensure it is current and accurately reflects those materials on site.

1.17.E. The Design-Builder shall ensure that EM 385-1-1 06.B is followed for all requirements on handling hazardous and toxic agents.

1.18. EXCAVATION/TRENCHING PLAN

1.18.A. The Excavation/Trenching Plan must be compliance confirmed prior to commencing excavation activities.

1.18.B. The Excavation/Trenching Plan can be developed individually for each season of work.

1.18.C. Trenching
The Construction Contractor shall furnish and place excavation protection for trenches deeper than 5 feet. Trench excavation protection shall include but not be limited to sloping, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, dewatering or diversion of water to provide adequate drainage.

1.18.D. Shoring
All excavations that are deeper than 5 feet or that are adjacent to existing structures or where excavation or fill support is necessary to support earth, protect adjacent features, or maintain worker safety, a support system shall be designed by a licensed professional engineer with training and experience in designing excavations of similar depth and complexity as those required for this project.

1.18.E. Regulatory Requirements

1. The Plan shall include the following: access and egress, securing of site, method for working around and protecting existing structures and utilities, equipment required, and other requirements as found in 29 CFR 1926.651.
2. The Construction Contractor shall design, install, and maintain trench excavation protection systems in accordance with the detailed specifications set out in Federal OSHA Standards and USACE EM 385-1-1.
3. The Construction Contractor shall adhere to all state trench safety laws including but not limited to state Occupational Health and Safety Acts. Refer to the Federal OSHA or State laws and standards and adhere to whichever is more stringent.

1.18.F. The Construction Contractor shall submit a Excavation/Trenching Plan as part of or as an addendum to the Accident Prevention Plan.

1.18.G. Plan Requirements

1. The Construction Contractor shall design the Excavation/Trenching Plan to be in accordance with OSHA and USACE EM 385-1-1, Section 25 standards governing the presence and activities of individuals working in and around trench excavations.

2. The Excavation/Trenching Plan construction and shop drawings shall be signed, sealed, and dated by a professional engineer registered in the State of Texas.
3. Detailed design calculations for excavations and shoring shall be submitted to the COR sealed by a professional engineer registered in the State of Texas.
4. The Excavation/Trenching Plan shall designate the competent person onsite who will be inspecting the excavations.
5. The Plan shall also address removal of the support. All shoring, sheeting and bracing shall be removed as fill and backfill operations progress and the void filled by a compliance confirmed method.

1.18.H. Review of the Excavation/Trenching Plan by the COR will only be in regard to compliance with this Section and will not constitute approval by the COR nor relieve Design-Builder and the Construction Contractor of obligations under State and Federal excavation, shoring, and trench safety regulations.

1.19. SAFE SITE ACCESS

1.19.A. The misuse of ladders has been observed on many construction sites. OSHA 29 CFR 1926 Subpart X is not nearly as detailed at the general industry information provided in 29 CFR 1910 Subpart D, but the issue remains that 29 CFR §1926.1052(a)(2) notes that stairs shall be installed between 30° and 50° from horizontal. OSHA 29 CFR 1926 Subpart X does not provide any other specifics as to when ladders, stairs, and ramps shall be used. When the construction standards are silent, the general standard applies (29 CFR §1910.5(c)(2)).

1.19.B. OSHA 29 CFR 1910 Subpart D provides clear details on the use of ladders, ship stairs, stairs, and ramps. The allowable uses are shown graphically in OSHA's Figure D-10.

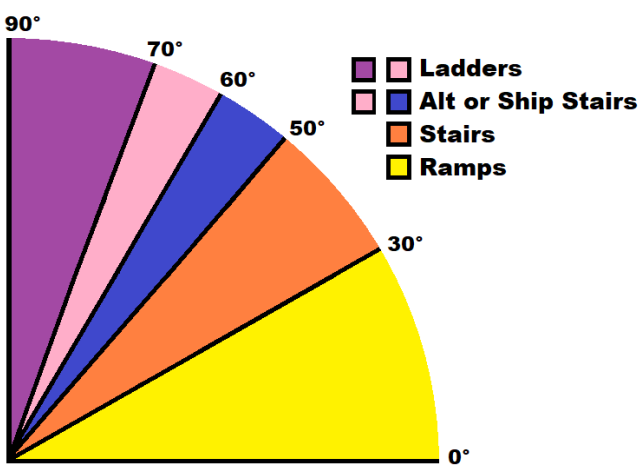

Figure 3 - Site Access Methods by Angle

Table 4 - Acceptable Methods of Access

SLOPES			LADDER	SHIP STAIRS	STAIRS	RAMP
ft/ft	1 V: x H	degree				
0.00	0.000	90.0	X			
5.67	0.176	80.0	X			
2.75	0.364	70.0	X	X		
2.00	0.500	63.4	X	X		
1.73	0.577	60.0	X	X		
1.33	0.750	53.1		X		
1.19	0.839	50.0		X	X	
1.00	1.00	45.0			X	
0.839	1.19	40.0			X	
0.800	1.25	38.7			X	
0.667	1.50	33.7			X	
0.577	1.73	30.0			X	X
0.500	2.00	26.6				X
0.400	2.50	21.8				X
0.364	2.75	20.0				X
0.333	3.00	18.4				X
0.176	5.67	10.0				X

1.20. CONFINED SPACES

1.20.A. The Design-Builder shall attempt to design the project to avoid creation of confined spaces. When confined spaces are unavoidable, the Design-Builder shall ensure that all work on confined spaces conforms to ANSI Z117.1 Safety Requirements for Confined Spaces.

1.20.B. When confined spaces exist on the project, the Design-Builder shall ensure that a section of the APP deals with confined spaces.

1. The Design-Builder is responsible for defining the conditions and precautions necessary to allow entry into a confined space. There must also be criteria in place to define a change in conditions. Changes in conditions require re-evaluation of the space and may result in re-classification.
2. Atmospheric testing is required prior to entry and periodically during occupation of the confined space.
3. Permits must be revoked when conditions or work activities change or could introduce a hazard not included in the original permit. For example, if welding were to be added to the work activities after the original permit was issued. This would require an evaluation of precautions for hot work and amendment of the permit to control welding hazards before the work began.
4. All entry team members, attendants, and entrants, must be trained and equipped prior to entry into a confined space.
5. All permit required confined space openings must be marked with a sign, "Danger - Permit Required Confined Space."
6. Requirements for rescue team members include the mandatory demonstration of proficiency for each type of confined space they may encounter. Their training is required to be based on performance standards such as NFPA 1006, NFPA 1981, and NFPA 2500.
   a. Emergency responders must be trained in the use of rescue equipment.
   b. Persons with Cardiopulmonary Resuscitation (CPR) or Automated External Defibrillator (AED) and/or first aid shall possess current certification.
7. Verification of Training.
   a. The effectiveness of personnel training must be conducted periodically by a qualified person. Training must be repeated as often as necessary to maintain an acceptable level of competence.
   b. Written records of training must be maintained and periodically reviewed to ensure proper follow-up for refresher training.
8. OSHA regulations are considered to be minimum requirements under the General Duty Clause of the Occupational Health and Safety Act.

1.20.C. If confined spaces exist on the project, the Design-Builder shall require the following submittals.

1. Confined Spaced Permit System.
2. Confined Space Training Records.

1.21. CRANES

1.21.A. Before any crane or hoisting equipment is initially installed or placed on the project site, it shall be inspected, tested, and certified in writing by a competent person to be in full compliance with the manufacturer's recommendations and the requirements of EM 385-1-1 and OSHA 29 CFR 1926 Subpart CC.

1. Excavators used for lifting items using slings and rigging qualifies as hoisting equipment.
2. Inspections shall be in accordance with EM 385-1-1, ASME standards, OSHA, and the manufacturer's recommendations. IBWC Form 265, Safety Inspection for Cranes, shall be used to document the inspections.
3. The Design-Builder shall provide the COR a minimum of 24 hour notice prior to equipment entering the site so that equipment inspections can be witnessed by the Government.
4. Copies of all crane inspections shall be provided to the COR within 24 hours of the inspection. The inspections shall be included with the Design-Builder's daily report.

1.21.B. The use of any electronic equipment for entertainment purposes is prohibited while operating a crane or hoisting equipment.

1.21.C. Cranes and hoisting equipment shall only be operated by designated qualified personnel. The Design-Builder shall provide proof of personnel qualification to the COR.

1. Crane operators must have a current certification by a nationally accredited crane operator testing organization or be licensed/recognized by a state or local government.
   a. Nationally recognized accrediting agencies include, but are not limited to:
      (1) Crane Institute Certification (CIC)
      (2) National Center for Construction Education and Research (NCCER)
      (3) National Commission for the Certification of Crane Operators (NCCCO)
      (4) Operating Engineers Certification Program (OECP)
   b. No crane operator certification or license will be accepted if it is more than 5 years old.
2. Crane operators must provide documentation that they are physically qualified to operate the equipment.

1.21.D. All loads must be rigged by a qualified rigger.

1. A qualified rigger shall have the knowledge and expertise to safely perform the required work.
2. The qualified rigger shall inspect the rigging prior to each lift.
3. Proof of rigger's qualification shall be provided to the COR.

1.21.E. When the crane operator's view of the point of operation or travel is obstructed, a qualified signal person shall be used.

1. A qualified signal person shall know and understand the signals used at the jobsite.
2. Signal person must pass a practical test and be qualified per OSHA 29 CFR 1926.1428.
3. Proof of signal person's qualification shall be provided by the Construction Contractor.

1.21.F. Cranes and hoisting equipment shall be load tested per EM 385-1-1 prior to lifting performing critical lifts or moving other large items.

1. Load tests shall be documented by the SSHO and included in the Design-Builder's daily report.
2. The COR shall be notified at least 24 hours prior to the load test.

1.21.G. Slings, Chains, and Lifting Accessories

1. Never exceed the safe working load of slings, chains, accessories, and other lifting equipment.
2. Inspect lifting equipment, slings, chains, and accessories before each shift.
3. Immediately remove defective equipment.
4. Routinely inspect chain, wire rope, fiber, synthetic webbing, and sling hooks. Remove from service if any are deformed, damaged, or otherwise do not meet inspection criteria and are not safe for use. Cut up and discard slings removed from service due to defects or plainly mark them as being unfit for load-bearing service. Do not repair cracked, broken, or bent end attachments. Replace them.
5. Appropriately protect slings from sharp, rough, or square corners to prevent damage to the strands, wires, or links. Properly store slings when not in use to protect them from damage.
6. Alloy Steel Chains
   a. Durable identification tags must be permanently affixed to welded alloy steel chain slings. The tags must state the size, grade, rated load, and sling manufacturer. Tags for multi-leg slings must also identify the angle the load rating is based on, the reach, and the number of legs.
   b. Remove from service any alloy steel chain assemblies with deformed master or coupling links or cracked hooks or attachments.

7. Wire Rope Slings
   a. Develop and use a system to identify individual slings that include at least the manufacturer and safe working load. If the wire rope sling no longer has an original identification tag, first determine the construction of the sling, then use the applicable capacity chart to find the safe working load.
   b. Inspect slings periodically and remove them from service if one or more of the following conditions are present:
      (1) Six randomly distributed broken wires in one rope lay, or three broken wires in one strand in one rope lay.
      (2) Wear or scraping on one-third the original diameter of outside individual wires.
      (3) Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure.
      (4) Evidence of heat damage.
      (5) Cracked, deformed, or worn end attachments.
      (6) Corrosion of the rope or end attachments.
8. Synthetic Fiber Rope
   a. Each sling must be marked to show the manufacturer, code or stock number, rated load for the various types of hitches used, type of material, and date of manufacture.
   b. Inspect slings and remove them from service if one or more of the following conditions are present:
      (1) Slings shortened with knots, bolts, or other noncompliance confirmed methods.
      (2) Damaged slings.
      (3) Rope less than ½ inch in diameter.
      (4) Slings subjected to a sustained load equal to the rated capacity for more than 3 days.
      (5) Slings made from old rope.
      (6) Slings subjected to chemical environments, unless permitted by the rope manufacturer.
9. Synthetic Webbing Slings
   a. Synthetic webbing slings must be marked or coded with the manufacturer's name, code or stock number, type of material, and the rated capacity for the type of hitches used.
   b. Immediately remove synthetic webbing slings from service if one or more of the following visible defects is present:
      (1) Acid or caustic burns.
      (2) Melting or charring of any part of the surface.
      (3) Snags, punctures, tears, or cuts.
      (4) Broken or worn stitches.
      (5) Wear or elongation exceeding the amount recommended by the manufacturer.
      (6) Distortion of fittings.
      (7) End of service life
10. Synthetic Roundslings
   a. Each roundsling must be tagged to show the manufacturer's identification, code or stock number, type of material in the core and cover (if different), and the rated capacity for the type of hitches used.
   b. Immediately remove roundslings from service if any of the following conditions are present:
      (1) Acid or caustic burns.
      (2) Melting or charring of any part of the sling surface.
      (3) Snags, punctures, tears, or cuts.
      (4) Broken or worn stitches.
      (5) Distortion of fittings.
      (6) Appearance of wear indicators.
      (7) End of service life.

11. Accessories
    The rated capacity of hooks, rings, links, or other attachments used with alloy steel chains must at least equal that of the chains. Do not use job-made hooks, links, or makeshift fasteners made from bolts or rods. A professional engineer must design and certify use of any job-fabricated rigging hardware and test it at twice the rated safe working load or in accordance with applicable standards.
    a. Remove shackles from service if they are bent, distorted, or worn in the crown or pin by more than 10% of their original diameter.
    b. Inspect hooks frequently and remove them from service if they are cracked, severely corroded, have been opened more than 15% of the normal throat opening measured at the narrowest point, or twisted more than 10° from the plane of the unbent hook.

1.21.H. <u>The Design-Builder shall ensure that personnel are never under a suspended load.</u>

1.21.I. If a crane is used on the project, the Design-Builder shall require the following submittals.
1. Crane Operator Qualifications
2. Crane Inspection Records
3. Crane Load Testing Records

1.21.J. If hoisting equipment is used on the project, the Design-Builder shall require the following submittals.
1. Rigger Qualifications
2. Hoisting Equipment Operator Qualifications
3. Hoisting Equipment Inspection Records
4. Hoisting Equipment Load Testing Records

1.22. CPR AND FIRST AID TRAINING

1.22.A. The Design-Builders shall provide evidence that all personnel working onsite (whether directly employed by themselves, the Construction Contractor, or employed by a subcontractor) are trained in CPR and first aid.
1. Delivery drivers and other intermittent site workers are not required to be certified, though it is recommended.

1.22.B. CPR and First Aid training records shall be provided as a separate submittal from any other items within this Section.

1.23. CONTINGENCY EVACUATION PLAN

1.23.A. When construction areas are adjacent to the United States-Mexico border, the possibility exists for random acts of violence or other law enforcement incidents. As part of a complete review of site security and employee safety, the Construction Contractor is required to complete a Contingency Evacuation Plan.

1.23.B. The Contingency Evacuation Plan shall include:
1. Employee actions and responsibilities if a random act of violence or a law enforcement apprehension effort impacts the jobsite.
2. Designation of a safe meeting area on or immediately adjacent to the jobsite. For long, linear projects, multiple sites may need to be designated as construction progresses. Ensure that a location is available within walking distance to your employees.
3. Identify personnel responsibilities during implementation of the plan.
4. Identify at least 5 points of contact for local law enforcement and/or Border Patrol to ensure coordination of activities.
5. Establish procedures for employee injuries from these activities or from stray gunfire.

1.23.C. USIBWC has a boilerplate Contingency Evacuation Plan available for Design-Builders to use and modify.

1.23.D. No site work will be allowed to begin until a Contingency Evacuation Plan has been compliance confirmed by the COR.

1.23.E. All employees working at the site shall be educated as to this plan and to the designated meeting area.

1.23.F. A copy of this plan shall be maintained at the project site at all times. The designated meeting area map shall be maintained on the Company's bulletin board or other appropriate area where it is readily visible throughout the workday.

1.23.G. The Contingency Evacuation Plan shall be provided as a separate submittal from any other items within this Section.

PART 2 - PRODUCTS

2.1. FIRE EXTINGUISHERS

2.1.A. Located on the fire extinguisher label is the UL rating. The UL rating is broken down into Class A and Class B:C ratings. These numerical ratings allow you to compare the relative extinguishing effectiveness of various fire extinguishers. For example, an extinguisher that is rated 4A:20B:C indicates the following:

1. The A rating is a water equivalency rating. Each A is equivalent to 1 1/4 gallons of water. 4A = 5 gallons of water.
2. The B:C rating is equivalent to the amount of square footage that the extinguisher can cover, handled by a professional. 20 B:C = 20 square feet of coverage.

2.1.B. Fire extinguishers are rated as:

1. Class A is ordinary combustibles such as wood and paper.
2. Class B is flammable liquids such as grease, gasoline, and oil.
3. Class C is electrically energized equipment.
4. Class D is flammable metals such as sodium.
5. Class K is cooking media in commercial kitchens.

2.1.C. Minimum fire extinguisher sizes allowed on the project.

1. Hot Work: 4A:80B:C
2. Vehicles Used for Transporting and/or Dispensing Flammable Liquids: 20B:C
3. Within 100 feet of each Pump or Service/Refueling Area: 40B:C
4. LP gas storage areas: 20B:C
5. Within 25 feet of working Kettles: Two 2A:20B:C
6. Inside Buildings: EM 385-1-1 Table 9-4
7. All Heavy and Load Handling Equipment: 10B:C

2.1.D. Any references to 10 pound fire extinguishers in EM 385-1-1 or OSHA regulations shall be defined as 4A:80B:C.

2.1.E. Only proper A:B:C ratings shall be used in documents related to this project.

2.2. PERSONNEL PROTECTIVE EQUIPMENT (PPE)

2.2.A. Whenever construction conditions require fall protection, confined spaces, asbestos, lead based paint, or other issues that require specific PPE, the Design-Builder shall ensure that 2 sets of PPE are available for use by Government personnel (usually the Inspector and COR).

2.2.B. Prior to using this PPE or entering into the construction conditions which require the PPE, the Government personnel shall be provided the same training and PPE fitting that construction personnel receive.

2.2.C. The Design-Builder, the Construction Contractor, and any subcontractors are not required to provide medical monitoring or medical testing for the Government personnel.

PART 3 - EXECUTION

3.1. GENERAL

The Design-Builder shall incorporate and install all safety measures, in accordance with standard industry practice and applicable regulatory requirements, to their design and to the construction work at the site.

3.2. BULLETIN BOARD

3.2.A. Immediately upon beginning construction work under this Contract, the Design-Builder or their Construction Contractor shall erect and maintain the safety and health bulletin board in a commonly accessed area in clear view of the onsite workers.

3.2.B. The bulletin board must be accessible to workers at all times of the day, every day of the week.

3.2.C. The bulletin board shall be continually maintained and updated and placed in a location that is protected against the elements and unauthorized removal.

3.3. TRENCH EXCAVATION PROTECTION SYSTEMS

3.3.A. The Design-Builder shall ensure that the trench safety system is installed in accordance with the Excavation/Trenching Plan for the locations and conditions identified in the plan.

3.3.B. A competent person, as identified in the Excavation/Trenching Plan, shall verify that trench boxes and other pre-manufactured systems are certified for the actual installation conditions.

3.3.C. The Design-Builder shall ensure that daily inspections of the trench excavation protection systems take place to ensure that the installed systems and operations meet the provisions of Federal OSHA Standards, 29 CFR 1926, USACE EM 385-1-1, and other personnel protection regulations requirements.

3.3.D. If evidence of possible cave-ins or slides or any other issue of safety is apparent, the Design-Builder shall immediately stop work in the trench and move personnel to safe locations until the necessary precautions have been taken by the Construction Contractor to safeguard personnel entering the trench.

3.3.E. The Design-Builder shall maintain a permanent record of daily inspections. Copies of these daily inspections shall be provided with the Design-Builder's Daily Report.

3.3.F. The Design-Builder shall verify specific applicability of the selected or specially designed trench excavation protection systems to each field condition encountered on the project.

3.4. UNFORESEEN HAZARDOUS MATERIAL

3.4.A. The design or preaward surveys should have identified materials such as PCB, lead paint and friable and non-friable asbestos. If additional material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the COR immediately.

3.4.B. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Design-Builder to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to FAR 52.243-4, Changes, and FAR 52.236-2, Differing Site Conditions.

3.5. SAFETY MEETINGS

3.5.A. At least 24 hours' notice shall be provided to the COR and Inspector of all project safety meetings.

3.5.B. These meetings shall be open to attendance by the COR, the Inspector, the FEM, and a local USIBWC O&M representative.

3.6. SAFETY TRAINING FOR SITE SPECIFIC HAZARDS

3.6.A. The Design-Builder shall ensure that any safety training provided to construction personnel for site specific hazards is also available to the Inspector, the COR, and the FEM (if used).

1. Examples of training that may include, but not be limited to: lock-out/tag-out, fall protection, confined space entry, and respirator training.
2. CPR, first aid, and blood borne pathogen training are not included.

3.6.B. If training is required to safely enter part of the project site, training shall be repeated, at no cost to the Government, if there is a change in Inspector, COR, or FEM.

--End of Section--

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SECTION 01.40.00.01
QUALITY REQUIREMENTS

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1.2.F. Section 01.35.23.01-◊●◊●◊ Safety

1.2.G. Section 01.43.26.01-◊●◊●◊ Testing and Inspection Agencies

1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulation (FAR)

1. FAR 52.246-12, Inspection of Construction

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Qualifications of QA/QC Personnel
   Resumes and other supporting data for all QA/QC positions as indicated in this Section shall be submitted.
2. Design-Builder's Quality Assurance Plan

1.4.C. Required submittals in this Section that must be provided include:

1. Certificates
   Either under this Section or under the construction specification section governing the products required, submit certification or product data to COR.
   a. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
   b. Certificates may be recent or previous test results on material or product, but must be acceptable to COR.
   c. These submittals are CC Type.
2. Manufacturer's Instructions
   For all individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the COR's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Daily Quality Control Reports (IBWC Form 163)
2. Record of Preparatory Phase Meetings (IBWC Form 162)
3. Record of Initial Phase Meetings (IBWC Form 166)
4. QA Logs and Inspections (records and forms identified by Design-Builder in their QA Plan)
5. IBWC Form 163-A, Equipment Mobilization/Demobilization
6. Design-Builder's Completion of Work Inspections
7. Delivery Tickets
   A legible copy of all delivery tickets shall be furnished to the COR. Attach all tickets with that day's quality control report.
8. Test Reports
   After each test/inspection, promptly submit electronic copy of report to COR.
   a. Include:
      (1) Date issued.
      (2) Project title and number.
      (3) Name of inspector.

(4) Date and time of sampling or inspection.
(5) Identification of product and specifications section.
(6) Location in the Project.
(7) Type of test/inspection.
(8) Date of test/inspection.
(9) Results of test/inspection.
(10) Conformance with Contract Documents.
(11) When requested by COR, provide interpretation of results.

b. Test report submittals are for COR's knowledge as Contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the construction documents.

c. Upon completion of construction, provide all QC tests and reports organized by type of material, type of test, and location if not provided under another Scope of Work or construction specification section.

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GENERAL

1.7.A. The Design-Builder is responsible for quality assurance and shall establish and maintain an effective quality assurance system in compliance with the Contract clause in FAR 52.246-12, Inspection of Construction. The quality assurance system shall consist of plans, procedures, and organization necessary to produce an end product that complies with the Contract, design, and construction requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence.

1.7.B. The Design-Builder is responsible for all testing and inspection required to complete this project.

1. This includes, but is not limited to, any and all testing and inspections required for quality control, required for quality assurance, required for code compliance, or required for commissioning.
2. Inspection includes, but is not limited to, examinations, observations, measurements, site visits, physical inspections, equipment start up, and reports written about such.
3. The Design-Builder shall subcontract appropriate entities to perform all testing and inspections.
4. The Government is not responsible for any testing or inspections required to complete this project.
5. Testing laboratories and personnel shall meet the requirements of Section 01.43.26.01.

1.7.C. If materials are delivered using a different unit of measure than specified for quality control testing in the construction documents (e.g. testing is required per cy but items delivered by ton), the Design-Builder shall ensure that manufacturer or material source provides a conversion factor between the two units. This does not apply when the unit of measure for quality control testing is as-constructed dimensions (e.g. square feet of subgrade).

1.8. QUALITY ASSURANCE PLAN

1.8.A. The Design-Builder shall furnish for review by the Government, their Quality Assurance Plan.

1.8.B. The Design-Build Quality Assurance (QA) Plan shall be approved by USIBWC. No work activities may proceed until the Design-Builder’s Quality Assurance Plan has been compliance confirmed in writing by USIBWC.

1.8.C. The plan shall detail how the Design-Builder will provide quality control (QC) and QA for both the design and construction elements of the project, obtain samples for Design-Builder quality control testing,

perform tests for Design-Builder quality control, provide inspection, and exercise management control (i.e. quality assurance testing) to ensure that work conforms to the Contract requirements.

1.8.D. The Design-Build QA Plan shall include a description of the quality control and quality assurance organization, including the number of full-time equivalent employees with specific Quality Control and/or Quality Assurance responsibilities.

1. Include a chart showing lines of authority and reporting responsibilities. The persons and organizations performing Quality Control and/or Quality Assurance functions shall have sufficient authority and organizational autonomy to identify quality problems, and to initiate, recommend, and verify implementation of solutions.
2. Do not include lab certifications, technician certifications, or other items noted in Section 01.43.26.01.
3. Do not include resumes, training, or certifications of any personnel.

1.9. DESIGN QA PLAN REQUIREMENTS

1.9.A. General

The quality control and quality assurance procedures for each type of Design Document and Construction Document shall be organized by engineering discipline (such as structural, civil and utilities). These procedures shall specify measures to be taken by the Design-Builder:

1. To ensure that appropriate quality standards are specified and included in the Design Documents and Construction Documents and to control deviations from such standards, it being understood and agreed that no deviations from such standards shall be made unless they have been previously approved by USIBWC at USIBWC's sole discretion.
2. And for the selection of suitability of materials, and elements of the Work that are included in the project.

1.9.B. The Design QA Plan shall include the following:

1. Quality control and quality assurance procedures for preparing and checking all plans, calculations, drawings, and other items submitted, to ensure that they are independently checked and back-checked in accordance with generally accepted engineering practices, by experienced engineers, respectively. The originator, checker and back-checker shall be clearly identified on the face of all submittals. Specific procedures for verifying computer programs used shall also be included. Plans, reports, and other documents shall be stamped, signed, and dated by the responsible registered engineer where required under the Contract Provisions, under generally accepted engineering practices or by applicable laws.
2. The plan shall set forth the level, frequency, and methods of review of the adequacy of the design of the Project, including the methods by which all final Design Documents and Construction Documents shall be independently reviewed and verified for adequacy of design and back-checked in accordance with generally accepted design and engineering practice by experienced engineers not involved with the preparation of such Documents.
3. The plan shall set forth the procedures for coordinating work performed by different persons in the same area, or in adjacent areas or in related tasks to ensure that conflicts, omissions, or misalignments do not occur between drawings or between the drawings and the specifications and to coordinate the review, approval, release, distribution, and revision of documents involving such persons.
4. The plan shall designate witness and hold points for inspections.
5. The plan shall identify those elements of the Contract provisions, design documents, or construction documents, if any, requiring special Quality Control and/or Quality Assurance attention or

emphasis, including applicable standards of quality or practice to be met, level of completeness and/or extent of detailing required.

6. The plan shall identify by discipline, the name, qualifications, duties, responsibilities, and authorities for all persons proposed to be responsible for QA.
7. The plan shall detail dispute resolution procedures to handle issues between the Design-Builder's team members. See Paragraph 1.9.C. below for additional guidance on disputes. Contractual details between team members is not required in the QA Plan.
8. The plan shall state any requirement for, and the name, qualifications, duties, responsibilities, and authorities of, external technical experts necessary to ensure the quality of the design of the Project, the anticipated timing of use of, the expected availability of, and any coordination required with respect to any such experts.
9. The plan shall describe the required design quality control and assurance functions, including scheduled activities for Design QA identifying the Design Documents and Construction Documents to be delivered to USIBWC for its review at each stage of the design or work phase of the Project.
10. Identify persons performing Quality Control and/or Quality Assurance functions. These people shall be at an organizational level which ensures that they are not influenced by the impact of implementation of Quality Control and/or Quality Assurance measures on the Project schedule, performance, or cost.
11. All key personnel performing Quality Control and/or Quality Assurance functions shall be exclusively designated to such and shall not be assigned to perform conflicting duties.
12. The plan shall identify key items that will be required in construction to implement the requirements of FAR 52.246-12, Inspection of Construction and the Contract

1.9.C. Disputes

1. Partnering should be considered an integral part of the Design-Builder's QC/QA program. A partnering agreement between the Designer and the Construction Contractor is recommended to handle disputes.
2. A separate procedure for conflict resolution should be developed and agreed to by the partnering participants. The procedure should include, but is not limited to, the following elements.
   a. Disputes should be delegated to the lowest appropriate level of authority on the project team to resolve within a specified timeframe.
   b. A timeframe for each level of authority should be established before the project begins for a list of typical disputes that could occur on a project.
   c. If the dispute is not resolved to the satisfaction of both parties within the specified timeframe, the dispute would be automatically escalated to the next level of authority on the project team.
   d. If left unresolved, the process would then continue to escalate to the highest level of authority where a final resolution would be arbitrated by an unbiased third party, whose selection would be agreed upon in advance as part of the QA Plan.
3. A written report describing the dispute, all subsequent actions, and final disposition of the dispute should be submitted to the project records.
4. If subsequent disputes arise on the same issue, the written report should be included as a resource during the resolution process.

1.9.D. All documents shall be maintained by the Design-Builder for the duration of the Contract and shall be organized, indexed, and delivered to USIBWC. These documents should include but not be limited to the following items: design criteria, reports and notes, calculations, drawings, schematics, supporting materials, etc. Provide these documents:

1. Upon Final Acceptance unless required to be delivered earlier pursuant to the Contract Provisions

2. Even if project is incomplete, within 7 days of receipt of request from USIBWC.

1.9.E. Project Control

1. The Design-Builder for each design item, segment, or phase shall ensure that design reviews are performed.
2. The project control system shall include features to:
   a. Determine and highlight critical path work from initial plans as work progresses.
   b. Identify progress against schedule for each identified work item.
   c. Forecast completion dates from current progress.
   d. Highlight rescheduled work in any area which is out of the required sequence.
   e. Determine any physical area that requires more resources than originally allocated.
   f. Forecast future conflicts in any area.

1.9.F. RFIs

1. Design-Builder shall provide lies of authority and processes for RFIs.
2. Design-Builder shall ensure that RFIs are documented per Section 00.90.00.01.
3. Design-Builder shall ensure that RFIs are documented per Section 01.31.00.01.

1.9.G. Submittals

Design-Builder shall provide submittal review procedures per Section 01.33.00.01 1.12.

1.10. DESIGN-BUILDER QA STAFF

1.10.A. Design-Builder Quality System Manager (QSM)

The Design-Builder Quality System Manager is the individual with overall responsibility for development of and adherence to the Design-Build QA Plan.

1. The Design-Builder QSM shall review all submittals (from both design and construction) and ensure that they meet the Contract requirements.
2. The Design-Builder QSM shall have total authority over the project to ensure that the Contract requirements are met. The Design-Builder QSM shall report to either the Project Manager or the Design-Builder's owner.
3. This individual shall be a professional engineer licensed by the State of Texas, having a minimum of 5 years supervisory experience the design/construction of water barrier lines with anchors.

1.10.B. Construction Quality Control (CQC) System Manager

1. The CQC System Manager (CQCSM) shall be at the jobsite at all times during whenever Contract work is in progress unless the CQCSM is on a scheduled absence.
2. The CQCSM shall be an employee of the Construction Contractor. The Design-Builder shall ensure that the Construction Contractor fills this position with a qualified, competent person.
   a. An independent contractor who is employed and paid by the Contractor shall be considered an employee.
   b. If the CQCSM is an independent contractor, the CQCSM shall only be performing these QC duties and shall not be providing any other subcontracted service nor shall they be affiliated with any other subcontractor on this project.
3. An alternate for the CQC System Manager will be identified in the plan to serve in the event of the CQC System Manager's absence.
   a. The requirements for the alternate will be the same as for the designated CQC System Manager.

4. Period of absence for CQCSM may not exceed 3 weeks at any one time and not more than 30 workdays during a calendar year.
   a. If the CQCSM is absent, the alternate CQCSM shall perform all CQC duties identified.
5. CQC System Manager Qualifications
   a. The CQC System Manager shall have a degree earned from an ABET accredited engineering program (www.abet.org) or a registered professional engineer in the State of Texas.
   b. The CQCSM shall have a minimum of 2 years of construction experience on similar projects.
   c. The CQCSM shall have had a minimum of 24 hours of quality control training.

The CQC System Manager will be responsible for implementation of the CQC Plan and shall have no other duties

1.10.C. Note the following regarding qualifying experience.

1. Structural cast-in-place concrete does not include sidewalks, curbs, gutter, roadways/air strips, and unreinforced canal lining.

1.10.D. The Design-Builder shall submit qualifications of all QA and QC personnel to the COR for compliance confirmation.

1.10.E. The Design-Builder's minimum QA staff and their organization within the design-build organization is shown in Figure 4.

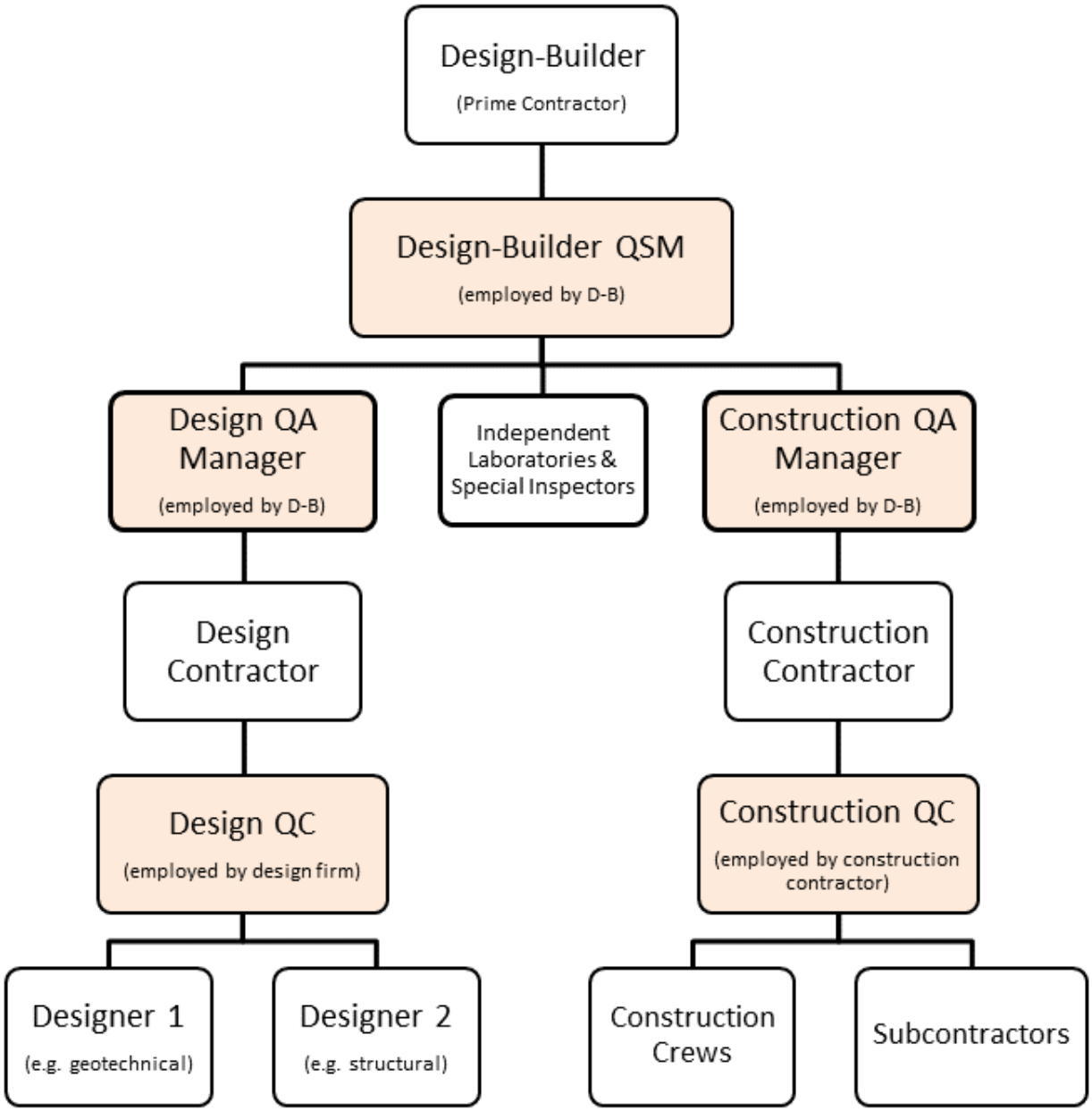

Figure 4 - Design-Build QA Organizational Chart

1.11. ORGANIZATIONAL CHANGES

1.11.A. The Design-Builder shall obtain the COR's acceptance before replacing any member of the quality control staff. Requests shall include the names, qualifications, duties, and responsibilities of each proposed replacement.

1.11.B. The Government reserves the right to require the Design-Builder to make changes in the quality control staff, including removal of personnel, as necessary, to obtain the quality specified. This includes quality control or quality assurance personnel being used by either the Designer or the Construction Contractor, testing laboratories, and testing technicians.

1.12. DOCUMENTATION

1.12.A. The Design-Builder shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall include, as a minimum, the following information:

1. Weather Conditions at the Worksite
   a. When determining minimum and maximum temperatures at the worksite, thermometers placed onsite shall be used. Use of weather.com or other online weather services is not valid for determining the worksite temperature.
   b. Additional thermometers may be required to monitor concrete placements.
2. Construction Contractor, subcontractors, and their area of responsibility.
3. Operating plant/equipment with hours worked, idle, or down for repair.
4. Equipment mobilized or demobilized from the worksite. Complete IBWC Form 163-A for each piece of equipment.
5. Work performed each day, giving location, description and by whom.
6. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow up). List deficiencies noted along with corrective action.
7. Quantity of materials, as appropriate, received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements. For lump sum priced line items, quantity of materials received is usually not relevant for payment of items; however, the CQC shall still make notes of items received, acceptability, storage, etc.
   a. Include copies of all delivery tickets, batch tickets, load manifests, etc. received with delivery of all materials whether they are for lump sum or unit price line items, for temporary or permanent construction, or for items not specified in this SOW.
8. Offsite surveillance activities, including actions taken.
9. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
10. Instructions given/received and conflicts in plans and/or specifications.
11. Design-Builder’s verification statement.

1.12.B. IBWC Form 150 shall be used to track punch list items and deficiencies. Only deficiencies that have not been adequately addressed shall be added to Form 150 by the CO or COR.

1.12.C. Records shall indicate a description of trades working on the project, the number of personnel working, weather conditions encountered, and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the Contract.

1.12.D. IBWC Form 163, Construction Contractor's Daily Quality Control Report, shall be used to document this data. The Design-Builder's Design-Builder QSM shall sign all Form 163s, including digital copies.

1. The report number shall be that of the contract day. The day that the Construction NTP is issued is day zero. Each day thereafter is counted whether the Construction Contractor works that day or not.
   a. If the report is for a single day, the report number is simply the contract day number.
   b. If the report is for a period of no work, the report number shall span the days covered. For example, a week of no work could have a report number of 144-150.
2. At a minimum, 1 report shall be prepared and submitted for every 7 calendar days of no work and on the last day of a no work period. The first report following a day of no work shall be for that day only. Days of work and no work cannot be combined on a report.

3. All calendar days shall be accounted for throughout the life of the construction phase of the Contract.
4. A pdf copy of Form 163 shall be emailed to the COR daily within 12 hours after the date(s) covered by the report, except that reports need not be emailed on calendar days on which no work is performed.

1.12.E. The Design-Builder's Form 163 shall contain all construction documentation including, but not limited to, test reports, survey notes, and the Construction Contractor's Form 163 (as detailed in the construction specifications). The daily report shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. All of these items shall also be provided to the COR in electronic format. IBWC Form 163 can be provided as a pdf scan of the original or as a pdf containing a scanned electronic signature. All test reports and other items attached to the daily report shall also be scanned into pdf format.

1.12.F. The Design-Builder shall maintain logs to ensure that QA/QC activities are being performed.

1. Construction Submittal Log
2. Construction RFI Log
3. Log of all materials delivered onsite
   This log shall be the initial basis for determining testing frequencies and shall be used as a check to ensure that delivery tickets and submittals are provided for all materials.
4. Log detailing if all Construction Contractor IBWC Forms 162, 166, 235, 237, 238, 240, and 241, daily reports, delivery tickets, batch tickets, and testing reports were received.
5. Log of all Construction Contractor environmental activities including, but not limited to, SWPPP inspections, BMP maintenance, and street sweeping. Also note whether the Construction Contractor has provided copies of all SWPPP inspections.
6. A log of all QC activities performed by the Construction Contractor
   Log shall include performance of sampling and testing to ensure that said QC activities conform to the Contract requirements. This monitoring shall include keeping records of testing performed as well as frequency of tests. This log shall also note whether QC activities are being performed at the intervals required in the Contract.
7. Log of all Noncompliant Work/Deficiencies
   Track all noncompliant work/deficiencies to include quantity/percentage estimates of deficient work. Keep IBWC Form 150 updated.
8. Log of Construction Progress of All Pay Items including Quantities Installed (unit priced items) or Percentage of Work Completed (lump sum items). Tracking shall match breakouts provided in the compliance confirmed schedule o values.
9. A log of record drawing items

1.13. NOTIFICATION OF NONCOMPLIANCE

The Government will notify the Design-Builder of any detected noncompliance with the foregoing requirements. The Design-Builder shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Design-Builder at the worksite, shall be deemed sufficient for the purpose of notification.

1.14. DEFINABLE FEATURE OF WORK

1.14.A. A definable feature of work (DFOW) is a task that is separate and distinct from other tasks, has separate quality control requirements, and is continuous in location of work. It could be identified by different trades or disciplines or it could be work by the same trade in a different environment. Although each

section of the Technical Specifications may generally be considered as a definable feature of the work, there is frequently more than one definable feature under a particular section.

1. All CLINs are comprised of at least one definable feature of work.
2. All critical path activities are comprised of at least one definable feature of work.
3. At a minimum, the following tasks are DFOW on this project:
   a. Backfill
   b. Clearing and grubbing/site preparation
   c. Concrete forming
   d. Concrete placement
   e. Concrete reinforcement installation
   f. Electrical
   g. Framing
   h. Geophysical survey
   i. Topographic survey
   j. Bathymetric survey
   k. H&H study and memo
   l. Geotechnical testing
   m. Install BMPs
   n. Mobilization
   o. Painting
   p. Site cleanup/demobilization
   q. Surveying
   r. Use of ATV/UTVs
   s. Use of crane
   t. Use of manlift, aerial lift, boom lift, scissor lift, or other mechanical equipment used to lift personnel
   u. Use of powered industrial trucks (PITs), forklifts, and telehandlers

1.14.B. An excellent way to separate items into definable features is to determine if the safety risks are the same. Each definable feature of work requires an AHA (Section 01.35.23.01 Paragraph 1.11).

1.15. QUALITY CONTROL COORDINATION MEETING

1.15.A. After the Preconstruction Conference, before start of construction, the Design-Builder and the Construction Contractor shall meet with the Government CO or COR and discuss the project's quality control system.

1.15.B. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Construction Contractor's management and control with the Design-Builder's Quality Assurance (QA).

1.15.C. Minutes of the meeting shall be prepared by the Government and signed by both the Design-Builder, the Construction Contractor, and the COR. The minutes shall become a part of the Contract file.

1.15.D. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures that may require corrective action by the Design-Builder.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION

3.1. GENERAL DESIGN REVIEWS

3.1.A. All design specifications and plans shall be reviewed by the project team including representatives of USIBWC technical divisions for conformity with USIBWC procedures and the terms of the Contract according to the QA Plan requirements. Review by USIBWC does not include detailed review or checking of design of major components and related details or the accuracy with which such designs are depicted on the plans.

1. The review by the COR of the design work is only to verify that all the requirements of this Contract are adequately met.
2. The Design-Builder has complete responsibility for the accuracy and completeness of all design documents as well as the construction documents prepared under this project

3.1.B. USIBWC may also make periodic visits to the designer(s) offices to discuss and verify design progress and the Design-Builder's QA Plan. USIBWC shall give the Design-Builder 2 calendar days advance notice of intent to make an oversight visit.

3.1.C. Throughout the design process, the Design-Builder may request additional oversight visits by USIBWC to discuss and verify design progress and to assist the Design-Builder and/or its designer(s) in resolving design questions and issues. The Design-Builder shall give USIBWC 2 calendar days' notice of any requested oversight visit.

3.2. FINAL DESIGN REVIEW

3.2.A. Prior to the release of final Design Documents and Construction Documents, the Design-Builder shall complete the review with engineers experienced in the appropriate disciplines(s).

3.2.B. The review shall verify that the design documents and construction documents were prepared in such a manner as to ensure that they will be acceptable to USIBWC, as well as the Design-Build Team.

3.2.C. The criteria used in such review shall include:

1. Conformity of the final design documents and construction documents with the Contract Provisions.
2. Assurance that all materials, equipment and elements of the work provided for in such documents which shall be incorporated into the project have been provided for and designed to perform satisfactorily for the purpose intended.
3. The appearance, organization, technical, and grammatical accuracy of such documents.
4. Verification that such documents have been checked and signed by the drafter, designer, checker and reviewers.
5. Where required under the Contract, generally accepted engineering practices or applicable law, verification that such documents have been stamped, signed and dated by the responsible registered engineer.
6. Assurance that such documents fully provide for constructability, compatibility of materials and conformity to acceptance criteria for inspections and tests as provided in the Contract.

3.3. QA OF DESIGN CHANGES

3.3.A. Changes, including field changes, in the design of the project, or any portion thereof, as shown on the design and construction documents, shall be subject to design QA measures and procedures commensurate with those applied to the original design of the portion of the project being changed.

3.3.B. Furthermore, all changes described in this Section shall be approved in writing by the organization that performed the original design. Any changes affecting the basic configuration of the project shall also be subject to the requirements contained in this Section. Changes to items originally signed and sealed shall be re-signed and re-sealed prior to submittal to the COR.

3.3.C. In accordance with the Design-Build SOW, Phase 1 is subject to review and acceptance by USIBWC. Once the USIBWC has accepted the design work (Phase 1), any item within the accepted design work (specifications and drawings) that the Design-Builder desires to change shall be identified by Design-Builder through a submittal identifying and requesting such change.

4. Said change shall not be incorporated into the project until the USIBWC has agreed to the change.

3.4. REVIEW OF CONSTRUCTION SUBMITTALS

3.4.A. Review of construction submittals shall comply with Section 01.33.00.01 1.12.

3.4.B. The Design-Builder shall ensure that the construction specifications clearly state any and all requirements for construction submittals.

3.4.C. The Design-Builder QSM shall be responsible for approving (compliance confirming) all submittals from the Construction Contractor and its subcontractors.

3.4.D. A copy of all construction submittals as well as the Design-Builder's and Designer of Record's submittal response shall be provided to USIBWC within 3 days of receipt by the Design-Builder/Project Manager.

3.4.E. Submittal documents relating to all construction phases shall be submitted to USIBWC for review. USIBWC's compliance confirmation of these submittals is not required and, in general, will not be provided. Any review comments made by USIBWC shall be provided, in writing, to the Design-Builder within 14 calendar days.

1. USIBWC compliance confirmation shall not relieve the Design-Builder of the responsibility for the accuracy of such drawings, nor for the proper fitting and construction of the work, nor for the furnishing of materials or work required by the Contract and not indicated on the drawings.
2. If during USIBWC's submittal review, it is determined that the submittal does not meet this Scope of Work or the construction documents, the Design-Builder shall be fully responsible for the schedule impacts and costs of revisions caused by the Design-Builder’s noncompliance with Contract requirements.

3.4.F. All submittals from the Construction Contractor shall clearly identify that the requirements of the project specifications have been met and shall properly note any deviations made.

3.4.G. No work called for by the construction specifications, construction drawings, or shop drawings shall be done until submittal has been approved by the Design-Builder.

3.5. THREE PHASE CONSTRUCTION INSPECTION

3.5.A. The Design-Builder shall ensure that the Construction Contractor implements at three phases of control to be conducted by the CQC System Manager for all definable features of work, as follows.

3.5.B. Preparatory Phase

1. This phase shall be performed prior to beginning work on each definable feature of work.
2. The preparatory phase shall be performed prior to beginning work on each definable feature of work. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, Design-Builder QA personnel, other CQC personnel (as applicable), the SSHO, the foreman responsible for the definable feature of work, and, if possible, the applicable work crew. The Construction Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet Contract Specifications.

3. A Preparatory Phase Meeting shall, at a minimum, include:
   a. A review of each paragraph of applicable specifications.
   b. A review of the Contract Drawings.
   c. A check to assure that all materials and/or equipment have been tested, submitted and compliance confirmed.
   d. A check to assure that provisions have been made to provide required control inspection and testing.
   e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the Contract.
   f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to compliance confirmed shop drawings or submitted data and are properly stored.
   g. A review of the appropriate safety measures, inspections, and activity hazard analysis to assure safety requirements are met.
   h. Discussion of procedures for constructing the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that phase of work.
   i. A discussion to determine how much and what specific work must be completed prior to the Initial Phase Meeting.
   j. The Government shall be notified at least 48 hours in advance of beginning any of the required action of the preparatory phase.
   k. The results of the preparatory phase meeting shall be documented on IBWC Form 162 and attached to the Construction Contractor's daily report.
   l. The Design-Builder shall ensure that the preparatory phase shall be repeated if there are changes in the applicable CQC staff, onsite supervision, if work on a definable feature of work is resumed after a substantial period of inactivity, or if other problems develop.

3.5.C. Initial Phase

1. The initial phase shall be accomplished at the beginning of a definable feature of work. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, Design-Builder QA personnel, other CQC personnel (as applicable), the SSHO, the foreman responsible for the definable feature of work, and the applicable work crew. The Construction Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet Contract Specifications.
2. The Initial Phase Meeting shall, at a minimum, include
   a. Review of preparatory phase meeting (IBWC Form 162) documentation.
   b. A check of initial work to ensure that it is in compliance with Contract requirements.
   c. Verify required control, inspection, and testing are properly implemented.
   d. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards.
   e. Resolve all differences.
   f. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker. Update AHAs and safety plan, if required.
   g. Review project schedule.
   h. The Government shall be notified at least 24 hours in advance of beginning the initial phase.
   i. The results of the initial phase meeting shall be documented on IBWC Form 166 and attached to the Construction Contractor's daily report. Exact location of initial phase shall be indicated for future reference and comparison with follow up phases.

j. The Design-Builder shall ensure that the initial phase shall be repeated for each new crew to work onsite, if there are changes in the applicable CQC staff, onsite supervision or work crew, if work on a definable feature of work is resumed after a substantial period of inactivity, or if other problems develop.

3.5.D. Follow-up Phase
The Design-Builder's QA personnel shall make daily checks to assure continuing compliance with construction requirements, including control testing, until completion of the particular feature of work. The checks shall be made a matter of record in the Design-Builder's QA documentation.

1. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work that may be affected by the deficient work.
2. The Construction Contractor shall not build upon or conceal non-conforming work.

3.5.E. Additional Preparatory and Initial Phases
As determined by the Design-Builder or by the COR, additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable construction QC staff, onsite production supervision or work crew, if work on a definable feature of work is resumed after a substantial period of inactivity, or if other problems develop.

3.6. WITNESS AND HOLD POINTS

3.6.A. Witness and Hold Points are to be established where notification of USIBWC is required for USIBWC's option of observing or visually examining a specific work operation or test. Witness Points are points identified within the QA Plan which require notification of USIBWC. Work may proceed beyond a witness point with or without participation by USIBWC provided proper notification has been given.

3.6.B. Hold Points are mandatory verification points identified within the QA Plan beyond which work cannot proceed until mandatory verification is performed and a written release is granted by USIBWC. Witness and Hold Points should be identified in the construction process where critical characteristics are to be measured and maintained, and at points where it is nearly impossible to determine the adequacy of either materials or workmanship once work proceeds past this point. All Preparatory Meetings shall be included in the Design-Builder’s QA Plan as Hold Points.

1. USIBWC will not grant a release at hold points unless Design-Builder QSM has already inspected and passed the preceding work.

3.7. DAILY REPORTS AND ATTACHMENTS

3.7.A. Daily reports, test reports, IBWC forms, delivery/batch tickets, inspections, minutes, etc. shall all be submitted in separate electronic files. Photos, with descriptions, are considered part of the daily report and are not required to be provided in a separate file.

1. When multiple delivery/batch tickets are provided for a single day, ensure that tickets are in sequential order within the document.
2. All daily reports and attachments, except for photos and videos, shall be provided as pdf documents.
3. See Section 01.33.33.01 for requirements of pdf documents submitted to USIBWC.

3.7.B. The file names for the electronic files shall always start with the Contract day number and shall also contain a brief description as well as the calendar date.

1. Use consistent naming for like documents. Once the filename for a specific report/etc. has been established, do not change it.
2. Use short but descriptive names for each file type. Recommended filename terms include:
   a. 065 DR Contractor Name 191BWCxxCxxxx 12-13-2022.pdf for daily reports

b. 065 Density Tests 191BWCxxCxxxx 12-13-2022.pdf for daily reports
c. 065 Concrete Batch Tickets 191BWCxxCxxxx 12-13-2022.pdf for concrete truck delivery tickets
d. 065 Safety 191BWCxxCxxxx 12-13-2022.pdf for safety inspections or daily safety report
e. 065 SWPP 191BWCxxCxxxx 12-13-2022.pdf for stormwater inspections
f. 065 Form 241 191BWCxxCxxxx 12-13-2022.pdf for IBWC Form 241

3.7.C. All dates within the project documentation and in the filenames shall have years shown with four digits.

3.8. CONTROL OF INSTALLATION

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

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

3.8.C. Should manufacturers' instructions conflict with Contract Documents, request clarification from COR before proceeding.

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

3.8.E. Have work performed by persons qualified to produce required and specified quality.

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

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

3.9. MOCK-UPS

3.9.A. Tests will be performed under provisions identified in this Section and identified in the respective product specification sections.

3.9.B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

3.9.C. Accepted mock-ups shall be a comparison standard for the remaining work.

3.9.D. Where mock-up has been accepted by COR and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

3.10. TOLERANCES

3.10.A. Monitor fabrication and installation tolerance control of products to produce acceptable work.

3.10.B. Do not permit tolerances to accumulate.

3.10.C. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from designer of record before proceeding. Document clarification in project files.

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

3.11. MANUFACTURERS' FIELD SERVICES

3.11.A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and waterway barrier line system as applicable, and to initiate instructions when necessary.

3.11.B. Submit qualifications of observer to COR 30 days in advance of required observations.

1. Observer is subject to approval of COR.

3.11.C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.12. DEFECT ASSESSMENT

3.12.A. Replace work or portions of the work not conforming to specified requirements.

3.12.B. If, in the opinion of COR, it is not practical to remove and replace the work, COR will direct an appropriate remedy or adjust payment.

--End of Section--

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SECTION 01.41.00.01
REGULATORY REQUIREMENTS

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.42.00.01-References

1.3. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.4. GENERAL

1.4.A. USIBWC is not required to obtain building permits from local jurisdictions for construction on real estate owned or controlled by USIBWC. However, the design and construction of utility connections, sewer connections, and fire-protection systems may require liaison with local jurisdictions. The Design-Builder shall be responsible for this coordination, if required.

1.4.B. Though the USIBWC is not required to obtain building permits from local jurisdiction, the Design-Builder shall comply with state and local building codes to the maximum extent practicable. USIBWC has the final authority to accept or reject any recommendation from State and/or local government officials.

1.4.C. Construction or encroachment upon property not owned by the USIBWC is subject to local codes and permit requirements.

1.5. DESIGN-BUILDER'S RESPONSIBILITY

1.5.A. It is the Design-Builder’s responsibility to design and construct the project in compliance with all applicable requirements of federal, state, and local laws, codes, rules, regulations, ordinances, and standards, including, but not limited to, those outlined in 1.7 below.

1.5.B. It shall be the responsibility of the Design-Builder to acquire copies of all applicable codes, regulations, and design criteria for ready reference.

1.5.C. In instances where requirements are in conflict, the stricter standard shall apply. All such conflicts shall be brought to the COR's attention.

1.5.D. Any and all inspections, observations, or tests required for code compliance are the responsibility of the Design-Builder.

1.5.E. The Design-Builder shall certify in writing upon submission of each design deliverable and upon submission of final documents that the project was designed in compliance with industry standards and all applicable requirements in this Section.

1.6. DATES

1.6.A. For all related standards and regulatory requirements in this document, the version, edition, or year shown indicates the governing version.

1.6.B. All Public Laws, Code of Federal Regulations (CFR), Federal Acquisition Regulation (FAR), Executive Orders (EOs), Management Policies, Government Directives, Government Standards, cited in the Design Standards refer to the original document as well as any subsequent amendments, corrections, and additions.

1. The latest amendments, corrections and additions are to be assumed applicable in the same way as the document itself.
2. The version in effect as of the date of issuance of the Solicitation for this project governs unless the law, regulation, order, policy, directive, or standard is updated with a retroactive clause.

1.7. SUMMARY

Regulatory requirements applicable to this project are listed below. Dual agency standards are listed under both agencies.

1.7.A. American Concrete Institute (ACI)

1. ACI 318-19 (CODE-318-19) Building Code Requirements for Structural Concrete, including Errata March 8, 2023
2. ACI Collection of Concrete Codes, Specifications, and Practices, 2023
3. ACI Detailing Manual, SP-66(04)

1.7.B. American Institute of Steel Construction, (AISC)

1. AISC/ANSI 303-22 Code of Standard Practice for Steel Buildings and Bridges www.aisc.org/globalassets/aisc/publications/standards/a303-22w.pdf
2. AISC/ANSI 341-16 Seismic Provisions for Structural Steel Buildings www.aisc.org/globalassets/aisc/publications/standards/seismic-provisions-for-structural-steel-buildings-ansi-aisc-341-16.pdf
3. AISC/ANSI 360-22 Specification for Structural Steel Buildings www.aisc.org/globalassets/product-files-not-searched/publications/standards/a360-22w.pdf

1.7.C. American National Standards Institute (ANSI)

1. ANSI/AF&PA SDPWS-2021 Special Design Provisions for Wind and Seismic Standard with Errata January 2023
2. ANSI/AISC 303-22 Code of Standard Practice for Steel Buildings and Bridges www.aisc.org/globalassets/aisc/publications/standards/a303-22w.pdf
3. ANSI/AISC 341-16 Seismic Provisions for Structural Steel Buildings www.aisc.org/globalassets/aisc/publications/standards/seismic-provisions-for-structural-steel-buildings-ansi-aisc-341-16.pdf
4. AISC/ANSI 360-22 Specification for Structural Steel Buildings www.aisc.org/globalassets/product-files-not-searched/publications/standards/a360-22w.pdf
5. ANSI/ASHRAE 15-2022, Safety Standard for Refrigeration Systems

6. ANSI/ISA-18.2-2016, Management of Alarm Systems for the Process Industries
7. ANSI/ISA-95.00.01-2010 (IEC 62264-1 Mod), Enterprise-Control System Integration - Part 1: Models and Terminology
8. ANSI/SMACNA 006, HVAC Duct Construction Standards - Metal and Flexible, 4th Edition

1.7.D. American Society of Civil Engineers (ASCE)

1. ASCE 7-22, Minimum Design Loads and Associated Criteria for Buildings and Other Structures with Supplement 2
2. ASCE 38-22, Standard Guideline for Investigating and Documenting Existing Utilities
3. ASCE/ANSI/EWRI 56-10 Guidelines for the Physical Security of Water Utilities with Supplement 1
4. ASCE/ANSI/EWRI 57-10 Guidelines for the Physical Security of Wastewater/Stormwater Utilities with Supplement 1
5. ASCE 75-22, Standard Guideline for Recording and Exchanging Utility Infrastructure Data

1.7.E. American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)

1. ASHRAE Guideline 0-2019, The Commissioning Process
2. ASHRAE Guideline 1.1-2007 HVAC&R Technical Requirements for The Commissioning Process
3. ASHRAE/ANSI 15-2022, Safety Standard for Refrigeration Systems
4. ASHRAE 52.2-2017, Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size
   www.ashrae.org/File%20Library/Technical%20Resources/COVID-19/52_2_2017_COVID-19_20200401.pdf
5. ASHRAE Standard 62.1-2022, Ventilation for Acceptable Indoor Air Quality
6. ASHRAE/ANSI/IES 90.1-2022, Energy Standard for Buildings Except Low-Rise Residential Buildings

1.7.F. American Welding Society (AWS)

1. AWS D1.1 2020 Structural Welding Code-Steel, including Errata June 28, 2023
2. AWS D1.2 2014 Structural Welding Code-Aluminum
3. AWS D1.3 2018 Structural Welding Code-Sheet Steel
4. AWS D1.4 2018-AMD1 Structural Welding Code-Steel Reinforcing Bars, including Errata September 7, 2020
5. AWS D1.5 2020 Bridge Welding Code, including Errata January 11, 2023

1.7.G. Concrete Plant Manufacturers Bureau

1. Concrete Plant Standards of the Concrete Plant Manufacturers Bureau, 16th revision, January 22, 2018
   www.cpmb.org/images/ConcretePlantStandards.pdf

1.7.H. Department of Justice (DOJ)

1. Architectural Barriers Act (ABA) Accessibility Standards
   www.access-board.gov/aba/

1.7.I. Executive Order (EO)

1. Executive Order 11988, Floodplain Management
   www.wbdg.org/ffc/fed/executive-orders/eo-11988

2. Executive Order 13112, Invasive Species
   www.federalregister.gov/documents/1999/02/08/99-3184/invasive-species
3. Executive Order 13221, Energy Efficient Standby Power Devices
   energy.gov/sites/prod/files/2013/10/f3/eo13221.pdf
4. Executive Order 13834 ,Efficient Federal Operations
   www.federalregister.gov/documents/2018/05/22/2018-11101/efficient-federal-operations
5. Executive Order 13717, Establishing a Federal Earthquake Risk Management Standards
   www.wbdg.org/ffc/fed/executive-orders/eo-13717
6. Executive Order 13751, Safeguarding the Nation from the Impacts of Invasive Species
   www.federalregister.gov/documents/2016/12/08/2016-29519/safeguarding-the-nation-from-the-impacts-of-invasive-species
7. Executive Order 14057, Catalyzing Clean Energy Industries and Jobs through Federal Sustainability
   www.govinfo.gov/content/pkg/FR-2021-12-13/pdf/2021-27114.pdf

1.7.J. Federal Acquisition Regulation (FAR)

1. FAR Subpart 23.2 - Energy and Water Efficiency and Renewable Energy
   www.acquisition.gov/far/part-23

1.7.K. Federal Geographic Data Committee (FGDC)

1. Standards and Specifications for Geodetic Control Networks, Federal Geodetic Control Committee, September 1984.
   www.ngs.noaa.gov/FGCS/tech_pub/1984-stds-specs-geodetic-control-networks.htm
2. Federal Geographic Data Committee's Content Standard for Digital Geospatial Metadata (CSDGM), version 2, FGDC-STD-001-1998
   www.fgdc.gov/standards/projects/metadata/base-metadata/v2_0698.pdf
3. Geospatial Positioning Accuracy Standards, Part 1: Reporting Methodology, FGDC-STD-007.1-1998
   www.fgdc.gov/standards/projects/accuracy/part1/chapter1
4. Geospatial Positioning Accuracy Standards, Part 2: Standards for Geodetic Networks, FGDC-STD-007.2-1998
   www.fgdc.gov/standards/projects/accuracy/part2/chapter2
5. Geospatial Positioning Accuracy Standards, Part 3: National Standard for Spatial Data Accuracy, FGDC-STD-007.3-1998
   www.fgdc.gov/standards/projects/accuracy/part3/chapter3
6. Geospatial Positioning Accuracy Standards, Part 4: Standards for Architecture, Engineering, Construction (A/E/C) and Facility Management, FGDC-STD-007.4-2002
   www.fgdc.gov/standards/projects/accuracy/part4/FGDC-endorsed-standard
7. Geospatial Positioning Accuracy Standards, Part 5: Standards for Nautical Charting Hydrographic Surveys, FGDC-STD-007.5-2002
   www.fgdc.gov/standards/projects/accuracy/part5/FGDC-STD-007.5-2005.pdf
8. FGDC Technical Guidance: Data.gov and the GeoPlatform Metadata Recommendations, December 13, 2022
   www.fgdc.gov/technical-guidance/metadata/fgdc-technical-guidance-datagov-geoplatform-ngda.pdf

1.7.L. General Services Administration (GSA)

1. Architectural Barriers Act Accessibility Standard (ABAAS). Use current version online.
   www.access-board.gov/aba/guides/

2. Facilities Standards for Public Buildings Service (P-100), October 2021 with 2022 Addendum www.gsa.gov/system/files/P100%202021%20v1.pdf

1.7.M. Interagency Security Committee (ISC), Department of Homeland Security (DHS)

1. The Risk Management Process for Federal Facilities, Revision 3, December 1, 2021 www.cisa.gov/sites/default/files/2022-11/The%20Risk%20Management%20Process%20-%202021%20Edition_2.pdf
Part of this is not accessible through download. A copy of the appropriate sections will be provided after award to the Construction Contractor.
2. Facility Security Plan, February 2015, 1st Edition www.dhs.gov/sites/default/files/publications/ISC-Facility-Security-Plan-Guide-2015-508.pdf

1.7.N. International Code Council (ICC)

1. International Building Code (IBC), 2024
2. International Fre Code (IFG), 2024
3. International Fuel Gas Code (IFGC), 2024
4. International Mechanical Code (IMC), 2024

1.7.O. National Fire Protection Association (NFPA)

1. NFPA 1-2024, Fire Code, including TIA through 24-5 and Errata 1-24-1
2. NFPA 10-2022 Standard for Portable Fire Extinguishers, including Errata 10-22-1
3. NFPA 25-2023 Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection System
4. NFPA 30A-2024 Code for Motor Fuel Dispensing Facilities and Repair Garages, including Errata 30A-24-1
5. NFPA 51B-2024 Standard for Fire Prevention During Welding, Cutting and Other Hot Work
6. NFPA 70-2023 Standard for Electrical Safety in the Workplace (also known as the National Electrical Code [NEC]), including Errata through 70-23-5 and TIA through 23-5
7. NFPA 72-2022, National Fire Alarm and Signaling Code, including TIA through 22-4 and Errata 22-1
8. NFPA 75-2020, Standard for the Fire Protection of Information Technology Equipment
9. NFPA 90A-2024, Standard for the Installation of Air-Conditioning and Ventilating Systems
10. NFPA 101-2024, Life Safety Code
11. NFPA 110-2022, Standard for Emergency and Standby Power Systems
12. NFPA 241-2022 Standard for Safeguarding Construction, Alteration and Demolition Operations, including Errata 241-22-1
13. NFPA 780-2023, Standard for the Installation of Lightning Protection Systems
14. NFPA 1006-2021, Standard for Technical Rescuer Professional Qualifications, with TIA through 21-1
15. NFPA 1140-2022, Standard for Wildland Fire Protection
16. NFPA 1981-2019, Standard on Open-Circuit Self-Contained Breathing Apparatus (SCUBA) for Emergency Services, TIA 19-1
17. NFPA 2001-2022, Standard on Clean Agent Fire Extinguishing Systems including Errata through 2001-22-2
18. NFPA 2500-2022, Standard on Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services, with TIA through 22-5

1.7.P. National Geodetic Survey

1. DSDATA Format Specifications dated January 15, 2020
   www.ngs.noaa.gov/DATASHEET/dsdata.pdf

1.7.Q. Office of Management and Budget (OMB)

1. Memorandum M-10-28 dated July 6, 2010
   www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/memoranda/2010/m10-28.pdf

1.7.R. Portland Cement Association (PCA)

1. DCCM: Design and Control of Concrete Mixtures (17th Edition)

1.7.S. Public Laws and Acts
All Public Laws and Acts can be found at www.gpo.gov/fdsys.

1. An Act Authorizing the Transfer of Certain Real Property for Wildlife, or other purposes, 16 USC 667b
2. Architectural Barriers Act (ABA) of 1968 [42 USC 4151 et seq]
3. Archaeological and Historic Preservation Act
4. Buy American Act, 41 USC 10a - 10d
5. Clean Air Act, 42 USC 7401 et seq.
6. Clean Water Act (CWA), 33 USC 1251 et seq.
7. Electronic and Information Technology Accessibility Standards Section 508 of the Rehabilitation Act of 1973, 29 USC 794d
8. Endangered Species Act (ESA), 16 USC 1531 et seq.
9. Energy Policy Act of 1992
10. Farm Security and Rural Investment Act (FSRIA), 7 USC 7624
11. Federal Environmental Pesticide Control Act, 7 USC Chapter 6
12. The Federal Information Security Modernization Act of 2014, 44 USC 3541-3549
13. Fish and Wildlife Act of 1956, 16 USC 742f (a) (4) and 16 USC 742f(b)(1)
14. Migratory Bird Treaty Act (MBTA), 16 USC 703 - 712
15. National Environmental Policy Act (NEPA), 42 USC 4321 - 4347
16. National Historic Preservation Act (NHPA), 54 USC 300101 et seq.
17. National Wildlife Refuge System Improvement Act of 1997, 16 USC 668dd
18. Refuge Recreation Act, 16 USC 460k - 460k-4
19. Resource Conservation and Recovery Act (RCRA), 42 USC 6901, et seq.
20. Solid Waste Disposal Act
21. Toxic Substance Control Act
22. Transportation for Individuals with Disabilities 49 CFR 27, 37, and 38
23. Wild and Scenic Rivers Act

1.7.T. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)

1. SMACNA/ANSI 006, HVAC Duct Construction Standards - Metal and Flexible, 4th Edition

1.7.U. State of Texas

1. Texas Board of Architectural Examiners Rules (TAC Title 22, Part 1, Chapters 3, 5, and 7)
   www.tbae.state.tx.us/LawsAndEnforcement/StatutesAndRules

2. Texas Engineering Practice Act and Rules Concerning the Practice of Engineering and Professional Engineering Licensure
www.tbpe.state.tx.us/downloads/law&rules.pdf
3. Texas Land Surveying Practices Act
www.statutes.legis.state.tx.us/Docs/OC/htm/OC.1071.htm
4. Texas Commission on Environmental Quality (TCEQ) Texas Pollution Discharge Elimination System (TPDES)

1.7.V. UL, LLC

1. UL 58-1996, Standard for Steel Underground Tanks for Flammable and Combustible Liquids
2. UL 142-2006, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids
3. UL 752, Standard for Bullet-Resisting Equipment, Edition 11
4. UL 1316-1994, Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures
5. UL-1479-2003, Standard for Fire Tests of Through-Penetration Firestops
6. UL 2085-1997, Standard for Protected Aboveground Tanks for Flammable and Combustible Liquids

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION

3.1. DESIGN-BUILDER RESPONSIBILITY
The Design-Builder shall certify in writing upon submission of Contract closeout documents that the building was designed and built in compliance with industry standards and all applicable requirements in this Section.

--End of Section--

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SECTION 01.42.00.01
REFERENCES

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1.2. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.3. APPLICATION OF INDUSTRY STANDARDS

1.3.A. Applicability of Standards
In the event of a conflict between the referenced standard and these Contract Documents, the provisions of the Contract Documents shall apply unless otherwise noted. When a reference standard is specified, comply with the requirements and recommendations stated in the standard, except when they are modified by the Contract Documents, or when applicable laws, ordinances, rules, regulations, or codes establish stricter standards.

1.3.B. Copies of Standards
Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required Contract activity, the Design-Builder shall obtain copies directly from publication source.

1.4. SOURCES FOR STANDARDS AND REFERENCES

1.4.A. Referenced industry standards are cited in other Sections of the Scope of Work or in other Contract Documents and the following may not include all referenced standards organizations within the Contract Documents.

1.4.B. Contact information is included to aid the Design-Builder. Agencies may be included that are not referenced and although the intention was to include all agencies, some may have been missed. Missing contact information does not relieve the Design-Builder of the responsibility of performing the work in accordance with all terms of the Scope of Work and Contract provisions herein.

1.4.C. Per FAR 11.201(b), Design-Builder may contact the referenced organizations to obtain copies of references and standards.

1.4.D. Federal Government Sources ADD any organizations not listed and delete those not referenced!

1. Code of Federal Regulations (CFR)
Superintendent of Documents, PO Box 371954, Pittsburg, PA 15250-7954
Ph: 202-512-1800; Fax: 202-512-2250; Internet: www.gpo.gov/fdsys/

2. Environmental Protection Agency (EPA)
   Public Information Center
   401 M Street, SW, Washington, DC 20460
   Ph: 202-260-7751 / 800-490-9198; Fax: 202-260-6257; Internet: www.epa.gov
3. Federal Acquisition Regulation (FAR)
   Internet: www.acquisition.gov
4. Federal Geographic Data Committee
   590 National Center, Reston, VA 20192
   Ph: 703-648-5752; Fax: 703-648-5755; Internet: www.fgdc.gov
5. Federal Highway Administration (FHWA)
   Office of Highway Safety (HHS-31).
   400 Seventh St., SW, Washington, DC 20590-0001
   Ph: 202-366-0411; Fax: 202-366-2249
   Order from: Government Printing Office (GPO), Superintendent of Documents
   Washington, DC 20402; Ph: 202-783-3238
6. Federal Sections (FS)
   DLA Document Services
   Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094
   Ph: 215-697-6396; Internet: quicksearch.dla.mil
7. General Services Administration (GSA)
   Ph: 202-619-8968; Internet: www.gsa.gov
8. National Institute for Occupational Safety and Health (NIOSH)
   395 E Street, SW, Ste 9200, Patriots Plaza Building, Washington, DC 20201
   Ph: 800-232-4636; Internet: www.cdc.gov/niosh
9. National Institute for Standards and Technology (NIST)
   100 Bureau Drive, Stop 1070, Gaithersburg, MD 20899
   Ph: 301-975-6478; Internet: www.nist.gov
10. Occupational Safety & Health Administration (OSHA)
    200 Constitution Ave., Washington, DC 20210
    Ph: 800-321-6742; Internet: www.osha.gov
11. United States Army Corps of Engineers (USACE)
    ATTN: Technical Report Distribution Section, Services Branch, TIC
    3909 Halls Ferry Road, Vicksburg, MS 39180-6199
    Ph: 601-634-2355; Fax: 601-634-2542; Internet: www.publications.usace.army.mil
12. United States Code (USC)
    Government Printing Office (GPO)
    732 North Capitol Street, NW, Washington, DC 20401
    Ph: 202-512-1800; Internet: www.gpo.gov/fdsys/
13. US Department of Commerce Product Standards (PS)
    Superintendent of Documents.
    PO Box 371954, Pittsburg, PA 15250-7954
    Ph: 202-512-1800; Fax: 202-512-2250; Internet: www.access.gpo.gov/su_docs
14. US Fish and Wildlife Service (FWS)
    P.O. Box 1306, Albuquerque, NM 87103-1306
    Ph: 505-248-6911; Internet: www.fws.gov/southwest/

1.4.E. State Government Sources

1.4.F. **Error! AutoText entry not defined.**Industry Sources

1. Agricultural Laboratory Testing Association (ALTA)
   PO Box 42, Charleston, IL 61920
   Ph: 618-614-8109; Internet: alta.ag
2. Aluminum Association (AA)
   1400 Crystal Drive, Ste 430, Arlington, VA 22202
   Ph: 480-779-6259; Internet: www.aluminum.org
3. American Association of State Highway and Transportation Officials (AASHTO)
   444 North Capital Street, NW, Suite 249, Washington, DC 20001
   Ph: 202-624-5800; Fax: 202-624-5806; Internet: www.aashto.org
4. AASHTO Materials Reference Laboratory (AMRL)
   4441 Buckeystown Pike, Suite A, Frederick, MD 21704
   Ph: 240-436-4900; Fax: 240-436-4899; Internet: www.amrl.net
5. The American Association for Laboratory Accreditation (A2LA)
   5301 Buckeystown Pike, Suite 350, Frederick, MD 21704
   Ph: 301 644 3248; Fax: 301 662 2974; Internet: www.a2la.org
6. American Concrete Institute (ACI)
   P.O. Box 9094, Farmington Hills, MI 48333
   Ph: 248-848-3700; Fax: 248-848-3801; Internet: www.aci-int.org
7. American Forest & Paper Association (AF&PA)
   1101 K. Street NW, Ste 700, Washington, DC 20005
   Ph: 202-463-2700; Internet: www.afandpa.org
8. American Institute of Steel Construction (AISC)
   One East Wacker Drive, Suite 3100, Chicago, IL 60601-2001
   Ph: 312-670-2400/800-644-2400; Fax: 312-670-5403; Internet: www.aisc.org
9. American Institute of Timber Construction (AITC)
   Ph: 503-639-0651; Fax: 503-684-8928; Internet: www.aitc-glulam.org
10. American Iron and Steel Institute (AISI)
    25 Massachusetts Ave. NW, Ste 800, Washington, DC 20001
    Ph: (202) 452-7100; Internet www.steel.org
11. American National Standards Institute (ANSI)
    11 West 42nd Street, New York, NY 10036
    Ph: 212-642-4900; Fax: 212-398-0023; Internet: www.ansi.org
12. American Petroleum Institute (API)
    1220 L Street NW, Washington, DC 20005-4070
    Ph: 202-682-8000; Internet: api.org
13. American Society for Nondestructive Testing (ASNT)
    PO Box 28518, 1711 Arlingate Lane, Columbus, OH 43228-0518
    Ph: 800-222-2768; Fax: 614-274-6899; Internet: asnt.org
14. American Society of Civil Engineers (ASCE)
    1801 Alexander Bell Drive, Reston, Virginia 20191-4400
    Ph: 800-548-2723; Fax: 703-295-6222; Internet: www.asce.org
15. American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)
    1791 Tullie Circle NE, Atlanta, GA 30329
    Ph: 404-636-8400; Fax: 404-321-5478; Internet: www.ashrae.org

16. American Society of Mechanical Engineers (ASME)
    345 East 47th Street, New York, NY 10017
    Ph: 212-705-7722; Fax: 212-705-7739; Internet: www.asme.org
17. American Society of Safety Engineers (ASSE)
    1800 E Oakton St., Des Plaines, IL 60018
    Ph: 847-699-2929; Fax: 847-768-3434; Internet: www.asse.org
18. American Water Works Association (AWWA)
    6666 West Quincy Avenue, Denver, CO 80235
    Ph: 303-794-7711; Fax: 303-794-7310; Internet: www.awwa.org
19. American Welding Society, Inc. (AWS)
    550 NW Le Jeune Road, Miami, FL 33126
    Ph: 305-443-9353, 800-334-9353; Fax: 305-443-7559; Internet: www.amweld.org
20. American Wood Council (AWC)
    222 Catoctin Circle SW, Ste 201, Leesburg, VA 20175
    Ph: 202-463-2766; Fax: 202-463-2791; Internet: awc.org
21. APA - The Engineered Wood Association
    7011 S. 19th Street, Tacoma, WA 98466
    Ph: 253-565-6600; Fax: 253-565-7265; Internet: www.apawood.org
22. Arizona Rock Products Association (ARPA)
    916 W Adams Street, Phoenix, AZ 85007
    Ph: (602) 271-0346; Fax: (888) 269-0430; Internet: www.azrockproducts.org
23. Association for Materials Protection and Performance (AMPP)
    15835 Park Ten Place, Houston, TX 77084
    Ph: 800-797-6223; Internet www.ampp.org
24. ASTM International (ASTM)
    100 Barr Harbor Drive, West Conshohocken, PA 19428-2959
    Ph: 610-832-9585; Fax: 610-832-9555; Internet: www.astm.org
25. Building Owners and Managers Association International (BOMA)
    1101 15th St., NW, Ste 800, Washington, DC 2005
    Ph: 202-408-2662; Fax 202-326-6377; internet: www.boma.org
26. Center for Construction Research and Training, The
    8484 Georgia Venue, Ste 1000, Silver Spring, MD 20910
    Ph: 301-578-8500; Fax: 301-578-8572; Internet: www.elcosh.org
27. Collaborative Testing Services, Inc.
    PO Box 650820, Sterling, VA 20165-0820
    Ph: 571-434-1925; Internet: collaborative-testing.com
28. Composite Panel Association (CPA)
    19465 Deerfield Avenue, Ste 306, Leesburg, VA 20176
    Ph: 703-724-1128; Fax: 703-724-1588; Internet: compositepanel.org
29. Crane Institute Certification (CIC)
    4011 W 1st St, Sanford, FL 32771
    Ph: 844-646-3362; Fax: 407-878-1342; Internet: www.craneinstitutecertification.com
30. Fenestration and Glazing Industry Alliance (FGIA aka AAMA)
    1900 E. Golf Rd. Suite 1250, Schaumburg, IL 60173
    Ph: 847-303-5859; Fax: 847-303-5774; Internet: fgiaonline.org

31. Illuminating Engineering Society of North America (IESNA)
120 Wall Street, New York, NY
Internet: www.ies.org

32. Institute of Electrical and Electronics Engineers (IEEE)
3 Park Avenue, 17th Floor, New York, NY 10016-5997
Ph: 800-701-4333; Fax: 732-981-9667; Internet: www.ieee.org

33. International Accreditation Service
5360 Workman Mill Road, Whittier, CA 90601
Ph: 562-364-8201; Fax: 562-699-8031; Internet: iasonline.org

34. International Code Council (ICC)
500 New Jersey Ave, NW, 6th Floor, Washington, DC 20001
Ph: 800-786-4452; Internet: www.iccsafe.org

35. International Dark-Sky Association (IDA)
3223 N 1st Avenue, Tucson, AZ 85719
Ph: 520-293-3198; Fax: 520-293-3192; Internet: darksky.org

36. International Safety Equipment Association (ISEA)
1901 North Moore Street, Arlington, VA 22209
Ph: 703-525-1695; Fax: 703-528-2148; Internet: www.safetyequipment.org

37. International Society for Automation (ISA)
PO Box 12277, Research Triangle Park, NC 27709
Ph: 919-549-8411; Internet: www.isa.org/

38. Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS)
127 Park Street, NE, Vienna, VA 22180-4602
Ph: 703-281-6613; Fax: 703-281-6671; Internet: msshq.com

39. Master Painters Institute (MPI)
2800 Ingleton Ave., Burnaby BC V5C 6G7 Canada
Ph: 604-298-7578; Fax: 604-298-7571; Internet: paintinfo.com

40. National Association of Architectural Metal Manufacturers (NAAMM)
800 Roosevelt Road, Bldg. C, Ste 321, Glen Ellyn, IL 60137
Ph: 630-942-6591; Fax: 630-790-3095; Internet: naamm.org

41. National Center for Construction Education and Research (NCCER)
13614 Progress Blvd, Alachua, FL 32615
Ph: 888-622-3720; Fax: 386-518-6303; Internet: www.nccer.org

42. National Commission for the Certification of Crane Operators (NCCCO)
2750 Prosperity Ave, Ste 505, Fairfax, VA 22031
Ph: 703-560-2391; Fax: 703-560-2392; Internet: www.nccco.org

43. National Electrical Manufacturers Association (NEMA)
1300 N 17th Street, Ste 1752, Rosslyn, VA 22209
Ph: 703-841-3200; Fax: 703-841-5900; Internet: www.nema.org

44. National Fire Protection Association (NFPA)
1 Batterymarch Park, Quincy, MA 02269-9101
Ph: 617-770-3000; Fax: 617-770-0700; Internet: www.nfpa.org

45. North American Proficiency Testing Program (NAPT)
5585 Guilford Rd., Madison, WI 53711
Ph: 608-268-4972; Fax: 608-273-2021; Internet: www.naptprogram.org

46. NSF International
    PO Box 130140, Ann Arbor, MI 48105
    Ph: 734-769-8010; Fax: 734-769-0109; Internet: www.nsf.org
47. Operating Engineers Certification Program (OECP)
    4210 Riverwalk Parkway, Ste 130, Riverside, CA 92505
    Ph: 951-351-4001; Fax: 951-351-4007; Internet: www.oecp.org
48. Petroleum Equipment Institute (PEI)
    PO Box 2380, Tulsa, OK 74101
    Ph: 918-494-9696; Fax: 918-491-9895; Internet: pei.org
49. Research Council on Structural Connections (RCSC)
    internet: boltcouncil.org
50. SAE International (SAE)
    400 Commonwealth Drive, Warrendale PA 15096
    Ph: 877-606-7323; Internet: www.sae.org
51. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)
    4201 Lafayette Center Drive, Chantilly, VA 20151
    Ph: 703-803-2980; Fax: 703-803-3732; Internet: www.smacna.org
52. Soil Science Society of America (SSSA)
    5585 Guilford Rd, Madison, WI 53711
    Ph: 608-273-8085; Fax: 608-273-2081; Internet: soils.org
53. Telecommunications Industry Association (TIA)
    1320 N Courthouse Rd, Ste. 200, Arlington, VA 22201
    Ph: 703-907-7700; Fax: 703-907-7727; Internet: www.tiaonline.org
54. The NELAC Institute (TNI)
    PO Box 2439, Weatherford, TX 76086
    Ph: 817-598-1624; Fax: 817-423-6777; Internet: www.nelac-institute.org
55. UL, LLC
    801 Klein Rd, Ste 200, Plano, TX
    Ph: 877-854-3577; Internet: ul.com
    UL Listed products can be searched at no cost at database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm
56. United States Green Building Council (USGBC)
    2101 L. Street NW, Ste. 500, Washington, DC
    Ph: 800-795-1747; Internet: www.usgbc.org

1.5. ABBREVIATIONS

Wherever the following abbreviations and terms are used in the Scope of Work, Contract Drawings, or other

GENERAL TERMS

°F	Degrees Fahrenheit
2D	Two Dimensional
3D	Three Dimensional
AHA	Activity Hazard Analysis
APP	Accident Prevention Plan (Safety Plan)
ARPA	Archaeological Resources Protection Act
ATV	All Terrain Vehicle
AVG	Average
BMP	Best Management Practices

BOP	Beginning of Project
C	Celsius
CAD	Computer Aided Design
CATEX	Categorical Exemption (NEPA)
CD	Compact Disc (may be used interchangeably with DVD)
CE	Categorical Exemption (NEPA)
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CI	Construction Inspector provided by Construction Management Contractor
CLIN	Contract Line Item Number
cm	Centimeter
CM	Construction Management Contractor
CO	Contracting Officer
COB	Close of Business
COND	Construction Management Division, USIBWC
COR	Contracting Officer's Representative
CPG	Comprehensive Procurement Guideline
CPM	Critical Path Method
CPR	Cardiopulmonary Resuscitation
CPSA	Consumer Product Safety Act
CQC	Contractor's Quality Control
CQCSM	Contractor's Quality Control Systems Manager
CRP	Contractor's Responsible Person
CUI	Controlled Unclassified Information
CWA	Clean Water Act, 33 USC 1251 et seq.
CWHSSA	Contract Work Hours and Safety Standards Act
cy	Cubic Yard
D	Diameter
D&O	Deficiency and Omission
DBA	Davis-Bacon Act
DROM	Deputy Regional Operations Manager
DIA	Diameter
DLC	Direct Labor Costs
dpi	Dots per inch
DTM	Digital Terrain Model
DVD	Digital Video Disc (may be used interchangeably with CD)
EA	Each
EA	Environmental Assessment (NEPA)
EIS	Environmental Impact Statement (NEPA)
EM	Engineering Manual
EO	Executive Order
EOF	USIBWC Engineering Office Files (ROW data)
EOP	End of Project
EPIC	Environmental Permits, Issues, and Comments
ESA	Endangered Species Act, 16 USC 1531 et seq.
ESD	Engineering Services Division, USIBWC
FAD	Finance and Accounting Division, USIBWC
FAR	Federal Acquisition Regulations
FEM	Field Environmental Monitor
FFT	Fast Fourier Transform
FHSA	Federal Hazardous Substances Act
FLSA	Fair Labor Standards Act

FONSI	Final of No Significant Impact (NEPA)
FS	Federal Specifications
FSRIA	Farm Security and Rural Investment Act of 2002
ft	Foot/feet
FY	Fiscal Year (October 1 through September 30)
g	Gram
GIP	Government Inspection Personnel
GPS	Global Position Satellite
GSF	Gross Square Footage
ID	Inside Diameter
IFB	Invitation for Bid
IGE	Independent Government Estimate
in	Inch
IPP	Invoice Processing Platform
JHA	Job Hazard Analysis
kPa	Kilopascals
ksi	Thousand pounds per square inch
lbs	Pounds
LD	Liquidated Damages
lf	Linear Feet
LRFD	Load and Resistance Factor Design
LS	Lump Sum
m	Meter
MAX	Maximum
MBTA	Migratory Bird Treaty Act, 16 USC 703 - 712
MIN	Minimum
min	Minute
mm	Millimeter
MOA	Memorandum of Agreement
Mod	Contract Modification
MOU	Memorandum of Understanding
MPa	Megapascals
MPEG	Moving Picture Experts Group file format
MSDS	Material Safety Data Sheets (has been replaced with SDS)
MUTCD	Manual on Uniform Traffic Control Devices
N	Newton
NA	Not Applicable
NAD27	North American Datum of 1927
NAD83	North American Datum of 1983
NAGPRA	Native American Graves Protection and Repatriation Act, 25 USC 3001 et. seq.
NAVD	or NAVD 88 North American Vertical Datum of 1988
NCR	No Carbon Required
NEPA	National Environmental Policy Act, 42 USC 4321-4347
NGVD	National Geodetic Vertical Datum of 1929
NHPA	National Historic Preservation Act, 54 USC 300101 et seq.
NOI	Notice of Intent (SWPP)
NOT	Notice of Termination (SWPP)
NTP	Notice to Proceed
NTS	Not to Scale
O&M	Operations and Maintenance
OC	On Center
OD	Outside Diameter

ODC	Other Direct Costs
OEM	Original Equipment Manufacturer
oz	Ounce
PE	Pay Estimate
PE	Professional Engineer
PIT	Powered Industrial Truck
PPE	Personal Protective Equipment
PPV	Peak Particle Velocity
psi	Pounds Per Square Inch
PSL	Project Specific Locations
QA	Quality Assurance
QC	Quality Control
QCSM	Quality Control System Manager
QSM	Quality System Manager
R/W	Right-of-Way
RCRA	Resource Conservation and Recovery Act
ROM	Regional Operations Manager
RFI	Request for Information
RFP	Request for Proposal
RMAN	Recovered Materials Advisory Notice
ROD	Record of Decision (NEPA)
ROW	USIBWC Right of Way
s	Second
SDS	Safety Data Sheets (new name of MSDS)
SDWA	Safe Drinking Water Act
sec	Second
sf	Square Foot
SF	Standard Form
SHPO	State Historical Preservation Officer/Office
SOP	Standard Operating Procedure
SOW	Statement of Work or Scope of Work
SSHO	Site Safety and Health Officer
SWPP	Stormwater Pollution Prevention
SWPPP	Stormwater Pollution Prevention Plan
sy	Square Yards
T&E	Threatened and Endangered
TBD	To be Determined
TCL	Temporary Construction Limits
TCP	Traffic Control Plan
TIA	Tentative Interim Amendment
TIN	Triangulated Irregular Networks file format
TYP	Typical
US	United States
USC	United States Code
USERRA	Uniformed Services Employment and Reemployment Rights Act
USIBWC	International Boundary and Water Commission, United States Section
UTV	Utility Vehicle, Utility Task Vehicle, Utility Terrain Vehicle
VTC	Video Teleconference
YD	Yard
YR	Year
ZC	Zero Crossing (frequency)

TEXAS

LRG	Lower Rio Grande
LRGFCP	Lower Rio Grande Flood Control Project
PUB	Public Utilities Board of Brownsville
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
THC	Texas Historical Commission
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TRRP	Texas Risk Reduction Program
TX	Texas
TxDOT	Texas Department of Transportation
TXSPC	Texas State Plane Coordinate System
URG	Upper Rio Grande
URGFCP	Upper Rio Grande Flood Control Project

AGENCIES & ASSOCIATIONS

A2LA	American Association for Laboratory Accreditation
ABA	Architectural Barriers Act
ABAAS	Architectural Barriers Act Accessibility Standard
ABET	Accreditation Board for Engineering and Technology
ACCP	ANST's Central Certification Program
AISI	American Industrial Standards Institute
AMPP	Association for Materials Protection and Performance
ANSI	American National Standards Institute
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Safety Engineers
ASTM	ASTM International
CBP	Customs and Border Protection
CIC	Crane Institute Certification
CPWR	The Center for Construction Research and Training
CSI	Construction Specifications Institute
DHS	US Department of Homeland Security
DOL	Department of Labor
EEOC	Equal Employment Opportunity Commission
ELCOSH	Electronic Library of Construction Occupational Safety & Health
GSA	Geological Society of America
GSA	US General Services Administration
IAS	International Accreditation Service
IBC	International Building Code
IBWC	International Boundary and Water Commission
ICC	International Code Council
IECC	International Energy Conservation Code
IEEE	Institute of Electrical and Electronics Engineers
IESNA	Illuminating Engineering Society of North America
IFG	International Fire Code
ISEA	International Safety Equipment Association
MPI	Master Painters Institute

NCCCO	National Commission for the Certification of Crane Operators
NCCER	National Center for Construction Education and Research
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NGS	National Geodetic Survey
NIOSH	National Institute for Occupational Safety and Health
NIST	US National Institute of Standards and Technology
NLRA	National Labor Relations Board
NWS	National Weather Service
OECP	Operating Engineers Certification Program
OIG	Office of Inspector General
OSHA	Occupational Safety and Health Association
PBS	GSA's Public Building Service
PCI	Precast/Prestressed Concrete Institute
PEI	Petroleum Equipment Institute
PS	US Department of Commerce Product Standard
SAC	Soil Analysis Certification
SAE	SAE International
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SNAP	EPA’s Significant New Alternatives Policy
SSSA	Soil Science Society of America
TNI	The NELAC Institute
UFC	United Facilities Criteria
UL	Underwriter’s Laboratory
USACE	United States Army Corps of Engineers
USBR	United States Bureau of Reclamation
WH	Wage and Hour Division, Department of Labor
WHD	Wage and Hour Division, Department of Labor

GEOTECHNICAL

ABC	Aggregate Base Course
CH	High Plasticity Clay
CL	Low Plasticity Clay
DAR	Durability Absorption Ratio
G	Gradation Coefficient
GC	Clayey Gravel
GM	Silty Gravel
GP	Poorly Graded Gravel
GW	Well Graded Gravel
LL	Liquid Limit
MH	High Plasticity Silt
ML	Low Plasticity Silt
ND1 or ND2	Nondispersive Soil from ASTM D4647
OH	High Plasticity Organic Silt
OL	Low Plasticity Organic Silt
PI	Plasticity Index
PL	Plastic Limit
PT	Peat
SC	Clayey Sand
SM	Silty Sand
SP	Poorly Graded Sand or Gravely Sand
SSD	Saturated Surface Dry

SW	Well Graded Sand
USCS	Unified Soil Classification System

MATERIALS

C:N	Carbon Nitrogen Ratio
DFT	Dry Film Thickness
DR	Pipe Dimension Ratio
EPDM	Ethylene Propylene Diene Monomer rubber
HDPE	High Density Polyethylene
IDT	Indirect Tensile
NPS	Nominal Pipe Size
PLS	Pure Live Seed
PVC	Polyvinyl Chloride
TRM	Turf Reinforcement Mat
TZ	Tetrazolium Test
UHMW	Ultra High Molecular Weight Polyethylene

SURVEYING

GRS	Geodetic Reference System
PLS	Public Land Surveyor
RPLS	Registered Professional Land Surveyor
RTK	Real Time Kinematic (Surveying)
RTN	Real Time Network (Surveying)
SUE	Subsurface Utility Engineering
VRS	Virtual Reference Station (Surveying)

CONCRETE

ACI	American Concrete Institute
CLSM	Controlled Low Strength Material
CPMB	Concrete Plant Manufacturers Bureau
CRSI	Concrete Reinforcing Steel Institute
ESCS	Expanded Shale, Clay, or Slate
f'c	Compressive Strength of Concrete
GGBFS	Ground Granulated Blast Furnace Slag (Concrete)
NRMCA	National Ready Mixed Concrete Association
PCA	Portland Cement Association
RCB	Reinforced Concrete Box Culvert
RCP	Reinforced Concrete Pipe
UFFA	Ultra Fine Fly Ash (Concrete)

STEEL/METAL

AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
BOF	Basic Oxygen Furnace
CMP	Corrugated Metal Pipe
EAF	Electric Arc Furnace
HPS	High Performance Steel
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.
NAAMM	National Association of Architectural Metal Manufacturers
RCSC	Research Council on Structural Connections

WELDING

AWS	American Welding Society
BPVC	Boiler and Pressure Vessel Code
CWI	Certified Welding Inspector
ET	Electromagnetic Testing
FCAW	Flux Cored Arc Welding
GMAW	Gas Metal Arc Welding
GTAW	Gas Tungsten Arc Welding
MAG	Metal Active Gas Welding, a subset of GTAW
MFL	Magnetic Flux Leakage
MIG	Metal Insert Gas Welding, a subset of GTAW
MMA	Manual Metal Arc Welding, also known as SMAW
MT	Magnetic Particle Testing
NDE	Nondestructive Examination
NDT	Nondestructive Testing
PT	Liquid Penetrant Testing
RT	Radiographic Testing
SAW	Submerged Arc Welding
SCWI	Senior Certified Welding Inspector
SMAW	Shielded Metal Arc Welding
TIG	Tungsten Insert Gas Welding, more properly known as GTAW
UT	Ultrasonic Testing
VT	Visual and Optical Testing
WPS	Welding Procedure Specifications

ELECTRICAL

A	Ampere
AC	Alternating Current
AWG	American Wire Gauge
BWG	Birmingham Wire Gauge
DC	Direct Current
EMI	Electromagnetic Interference
EMT	Electrical Metallic Tubing
NEC	National Electrical Code (also known as NFPA 70)
PT&I	Predictive Testing and Inspection
THHN	Thermoplastic High Heat-Resistant Nylon-Coated
THWN	Thermoplastic Heat and Water-Resistant Nylon-Coated
V	Volt
VoIP	Voice over Internet Protocol
W	Watt

COMMISSIONING

BoD	Basis of Design
CCxP	Contractor's Commissioning Plan
CCxR	Contractor's Commissioning Representative
CxA	Commissioning Authority
FPT	Functional Performance Test
TBC	Total Building Commissioning

1.6. DEFINITION OF TERMS

Definitions of terms used include the following:

Activity	A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the project. Activities included in a construction schedule consume time and resources.
Actual Cost	Cost to provide labor, material, equipment, and project overhead necessary for the work.
Addendum	Change in Solicitation developed between advertising and bid submittal deadline.
Air Temperature	The temperature measured in degrees Fahrenheit (°F) in the shade, not in the direct rays of the sun and away from artificial heat.
All Terrain Vehicles	ATVs are recreational-type vehicles intended for off-road use that travel on four low pressure tires with a seat designed to be straddled by the operator.
Antiquity	Items associated with archaeological sites and ruins greater than 50 years old. Antiquities are protected by the Antiquities Act of 1906 and 43 CFR 3.
Archaeological Resource	Per ARPA, any material remains of human life or activities which are at least 100 years of age and which are of archaeological interest.
Archaeological Site	Any place where physical remains of human activities are present which are at least 50 years of age.
Architectural Resource	Buildings and structures, whether functional or collapsed, which are at least 50 years of age and which are of significant, unique, historical, or show architectural significance.
AutoCAD	General term AutoCAD refers to AutoCAD Civil 3D version of the program.
Baseline	A control line offset from the existing facility and/or proposed improvement.
Baseline Schedule	The compliance confirmed schedule used as a basis to judge progress on the project.
Best Management Practices	Methods or measures used for stormwater pollution control.
Bridge	A structure, including supports, erected over a depression or an obstruction (e.g., water, a highway, or a railway) having a roadway or track for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between faces of abutments, spring lines of arches, or extreme ends of the openings for multiple box culverts.
Brittle	Breaking of geological materials from relatively low stress.
Bug Holes	Bug holes, blowholes, or air voids, are small cavities ranging from nearly invisible to approximately one inch that result from the entrapment of air bubbles in the surface of formed concrete.
Business Day	All days in a month excluding weekends and holidays.
Buy American Act	Any of FAR clauses 52.225-9, 52.225-10, 52.225-11, or 52.225-12 covered by FAR Chapter 25 and 41 USC Chapter 83.

Calendar Day	All days in a month including weekends, holidays, and both work and non-work days.
Canal	A manmade waterway used for conveying irrigation water.
Canal Turnout	A structure used to divert water from a canal to a smaller water distribution system.
Centerline	The line identified as the geometric center of the alignment of the existing facility or proposed improvement.
Cold Weather	When the air temperature has fallen to, or is expected to fall below 40°F during the protection period of concrete which includes placement.
Competent	In geology, competence refers to the degree of resistance of geological materials to erosion and deformation. High resistance to erosion and deformation is a competent material.
Competent Person	A person who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
Contract	The agreement between the USIBWC and the Design-Builder establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract Documents.
Contract Documents	Elements of the Contract including but not limited to the Contract Drawings, Solicitation, Contract, Scope of Work, Technical Specifications, provisions, modifications, reports, supplemental agreements, and separate documents provided as downloads or attachments to any of these items.
Contract Drawings	The USIBWC provided drawings and any drawings produced as part of this Contract.
Contract Time	The number of calendar days specified for completion of the work including authorized additional working days.
Contracting Officer	Authorized representative of the USIBWC with the authority to enter into, administer and/or terminate Contracts and make related determinations and findings.
Contracting Officer's Representative	An individual, designated in writing, by the Contracting Officer authorized to perform specific technical and administrative functions.
Control Point	An established point shown on the construction drawings to provide vertical and horizontal references for geometric control for construction.
Cost Loading	The allocation of the Schedule of Values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract sum, unless otherwise approved by the CO or COR.
Critical Path	The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
Critical Path Method	An activity-oriented scheduling method, where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of the project.

Cross-Sections	Graphic representations of the original ground and the proposed improvement, at right angles to the baseline or centerline.
Crumbly	A material that is easily broken into small fragments or reduced to powder.
Cultural Resources	Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties; specific items include, but are not limited to, human skeletal remains, archaeological artifacts, records, and material remains related to such properties. Items are at least 50 years of age.
Culvert	Any buried structure providing an opening under the facility for drainage or other purposes.
Definable Feature of Work	A task that is separate and distinct from other tasks, has separate control requirements, and is continuous in location of work. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment, although each section of the construction specifications may generally be considered as a definable feature of the work, there is frequently more than one definable feature under a particular section. All CLINs are Definable Features of Work. All critical path activities are Definable Features of Work. For example, mobilization, geophysical survey, subsurface utility survey, soil and groundwater sampling, surveying, site cleanup/demobilization, concrete forming, concrete reinforcement installation, concrete placement, clearing and grubbing/site preparation, demolition, excavation, loading, hauling, and disposal of excavated soil, backfill, drywall, framing, plumbing, HVAC etc. are all Definable Features of Work. Except for rare occasions, refueling or refueling/mechanic is a Definable Feature of Work on every project.
Design-Build	A method of project delivery, combining design and construction in a single contract with one contractor (FAR 36.102).
Design-Builder	The individual, partnership, limited liability company, corporation, or joint venture and all principals and representatives with which the Contract is made by the USIBWC.
Design-Builder Quality System Manager	The Design-Builder Quality System Manager is the individual with overall responsibility for development of and adhere to the Design-Build Contract requirements.
Detour	A temporary traffic route around a closed portion of a road.
Drawings	Construction Contract Drawings that show the location, character, dimensions, and details of the work and are a part of the Contract Documents. Plans are the same as drawings.
Easement	A real property right acquired by one party to use land belonging to another party for a specified purpose.
Employee	An employee is an individual who works under the supervision or control of a contractor in return for wages or salary. An independent contractor with no affiliation to any other subcontractor, vendor, or supplier on this project working under direct supervision of a contractor shall be considered an employee.

Encroachment	An illegal intrusion onto USIBWC's easement or property. Trespass.
Engineer	A professional engineer or engineering firm registered in the state where work is performed.
Flexible Base	One or more layers of specified material thickness placed on a subgrade to support a surface course (usually asphalt).
Float	The measure of leeway in starting and completing an activity in a CPM schedule. Float is not for the exclusive use or benefit of either the Government or the Design-Builder by is jointly owned. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned project completion date.
Flood	An overflow of water that submerges land which is usually dry. Flooding can be caused by any source of water including, but not limited to, rain, runoff, river flow, dam releases, and structural failures.
Floodplain	Area between the riverside toe of the levee and the active bank of the river.
Forb(s)	Any herbaceous flowering plant that is not a grass.
Friable	Geological material that crumbles very easily in the hand or is reduced to finer particles by small pressure or friction. Friability is the ability of a solid substance to be reduced to smaller pieces with little effort.
Geotechnical Engineer	A professional engineer, licensed in the state where work is being performed with a minimum of 5 years of experience in the field of geotechnical engineering.
Government	Refers to International Boundary and Water Commission, United States and Mexico, United States Section.
Ground Disturbing Activities	A ground disturbance is any work or activity that results in a disturbance of the earth including, but not limited to: excavating, digging, trenching, plowing, drilling, tunneling, auguring, backfilling, blasting, topsoil stripping, land leveling, placing embankment, quarrying, clearing and grubbing, hauling, burning, tree removal, fencing, discing, and seeding.
Hard	Geological material that is not friable, is unyielding to pressure, and is impenetrable or almost impenetrable.
Haul Road	A temporary road created or modified to handle construction traffic.
Haul Route	The complete route that will be used to haul materials to and from the worksite. This includes haul roads and existing roads, both on and off the site.
Hazardous Materials	Hazardous materials or waste include but are not limited to explosives, compressed gas, flammable liquids, flammable solids, combustible liquids, oxidizers, poisons, radioactive materials, corrosives, etiologic agents and other material classified as hazardous by 40 CFR 261, or applicable state and federal regulations.
Holidays	Holidays recognized by the Federal Government: New Year's Day, Birthday of Martin Luther King, Jr., Washington's Birthday, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day,

	Veterans Day, Thanksgiving Day, and Christmas Day. See www.opm.gov/policy-data-oversight/pay-leave/federal-holidays/ for a complete list of dates for any given year.
Homogeneous	Of uniform structure or composition throughout. Alike in construction.
Honeycomb	A condition of irregular voids in concrete due to failure of the mortar to effectively fill the spaces between the coarse aggregate particles. Honeycomb is caused by segregation of the concrete during placement.
Hot Weather	One or a combination of the following conditions that tends to impair the quality of freshly mixed or hardened concrete by accelerating the rate of moisture loss and rate of cement hydration, or otherwise causing detrimental results: high ambient temperature, high concrete temperature, low relative humidity, and high wind speed.
Independent Assurance Tests	Tests used to evaluate the sampling and testing techniques and equipment used in the acceptance program.
Inspector	The firm or person assigned by the USIBWC to inspect for compliance with the Contract any or all parts of the work and the materials used.
Jobsite	See Section 01.35.23.01 1.13.D.1.a. through g. for definition.
Levee	A facility running parallel to a water course that is constructed of an embankment whose primary purpose is to furnish flood protection from seasonal high water and which is therefore subject to water loading for periods of only a few days or weeks a year.
Limits of Construction	An area with established boundaries, identified within the Project's right of way and easements, where the Design-Builder is permitted to perform the work.
Maintenance Road	A road usually on top of or adjacent to the facility, primarily utilized by the USIBWC and DHS.
Manlift	These are specialized machines that enable workers to perform tasks safely and efficiently at heights. They have an enclosed platform attached to a lifting mechanism that raises and lowers workers and their tools as needed. Also known as aerial lift, boom lift, or scissor lift, manlift encompasses all mechanical equipment used to lift personnel.
Materials	The words "material" or "materials" is used in this Scope of Work to denote items furnished by the Design-Builder which shall be construed to mean equipment, machinery, product, component, or any other item required to be incorporated in the work.
Milestone Date	The date that a specific portion of the work is to be completed, before the completion date for all work under the Contract.
Mobilization	The initial stage of the construction project where preparations occur onsite prior to the commencement of any work. The preparations include movement of personnel, equipment, supplies, and incidentals to the site and setup of all offices, buildings, and other facilities necessary for the work. See Section 01.71.13.01 for additional details.
Modification	Any written change in the terms of a Contract.
New	Item composed of previously unused components, whether manufactured from virgin material, recovered material in the form of raw material, or

	materials and by-products generated from, and reused within, an original manufacturing process, provided that the supplies meet Contract requirements, including but not limited to, performance, reliability, and life expectancy.
Notice to Proceed	A written notice to the Design-Builder to begin Contract work.
Pavement	That part of a roadway having a constructed all-weather surface. Pavement Structure Combination of surface course, flexible base and subgrade to support the traffic load and distribute it to the roadbed.
Pavement Structure	Combination of surface course, base course, and subgrade to support the traffic load and distribute it to the roadbed: (1) Surface Course - Pavement structure layers designed to accommodate the traffic load. The top layer resists skidding, traffic abrasion, and the disintegrating effects of climate and is sometimes called the wearing course. (2) Base Course - One or more layers of specified material thickness placed on a subgrade to support a surface course. (3) Subgrade - The top surface of a roadbed upon which the base and surface courses (and curbs, if applicable) are constructed.
Pesticide	Any substance or mixture of substances intended for preventing, destroying or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animals, or substances which may be administered to animals for the control of insects, arachnids or other pests in or on their bodies.
Plans	Construction Contract Drawings that show the location, character, dimensions, and details of the work and are a part of the Contract Documents. Plans are the same as drawings.
Powered Industrial Truck	PIT are forklifts, telehandlers, fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial equipment designed to carry, push, pull, lift, or stack materials. PIT include industrial equipment intended for indoor use only as well as off road and rough terrain applications. PIT do not include farm vehicles, vehicles intended primarily for earth moving, or vehicles used for over-the-road hauling.
Project	The facility and its associated appurtenances that are being designed and constructed under this Contract.
Project Area	The worksite, all adjacent properties, and the general geographical area surrounding them.
Project Specific Location	Areas including, but not limited to, borrow pits, material sources, waste sites, parking areas, stockpiles, storage areas, field offices, staging areas, haul roads, etc. both on and off the ROW.
Protection Period	The time required to prevent concrete from being affected by exposure to cold weather.
Quadrat	A frame of known area, usually one square foot, that is placed on the ground to measure items within to determine the distribution of an item over a large area.

Quality Assurance	Sampling, testing, inspection, and other activities conducted by the Design-Builder to assure that the Construction Contractor's quality control is being conducted properly.
Quality Control	Sampling, testing and other process control activities conducted by the Construction Contractor to monitor production and placement operations in order to maintain required quality.
Recondition	To restore to the original normal operating condition by readjustments and material replacement.
Rehabilitate	To restore to original condition, operation, and/or capacity. To make as-new.
Remanufactured	Factory rebuilt to original specifications.
Resource Loading	The allocation of manpower and equipment necessary for the completion of an activity as scheduled.
Right-of-Way	A general term denoting property owned or controlled by the USIBWC. Also any property on which USIBWC has an easement.
Road or Street	General terms denoting a public way for purposes of vehicular travel, primarily for access to residence, business, or other abutting property. Also used for USIBWC's O&M road which is not a public way.
Roadway Gravel	Aggregate designed as the surface of a gravel roadway; also known as aggregate surface.
Scarification	Scratching the surface of a compacted layer to facilitate bonding with the next layer and avoid potential lamination between compacted layers.
Site of Work	Used in reference to Davis Bacon Act and as defined in 29 CFR 5.2(l).
Slide Gate	A mechanical apparatus that controls the flow of water (through a pipe at the bottom of the levee) usually from the landside of the levee to the floodway or channel.
Specifications	Requirements issued or made pertaining to the method and manner of performing the work or to quantities and qualities of materials to be furnished under the Contract.
Station	A unit of measurement consisting of 100 horizontal feet.
Subcontract	The agreement between the Design-Builder and subcontractor establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract Documents.
Subcontractor	An individual, partnership, limited liability company, corporation, or any combination thereof that the Design-Builder sublets, or proposes to sublet, any portion of a Contract. Any entity providing services to the Design-Builder or their subcontractors is a subcontractor. Material suppliers/vendors and owner-operator truck drivers are not subcontractors.
Subgrade	The top surface of a roadbed (in situ soil) upon which the base and surface courses (and curbs, if applicable) are constructed. Also the bottom of the excavation above which backfill or concrete will be placed.

Subsidiary	Materials, labor, or other elements that because of their nature or quantity have not been identified as a separate bid item and are considered included within the items on which they necessarily depend.
Superintendent	The representative of the Design-Builder who is available at all times and able to receive instructions from the USIBWC CO or COR and is able to act for the Design-Builder.
Surface Course	Pavement structure layers designed to accommodate the traffic load. The top layer resists skidding, traffic abrasion and the disintegrating effects of climate and is sometimes called the wearing course.
Surplus Materials	Any debris or material related to the Contract not incorporated into the work.
Utility	Privately, publicly, or cooperatively owned lines, facilities, and systems for producing, transmitting, or distributing communications, power, heat, gas, oil, water, waste, or storm or irrigation water; the utility company.
UTV	Utility vehicles that are designed to perform off-road utility tasks such as passenger and cargo transportation with side-by-side seating.
Vendor	An individual, partnership, limited liability company, corporation, or any combination thereof that provides goods to the Design-Builder or their subcontractors. Also called a material supplier.
Verification Tests	Tests used to verify accuracy of QC and QA testing.
Weather Advisory	An announcement that hazardous weather or hydrologic event is occurring, imminent, or likely. Advisories are less serious than warnings. Advisories are for events that cause significant inconvenience and if caution is not exercised, could lead to situations that may threaten life or property.
Weather Warning	An announcement that hazardous weather or hydrologic event is occurring, imminent, or likely. A warning means weather conditions pose a threat to life or property. People in the path of the storm need to take protective action.
Weather Watch	An announcement that the risk of a hazardous weather or hydrologic event has increased significantly, but its occurrence, location, or timing is still uncertain. Warnings are intended to provide enough lead time so those who need to set plans in motion can do so. A watch means that hazardous weather is possible. People should have a plan of action in case a storm threatens and they should listen for later information and possible warnings.
Work	The furnishing of all labor, materials, equipment and other incidentals necessary for the successful completion of the Contract.
Work Day	Design-Builder's scheduled days of work, whether work is performed or not.
Work Week	Normal, non-overtime, work week accounts for 40 hours in 4 or 5 work days.
Worksite	All areas where work under this Contract take place, including, but not limited to, the Contractor's local offices, yards, warehouses, lay down areas, staging areas, storage areas, haul roads not on a public roadway,

material disposal sites, PSLs, and borrow pits meeting the definition of Section 01.29.15.01 1.12.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 01.43.26.01
TESTING AND INSPECTION AGENCIES

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.3. REFERENCE STANDARDS

1.3.A. The American Association for Laboratory Accreditation (A2LA)

1. Geotechnical Testing Accreditation Program

1.3.B. ASTM International (ASTM)

1. ASTM C1077-17 Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
2. ASTM D2216-19 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
3. ASTM D3666-16 Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
4. ASTM D3740-19 Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

5. ASTM D6938-17a Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
6. ASTM D7759-14 Guide for Nuclear Surface Moisture and Density Gauge Calibration
7. ASTM E329-20 Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
8. ASTM E543-15 Standard Specification for Agencies Performing Nondestructive Testing
9. ASTM E699-16 Standard Practice for Evaluation of Agencies Involved in Testing, Quality Assurance and Evaluating of Building Components

1.3.C. Collaborative Testing Services, Inc.

1. Agricultural Laboratory Proficiency (ALP) Program

1.3.D. International Accreditation Service

1. Testing Laboratories Program

1.3.E. Soil Science Society of America

1. North American Proficiency Testing (NAPT) Program

1.3.F. United States Army Corps of Engineers (USACE)

1. Materials Testing Center, Laboratory Quality Assurance Inspection

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Engineering Testing Agency Qualifications
   a. Prior to start of work, submit laboratory name, address, and telephone number, and names of full time registered Engineer and responsible officer.
   b. Submit copy of report of laboratory facilities inspection with memorandum of remedies of any deficiencies reported by the inspection.
   c. Qualification Statement
      Provide documentation showing testing laboratory is accredited.
2. Agricultural Testing Agency Qualifications
   a. Prior to start of work, submit laboratory name, address, and telephone number, and name of responsible officer.
   b. Qualification Statement
      Provide documentation showing testing laboratory is certified.
3. Testing Technician Qualifications
   Provide copies of all technician qualification certificates.
4. Equipment Calibration
   Provide calibration reports for each nuclear density gauge used on the project.

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. IBWC Form 237, Nuclear Gauge Test Results
2. IBWC Form 240, Nuclear Gauge Moisture Calibration

3. IBWC Form 241, Nuclear Gauge Standard Count

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GENERAL

1.7.A. The Design-Builder shall pay for all services of all independent testing laboratories required to perform the specified quality control testing and required to ensure that all Contract requirements are met.

1.7.B. References to testing laboratories within this SOW apply both to any QA laboratories and to any QC laboratories. Statements made about QC laboratories also apply to QA laboratories.

1.7.C. All work requiring a PE stamp shall be stamped in the respective state of the worksite.

1.8. DEFINITIONS

1.8.A. Engineering tests include, but are not limited to, tests established or standardized by ASTM, TxDOT, and AASHTO.

1.8.B. Agricultural tests include, but are not limited to, soil analyses of pH, phosphorus, potassium, calcium, magnesium, sodium, sulfur, copper, zinc, chloride, total dissolved salts, conductivity, and sodium absorption ratio.

1.9. TESTING LABORATORIES.

1.9.A. The Government reserves the right to check the laboratory equipment in the proposed laboratory for compliance with the standards set forth in the Contract specifications and to check the laboratory technician's testing procedures and techniques.

1.9.B. The Design-Builder shall employ a certified independent laboratory to perform sampling and testing or provide an onsite laboratory with testing apparatus and qualified laboratory technicians.

1. Engineering testing laboratories shall be accredited by US Army Corps of Engineers (USACE), AASHTO, International Accreditation Service, or American Association for Laboratory Accreditation (A2LA) for all tests to be performed.
2. Agricultural testing laboratories shall be certified to perform soil analysis/testing by North American Proficiency Testing (NAPT) Program, the Agricultural Laboratory Testing Association (ALTA) under their Soil Analysis Certification (SAC) Program, or Collaborative Testing Services in their Agricultural Laboratory Proficiency (ALP) Program.

1.9.C. **All engineering laboratory tests shall be signed and sealed by the engineering laboratory's professional engineer** licensed to practice in the State of Texas (Texas' Rules Concerning the Practice of Engineering and Professional Licensure §137.33(f)).

1.9.D. Testing laboratories must be experienced in the type of testing work to be done. All laboratories must meet the requirements of ASTM E699 and ASTM E329.

1. Laboratories testing concrete and concrete aggregates: Meet requirements of ASTM C1077.
2. Laboratories testing soil and rock: Meet requirements of ASTM D3740.
3. Laboratories testing bituminous paving materials: Meet requirements of ASTM D3666.
4. Laboratories engaged in nondestructive testing: Meet requirements of ASTM E543.

1.9.E. Laboratories shall calibrate measuring devices, laboratory equipment, and instruments at established intervals against certified standards in accordance with National Institute of Standards and Technology requirements.

1. Anytime a nuclear density gauge is used on this project, a daily calibration test shall be conducted. IBWC Form 241 shall be completed each day a nuclear density gauge is used.
2. Anytime soil moisture is determined via oven dried laboratory tests, the nuclear gauges used onsite shall be checked to ensure that moisture calibration is within industry tolerances. IBWC Form 240 shall be completed whenever oven dried moisture tests are conducted on soils also tested with nuclear density gauges.

1.9.F. Upon request, the testing laboratory shall make measuring and testing devices available for use by the Government for verification tests.

1.10. TECHNICIANS

1.10.A. For all concrete work, the operator shall either be ACI certified or qualified by a recognized, equivalent written and performance testing program for all of the tests to be performed.

1.10.B. For work requiring the use of nuclear density equipment, the operator shall have passed training on the equipment to be used and on radiation safety in general.

1.10.C. For all other work, industry standard certification and/or training shall be required for all technicians and inspectors.

1.10.D. The testing technicians performing the field and laboratory sampling and testing shall be employed by the Design-Builder or the laboratory being used.

1. Testing technicians performing the field and laboratory sampling cannot be employees of the Construction Contractor.

1.11. NUCLEAR DENSITY TESTING EQUIPMENT

1.11.A. Nuclear Density Testing Equipment Operations
Nuclear density testing equipment shall be used in accordance with ASTM D6938. In addition, the following conditions shall apply:

1. Prior to using the nuclear density testing equipment on the site, the Construction Contractor shall submit to the Design-Builder a certification that the operator has completed a training course approved by the nuclear density testing equipment manufacturer.
2. The nuclear density testing equipment shall be capable of extending a probe a minimum of 12 inches down into a hole.

1.11.B. Prior to use of any nuclear density gauge, IBWC Form 241 shall be completed. Copies of these reports shall be provided daily to the COR.

1. USIBWC will not accept test results from gauges that exceed the manufacturer's standard count error variation or from gauges where the error has not be calculated.
   a. Troxler and Humboldt allow a 1% variation for density standard readings and a 2% variation for moisture standard readings.
   b. Provide manufacturer manuals if these values vary for your manufacturer.
2. Any gauge which fails the daily standard count verification may be retested up to 4 times. If the additional tests also fail, the gauge shall be removed from the worksite until certification is supplied that the gauge has been recalibrated by an independent source.

1.11.C. All test results determined with a nuclear density gauge on the project shall be recorded on IBWC Form 237. Copies of this report shall be provided daily to the COR.

1.11.D. Moisture tests taken by ASTM D6938 shall be correlated with ASTM D2216 to ensure that nuclear testing procedures are within industry guidelines.

1. Per ASTM D6938 10.6.1, a ASTM D2216 correlation test shall be performed prior to using a nuclear gauge on any new material. Manufacturer's recommendations on the number of calibration tests required for each new material shall be followed. For example, Troxler specifies four or more K factors for each soil type.
2. One ASTM D2216 correlation test shall be performed every 10 density/moisture tests performed by ASTM D6938.
3. IBWC Form 240 shall be used for each ASTM D2216 correlation test performed.

1.12. PROCTOR TESTS

1.12.A. Initial proctor tests on any material shall be based upon at least 5 data points. Additional tests on the same material shall contain at least 3 data points. Single point proctors are not allowed.

1.12.B. Proctor tests for each material shall not be used independently but shall form a family of curves which will be utilized to estimate optimum properties (maximum dry density and optimum moisture content) to be used with field density tests. Running averages for maximum dry density and optimum moisture content shall be provided and updated with each additional proctor performed.

1.12.C. Method B shall be used on all proctor tests unless the gravel fraction dictates that Method C is appropriate.

1. Method A shall not be used on any material on this project.
2. All subsequent proctors on the same material shall use the same method.

1.12.D. Wet preparation is preferred. If dry preparation is used, every effort shall be made to breakdown the material to match the construction conditions. All proctors for the same material shall use the same preparation method.

1.13. ORGANIZATIONAL CHANGES

1.13.A. The Design-Builder shall obtain the Government COR's acceptance before replacing any testing laboratories or technicians. Requests for changes shall include the names, qualifications, duties, and responsibilities of each proposed replacement.

1. Multiple technicians can be confirmed for use on the project allowing flexibility in day to day operations.

1.13.B. The Government reserves the right to require the Design-Builder to make changes in the quality control/assurance, including removal of personnel, laboratories, or technicians as necessary, to obtain the quality specified.

1.14. LABORATORY AFFILIATION

1.14.A. All laboratories employed to perform testing under this Contract shall be unaffiliated with the Design-Builder and the Construction Contractor. Additionally, the companies cannot have common ownership or management.

1.14.B. The testing laboratories shall have no financial, political, familial link to any contractor working on this project.

1.14.C. Personnel performing or overseeing QC testing shall not have been involved with the design of the project.

1.15. DESIGN-BUILDER RESPONSIBILITY

Employment of testing laboratories in no way relieves the Design-Builder of the obligation to perform work in accordance with the requirements of the Contract.

1.16. NOTIFICATION OF NONCOMPLIANCE

The Government will notify the Design-Builder of any detected noncompliance with the foregoing requirements. The Design-Builder shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Design-Builder at the worksite, shall be deemed sufficient for the purpose of notification.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. TESTING PROCEDURES

3.1.A. The Design-Builder shall ensure that all specified or required tests to verify that control measures are performed adequately to provide a product which conforms to Contract requirements. Testing includes operation and or/acceptance tests when specified.

3.1.B. The Design-Builder shall procure the services of a compliance confirmed testing laboratory.

3.1.C. The Design-Builder shall perform the following activities and shall record and provide the following data:

1. Verify that testing procedures comply with Contract requirements.
2. Verify that facilities and testing equipment are available and comply with testing standards.
3. Check test instrument calibration data against certified standards.
4. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
5. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC daily report for the date taken. Section paragraph reference, location where tests were taken and the sequential control number identifying the test will be given. If compliance confirmed by the Government, actual test reports may be submitted later with the reference to the test number and date taken.
   a. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Government.
   b. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this Contract.

3.2. TEST RECORDS

3.2.A. The Design-Builder shall ensure that each material type (e.g. levee embankment, crushed aggregate base, earthwork subgrade, concrete subgrade, and roadway aggregate) and subtype, if applicable, (e.g. clay 1, clay 2, aggregate mix 1, aggregate mix 2, etc.) have a unique identification number to be used throughout all test reports. Test results for each material type shall have a unique testing designation or numbering system.

3.2.B. The Design-Builder shall ensure that test records are separated by material type.

1. For example, all density tests cannot simply be listed with a one-up number, regardless of material type. Density tests for materials such as levee embankment, crushed aggregate base, earthwork subgrade, concrete subgrade, and roadway aggregate shall be listed and numbered separately.

2. Tests can be numbered with a material type prefix (e.g. LEV0001, CAB0001, SGE0001, SGC0001, or RD0001) or they can simply be provided with a description of the material type within the report, but each material type shall be numbered individually.

3.2.C. Proctors, gradation, Atterberg limits, etc. are usually not identified with a one-up numbering system by testing laboratories. The test shall clearly define what material is being tested, provide its unique identification number, and identify where the sample was taken.

3.2.D. If material type prefixes are used on density tests, use the same prefixes on all tests.

3.3. TESTING AND INSPECTION

3.3.A. Construction specification sections shall clearly delineate testing and inspection required.

3.3.B. Testing Laboratory Duties

1. Provide qualified personnel at site. Cooperate with COR and Design-Builder in performance of services.
2. Perform specified sampling and testing of products in accordance with specified standards.
3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
4. Promptly notify COR, Design-Builder, and Construction Contractor of observed irregularities or nonconformance of work or products.
5. Perform additional tests and inspections required by COR.
6. Submit reports of all tests/inspections specified. For engineering tests, ensure that all tests/inspections are stamped and signed by a professional engineer.

3.3.C. Determination of Passing/Failure of Tests

1. Determination of pass or failing compaction tests shall be determined to one decimal place.
   a. For example, if the compaction percentage is determined to be 94.7% and the minimum required is 95.0%, then the test is a failure.
2. Minimum testing values shall be considered to be inclusive of one decimal place.
   a. For example, if the minimum allowable compaction is 95%, it shall be assumed to be 95.0%.
   b. Or, if the maximum loss in a soundness test is 18%, it shall be assumed to be 18.0%
   c. Any values under the specified minimum are failures.

3.3.D. Limits on Testing/Inspection Laboratory Authority

1. Laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Laboratory may not approve or accept any portion of the work.
3. Laboratory may not assume any duties of Design-Builder nor the Construction Contractor.
4. Laboratory has no authority to stop the work except for safety situations.

3.3.E. Design-Builder Responsibilities

1. The Design-Builder may impose these responsibilities upon the Construction Contractor.
2. Provide laboratory adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
3. Cooperate with laboratory personnel, and provide access to the work and to manufacturers' facilities.
4. Provide incidental labor and facilities.
   a. To provide access to work to be tested/inspected.
   b. To obtain and handle samples at the site or at source of products to be tested/inspected.
   c. To facilitate tests/inspections.

d. To provide storage and curing of test samples.

5. Notify COR and laboratory at least 24 hours prior to expected time for operations requiring testing/inspection services.

3.3.F. Retesting required because of nonconformance to specified requirements shall be performed by the same agency on instructions by COR.

3.3.G. Retesting required because of nonconformance to specified Contract or construction requirements shall be paid for by Design-Builder.

--End of Section--

SECTION 01.51.00.01
TEMPORARY UTILITIES

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.3. REFERENCE STANDARDS

1.3.A. Code of Federal Regulations (CFR)

1. 29 CFR 1910, Occupational Safety and Health Standards
2. 29 CFR 1926, Construction Standards

1.3.B. National Fire Protection Association (NFPA)

1. NFPA 10-2022 Standard for Portable Fire Extinguishers, including Errata through 10-22-11
2. NFPA 30A-2021 Code for Motor Fuel Dispensing Facilities and Repair Garages, including TIA 21-1
3. NFPA 51B-2019 Standard for Fire Prevention During Welding, Cutting and Other Hot Work, including TIA 19-1
4. NFPA 70-2023 Standard for Electrical Safety in the Workplace (also known as the National Electrical Code [NEC]), including Errata through 70-23-2 and TIA through 23-4
5. NFPA 241-2022 Standard for Safeguarding Construction, Alteration and Demolition Operations, including Errata 241-22-1

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Construction Water Source

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Daily meter readings from water source

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GOVERNMENT FURNISHED UTILITIES

The Government will not be furnishing any utilities for this project including but not limited to: potable and non-potable water, electricity, telephone, sewer, and natural gas.

1.8. TEMPORARY ELECTRICITY

1.8.A. Temporary electrical services shall be provided by the Design-Builder or the Construction Contractor until substantial completion of the Project unless otherwise agreed by COR.

1.8.B. Temporary service shall be obtained by the Design-Builder at their expense from the local electric provider, or by generator. The location of existing utility owner's facilities shall be researched by the Design-Builder. The location of the temporary power facilities shall be determined by the Design-Builder and approved by the local electric provider and compliance confirmed by the COR.

1. The Construction Contractor shall furnish and install onsite power generators and/or engine driven equipment as required to supplement power available from the utility owner for the Design-Builder's construction activities.
2. The Design-Builder shall coordinate with the local electric provider for number of services required to provide power to all trades and subcontractors throughout the course of the project.
3. All costs, including permitting and charges for power consumed shall be assumed by the Design-Builder.

1.8.C. Service shall be provided and maintained so that power can be secured at any desired point with no more than a 50 foot extension cord.

1.8.D. Design-Builder shall ensure that each outlet is provided with circuit breaker protection and comply with ground fault protective requirements of NEC Part 210-8.

1.8.E. Design-Builder shall ensure that the temporary service and temporary site distribution conforms to applicable provisions of NEC (National Electrical Code, NFPA 70), OSHA, and all other applicable codes, including utility service regulations.

1.8.F. Provide continuous power for the Design-Builder's and/or the Construction Contractor's construction site office up to 24 hours per day, 7 days per week.

1.8.G. Provide power for testing and checking equipment, if required.

1.8.H. The Construction Contractor's equipment operations, if required, shall be limited to the maximum power demand established by the utility owner.

1.9. TEMPORARY LIGHTING

1.9.A. Definitions
The following definitions apply:

1. Work Lighting: That lighting required to provide adequate illumination for work being performed.
2. Safety Lighting: That lighting required to provide:
   a. Adequate illumination for safe movement of authorized persons throughout Project.
   b. Adequate illumination for public safety.
   c. Special warning lighting for hazardous conditions.
3. Security Lighting: That lighting required in protection of project from unauthorized entry.

1.9.B. Furnish and install temporary lighting which is required for:

1. Construction needs.
2. Safe and adequate working conditions throughout project.
3. Public safety.
4. Security lighting.
5. Lighting for temporary office, storage and construction buildings.

1.9.C. Maintain strict supervision of use of temporary lighting. Enforce conformance with applicable standards and safe practices and prevent abuse of services.

1.9.D. Costs of Installation and Operation
The Design-Builder shall pay all costs for temporary lighting, including costs of installation, maintenance and removal and shall provide all lamps and replacements.

1.9.E. Requirements of Regulatory Agencies
The Design-Builder shall comply with NEC, federal, state, and local codes, and utility service company regulations.

1.10. TEMPORARY WATER

1.10.A. The Design-Builder shall ensure that construction water is available throughout construction period.

1.10.B. The Design-Builder is ultimately responsible for source of water, as well as determining quantity of water required and availability of water.

1.10.C. The Design-Builder shall provide water for Design-Builder's field offices and ensure that the Construction Contractor has sufficient water for cleaning, dust control, and general construction requirements.

1.10.D. The Design-Builder ensure that there is an adequate volume of water for all purposes and attain approval of the local governing entity, water district, municipality, or owner of the utility for amount of water and locations of connections that may be required. Provide a copy of the use agreement with the entity providing the water.

1.10.E. The Design-Builder shall ensure that potable water meeting the requirements of all state and federal regulations is available. Bottled water may be used for potable water.

1.10.F. The water required shall not come from the Rio Grande and must adhere to state water law.

1.10.G. The water required for construction shall be provided from a Government compliance confirmed and metered source.

1. The Design-Builder shall submit weekly reports to the COR showing meter readings by day and total water used by week.

1.10.H. The Design-Builder shall maintain strict supervision of use of temporary services:

1. Enforce conformance with applicable codes and standards.
2. Enforce sanitary practices.
3. Prevent abuse of services.
4. Prevent wasteful use of water.
5. Protect system from freezing.

1.11. TEMPORARY FIRE PROTECTION

1.11.A. The Design-Builder shall conform to the fire protection and prevention requirements specified herein as well as those which may be established by federal, state, or local governmental agencies.

1.11.B. The Design-Builder shall ensure that all construction complies with all applicable provisions of NFPA Standard No. 241, Safeguarding Construction, Alteration and Demolition Operations. NFPA 51B Standard for Fire Prevention During Welding, Cutting and Other Hot Work shall also be adhered to for all work.

1.11.C. The Design-Builder is responsible for assuring that all subcontractors also conform to the provisions of this Section and all applicable laws, ordinances, rules, and regulations.

1.11.D. The Design-Builder shall ensure that portable fire extinguishers, rated not less than 2A or 5B in accordance with NFPA Standard No. 10, Portable Fire Extinguishers, are available for each temporary building, field office, vehicle, or piece of equipment.

1.11.E. The Design-Builder shall regularly inspect and ensure that portable fire extinguishers are within 50 feet maximum from any point in the protection area.

1.11.F. The Design-Builder shall prohibit smoking in hazardous areas and ensure that suitable warning signs shall be posted in areas which are continuously or intermittently hazardous.

1.11.G. The Design-Builder shall ensure that flammable and combustible liquids are stored and used in use metal safety containers. The requirements of NFPA 30A Code for Motor Fuel Dispensing Facilities and Repair Garages shall be followed for construction fueling areas.

1.11.H. The Design-Builder shall regularly inspect the construction area to ensure that clear exits from all points of the work are maintained.

1.11.I. The Design-Builder shall be fully responsible for all costs associated with temporary fire protection including installation, inspection, maintenance and removal of any required systems or items.

PART 2 - PRODUCTS

2.1. MATERIALS FOR TEMPORARY LIGHTING

2.1.A. Design-Builder shall ensure that materials and equipment used for temporary lighting are adequate for purposes intended and must not create unsafe conditions or violate requirements of applicable codes.

2.1.B. The Design-Builder shall provide all required facilities, including wiring, switches, accessories, and supports.

2.1.C. The Design-Builder shall provide temporary lighting products that meet UL "Listed" requirements, that have heavy-duty guards on fixtures, and that fixtures are used in accordance with NEC standards.

2.2. MATERIALS FOR TEMPORARY WATER

2.2.A. Design-Builder shall ensure that materials used are adequate for purpose required, must be sanitary, and must not violate requirements of applicable codes.

2.2.B. The Design-Builder shall provide all required facilities, including piping, valves, pumps, pressure regulators, tanks, and other appurtenances.

2.2.C. Source

1. The water required for all construction activities, including dust control, shall be provided from a USIBWC compliance confirmed and metered municipal source.
2. Water from the Rio Grande shall not be used by the Contractor at any time.

PART 3 - EXECUTION

3.1. REQUIREMENTS FOR TEMPORARY ELECTRICITY

3.1.A. The Design-Builder shall ensure that temporary electrical hook ups are made in a neat orderly manner and make structurally and electrically sound throughout.

1. The Design-Builder is responsible for maintaining installation of temporary electricity throughout construction period and to provide safe working conditions.
2. The Design-Builder shall ensure that service and wiring is rearranged as work progress requires.
3. The Design-Builder shall ensure that all electrical facilities are located to avoid interference with hoisting, materials handling, storage, traffic areas, existing operable facilities, and work under other Contracts.

3.1.B. At the completion of the project or after permanent installation is in use, the Design-Builder shall ensure that all temporary materials and equipment is completely removed.

1. The Design-Builder shall ensure that any damage caused by the temporary service or its removal is restored to specified or original condition.

3.2. REQUIREMENTS FOR TEMPORARY LIGHTING

3.2.A. The Design-Builder shall ensure that temporary lighting is installed in a neat and orderly manner and make structurally and electrically sound throughout.

1. The Design-Builder is responsible for ensuring that temporary lighting is maintained throughout construction period to give continuous service and to provide safe working conditions.
2. The Design-Builder is responsible for ensuring that lighting is modified and moved as work progress requires and that all lighting is installed to avoid interference with hazards.

3.2.B. After the project is complete, the Design-Builder shall ensure that all temporary lighting materials and equipment is completely removed.

1. The Design-Builder shall ensure that any damage caused by the temporary service is restored to specified or original condition.

3.3. REQUIREMENTS FOR TEMPORARY WATER

3.3.A. The Design-Builder shall ensure that temporary water is installed in a neat and orderly manner and make structurally and mechanically sound throughout.

1. The Design-Builder shall ensure that water is provided as needed and that water service is modified or extended, as needed, as work progress requires.
2. The Design-Builder shall ensure that water piping and outlets to provide service is convenient to work stations and positioned to avoid interference with traffic and work areas, materials handling equipment, and storage areas.
3. The Design-Builder shall ensure that insulation is provided, or other means as required, to prevent pipes from freezing.

4. When necessary to maintain pressure, provide temporary pumps, tanks, and compressors.

3.3.B. After the project is complete, the Design-Builder shall ensure that all temporary materials and equipment are removed.

1. The Design-Builder shall ensure that any damage caused by the installation and use of temporary water is restored to specified or original condition.

--End of Section--

SECTION 01.52.13.01
FIELD OFFICES AND SHEDS

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1.5. Use of Government Land....1
1.6. Staging Areas....2
Part 2 - Products (Not Used)....2
Part 3 - Execution (Not Used)....2
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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.57.00.01-◊●◊●◊ Temporary Controls for Work Areas

1.3. SUBMITTALS

1.3.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.3.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Staging Area
   a. ANSI B (11"x17") plan showing the location of any proposed staging or storage area 15 calendar days prior to the use of such area.
   b. Copies of any permits, stormwater plans, surveys, etc. related to staging and storage areas shall be provided to the COR.

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. USE OF GOVERNMENT LAND

1.5.A. The Design-Builder's construction facilities shall be arranged and operated in a manner to preserve and protect existing features, trees, and vegetation to the maximum extent practicable. The location, construction, operation, maintenance, and removal of construction facilities on Government land shall be subject to the approval of the COR.

1.5.B. USIBWC land is not available for use for the Design-Builder's Field Office and/or sheds.

1. The Design-Builder may choose to have an offsite Field Office.

1.5.C. USIBWC property is not available for use as the Design-Builder's staging and/or storage areas. All areas available are subject to flooding. Use of areas shall be at Design-Builder's risk.

1.5.D. Housing for Design-Builder personnel will not be permitted on Government land.

1.5.E. Upon completion of the work, and following removal of construction facilities and required cleanup, Government land used for construction purposes and not required for the completed installation shall be returned to preconstruction conditions.

1.6. STAGING AREAS

1.6.A. The specific location of the Staging Area is subject to compliance confirmed by COR. Additionally, the Design-Builder shall submit an ANSI B (11"x17") plan showing the location of any proposed staging or storage area 15 calendar days prior to the use of such area, indicating the size of the area and the proposed method of fencing the area.

1. A similar submittal is required 15 calendar days prior to the change of location or expansion of size of any staging or storage area.
2. The Design-Builder shall leave the Staging Area in preconstruction conditions or better.

1.6.B. The Design-Builder shall ensure that staging areas, parking areas, and all other PSLs are protected from hydrocarbon spills.

1.6.C. The Design-Builder is responsible for all permits, stormwater plans, environmental surveys, or other items required for the staging or storage areas. It is the Design-Builder's responsibility to check with the local regulatory bodies to ensure that all regulations and requirements are met.

1. Design-Builder shall ensure that requirements of Section 01.57.00.01 are met for all staging and storage areas.
2. Copies of any permits, stormwater plans, surveys, etc. related to staging and storage areas shall be provided to the COR.

1.6.D. Design-Builder is responsible for all security related to maintenance, use, and storage at their Staging Area.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 01.55.00.01
VEHICULAR ACCESS AND PARKING

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

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1.2.B. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.C. Section 01.35.23.01-◊●◊●◊ Safety

1.2.D. Section 01.57.19.01-◊●◊●◊ Temporary Environmental Controls

1.3. REFERENCE STANDARDS

1.3.A. Code of Federal Regulations (CFR) / Occupational Safety and Health Administration (OSHA)

1. 29 CFR 1926, Construction Standards

1.4. ERROR! AUTOTEXT ENTRY NOT DEFINED.SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

The Design-Builder shall ensure that all barricades, signs, cones, lights and /or traffic control devices are installed, moved, replaced, maintained, cleaned, and removed upon completion of work.

1.7. PROJECT AND SAFETY SIGNS

1.7.A. All project entry points shall have signs stating "Construction Area-Keep Out" and warning signs requiring PPE. PPE sign may state "Hard Hats Required" or may specify "Hard Hats, Steel Toe Boots, and Eye Protection Required" as applicable based upon the APP.

1. The Design-Builder may delineate an area within this work zone as a "hard hat free zone." Usually such areas are used for private parking areas or lunch areas.
2. Hard hat free zones must be clearly identified and cannot be within any area of ongoing construction.

1.7.B. Ensure that signs are consistent with APP in Section 01.35.23.01.

1.7.C. Provide required and appropriate safety signs and barricades.

1.7.D. Site access restrictions are detailed in Section 00.24.00.01.

PART 2 - PRODUCTS

2.1. PROJECT SIGNS

2.1.A. Project signs shall be of the size, color, and shape applicable for their application.

2.1.B. Signs related to safety situations shall meet associated OSHA requirements.

2.1.C. In almost all situations, hand written signs are not allowed.

PART 3 - EXECUTION

3.1. IMPLEMENTATION

3.1.A. Before beginning work, designate in writing a Design-Builder's Responsible Person (CRP) to be the representative of the Design-Builder who is responsible for taking or directing corrective measures of installation and maintenance of barricades and signing deficiencies as soon as possible. The CRP must be accessible by phone and able to respond to emergencies 24 hours per day.

3.1.B. The Design-Builder shall develop a barricade and signing plan and submit for Government for compliance confirmation.

3.1.C. The Design-Builder shall install devices straight and plumb. Do not make changes to the location of any device or implement any other changes without the compliance confirmation of the Government. Minor adjustments to meet field constructability and visibility are allowed.

3.2. LOCAL ACCESS

3.2.A. The Design-Builder shall ensure that all roads used during construction are maintained throughout the duration of use and shall be restored to the preconstruction condition or the intended construction condition.

1. All affected roads shall be included on the preconstruction video to fully document the condition of the road prior to construction activities.
2. When hauling operations are being performed, the Design-Builder shall ensure that all roads being utilized for hauling are graded smooth at least once a week. During normal construction periods (no hauling), the Design-Builder shall ensure that grading is scheduled to ensure upkeep of the roadway.
3. The Design-Builder shall ensure that blow outs, pot holes, or other damaged roadway areas are repaired within 3 working days of discovery.

4. The Design-Builder shall ensure that gravel or other material is added to roads used as part of this project as required to keep them maintained.

3.3. BARRICADES AND SIGN SUPPORTS

3.3.A. Adequate support for the project signing and barricades, including positioning and alignment, shall be provided by the Design-Builder.

3.3.B. The Design-Builder shall implement an inspection schedule to ensure that all required and necessary signs are in the correct position and alignment. This schedule may vary based upon weather conditions or time of year.

3.4. MAINTENANCE

3.4.A. The Design-Builder shall maintain devices including, but not limited to barricades, concrete traffic barrier, and signing, by taking corrective action as soon as possible.

3.4.B. Corrective action includes but is not limited to cleaning, replacing, straightening, covering, or removing devices.

3.4.C. The Design-Builder shall maintain the devices such that they are properly positioned, spaced, and legible and that retro-reflective characteristics meet requirements during darkness and rain.

3.4.D. Traffic control signs such as flaggers, truck turning, etc. shall be covered, turned, or removed when signed activities are not currently being conducted.

3.5. MUD FROM VEHICLES

3.5.A. The Design-Builder shall ensure that a means of removing mud from vehicles prior to entering public roads is provided.

3.5.B. The Design-Builder shall ensure that a maintenance program for removing dust, debris, and mud from public roadways that may be tracked from construction site is established and effective.

3.5.C. See Section 01.57.19.01 for full guidance on preventing track out of sediment from jobsite.

3.6. REMOVAL

Upon completion of work, the Design-Builder shall remove all barricades, concrete traffic barrier, signs, cones, lights and/or traffic control devices used for work-zone, unless otherwise shown on the plans.

--End of Section--

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SECTION 01.57.00.01
TEMPORARY CONTROLS FOR WORK AREAS

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

1.2.A. Section 00.24.00.01-Procurement Scope

1.2.B. Section 00.31.24.01-Environmental Information

1.2.C. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.D. Section 01.52.13.01-Field Offices and Sheds

1.2.E. Section 02.01.00.01-◊●◊●◊ Existing Conditions & Facilities

1.2.F. Section 02.21.13.01-◊●◊●◊ Cultural Resources Surveys

1.3. REFERENCE STANDARDS

1.4. ERROR! AUTOTEXT ENTRY NOT DEFINED.SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section include:

1. Design-Builder documentation on certification decisions, contacts, and correspondence with the resource agencies for all Project Specific Locations (PSL).
2. The Design-Builder shall submit to the Government copies of the city or county permits, Stormwater Pollution Prevention Plan (SWPPP), landowner agreement, and applicable cultural survey for all non-commercial (not open to the public for sales of borrow materials) borrow pits utilized on this project.

3. The Design-Builder shall submit to the Government copies of the Stormwater Pollution Prevention Plan (SWPPP), landowner agreement, and other applicable documentation for all staging areas utilized on this project as well as for the location of the Design-Builder's field office.
4. The Design-Builder shall submit to the Government copies of landowner agreements or other temporary easements obtained to facilitate construction operations per Section 00.24.00.01 Paragraph 3.2.
5. The Design-Builder shall obtain written compliance confirmation from the Government for all PSLs on USIBWC property not specifically addressed in the Scope of Work.

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

The Design-Builder shall obtain written compliance confirmation from the Government for all PSLs in the right of way not specifically addressed in the Contract Drawings.

1.7. WORK AREA / PROJECT-SPECIFIC LOCATION REQUIREMENTS

1.7.A. The Design-Builder shall limit all construction activities to areas within the project limits and other project specific locations (PSLs). PSLs include, but are not limited to, borrow pits, material sources, waste sites, parking areas, stockpiles, storage areas, field offices, staging areas, haul roads, etc. both on and off the ROW. Most PSLs are located on private or non-USIBWC property.

1. Field office, stockpile, staging area, and haul route locations shall be compliance confirmed by the Government prior to the start of construction.
2. See Section 01.52.13.01 for details on use of USIBWC property for offices, storage, and/or staging areas.
3. The Government will not be specifying or providing a borrow pit location on or off Government right of way. It is the Design-Builder’s responsibility to obtain fill material that meets the fill material requirements of this Scope of Work.

1.7.B. The Design-Builder shall provide for protection of the existing right-of-way and existing facilities.

1.7.C. Signing the Contract certifies compliance with all applicable laws, rules, and regulations pertaining to the preservation of natural and cultural resources and the environment as issued by the following or other agencies:

1. Occupational Safety and Health Administration (OSHA)
2. US Environmental Protection Agency (EPA)
3. US Fish and Wildlife Service (FWS)
4. US Army Corps of Engineers (USACE)
5. US Federal Emergency Management Agency (FEMA)
6. **Error! AutoText entry not defined.**Hidalgo County, Texas
7. USIBWC Environmental Documents List in Section 00.31.24.01

1.7.D. PSLs shall not impact wetlands, natural resources, nor cultural resources.

1.7.E. The Design-Builder shall ensure that the Construction Contractor and all subcontractors also comply with applicable environmental laws, rules, regulations, and requirements in the Contract.

1.7.F. All geological materials used on the project shall meet Section 02.21.13.01.

1.7.G. The Design-Builder shall maintain documentation of certification activities including environmental consultant reports, documentation on certification decisions, contacts, and correspondence with the resource agencies.

1. See Section 02.21.13.01 for environmental consultant reports details.
2. The Design-Builder shall provide said documentation to the Government for all PSLs.
3. The Design-Builder shall provide the Government with proof of compliance with all natural, cultural, and environmental regulations for use of any site. Proof of compliance can be documentation from the city/county/state oversight board or a release of all claims from the property owner.

1.7.H. The Design-Builder shall obtain written compliance confirmation from the Government for all PSLs in the right of way not specifically addressed in the construction drawings.

1. The Design-Builder shall address requirements for stormwater pollution prevention for all Design-Builder and/or construction facilities located within the right of way. The Design-Builder shall comply with all permit requirements for portable facilities, such as concrete batch plants, rock crushers, asphalt plants, etc.
2. The Design-Builder shall address all environmental issues, such as Section 404 permits, EIS, ROD, EA, FONSI, wetland delineation, endangered species consultation requirements, or archaeological and historic site impacts.

1.8. ACCESS TO THE WORK

1.8.A. The Design-Builder shall use existing roads to access project limits and associated PSLs subject to the following conditions:

1. The Design-Builder shall be responsible for and repair, any damage to roadways used by the Design-Builder, subcontractors, and/or vendors in performing the work under this Contract.
2. The Design-Builder shall meet all conditions imposed upon the use of existing roads by those having jurisdiction thereof, including seasonal, weight limits, and/or other limitations or restrictions.
3. The Design-Builder shall assure that the hauling of sand, gravel, earth material, or other hauling, over public highways, roads, or bridges is in compliance with the applicable local regulations and shall be such as to minimize interference with or congestion of local traffic.

1.8.B. Under flood conditions or other extreme weather events, full access to the jobsite may not be available. The Design-Builder shall make accommodations for less than full access in their Flood Protection Plan (Section 02.01.00.01).

1.9. AGREEMENTS AND TEMPORARY EASEMENTS

1.9.A. Agreements and temporary easements for PSLs and for contractor access to property to facilitate construction off USIBWC's ROW shall reference the Contract number and project title.

1.9.B. Agreements and temporary easements shall include permission for Government access to conduct appropriate inspections.

1.9.C. Dollar amounts on these documents may be blacked out when copies are provided to Government.

1.9.D. See Section 00.24.00.01 Paragraph 3.2 for areas accessible to Contractor without agreements or temporary easements.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION

3.1. GENERAL

3.1.A. All SWPPPs associated with this project shall be signed, sealed, and dated by a registered professional engineer and shall be available for review during the duration of construction activities.

3.1.B. A general SWPPP covering all work areas is not permitted; each PSL must be addressed separately.

1. If acceptable to the COR, PSLs sharing common ownership may be covered under a single SWPPP.

3.2. STAGING AREAS AND FIELD OFFICE
The Design-Builder shall submit to the Government copies of the Stormwater Pollution Prevention Plan (SWPPP), landowner agreement, and other applicable documentation for all PSLs utilized on this project.

--End of Section--

SECTION 01.57.19.01
TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

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1.2.B. Section 00.31.43.01-Permit Application

1.2.C. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.D. Section 01.57.00.01-◊●◊●◊ Temporary Controls for Work Areas

1.2.E. Section 01.74.19.01-◊●◊●◊ Construction Waste Management and Disposal

1.2.F. Section 02.01.00.01-◊●◊●◊ Existing Conditions & Facilities

1.2.G. Section 02.21.13.01-◊●◊●◊ Cultural Resources Surveys

1.3. REFERENCE STANDARDS

1.3.A. Code of Federal Regulations (CFR)

1. 22 CFR 1104, International Boundary and Water Commission, Protection of Archaeological Resources
2. 29 CFR 1910, Occupational Safety and Health Standards (OSHA)
3. 36 CFR 800, Protection of Historic Properties (NHPA)

1.3.B. **Error! AutoText entry not defined.**United States Code (USC)

1. Archaeological Resources Protection Act (ARPA), 16 USC Chapter 1B
2. Clean Water Act (CWA), 33 USC 1251 et seq.
3. Endangered Species Act (ESA), 16 USC 1531 et seq.
4. Federal Environmental Pesticide Control Act, 7 USC Chapter 6
5. Migratory Bird Treaty Act (MBTA), 16 USC 703-712
6. National Environmental Policy Act (NEPA), 42 USC 4321-4347
7. National Historic Preservation Act (NHPA), 54 USC 300101 et seq.
8. Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC 3001 et. seq.

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Stormwater Pollution Prevention Plan(s)
   a. A compliance confirmed SWPPP for the worksite is required prior to construction mobilization.
   b. Spill Prevention, Control, and Countermeasure (SPCC) Plan, if required.
   c. Copies of NOI, NOT, and any applicable waivers shall be provided to COR upon receipt.
2. Pesticide Use Plan, if required.
3. Hydrocarbon Storage Tank Permits

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. SWPPP Inspections
2. SWPPP Modification Logs
3. SWPPP Rainfall Logs
4. SWPPP Corrective Action Forms

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GENERAL

1.7.A. The Design-Builder shall provide and maintain methods, equipment, and temporary construction as necessary to provide controls over environmental conditions in the construction areas, adjacent areas,

temporary work areas and all Project Specific Locations (PSL) and shall remove physical evidence of the temporary facilities at the completion of work.

1.7.B. The Design-Builder shall, at their own expense, obtain all required permits for environmental controls unless otherwise specified.

1.7.C. Design-Builders shall be responsible for knowing about applicable environmental laws and regulations.

1.8. FIELD ENVIRONMENTAL MONITOR

1.8.A. USIBWC shall obtain the services of a Field Environmental Monitor (FEM) to ensure compliance with regulatory requirements and environmental protection commitments made during NEPA documentation.

1.8.B. The Design-Builder is responsible for being cognizant of and ensuring compliance with the environmental documents referenced in Section 00.31.24.01 as well as laws and regulations in Section 01.57.00.01 that oversee construction work. This responsibility shall apply to both the Design-Builder's operations and those of the any subcontractors.

1.8.C. The FEM shall be onsite, overseeing construction during any ground disturbing activity including, but not limited to: excavation, clearing, grubbing, compacting, erosion control, driving sheet pile, seeding, placing riprap, and hauling. If ground disturbing activities are not being conducted, the FEM shall, at a minimum, perform a daily inspection of the site.

1. The Design-Builder must coordinate the construction schedule, either daily or weekly, with the Government so that scheduling of the FEM can be accomplished in advance.
2. The Design-Builder shall specifically identify locations of ground disturbing activities on the construction schedule.

1.8.D. The FEM will be required to survey for and monitor any Threatened and Endangered (T&E) Species and/or birds protected under the Migratory Bird Treaty Act and/or Endangered Species Act within the project limits in order to prevent adverse impacts to or destruction of these species during construction.

1.8.E. The FEM will write a daily inspection report using IBWC Form 203. A copy of this report will be provided to the Design-Builder within 1 day of the inspection detailed in the report. Reports are not required to be delivered on non-work days.

1.8.F. When any violations of the environmental documents or applicable local, state, or Federal environmental regulations referenced in this Contract are called to the Design-Builder's attention by the Government, the Design-Builder shall immediately correct the condition to which attention has been directed. Such notice, either oral or written, when served on the Design-Builder or the Design-Builder's representative shall be deemed sufficient.

1.8.G. In the event the Design-Builder fails to or refuses to promptly comply with the compliance directive issued under this Section, the CO may issue an order to stop all or any part of the work. When satisfactory corrective action is taken, an order to resume work will be issued. The Design-Builder shall not be entitled to any extension of time, to any claim for damages, nor to any additional compensation by reason of the directive or the any stop work order issued under this Section. Failure of the Government to order discontinuance of any or all of the Design-Builder's operations shall not relieve the Design-Builder of their responsibility under local, state, and Federal environmental regulations.

1.8.H. The FEM shall report directly to the COR, but will have normal day-to-day contact with the Design-Builder, the Construction Contractor, and the Government Inspector. The Design-Builder shall implement changes required by the FEM to maintain compliance with the EA and environmental laws.

1.8.I. The FEM will not perform stormwater pollution prevention (SWPP) inspections of the site for the Design-Builder. For the Design-Builder to meet the requirements in their stormwater pollution prevention plan (SWPPP), the Design-Builder must delegate all SWPP inspection responsibilities to a specific person

on the Design-Builder's payroll or to an appropriate subcontractor. The FEM may report SWPP violations for corrective action.

1.9. WATER POLLUTION

1.9.A. The Design-Builder shall ensure that all construction activities are performed by methods that will prevent entrance, or accidental spillage, of solid matter, contaminants, debris, or other pollutants or wastes into the Rio Grande or associated watersheds of the project limits.

1.9.B. If the COR determines that stockpiling material on the floodplain is in the benefit of the Government due to restricted non-Government areas for stockpiling, the Construction Contractor may stockpile soil and rock material on the riverside of the levee.

1. Stockpiles shall be placed parallel to the levee.
2. Stockpiles shall have appropriate stormwater BMPs placed between the stockpile and the Rio Grande.
3. In case of activation of the Design-Builder's Flood Protection Plan (Section 02.01.00.01), stockpiles on the floodplain shall be pushed up against or onto the levee.
4. Brush and other debris cannot be stored on the floodplain. These items must be removed from the riverside of the levee within 72 hours.

1.9.C. All discharges into "waters of the United States" shall meet the requirements of the Clean Water Act (CWA).

1.9.D. The Design-Builder shall meet all requirements of the TCEQ Pollutant Discharge Elimination System requirements for discharges associated with construction activities including but not limited to preparation of a stormwater pollution prevention and monitoring plan (SWPPP).

1.9.E. The Design-Builder shall meet all the requirements of the SWPPP during construction activities.

1.9.F. The Design-Builder shall provide contained traps to washout concrete trucks. All material washed out of any concrete truck shall be contained in the trap. All concrete waste collected in the trap shall be properly disposed of per Section 01.74.19.01.

1.9.G. The Design-Builder shall provide secondary containment systems capable of containing twice the volume of the storage tank as well as appropriate spill cleanup materials onsite for any material that is toxic or is harmful to flora, fauna, or the environment.

1.9.H. The Design-Builder shall periodically inspect earthwork for any evidence of erosion starting. If such evidence is found, the Design-Builder shall apply corrective measures, as required, to control erosion.

1. Inspections for erosion shall be noted in the daily QC report.

1.10. AIR POLLUTION

1.10.A. The Design-Builder shall ensure compliance with applicable Federal, state, and local laws and regulations and with the requirements of these Contract Documents concerning the prevention and control of air pollution and for pollutant emissions from all vehicles and equipment onsite. Should a conflict exist in the requirements for abatement of air pollution, the most stringent requirement shall apply. The Design-Builder shall utilize such methods and devices available to prevent, control and otherwise minimize atmospheric emissions or discharges of air contaminants including dust.

1.10.B. The Design-Builder shall ensure that equipment and vehicles that show excessive emissions of exhaust gases are not operated until corrective repairs or adjustments reduce such emissions to acceptable levels.

1.11. DUST ABATEMENT

1.11.A. The Design-Builder shall, during the performance of the work required by these Contract Documents, or any operations appurtenant thereto and whether within the construction limits of this project or elsewhere, comply with applicable Federal, state, and local laws and regulations regarding the prevention, control and abatement of dust pollution. Should a conflict exist in the requirements for dust abatement, the most stringent requirement shall apply.

1.11.B. The Design-Builder shall be ultimately responsible for controlling objectionable dust caused by the operation of vehicles and equipment, clearing, or for any reason whatever. Dust shall be controlled at all times, including Saturdays, Sundays, and holidays, during both working and nonworking hours.

1.11.C. The Government has the authority to stop any construction activity contributing to dust levels which are excessive or are in violation of Federal, state, or local laws. Dust control measures shall be maintained at all times to the satisfaction of the COR, in accordance with the requirements of the Government.

1.11.D. All costs resulting from such work stoppage shall be the responsibility of the Design-Builder and Contract time extensions will not be provided.

1.11.E. The Design-Builder shall reference dust control requirements in SWPPP.

1.12. NOISE POLLUTION

1.12.A. The Design-Builder shall ensure that noise is minimized throughout all phases of the Contract and shall exercise particular and special efforts to avoid the creation of unnecessary noise impact on adjacent noise sensitive receptors in the placement of non-mobile equipment such as air compressors, generators, pumps, etc. The Design-Builder shall ensure that mobile and stationary equipment is placed to cause the least disruption of normal adjacent activities.

1.12.B. The Design-Builder shall ensure compliance with the applicable federal, state, and local laws and regulations, regarding the prevention, control, and abatement of harmful noise levels. Should a conflict exist in the requirements for noise abatement, the most stringent requirement shall apply.

1.12.C. All vehicles and equipment shall be such as to minimize noise to the greatest degree practicable. Noise levels shall conform to the latest OSHA and local agency standards.

1.12.D. All equipment associated with the work must be equipped with components to suppress excessive noise and these components must be maintained in their original operating condition considering normal depreciation. Noise attenuation devices installed by the manufacturer such as mufflers, engine covers, insulation, etc. must not be removed nor rendered ineffectual nor be permitted to remain off the equipment while the equipment is in use.

1.13. LIGHT ABATEMENT

The Design-Builder shall ensure that special care is exercised to direct all stationary lights to shine downward at an angle less than horizontal. These lights shall also be shielded so as not to be a nuisance to surrounding areas. No lighting shall include a residence or roadway in its direct beam. The Design-Builder shall immediately correct lighting problems when they occur.

1.14. PESTICIDES

1.14.A. Pesticides are also known as herbicides, insecticides, fungicides, rodenticides, piscicides, avicides, sanitizers, disinfectants, animal repellants, and insect repellants. Additionally, certain plant growth regulators or hormones may also be regulated as pesticides by the Federal Environmental Pesticide Control Act (FIFRA).

1.14.B. Only those pesticides registered with EPA in compliance with the FIFRA and with State agencies may be used on the site.

1.14.C. Only pesticides noted as safe for use near lakes and aquatic environments shall be used.

1.14.D. All pesticides, except those noted in 1.14.F.1. below, used shall contain a marker dye or colorant. The dye used shall be considered non-toxic under OSHA 29 CFR 1910.1200, be safe for animals, and be safe for aquatic environments.

1.14.E. The Design-Builder shall provide rodent and pest control as necessary to prevent infestation of construction or storage areas, employing methods, and use materials which will not adversely affect conditions at the site or on adjoining properties.

1.14.F. Pesticide Use Plan
Prior to the use of any pesticide on within USIBWC's ROW, the Design-Builder shall submit a pesticides use plan.

1. A pesticide use plan is not required for insect repellant to be applied directly to clothing, or for small quantities of aerosol insecticides, such as fly and spider sprays, to be applied within or directly to offices or shop buildings.
2. For each pesticide:
   a. Identify the entity to be responsible for pesticide application.
      (1) Pesticide applicators shall be licensed in the state where pesticide will be applied
      (2) Provide a copy of this license as part of the Pesticide Use Plan.
   b. Provide the complete label as defined by FIFRA, as amended, containing the following:
      (1) Brand, common and chemical names
      (2) Ingredients and net contents
      (3) Use classification and registered uses
      (4) Name and address of manufacturer or registrant, EPA registration number and the establishment number
      (5) Directions for use, including safety information, warnings and precautions
   c. Safety Data Sheet (SDS) for pesticide
   d. Safety Data Sheet for dye/colorant

1.14.G. All EPA and manufacturer requirements for storage and transport of pesticides shall be met. A spill kit appropriate for the pesticide used shall be kept nearby during mixing and application.

1.14.H. Keep records of pesticide types and amounts purchased, delivered, stored, mixed and actually used, and disposal means of excess. Provide copies of all records to the COR as well as keeping a copy at the worksite for review.

1.15. EROSION PROTECTION

1.15.A. The Design-Builder shall ensure that industry Best Management Practices (BMP) for erosion control and construction stormwater containment and permits are used.

1.15.B. The Design-Builder shall ensure that earthwork is planned and executed by methods to control surface drainage from cuts and fills and from borrow and waste disposal areas, to prevent erosion and sedimentation.

1.15.C. The Design-Builder shall ensure that areas of bare soil exposed at any time are held to a minimum.

1.15.D. The Design-Builder shall ensure that temporary control measures such as berms, dikes, and drains are provided.

1.15.E. Vegetation for Erosion Control-Topsoil Salinity
When using vegetation as a method for temporary erosion control, Design-Builder shall be responsible for using topsoil with salinity levels that are conductive to plant growth, particularly for establishment of native grasses and forbs.

1.15.F. Prior to completion of this Contract, a vegetative cover equal to at least 70% or greater if required by the SWPP permit shall be established to control erosion.

1.15.G. The Design-Builder shall ensure that fills and waste areas are constructed by selective placement to eliminate surface silts or clays which will erode.

1.15.H. The Design-Builder shall ensure that water or use other methods subject to the COR's compliance confirmation are applied which will keep dust in the air to a minimum.

1.15.I. The Design-Builder shall ensure that all areas disturbed during construction are revegetated.

1.16. PAINT AND SOLVENT CONTROL

The Design-Builder shall comply with all requirements of regulatory agencies in use, storage, application, and disposal of paints and solvents, and containers for paints and solvents. All disposals shall be at a compliance confirmed legal disposal site and Section 01.74.19.01.

1.17. OILS

1.17.A. Oil means oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.

1. Petroleum oils include, but are not limited to, crude and refined petroleum products, asphalt, gasoline, fuel oils, mineral oils, naphtha, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.
   a. Asphalt is a thermoplastic material, composed of unsaturated aliphatic and aromatic compounds, that softens when heated and hardens upon cooling. Within a certain temperature range, it exhibits viscoelastic properties with viscous flow behavior and elastic deformation. All types of asphalt are petroleum oil products, and its composition depends on the source of the crude oil and the process used to manufacture it.
   b. Asphalt includes asphalt cement (AC) as well as asphalt derivatives such as cutbacks and emulsions. Although AC is semi-solid or solid at ambient temperature and pressure, it is generally stored at elevated temperatures. Hot AC is liquid and therefore is capable of flowing. Cutbacks and emulsions are liquid at ambient temperature, and because of their low viscosity, they may flow when discharged onto the ground.
2. Nonpetroleum oils and greases include coal tar, creosote, silicon fluids, pine oil, turpentine, and tall oils.
3. Synthetic oils are used in a wide range of applications, including as heat transfer fluids, engine fluids, hydraulic and transmission fluids, metalworking fluids, dielectric fluids, compressor lubricants, and turbine lubricants. Synthetic oils are created by chemical synthesis rather than by refining petroleum crude or extracting oil from plant seeds.
4. Animal fat means a non-petroleum oil, fat, or grease of animal, fish, or marine mammal origin.
5. Vegetable oil means a non-petroleum oil or fat of vegetable origin, including but not limited to oils and fats derived from plant seeds, nuts, fruits, and kernels.

1.17.B. Oils shall not be stored within the 100 year floodplain. The 100 year floodplain is defined as top of left levee to top of right levee.

1.17.C. All stored oils must have a secondary containment system capable of containing twice the volume of the storage tank. Appropriate spill cleanup materials must be available onsite at all times during construction.

1. Storage tanks shall have a capacity of 1,100 gallons or less or shall be properly licensed by the state where the tank is located.

1.17.D. A Spill Prevention, Control, and Countermeasure (SPCC) Plan shall be prepared if any of the following apply:

1. Have a stored oil capacity of 1,320 gallons or more.
2. Can reasonably expect that accidental discharge of oil will reach navigable waters or adjoining shorelines in quantities that may be harmful.

1.17.E. SPCC plans shall be provided with the Design-Builder's SWPPP.

1.17.F. The Design-Builder shall ensure that all equipment, both onsite and at all PSLs, is maintained in good working order to prevent drips and leaks.

1. Leaking equipment shall not be used.
2. Leaking equipment shall be red tagged by the FEM, the Inspector, or the COR. This equipment must be removed from the site until all leaks have been corrected.

1.17.G. The Design-Builder shall ensure that all equipment (heavy equipment, chainsaws, ATVs, other hand power tools, etc.) are fueled outside of stream adjacent riparian areas and wet areas and at least 100 feet from any surface water. Specific fueling areas may be approved and designated by the COR.

1.17.H. Used oils shall be disposed of by the Design-Builder according to Section 01.74.19.01.

1.17.I. The Design-Builder shall ensure that any soil contaminated by oil shall be removed from the site and disposed of according to Section 01.74.19.01.

1.18. PRESERVATION OF HISTORICAL AND ARCHAEOLOGICAL DATA

1.18.A. General
Federal legislation provides for the protection, preservation, and collection of scientific, prehistoric, historic, and archaeological data, including relics and specimens, which might otherwise be lost due to alteration of the terrain as a result of any Federal construction project.

1. Scientific data and specimens include, but are not limited to: fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest, and that provide information about the history of life on earth.

1.18.B. If the Design-Builder, Construction Contractor, or any subcontractors intends to conduct operations which will affect other public or private lands, including but not limited to quarry operation, aggregate production, and use of borrow sources or waste areas or if they are purchasing geological materials for use on this project, cultural resource studies shall be performed to ensure that Section 106 of National Historic Preservation Act (NHPA - 36 CFR 800) as well as USIBWC NHPA implementing regulations (22 CFR 1104) are met. Specific requirements are noted in Section 02.21.13.01.

1.18.C. The Design-Builder, Construction Contractor, and any subcontractors shall comply with state historical preservation laws (see State's Historical Preservation Office (SHPO)) when operating on non-Federal and non-Indian lands.

1.18.D. Destruction of Archaeological Resources
Any person who excavates, removes, damages, alters, or defaces or attempts to excavate, remove, damage, or otherwise alter, or deface any archaeological resource located on public lands or Indian lands is subject to a maximum of five years in prison and $250,000 fine, as prescribed under Sections 6 and 7 of the Archaeological Resources Protection Act (ARPA). State law may provide other penalties on non-Federal lands.

1.18.E. Discovery of Resources

1. Should the Design-Builder, or any of the Design-Builder's employees, or parties operating or associated with the Design-Builder in the performance of this Contract (including Construction

Contractor or other subcontractors) discover evidence of possible cultural, scientific, prehistoric, historical, or archaeological resources, the Design-Builder shall ensure that:

a. Work is ceased immediately at that location.

b. The COR is immediately notified orally, giving the location and nature of the findings.

c. Written confirmation to the COR is completed within 2 days.

2. In addition to notifying the COR, where the discovery occurs on state, municipal, or private lands, the Design-Builder shall ensure that the appropriate state officials as prescribed by state law are notified.

3. If a cultural resource is determined by USIBWC to be a Native American cultural item, then the Design-Builder shall ensure that all activity in the area of the discovery is ceased, that a reasonable effort to protect the items discovered is made, and that written approval from the CO is received prior to resuming activity. This requirement is prescribed under the Native American Graves Protection and Repatriation Act (NAGPRA).

4. If the discovery occurs on tribal lands, the Design-Builder shall immediately orally notify the responsible tribal official and the COR and follow with written confirmation within 2 days to the responsible tribal official and the COR.

5. The Design-Builder shall ensure that care is exercised so as not to disturb or damage any cultural resources uncovered during construction activities and provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the CO.

6. The Design-Builder shall ensure that work in the area of discovery is not resumed until receipt of written notice to proceed from the CO.

1.18.F. Discovery of Human Remains or Native American Artifacts

1. Should the Design-Builder, or any of the Design-Builder's employees, or parties operating or associated with the Design-Builder in the performance of this Contract (including Construction Contractor or other subcontractors) discover evidence of human remains or burials, the Design-Builder shall ensure that:

a. Work is ceased immediately at that location and within a 100 foot radius.

b. The COR is immediately notified orally and is given the location and nature of the findings.

c. Follow with written confirmation to the COR within 24 hours.

2. In additional to all Federal regulations, any human remains or Native American artifacts found on private property or state owned land used as part of this project is subject to all applicable state regulations.

a. See Texas Health and Safety Code §711-715.

3. The Design-Builder shall ensure that care is exercised so as not to disturb or damage any remains or artifacts uncovered during construction activities and provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the CO.

4. The Design-Builder shall ensure that work in the area of discovery is not resumed until receipt of written notice to proceed from the CO.

1.18.G. Where appropriate by reason of discovery, the CO may order delays in time of performance or changes in work, or both. When such delays or changes are ordered, an equitable adjustment will be made in the Contract in accordance with applicable clauses of the Contract.

1.18.H. The Design-Builder shall insert this Subsection (1.18 Preservation of Historical and Archaeological Data) in all subcontracts which involve performance of work on project related ground disturbing activities, regardless of location.

1.19. MIGRATORY BIRDS

1.19.A. Bird species that are protected under the Migratory Bird Treaty Act (MBTA) may nest in areas containing trees or other suitable habitat within the project limits.

1. When possible, construction activities should be scheduled to occur outside of the migratory bird nesting season (from the March 1 through August 31).
2. However, if construction activities must occur during the nesting season of birds protected under the MBTA, then the areas proposed for disturbances shall be surveyed and flagged for any nesting birds prior to construction to avoid inadvertent destruction of active nests and eggs.
3. If nesting birds are found during this survey, the birds and any related eggs must be relocated or mitigated at the Design-Builder's expense prior to starting construction.

1.19.B. US Fish and Wildlife (FWS) regulations do not allow for the collection or transport (dead or alive) of any migratory birds nor removal of their nests without a permit issued by the FWS Regional Bird Permit Office. If birds or nest removal is required, the Design-Builder or FEM shall call the COR. The COR will coordinate with a USIBWC biologist so that they identify, coordinate, and acquire a temporary permit to collect the bird(s).

1. The Design-Builder or the FEM shall notify the COR of any dead birds found on the project site.

1.20. NOXIOUS WEEDS

1.20.A. To prevent the potential spread of noxious weeds into work areas, Design-Builder shall be required to use weed-free equipment.

1.20.B. The Design-Builder shall ensure that all equipment is pressure washed to remove dirt and vegetation before bringing onsite to limit introduction of noxious weeds.

1.20.C. All subsequent move-ins of construction equipment shall be treated in the same manner as initial move-in.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. DESIGN-BUILDER'S RESPONSIBILITIES

3.1.A. Stormwater Pollution Prevention Plan

1. Per Section 00.31.43.01 the Design-Builder shall prepare an individual, site specific Stormwater Pollution Prevention Plan (SWPPP) and obtain Government's compliance confirmation prior to mobilization. The Design-Builder shall implement their SWPPP in accordance with TCEQ and Texas Pollutant Discharge Elimination System (TPDES) 2018 General Permit TXR150000.
2. USIBWC is not responsible for any SWPP operations and compliance therefore, USIBWC shall not be named as a responsible party or tasked to perform any activities, inspections, or other functions within the Design-Builder's SWPPP.
   a. While USIBWC will review and compliance confirm the Design-Builder's SWPPP, they will not sign the Design-Builder's document. Therefore, the Design-Builder's SWPPP shall not include a place for USIBWC's signature.
   b. The Design-Builder shall not prepare a group SWPPP for the project the includes USIBWC. Only an individual SWPPP (or a group SWPPP with their subcontractors) with the Design-Builder (and possibly their subcontractors) as the site operator shall be compliance confirmed.

3. The Design-Builder is responsible for developing and implementing a SWPPP for all project-specific locations as defined in Section 01.57.00.01 within and outside of the Government's right of way in accordance with the specific or general stormwater permit requirements.
4. The Notice of Intent (NOI) may not be filed until the SWPPP has been compliance confirmed by the COR.
5. Copies of NOI, Waivers, and Notice of Terminations (NOT) shall be provided to the COR.
6. The Design-Builder shall prevent water pollution from stormwater associated with project site.
7. The plan shall include the BMPs to be used.
8. The SWPPP shall be signed, sealed, and dated by a professional engineer and shall be available and posted on the project site during the duration of construction activities.
9. A general plan covering all work areas is not permitted; each PSL must be addressed separately.
10. It is the Design-Builder's responsibility to obtain all permits and clearances required by the SWPPP prior to commencement of construction.
11. Attachments to your base SWPPP shall be called "attachments" and not "appendices." EPA and others reference their appendices often and having the permit appendices and then your appendices creates confusion.

3.1.B. Other General Responsibilities

1. Phasing.
   The Design-Builder shall ensure that control measures are implemented in the area to be disturbed before beginning construction. Disturbances shall be limited to those areas shown on the construction drawings. If, in the opinion of the Government, the Design-Builder cannot control soil erosion and sedimentation resulting from construction operations, the Government will limit the disturbed area to that which the Design-Builder is able to control. The Design-Builder shall minimize disturbance to vegetation.
2. Maintenance
   The Design-Builder shall immediately correct ineffective control measures, implement additional controls, and/or remove excavated material within the time requirements specified in the applicable stormwater permit.
3. Stabilization
   The Design-Builder shall ensure that all disturbed areas where construction activities will be temporarily stopped is stabilized in accordance with the applicable stormwater permit and establish a uniform vegetative cover.
4. Finished Work
   Upon acceptance of vegetative cover, the Design-Builder shall ensure that all temporary control measures, temporary embankments, bridges, matting, falsework, piling, debris, or other obstructions placed during construction that are not a part of the finished work are removed and disposed of. Areas where temporary control measures are removed shall be reshaped and seeded.
5. Restricted Activities
   a. The Design-Builder shall ensure that disposal areas, stockpiles, or haul roads are not located in any wetland, water body, or streambed unless specifically allowed on the Contract Drawings.
   b. The Design-Builder shall ensure that no gravel or other material is placed on the floodplain to facilitate hauling.
   c. The Design-Builder shall ensure that temporary construction crossings are not installed in or across any water body without the prior compliance confirmation of the appropriate resource agency and the Government.
   d. The Design-Builder shall restrict construction operations in any water body to the necessary areas as shown on the plans or applicable permit; use temporary bridges, timber mats, or other

structurally sound and non-eroding material for stream crossings; provide protected storage area for paints, chemicals, solvents and fertilizers at a compliance confirmed location; keep paints, chemicals, solvents and fertilizers off bare ground and provide shelter for stored chemicals.

e. The Design-Builder shall ensure that no equipment repairs shall occur on or in the floodplain/channel of the Rio Grande.

f. The Design-Builder shall ensure that unless compliance confirmed by the COR, all equipment shall be parked at the staging area or at the stockpile site at the end of each work shift.

6. Structure Intakes
The Design-Builder shall ensure that all structures shall be protected with silt fence or other appropriate BMP.

7. Installation, Maintenance and Removal Work

a. The Design-Builder shall ensure that all work is performed in accordance with the specific or general stormwater permit; install and maintain the integrity of temporary erosion and sedimentation control devices to accumulate silt and debris until earthwork construction and permanent erosion control features are in place or the disturbed area has been adequately stabilized as determined by the Government.

b. If a device ceases to function as intended or it has visible damage, the Design-Builder shall ensure that it is repaired or replaced, as necessary.

c. The Design-Builder shall ensure that sediment, debris, and litter is removed. When compliance confirmed, sediments may be disposed of in the right of way in areas where the material will not contribute to further siltation. The Design-Builder shall ensure that removed material is disposed of in accordance with Federal, state, and local regulations.

d. The Design-Builder retains ownership of stockpiled material and must remove it from the project when new installations or replacements are no longer required.

e. The Design-Builder shall ensure that devices are removed upon compliance confirmation or when directed. Upon removal, finish-grade and dress the area. Stabilize disturbed areas in accordance with the permit and/or as shown on the plans or directed.

3.1.C. Cleaning Equipment

1. The Design-Builder shall ensure that all equipment shall be cleaned (pressure washed and/or steam cleaned) of external oil, grease, dirt and mud, and all leaks repaired prior to arriving at the project site.

a. All equipment will be inspected by the CQC and the Government Inspector before unloading at site.

b. Any leaks or accumulations of grease shall be immediately corrected.

c. The cleaning date shall be documented on Form 163A.

d. A written log of inspections and maintenance must be completed and maintained throughout the project period.

2. The Design-Builder shall ensure that all equipment shall be sanitized with steam or 2% bleach solution prior to arriving onsite and prior to leaving the site to help stop the spread of zebra mussels.

a. Remove any visible mud, plants, or animals before cleaning.

b. After being cleaned, the equipment shall be thoroughly drained and dried.

c. The date performed and type of cleaning shall be documented and indicated on Form 163A.

3.1.D. The Design-Builder shall submit the SWPPP to the COR for review and compliance confirmation.

1. The Design-Builder shall ensure that the SWPPP is kept maintained to include performing the required site inspections, performing training, and updating the logs within the SWPPP.

2. If the SWPPP must be amended provide a copy of the amended document to the COR for review and compliance confirmation.
3. Provide copies of SWPPP inspections, logs, and corrective action forms with that day's quality control report.

3.2. CONTROLS

3.2.A. In addition to BMPs identified in the Design-Builder's SWPPP, the Design-Builder shall ensure that the following are provided as required:

3.2.B. Construction Exits / Entrances
When tracking conditions exist, prevent traffic from crossing or exiting the construction site or moving directly onto a public roadway, alley, sidewalk, parking area, or other right of way areas other than at the location of construction exits. The COR will require the use a street sweeper, blade, water truck, or other equipment if other methods of track out control fail to prevent buildup of mud or dust on the roadway.

3.2.C. Earthwork for Erosion Control

1. The Design-Builder shall ensure that excavation and embankment operations are performed to minimize erosion and to remove collected sediments from other erosion control devices.
2. The Design-Builder shall ensure that:
   a. Earth dikes, swales, or combinations of both are placed along the low crown of daily lift placement to prevent runoff spillover
   b. Swales and dikes are placed at other locations to prevent runoff spillover or to divert runoff
   c. Cuts are constructed with the low end blocked with undisturbed earth to prevent erosion of hillsides
   d. Sediment traps are constructed at drainage structures in conjunction with other erosion control measures.

3.2.D. Removal of Sediment and Debris
The Design-Builder shall ensure that sediment and debris are removed when accumulation affects the performance of the devices.

3.2.E. Drip Pans
The Design-Builder shall ensure that oil drip pans are set under any vehicle left parked overnight or being repaired within USIBWC's ROW to prevent oil drips from contaminating the soil.

3.3. ENVIRONMENTAL COMMITMENTS

3.3.A. The Design-Builder shall ensure that all equipment is power washed prior to using onsite.

1. If equipment is demobilized and then returned to the project, it shall be power washed again.
2. Haul trucks are exempt from this requirement unless they are only used onsite.

3.3.B. Leaking or dripping equipment is not allowed to be operated on this worksite. The Design-Builder shall ensure that all equipment is in sound working order.

3.3.C. Equipment with oil seeps may require periodical power washing to ensure that oil is not deposited within USIBWC ROW.

1. Equipment may not be power washed within the floodplain, the river channel, or the levee footprints.

3.3.D. The Design-Builder shall ensure that construction operations incorporate any environmental commitments identified in the project's environmental documents identified in Section 00.31.24.01.

3.3.E. The Design-Builder shall include permission for Government access in arrangements for private lands used as staging areas, quarries, aggregate sources, borrow sources, etc. Government access to the private land shall be to identify cultural resources and conduct appropriate inspections.

--End of Section--

SECTION 01.58.00.01
PROJECT IDENTIFICATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Reference Standards....1
1.4. Submittals....1
1.5. Measurement and Payment....2
1.6. General....2
Part 2 - Products....2
2.1. Project Sign....2
Part 3 - Execution....3
3.1. Implementation....3
3.2. Sign Supports....3
3.3. Maintenance....4
3.4. Removal....4
--End of Section--....4

1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.3. REFERENCE STANDARDS

1.3.A. Federal Highway Administration (FHWA)

1. Standard Highway Signs, 2004 Edition with 2012 Supplement

1.3.B. Master Painter's Institute (MPI)

1. MPI #5 Primer, Alkyd/Oil for Exterior Wood, 2011
2. MPI #9 Alkyd, Exterior Gloss (MPI Gloss level 6), 2011
3. MPI #94 Alkyd, Exterior, Semi-Gloss (MPI Gloss level 5), 2012

1.3.C. SAE International (SAE)

1. AMS-STD-595A Colors Used in US Government Procurement, February 10, 2017

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Proposed Project Sign
   a. Design-Builder shall provide COR with details of the construction and layout of the proposed project sign prior to fabrication.

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

1.6.A. The Design-Builder shall ensure that 2 project identification signs as specified herein is furnished and installed at a location agreed upon with the COR.

1. Signs shall read as indicated below and shall be erected within 21 calendar days after the Construction Contractor mobilizes to the site.
2. The Design-Builder shall ensure that signs are maintained in good condition throughout the life of the construction period.

1.6.B. The Design-Builder may place a company sign adjacent to the project identification sign. The sign design shall be cleared by the COR prior to fabrication. The sign may not exceed 4 feet by 8 feet.

PART 2 - PRODUCTS

2.1. PROJECT SIGN

2.1.A. The project identification sign shall be constructed as indicated.

1. Text shall be based upon FHWA standard alphabet Series EM 2000.
2. Size and coloring shall be in accordance with the following illustration.
3. Other material requirements shall include the following:
   a. Colors refer to Color Standard No. 595A.
   b. Primer shall conform to MPI #5. Paints shall conform to MPI #9 or MPI#94 for finish paint and lettering. All exposed surfaces and edges of plywood shall be given one coat of linseed oil and be wiped prior to applying primer. All exposed surfaces and supports shall be given one coat of primer and two finish coats of white paint. Lettering on all signs shall be colored and sized as indicated.
   c. IBWC logo will be provided to the Design-Builder by the COR in jpg and tiff formats.
   d. The sign panel shall be constructed of ¾-inch minimum thickness high-density overlaid exterior type plywood panels, 5-ply B-B Grade or better, mounted flush on a 2 inch by 4 inch wood frame with vertical intermediate supports, 24 inches on center minimum, secured with non-corrosive fasteners.
   e. All supports, trims, and panels shall be given one prime coat of paint followed by one coat of compliance confirmed exterior enamel (white).

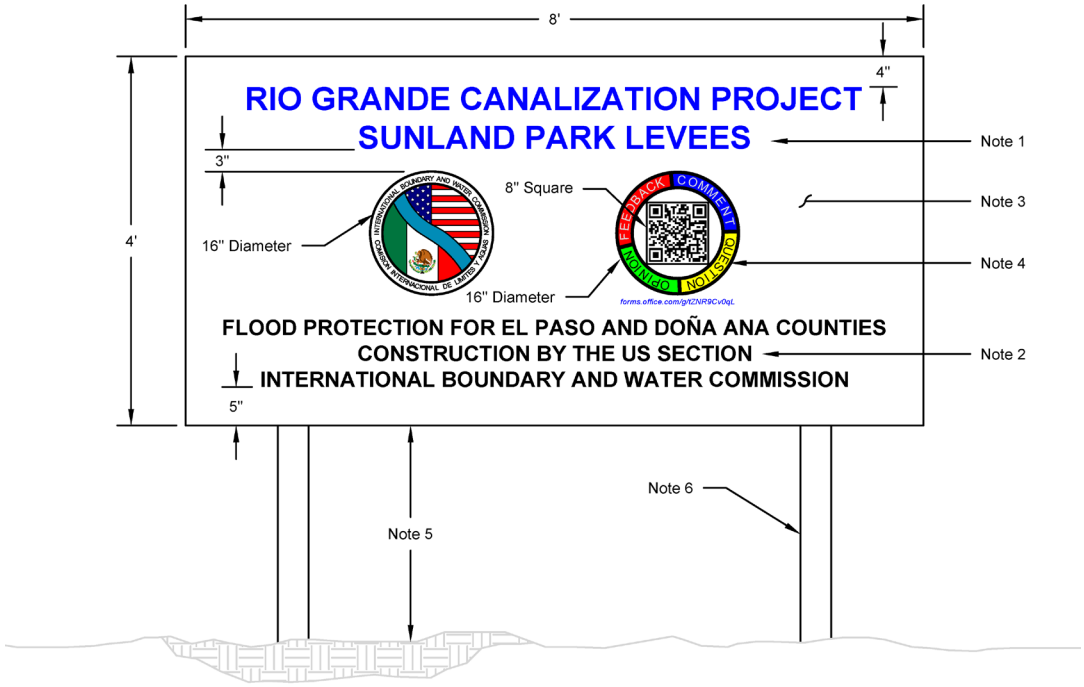

Figure 5 - Sample Project Sign

Sign notes are as follows:

Note 1-Text shall be Blue No. 15056. Text shall be 3 inches in height.

Note 2-Text shall be Black No. 17038. Text shall be 2 inches in height.

Note 3-Background and all other sign components not designated are to be painted White No. 17875.

Note 4-Feedback symbol can be based upon provided png file or created using 0.1875" thick circles one with an outside diameter of 16" and the other with an outside diameter of 12". Text in colored circle shall be 1.1" in height. QR code shall be based upon url forms.office.com/g/tZNR9Cv0qL. Url text (blue 15056) shall be 0.75" in height.

Note 5-Contractor shall place sign a proper distance above prevailing grade to permit easy public viewing.

Note 6-Contractor shall provide adequate supports for sign as site conditions may require.

PART 3 - EXECUTION

3.1. IMPLEMENTATION

3.1.A. The project signs shall be installed so that they are visible to the public. The location shall be agreed upon between the Design-Builder and the COR.

3.1.B. If the Design-Builder chooses to install a company sign, it's location shall also be agreed upon with the COR.

3.2. SIGN SUPPORTS

3.2.A. The Design-Builder shall ensure that adequate support for the project signing, including positioning and alignment, is provided.

3.2.B. The Design-Builder shall implement an inspection schedule to ensure signs remains in the correct position and alignment. This schedule may vary based upon weather conditions or time of year.

3.3. MAINTENANCE

3.3.A. The Design-Builder shall ensure that signs are maintained by taking corrective action as soon as possible.

3.3.B. Corrective action includes but is not limited to cleaning, replacing, straightening, covering, or removing devices.

3.4. REMOVAL

Upon completion of work, the Design-Builder shall ensure that project signs are removed unless otherwise shown on the plans or directed by COR.

--End of Section--

SECTION 01.61.00.01
COMMON PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Submittals....1
1.4. Measurement and Payment....2
1.5. Source Control....2
1.6. Quality Control / Quality Assurance of Materials....2
1.7. Sampling, Testing, and Inspection of Materials....3
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2.2. Surplus Materials....3
2.3. Hazardous Materials....3
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3.1. Transportation and Handling....4
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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.40.00.01-◊●◊●◊ Quality Requirements

1.2.C. Section 01.57.19.01-◊●◊●◊ Temporary Environmental Controls

1.2.D. Section 01.61.16.01-◊●◊●◊ Use of Recovered Materials and Biobased Products

1.2.E. Section 01.74.19.01-◊●◊●◊ Construction Waste Management and Disposal

1.2.F. Section 01.78.23.01-Operations and Maintenance Data

1.2.G. Section 01.78.36.01-◊●◊●◊ Warranties

1.2.H. Section 02.21.13.01-◊●◊●◊ Cultural Resources Surveys

1.3. SUBMITTALS

1.3.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.3.B. Required submittals in this Section include:

1. List of Equipment Specific/Special Tools
2. List of Manufacturer's Recommended Spare Parts

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. SOURCE CONTROL

1.5.A. The Design-Builder shall ensure that only materials that meet the Contract and construction document requirements are used.

1.5.B. Unless otherwise specified or compliance confirmed, the Design-Builder shall use new materials for the work. Material can be reused onsite upon approval of COR.

1.5.C. All materials installed shall be free of defects.

1.5.D. Only materials noted as safe for use near lakes and in aquatic environments shall be used.

1.5.E. The Design-Builder is responsible for verifying the Construction Contractor's proposed materials and their proposed sources prior to their delivery to the project, whether specified within this SOW or not.

1. All materials used on this project shall be submitted for compliance confirmation to ensure that they meeting environmental requirements of Section 01.57.19.01 and Section 02.22.13.01 as well as the recovered/recycled/biobased requirements of Section 01.61.16.01.
2. Additionally, the Design-Builder shall furnish mill test reports or manufacturer’s certification to the USIBWC for each lot or shipment of steel and iron materials.
3. COR may request any other documentation required to verify any Buy American Acts in this Contract.

1.6. QUALITY CONTROL / QUALITY ASSURANCE OF MATERIALS

1.6.A. Source Limitations
To the greatest extent possible for each item of work, the Design-Builder shall provide materials of a singular generic kind from a single source.

1.6.B. Compatibility of Options
Where more than one choice is available as options for Design-Builder's selection of a product, material, or equipment, the Design-Builder shall select an option which is compatible with other products, materials, or equipment. Compatibility is a basic general requirement of product, material, and equipment selections.

1.6.C. Field Measurements
Verify field measurements, lines, grades, locations, and details at the worksite prior to fabrication. It shall be the Design-Builder's responsibility to conform to and satisfy actual field conditions, for accuracy of dimensions, proper fit, and for adequacy of use intended.

1.6.D. The Design-Builder shall correct or remove materials that fail to meet Contract requirements or that do not produce satisfactory results. The Design-Builder shall reimburse the Government for cost incurred if additional quality assurance sampling and testing is required by a change of source.

1.6.E. Materials not meeting Contract requirements will be rejected, unless the Government approves corrective actions. Upon rejection, the Design-Builder shall ensure rejected materials are immediately removed and replaced. Should the Design-Builder fail to comply with the removal of rejected materials, the Government may remove and replace defective material and the cost of testing, removal, and replacement will be deducted from the Design-Builder’s pay estimate or final payment.

1.7. SAMPLING, TESTING, AND INSPECTION OF MATERIALS

1.7.A. The sampling and testing of materials shall be in accordance with the Design-Builder's QA Plan, the Construction Contractor's QC Plan, this Scope of Work, and the various construction documents.

1. The Design-Builder shall provide a complete written statement of the origin, composition, and manufacture of materials to show that all materials meet the Buy American Act.
2. Materials shall be available for inspection by the Government at any time (upon delivery, stockpile, during preparation or use, after installation, etc.) and at the discretion of the Government.
3. Material which that has been tested and compliance confirmed at a supply source or staging area may be reinspected or tested before or during incorporation into the work and may be rejected if it does not meet Contract requirements.
4. The Design-Builder shall not use material that, after compliance confirmed, becomes unfit for use. The Design-Builder shall ensure that material that becomes damaged on installation or testing is replaced.
5. Unless otherwise noted in the Contract, all testing must be performed within the United States and the Government must be provided the opportunity to witness the testing.
6. If materials or processes require quality assurance testing outside the contiguous 48 United States, the Design-Builder shall reimburse the Government for inspection expenses.

1.7.B. The Government reserves the right to sample and test any material used on this Contract.

1.7.C. Government inspections are for the sole benefit of the Government and do not:

1. Relieve the Design-Builder of responsibility for providing adequate quality control measures.
2. Relieve the Design-Builder of responsibility for damage to or loss of the material before acceptance.
3. Constitute or imply acceptance.

1.7.D. The presence or absence of a Government inspector does not relieve the Design-Builder nor the Construction Contractor from any Contract requirements.

PART 2 - PRODUCTS

2.1. USE OF MATERIALS FOUND ON THE RIGHT OF WAY

Material found in the excavation areas, compliance confirmed by the Government for use, and meeting the Contract requirements may be used in the work. The Design-Builder shall not excavate or remove any material from within the right of way or within the limits of the project without written permission unless specifically noted in this Scope of Work or the construction documents.

2.2. SURPLUS MATERIALS

2.2.A. The Design-Builder shall take ownership of surplus materials unless otherwise indicated in the Contract Documents.

2.2.B. The Design-Builder shall ensure that materials are removed and disposed in accordance with Section 01.74.19.01. The Design-Builder shall provide documentation to verify proper disposal.

2.3. HAZARDOUS MATERIALS

2.3.A. The Design-Builder shall use materials that are free of hazardous materials. The Design-Builder shall notify the Government immediately when a visual observation or odor indicates that materials in required material sources or on sites owned or controlled by the Government may contain hazardous materials.

2.3.B. The Government is responsible for testing and removing or disposing of hazardous materials not introduced by the Design-Builder on sites owned or controlled by the Government. The Design-Builder is

not required to test, remediate, or remove hazardous materials that the Design-Builder did not introduce onto the work locations unless otherwise noted in these specifications.

2.3.C. The Government may suspend the work wholly or in part during the testing, removal, or disposition of hazardous materials on sites owned or controlled by the Government.

2.3.D. When a visual observation or odor indicates that materials delivered to the work locations by the Design-Builder may contain hazardous materials, the Design-Builder shall have a compliance confirmed commercial laboratory test the materials for contamination.

2.3.E. The Design-Builder shall remove, remediate, and dispose of any of these materials found to be contaminated.

2.3.F. The testing, removal, and disposition of hazardous materials introduced onto the work locations by the Design-Builder will be at the Design-Builder's expense. Calendar day charges will not be suspended and extensions of calendar days will not be granted for activities related to handling hazardous material delivered by the Design-Builder.

2.3.G. Slag materials, not a component of concrete, shall not be permitted in/on the project at any time.

PART 3 - EXECUTION

3.1. TRANSPORTATION AND HANDLING

3.1.A. Coordinate schedule of product delivery to designated, prepared areas in order to minimize site storage time and potential damage to stored materials.

3.1.B. Transport and handle products in accordance with manufacturer's instructions.

3.1.C. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

3.1.D. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

3.2. STORAGE AND PROTECTION

3.2.A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

3.2.B. Store and protect products in accordance with manufacturers' instructions.

3.2.C. Store with seals and labels intact and legible.

3.2.D. Prevent contact with material that may cause corrosion, discoloration, or staining.

3.2.E. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

3.2.F. The Design-Builder shall store and handle materials to preserve their quality and fitness for the work and shall store materials so that they can be easily inspected and retested. When required by the Government, the Design-Builder shall protect the material with cover, on wooden platforms, or on other hard, clean surfaces as necessary.

3.2.G. The Design-Builder shall obtain compliance confirmation to store materials on the right of way. Many portions of USIBWC ROW are subject to flooding. Storage on ROW is at the Design-Builder's discretion and risk. Additional security, flood control, or protections required to store items on ROW is at no additional cost to the Government.

3.3. INSTALLED OR COMPLETED ITEMS

Prior to issuance of substantial completion per Section 01.78.36.01, the Design-Builder shall protect all items installed, completed, constructed, etc. from damage. If any damage occurs, regardless of fault or source, it shall be repaired or replaced, without charge to the Government, to bring all items and materials back into compliance with the Contract Documents.

3.4. EQUIPMENT SPECIFIC/SPECIAL TOOLS

3.4.A. When equipment specific tools or special tools are required to perform regular maintenance on installed equipment, one such tool shall be provided to the Government.

1. The tool part number, description, and the company name with address and/or website shall also be provided where additional tools can be ordered.

3.4.B. Indicate in the O&M Manuals provided per Section 01.78.23.01 how the provided tools to perform regular maintenance.

3.4.C. When these items are delivered directly to Field Office personnel, IBWC Form 359 shall be completed and provided to the COR.

3.5. MANUFACTURER'S RECOMMENDED SPARE PARTS TO HAVE ON HAND

3.5.A. The Design-Builder shall supply a complete set of manufacturer recommended spare parts for all installed equipment.

1. If multiples of the same piece of equipment are installed under this Contract, provide the greater of 2 sets or the number of sets of spare parts corresponding to the minimum number of pieces of equipment that must remain operational for continued Government operations.

3.5.B. Indicate in the O&M Manuals provided per Section 01.78.23.01 exactly what spare parts have been provided, their shelf life, and what equipment they are used on.

3.5.C. When these items are delivered directly to Field Office personnel, IBWC Form 359 shall be completed and provided to the COR.

3.6. ITEMS DELIVERED TO USIBWC

All items delivered to USIBWC that are not integrated into the final construction including, but not limited to, spare parts, tools, consumables, appurtenances, software, keys, manuals, equipment, and excess materials shall be documented on IBWC Form 359.

--End of Section--

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SECTION 01.61.16.01
USE OF RECOVERED MATERIALS AND BIOBASED PRODUCTS

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Reference Standards....1
1.4. Submittals....1
1.5. Measurement and Payment....2
1.6. General....2
1.7. Resource Conservation Construction Plan....2
1.8. BioPreferred Program....2
1.9. Comprehensive Procurement Guidelines....3
Part 2 - Products....3
2.1. Biobased Materials....3
2.2. Recycled Materials....4
Part 3 - Execution....5
3.1. Reporting....5
--End of Section--....5

1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.3. REFERENCE STANDARDS

1.3.A. United States Code (USC)

1. Resource Conservation and Recovery Act (RCRA), 42 USC 6901, et seq.
2. Farm Security and Rural Investment Act (FSRIA), 7 USC 7624

1.3.B. Executive Order (EO)

1. Planning for Federal Sustainability in the Next Decade, EO 13693

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Resource Conservation Construction Plan
2. The Design-Builder shall provide data on the quantity and dollar values of biobased and recycled-content products used in this Contract. The data will be submitted to the COR quarterly.

1.4.C. Required submittals in this Section that must be provided include:

1. Either under this Section or under the construction specification section governing the products required, provide certification of the products biobased and recovered material contents. (CC Type submittal)

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

1.6.A. The Design-Builder shall use products that are composed of the highest percent of recovered material or biobased content practicable.

1.6.B. The Design-Builder must comply with Section 9002 of the Farm Security and Rural Investment Act of 2002 (FSRIA), Executive Order (EO) 13423, "*Strengthening Federal Environmental, Energy and Transportation Management*," Resource Conservation and Recovery Act (RCRA), and the Federal Acquisition Regulation to provide biobased and recycled-content products.

1.7. RESOURCE CONSERVATION CONSTRUCTION PLAN

1.7.A. Within 30 days of the construction Notice to Proceed, the Design-Builder shall submit a Resource Conservation Construction Plan. This submittal shall be compliance confirmed by the COR. The Design-Builder shall not commence construction until this submittal is compliance confirmed.

1.7.B. The Plan must be reviewed and updated annually and as required by the COR. The Plan must contain and define the following elements:

1. The Design-Builder's written policy stating its commitment to the use of biobased and recycled-content products, employee health and safety, and sound environmental management practices.
2. Detail on how the Design-Builder intends to keep abreast of the development and increasing availability of designated and non-designated biobased and recycled-content products and how any new or improved products will be incorporated on an ongoing basis into Contract performance.
3. Proposed biobased and recycled-content products which must be selected in accordance with the criteria included above. At a minimum, the Plan must identify products by brand name for each of the product types.
   a. Items are not limited to those shown in subsections 2.1 and 2.2 below. For example, steel is almost always 100% recycled material, but is not included in Table 6.
   b. NOTE: A Design-Builder may propose more than one product within a product category and/or propose a product or products addressing more than one product category.
4. The product guides which define standard operating procedures for instructing staff in the proper use, storage, and disposal of biobased and recycled-content products as well as proper maintenance of equipment and other procedures/instructions to accomplish work under this Contract.

1.7.C. The Plan shall be updated with current product data whenever new products or different products are chosen for work under this Contract.

1.8. BIOPREFERRED PROGRAM

1.8.A. The US Department of Agriculture (USDA) manages the BioPreferred program. BioPreferred includes a preferred procurement program for Federal agencies and their contractors and a voluntary labeling program for the broad scale consumer.

1. Under the Federal procurement preference program, USDA designates categories of biobased products. Federal agencies and their contractors are then required to give preferential consideration to these designated product categories when making purchases.
2. USDA BioPreferred product categories are shown at: www.biopreferred.gov/BioPreferred/faces/pages/ProductCategories.xhtml

1.9. COMPREHENSIVE PROCUREMENT GUIDELINES

1.9.A. The US Environmental Protection Agency (EPA) manages the Comprehensive Procurement Guideline (CPG) program to promote the use of materials recovered from solid waste.

1. Once a product is designated, procuring agencies are required to purchase it with the highest recovered material content level practicable. Recovered Materials Advisory Notices (RMANs) provide purchasing guidance and recommend recovered and postconsumer material content levels for designated items.
2. EPA CPG product list is at: www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program

1.9.B. Buying products made with recovered materials ensures that the materials collected in recycling programs will be used again in the manufacture of new products.

PART 2 - PRODUCTS

2.1. BIOBASED MATERIALS

2.1.A. The Design-Builder shall make maximum use of products containing biobased materials. Table 5 lists the minimum biobased content of designated construction products. The Design-Builder shall provide items that meet or exceed the requirements of Table 5 unless one of the three items below applies.

1. Product is not available within a timeframe required for compliance with the Contract performance schedule.
2. Product cannot meet Contract performance requirements.
3. Product is unavailable at a reasonable price.

2.1.B. If the Design-Builder requests a variance from Table 5, supporting data must be provided to the COR prior to proceeding with another product.

2.1.C. All items shall be of a type and quality that conform to applicable specifications and standards. All items to be used in the performance of work described herein are subject to the compliance confirmation of the COR.

Table 5 - Required Minimum Biobased Content

Product Category	Description	Minimum Biobased Content
Bioremediation Materials	Dry or liquid solutions (including those containing bacteria or other microbes but not including sorbent materials) used to clean oil, fuel, and other hazardous spill sites.	86%
Concrete and Asphalt Cleaners	Chemicals used in concrete etching as well as to remove petroleum-based soils, lubricants, paints, mastics, organic soils, rust, and dirt from concrete, asphalt, stone, and other hard porous surfaces. Products within this item include only those marketed for use in commercial or residential construction or industrial applications.	70%
Concrete and Asphalt Release Fluids	Products that are designed to provide a lubricating barrier between the composite surface materials (e.g., concrete or asphalt) and the container (e.g., wood or metal forms, truck beds, roller surfaces).	87%
Corrosion Preventatives	Products designed to prevent the deterioration (corrosion) of metals.	53%
Hydraulic Fluids-Stationary Equipment	Fluids formulated for use in stationary hydraulic equipment systems that have various mechanical parts, such as cylinders, pumps, valves, pistons, and gears, that are used for the transmission of power (and also for lubrication and/or wear, rust, and oxidation protection).	44%

Product Category	Description	Minimum Biobased Content
Plastic Insulating Foam	Spray-in-place plastic foam products designed to provide a sealed thermal barrier for residential or commercial construction applications.	7%
Sorbents	Materials formulated for use in the cleanup and bioremediation of oil and chemical spills, the disposal of liquid materials, or the prevention of leakage or leaching in maintenance applications, shop floors, and fuel storage areas.	89%
Stainless Steel Cleaners	Products that are designed to clean and remove grease, oil, dirt, stains, soils, and rust from metal surfaces. Products that are designed to clean and remove grease, oil, dirt, stains, and soils from stainless steel surfaces.	75%
Wood and Concrete Sealers-Membrane	Products that are penetrating liquids formulated to protect wood and/or concrete, including masonry and fiber cement siding, from damage caused by insects, moisture, and decaying fungi and to make surfaces water resistant. Concrete sealers that are formulated to form a protective layer on the surface of the substrate.	11%
Wood and Concrete Sealers-Penetrating Liquids	Products that are penetrating liquids formulated to protect wood and/or concrete, including masonry and fiber cement siding, from damage caused by insects, moisture, and decaying fungi and to make surfaces water resistant. Wood and concrete sealers that are formulated to penetrate the outer surface of the substrate.	79%

2.2. RECYCLED MATERIALS

2.2.A. The Design-Builder shall make maximum use of products containing recovered materials. Table 6 lists the minimum recovered content of designated construction products. The Design-Builder shall provide items that meet or exceed the requirements of Table 6 unless one of the three items below applies.

1. Product is not available within a timeframe required for compliance with the Contract performance schedule.
2. Product cannot meet Contract performance requirements.
3. Product is unavailable at a reasonable price.

2.2.B. If the Design-Builder requests a variance from Table 6, supporting data must be provided to the COR prior to proceeding with another product.

2.2.C. All items shall be of a type and quality that conform to applicable specifications and standards. All items to be used in the performance of work described herein are subject to the compliance confirmation of the COR.

Table 6 - Required Minimum Recovered Content

CONSTRUCTION PRODUCT	POST-CONSUMER RECOVERED CONTENT	TOTAL RECOVERED CONTENT
Latex Paint-Consolidated	100%	100%
Latex Paint–Reprocessed Grey, Brown, Earthtones, and Other Dark Colors	50–99%	50–99%
Latex Paint-Reprocessed White, Off-White, Pastel Colors	20%	20%
Sign Posts-Plastic	80-100%	—
Sign Posts-Steel BOF	16%	25-30%
Sign Posts-Steel EAF	67%	100%
Signage-Aluminum	25%	—
Signage-Plastic	80-100%	—

2.2.D. Cementitious Materials

1. Concrete, flowable backfill, and cements are encouraged to contain fly ash, GGBF slag, cenospheres, and silica fume. Content of these materials required in cement or concrete mixtures shall be based upon design.
2. The recycled/recovered material content of any fly ash, GGBF slag, cenospheres, and silica fume used shall be provided.

2.2.E. Compost and Fertilizers

1. The use of compost and fertilizers made exclusively or primarily from recovered organic materials is preferred.
   a. Composts are usually made from food waste, yard trimmings, manure, biosolids, and other recovered organic materials.
   b. Fertilizers are usually made from alfalfa meal, blood meal, cottonseed meal, feather meal, fish meal, meat and bone meal, poultry manure/litter, soybean meal, wood ash, and other recovered organic materials.
2. The recycled/recovered material content of all compost and fertilizers used shall be provided.

PART 3 - EXECUTION

3.1. REPORTING

The Design-Builder shall provide data on the quantity and dollar values of biobased and recycled-content products used in this Contract. The data will be submitted to the COR quarterly.

--End of Section--

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SECTION 01.71.13.01
MOBILIZATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Submittals....1
1.4. Measurement and Payment....1
1.5. General....2
Part 2 - Products (Not Used)....2
Part 3 - Execution (Not Used)....2
--End of Section--....2

1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.77.19.01-◊●◊●◊ Closeout Requirements

1.3. SUBMITTALS

1.3.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.3.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Schedule of Values

1.4. MEASUREMENT AND PAYMENT

1.4.A. No Measurement will be made for mobilization and demobilization required by this Section. Progress Payments for items listed in the Schedule of Values are based on the percentage complete, as determined by the COR. All costs in connection therewith shall be included in the Schedule of Values for the items to which the work is incidental thereto.

1.4.B. Payment will be made under the Lump Sum bid price for "**Construction**."

1.4.C. Payment constitutes full compensation for furnishing, delivering, handling, and/or installing all material, labor, services, testing, tools, equipment, and for other incidental work necessary to meet Contract requirements applicable. The Design-Builder will not be allowed payment for rejected items.

1.4.D. Insurance and bonds work shall be shown in the Schedule of Values and the Construction Schedule. The Government will pay for insurance and bonds after issuance of the Notice to Proceed. Copies of paid invoices must be provided with pay estimate.

1.4.E. Mobilization work shall be shown in the Schedule of Values and the Construction Schedule.

1.4.F. Demobilization work shall be shown in the Schedule of Values and the Construction Schedule.

1.4.G. The progress payments are made to benefit the Design-Builder. Progress payments do not constitute acceptance of any portion of the work and do not reduce the Design-Builder's liability to replace unsatisfactory work, material, or equipment.

1.4.H. Final payment of demobilization will not be made until substantial completion has been achieved, the Design-Builder has completely demobilized, and the site has passed final inspection as outlined in Section 01.77.19.01.

1.5. GENERAL

1.5.A. Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for:

1. Movement of personnel, equipment, supplies, and incidentals to the site.
2. Establishment of all offices, buildings, and other facilities necessary for the construction work.
3. All other construction related work and operations which must be performed, or costs incurred, prior to beginning the construction.
4. Premiums paid for performance and payment bonds.
5. Premiums paid for Contract required project specific insurance.
6. Setting up a field office and staging area.

1.5.B. Demobilization shall include, but not be limited to:

1. All activities and costs for transportation of personnel, equipment, and supplies not required or included in the Contract from the site.
2. Disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the site.
3. Repair of access roads, temporary haul roads, and equipment parking areas leaving the project site in the same or better condition than at the start of the project.
4. Cleanup, removal of all trash, and housekeeping needed to restore a neat and orderly project site.

1.5.C. The Design-Builder may include insurance premiums for insurance required under this Contract of which the Government is listed as an additional insured in mobilization.

1. Automobile insurance, worker's compensation insurance, and health insurance are not covered under mobilization.

1.5.D. Purchase of equipment and labor administrative costs are not considered mobilization costs.

1.5.E. The Government will not pay additional mobilization compensation for work under a Contract Modification unless the Design-Builder is specifically instructed to demobilize by the CO or it is agreed to as part of the modification.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION
(NOT USED)

--End of Section--

SECTION 01.74.19.01
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Reference Standards....1
1.4. Submittals....1
1.5. Measurement and Payment....2
1.6. General Clean-Up and Disposal Of Waste Materials....2
1.7. Woody Debris....2
1.8. Soil, Rocks, Gravel, Bricks, and Used Concrete....3
1.9. Recyclables....3
1.10. Hazardous Materials....3
1.11. Nonhazardous Materials....3
1.12. Failure to Perform....3
Part 2 - Products (Not Used)....4
Part 3 - Execution....4
3.1. Reporting....4
--End of Section--....4

1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.35.23.01-◊●◊●◊ Safety

1.2.C. Section 01.57.19.01-◊●◊●◊ Temporary Environmental Controls

1.2.D. Section 02.21.13.01-◊●◊●◊ Cultural Resources Surveys

1.3. REFERENCE STANDARDS

1.3.A. Code of Federal Regulations (CFR)

1. 40 CFR 261.3, Definition of Hazardous Waste

1.3.B. Federal Acquisition Regulation (FAR)

1. FAR 52.236-12, Cleaning Up

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Bills of lading, disposal tickets/landfill receipts, and other items that document the end result of materials removed from the project site.
2. Project Disposal Totals

3. Landowner Written Permission for Disposal
4. Burn Permit, if required

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL CLEAN-UP AND DISPOSAL OF WASTE MATERIALS

1.6.A. The Design-Builder shall be responsible for the cleanup and disposal of removed items, waste materials, and rubbish from the construction site, field office(s), and staging area(s).

1.6.B. Dispose of recyclable and reusable products through waste disposal only as a last option.

1.6.C. The Design-Builder shall ensure that the disposal of waste materials and rubbish is in accordance with applicable federal, state, and local laws and regulations and with the requirements in these Contract Documents. Should a conflict exist in the requirements for cleanup and disposal of waste materials, the most stringent requirements shall apply.

1.6.D. All waste, unless otherwise noted in this SOW, shall be disposed of at a licensed landfill or waste disposal facility.

1.6.E. No excess materials shall be deposited within Government property, unless compliance confirmed by the Government. Excess materials not compliance confirmed by the Government for placement on Government property shall be disposed of or reused by the Design-Builder at another site.

1.6.F. The Design-Builder shall keep records of the types and amounts of waste materials produced and of the disposal of all waste materials. These records shall be kept current and accurate. Bills of Lading, disposal tickets/landfill receipts, and other items that document the end result of materials removed from the project site shall be submitted to the COR.

1.6.G. In accordance with FAR Clause 52.236-12, entitled "Cleaning Up," the Design-Builder shall ensure that work and storage areas are free from accumulations of waste materials and rubbish and before completing the work, shall remove all temporary facilities, including, buildings, unused materials, concrete forms, and other like materials, which are not a part of the permanent work.

1.7. WOODY DEBRIS

1.7.A. If compliance confirmed by the COR and allowed by local laws and regulations, the Design-Builder may burn woody debris onsite.

1. If not already addressed in the Accident Prevention Plan (Section 01.35.23.01), the Plan shall be modified and resubmitted to address onsite burning.
2. Contractor shall meet all state and local requirements for burning. If localities require issuance of a burn permit, the permit shall be provided to the COR.
3. Contractor shall notify the nearest fire department of their burning plan.
4. If anyone lives or works in adjacent properties, the Contractor shall notify them of the planned burn.
5. Contractor shall maintain at least 1 water truck onsite through the full burning period.
6. Contractor shall maintain personnel onsite as a fire watch through the full burning period.
7. Any waste generated from the burning shall be disposed in accordance with this Section.

1.7.B. If compliance confirmed by the COR and allowed by local environmental conditions, the Design-Builder may chip woody debris onsite. All woody chips generated shall be evenly spread over the topsoil, used as mulch during seeding, or placed in another location as approved by COR.

1.7.C. Clean woody debris may be sold or donated to a composting facility or private landowner.

1.7.D. Invasive weeds/plants may only be burned or hauled to a landfill unless it can be shown that they do not reproduce from mulching.

1. COR approval is required prior to mulching any such items.
2. Invasive and noxious weeds/plants may not be sold or donated to any person or facility.
3. See Section 01.57.19.01 for more details about noxious weeds.

1.7.E. Giant cane (bamboo) may only be burned or hauled to a landfill.

1.8. SOIL, ROCKS, GRAVEL, BRICKS, AND USED CONCRETE

1.8.A. If approved by a landowner, in writing, and allowed by local laws and regulations, the Design-Builder may bury concrete debris, bricks, soil, gravel, and rocks on said landowner's property.

1.8.B. The Design-Builder may haul surplus or waste soil, rocks, gravel, bricks, and used concrete to an offsite stockpile or to another project for reuse.

1.8.C. Prior to disposal, site must be cleared per Section 02.21.13.01.

1.9. RECYCLABLES

1.9.A. Scrap metal shall be donated or sold to scrap dealers or recycle centers whenever possible.

1.9.B. Removed asphalt can be donated or sold to an asphalt plants for reuse.

1.9.C. Used concrete can be donated or sold to a supplier who will crush it and reuse it as aggregate.

1.9.D. The Design-Builder shall dispose of recyclable and reusable products through waste disposal only as a last option.

1.9.E. Provide totals of recycled materials by type and pounds.

1.10. HAZARDOUS MATERIALS

1.10.A. All hazardous materials or wastes used or generated by the Design-Builder, the Construction Contractor, any subcontractors, or discovered in work or storage areas defined as hazardous by 40 CFR 261.3, or other federal, state, or local laws or regulations shall be disposed of by the Design-Builder in accordance with these Contract Documents and applicable Federal, State, and local laws and regulations.

1.10.B. Unknown waste materials that may be hazardous shall be tested and the test results shall be submitted immediately to the Government for review.

1.10.C. A copy of all hazardous waste manifests shall be submitted immediately to the Government for review.

1.11. NONHAZARDOUS MATERIALS

1.11.A. All nonhazardous materials or wastes used or generated by the Design-Builder to include, but not limited to, refuse, garbage, sanitary wastes, industrial wastes, oil, and other petroleum products shall be disposed of by the Design-Builder in accordance with these Contract Documents and applicable federal, state, and local laws and regulations.

1.11.B. All materials within the construction site, field office, and staging area(s) shall be removed prior to completion of the work under these Contract Documents. Unless otherwise noted in this Scope of Work, all materials removed shall become the property of the Design-Builder.

1.12. FAILURE TO PERFORM

In the event of the Design-Builder’s failure to perform the work required by this Section, the work will be performed by the Government and the Design-Builder shall be responsible for the cost of such work. The costs for temporary controls provided by the Government shall include both direct labor costs and other direct costs associated with the Work.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION

3.1. REPORTING

3.1.A. Bills of Lading, disposal tickets/landfill receipts, and other items that document the end result of materials removed from the project site shall be provided to COR.

3.1.B. Design-Builder shall provide end of project totals for:

1. Nonhazardous solid waste (not construction waste) hauled to landfill.
2. Nonhazardous solid waste (not construction waste) diverted from landfill.
3. Nonhazardous construction waste hauled to landfill.
4. Nonhazardous construction waste diverted from landfill.
5. Recycled material by type and pounds.

3.1.C. The final disposal of location of all materials shall be provided.

--End of Section--

SECTION 01.77.19.01
CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Reference Standards....1
1.4. Measurement and Payment....1
1.5. General....2
1.6. Contract Closeout Documents....2
1.7. Completion of Work Inspections....3
1.8. Final Acceptance by Government....4
Part 2 - Products....5
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Part 3 - Execution (Not Used)....5
--End of Section--....5

1.2. RELATED REQUIREMENTS

1.2.A. Section 00.73.73.01-Requirements for Sensitive But Unclassified Information

1.2.B. Section 01.33.33.01-◊●◊●◊ Document Requirements

1.2.C. Section 01.40.00.01-◊●◊●◊ Quality Requirements

1.2.D. Section 01.61.00.01-Common Product Requirements

1.2.E. Section 01.78.23.01-Operations and Maintenance Data

1.2.F. Section 01.78.36.01-◊●◊●◊ Warranties

1.2.G. Section 01.78.39.01-Record Drawings

1.2.H. Section 02.21.00.01-◊●◊●◊ Surveys

1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulation (FAR)

1. FAR 52.236-12, Cleaning Up

1.4. MEASUREMENT AND PAYMENT

1.4.A. Measurement

1. This Bid Item will be paid on the lump sum basis and no activity will be measured in the field for the purpose of payment for this individual construction activity.
2. Work includes, but is not be limited to, record drawings (Section 01.78.39.01), warranty requirements (Section 01.78.36.01), equipment warranty identification tags (Section 01.78.36.01), manuals (Section 01.78.23.01), shop drawing submittals (Section 01.33.00.01), and appurtenances as appropriate.

1.4.B. Payment

1. This Bid Item will be paid for based on the lump sum price identified in Section B of the Contract Provisions identified as "**Contract Closeout**."
2. Payment constitutes full compensation for furnishing, delivering, handling, and/or installing all material, labor, services, testing, tools, equipment, and for other incidental work necessary to meet Contract requirements applicable. The Design-Builder will not be allowed payment for rejected items.
3. Partial payments are not authorized for this CLIN. One hundred percent (100%) payment will not be made until completion and approval of all Contract closeout activities detailed in this Section or in other Contract Documents.

1.5. GENERAL

This Section includes administrative and procedural requirements for worksite demobilization and cleanup; submission of project record documents, inspection and correction of unsatisfactory conditions, if necessary, and final inspection prior to final progress payment.

1.6. CONTRACT CLOSEOUT DOCUMENTS

3.2.B. The Design-Builder shall supply the COR with the following documents:

1. Signed copy of all Design-Builder Daily Reports (reports shall include any items originally included with the daily report).
2. Signed copies of all submittal reviews.
3. Copy of Design-Builder's maintained submittal register.
4. Copies of all finalized meeting minutes
   a. Minutes shall include scans of the sign in sheet or handouts provided during the meeting.
   b. One copy shall be provided at the time of the meeting or soon thereafter.
   c. Upon completion of construction, all agendas and all finalized meeting minutes shall be provided to COR in a complete set.
5. Copy of all RFI requests along with the associated RFI responses.
6. Copy of Design-Builder's maintained RFI log.
7. Copies of all Design-Builder’s construction photos with applicable captions.
8. Written certification from Design-Builder that all work was constructed per Contract requirements.
9. Design-Builder has certified to the CO that all CUI data, whether provided by USIBWC or created under this Contract, has been destroyed in a manner to preclude recognition or reconstruction by themselves and all subcontractors and suppliers/vendors to whom the data was issued per Section 00.73.73.01.

1.6.B. The Design-Builder shall supply the CO with the following documents:

1. Design-Builder's Consent of Surety Company to Final Payment (i.e., AIA-G707).
2. Design-Builder's Affidavit of Payment of Debts and Claims (i.e., AIA-G706).
3. Design-Builder's Affidavit to Release of Liens (i.e., AIA-G706A).
4. Design-Builder's Release of Claims, IBWC Form 243.
5. Design-Builder's Certificate of Substantial Completion for Construction, IBWC Form 255

1.7. COMPLETION OF WORK INSPECTIONS

1.7.A. Design-Builder Inspection

At the completion of all work or any increment thereof established by a completion time stated in the FAR Clause 52.211-10, entitled "Commencement, Prosecution and Completion of Work," or stated elsewhere in the Contract Documents, the Design-Builder's Quality System Manager shall conduct an inspection of the work and develop a "Design-Builder's Punch List" of items of work which do not conform to the Contract Documents. Such a list of deficiencies shall be included in the daily documentation and shall include the estimated date by which the deficiencies will be corrected.

1. The Design-Builder's Quality System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected and so notify the Government.
2. These inspections and any deficiency corrections required by this paragraph will be accomplished within the time stated for completion of the entire work.

1.7.B. Design-Builder and Government Pre-Final Inspection

The Design-Builder's Quality System Manager, Design-Builder's superintendent, or other primary management person, and the Government will be in attendance at this inspection. The Pre-Final Inspection will be formally scheduled by the Government based upon notice from the Design-Builder. This notice will be given to the Government at least 14 calendar days prior to the Pre-Final Inspection. The notice must include the Design-Builder's assurance that all deficiencies listed in the "Design-Builder's Punch List" developed during the Design-Builder Inspection phase have been corrected and all Contract Work is complete and acceptable by the date scheduled for the Pre-Final Inspection.

1. Failure of the Design-Builder to have all Contract work acceptably complete will be cause for the Government to cancel the inspection and bill the Design-Builder for the Government's additional inspection costs in accordance with FAR Clause 52.246-12, Inspection of Construction.
2. At this inspection the Government will develop a "Government's Punch List" of incomplete and/or unacceptable work performed under the Contract and will subsequently furnish this list to the Design-Builder.
3. Failure of the Government to detect and list all incomplete and/or unacceptable work during this inspection will not relieve the Design-Builder from acceptably performing all work required by the Contract Documents.
4. The Government, at its option, may accept this inspection as the final acceptance inspection if in its opinion, the completion status of the inspected facilities and other work performed under the Contract, warrant this consideration.

1.7.C. Design-Builder and Government Final Acceptance Inspection

The Design-Builder's Quality System Manager, the superintendent or other primary management person and the Government will be in attendance at this inspection. The final acceptance inspection will be formally scheduled by the Government based upon notice from the Design-Builder. This notice will be given to the Government at least 14 calendar days prior to the final acceptance inspection. The notice must include the Design-Builder's assurance that all items in the "Government's Punch List" developed during the Design-Builder and Government Pre-Final Inspection phase have been corrected.

1. Failure of the Design-Builder to have all Contract work acceptably complete for this final acceptance inspection will be cause for the Government to cancel the inspection and bill the Design-Builder for the Government's additional inspection costs in accordance with FAR Clause 52.246-12, Inspection of Construction.
2. This inspection will be considered another Design-Builder and Government Pre-Final Inspection and the Design-Builder must schedule another Design-Builder and Government Final Acceptance Inspection after all items have been corrected.

3. Otherwise, this inspection will be considered a Design-Builder and Government Final Acceptance Inspection if all items in the "Government's Punch List" and all other work are considered acceptably complete by the Government.

1.8. FINAL ACCEPTANCE BY GOVERNMENT

1.8.A. Final acceptance by the Government will not take place until all of the following have occurred:

1. All Contract Closeout Documents noted in subsection above have been provided.
2. All design documents have been provided, including:
   a. Monthly Reports
   b. Final Design Report
   c. Final Geotechnical Report
   d. Final Construction Drawings
   e. Final GIS Data
   f. Final Construction Specifications
   g. Final Design QA Plan
   h. Final Design Survey Data including field notes, records, and calculations
3. All construction items have been completed, including:
   a. The construction site and all construction work passed a final inspection.
      (1) Design-Builder provided a punch list with items noted as completed and inspected by the Government Inspector and COR.
      (2) The Design-Builder cleaned the entire worksite as provided in Section 01.52.13.01 and FAR 52.236-12.
   b. The Design-Builder shall submit all reports for testing and inspections of the work as specified in Section 01.40.00.01 and in the construction specifications.
      (1) QC tests and reports organized by type of material, type of test, and location were provided.
         (a) All official QC tests stamped by a registered professional engineer licensed in the state where the construction work occurred.
         (b) All test results organized by material, type of test, and location and submitted under this Section. Copies of test results provided with daily reports do not fulfill the requirements of this Section.
      (2) Signed copy of all Construction Contractor Daily Quality Control Reports (reports shall include any items originally included with the daily report) were provided.
      (3) Original minutes from all preparatory phase and initial phase meetings were provided.
      (4) The Design-Builder shall indicate by manner of testing, material tested, and locations tested to show how the quality control requirements of the Contract, including minimum test results and frequency of testing, were met. Provide this information in a written report signed by the Designer of Record that contained a certification that all work was constructed per Contract requirements.
   c. Copies of all weekly toolbox safety meetings, other safety meetings, safety logs, or other safety items were provided to the COR in an organized manner. If electronic copies of these items have not already been provided, include a CD with all items in pdf format.
   d. All submittals required under this SOW and under the construction specifications were submitted to the COR and received compliance confirmation.
   e. All final survey data including field notes, records, and calculations were provided in an organized manner. Refer to Section 02.21.13.01 for all final survey data requirements.
      (1) All final survey data was stamped by a registered professional surveyor.

f. Copies of Release of Claims from all affected public entities (DOTs, irrigation districts, etc.) as well as from all borrow pit and haul road owners were provided to the COR to show proof of clean up and restoration.

g. The Design-Builder submitted evidence of SWPP Notice of Termination (NOT) filing as well as copies of any final environmental inspections performed on the site and PSLs.

h. All IBWC Form 359 detailing delivery of items to USIBWC per Section 01.61.00.01 were provided.

i. Certified payrolls covering all Davis-Bacon workers on the site, including owner-operator truck drivers, were provided to the COR.

j. All other construction management and construction administration items as specified in this Scope of Work and in the Design-Build Contract were provided.

4. All applicable manuals were provided to the COR per Section 01.78.23.01.
5. All special tools and/or software per Section 01.61.00.01 shall be provided.
6. All spare parts Section 01.61.00.01 shall be provided.
7. All warranties were provided to the Government. Refer to Section 01.78.36.01 for warranty requirements.
8. Record drawings were completed and accepted per Section 01.78.39.01.
9. Substantial completion has been reached and IBWC Form 255 has been submitted per Section 01.78.36.01.

PART 2 - PRODUCTS

2.1. CLOSEOUT DOCUMENTS

2.1.A. All hardcopy and electronic documents provided shall meet the minimum document requirements noted in Section 01.33.33.01.

2.1.B. Items provided shall meet the requirements within this SOW as well as additional requirements noted in associated Technical Specification sections.

PART 3 - EXECUTION

(Not Used)

--End of Section--

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SECTION 01.78.23.01
OPERATIONS AND MAINTENANCE DATA

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Submittals....1
1.4. Measurement and Payment....1
1.5. General....2
Part 2 - Products....2
2.1. Manuals....2
2.2. Hard Cover Binders....5
2.3. Maintenance Schedule....6
2.4. Emergency Disconnect Plan....6
2.5. Laminated Diagram-Safety Card....6
Part 3 - Execution....7
3.1. Delivery of Items....7
--End of Section--....7

1.2. RELATED REQUIREMENTS

1.2.A. Section 00.73.73.01-Requirements for Sensitive But Unclassified Information

1.2.B. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.C. Section 01.61.00.01-Common Product Requirements

1.2.D. Section 01.77.19.01-◊●◊●◊ Closeout Requirements

1.2.E. Section 01.78.36.01-◊●◊●◊ Warranties

1.3. SUBMITTALS

1.3.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.3.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Maintenance Schedule
2. Emergency Disconnect Plan
3. Laminated Diagram-Safety Cards
4. Manuals for each separate system and/or as specified in other sections of the Construction Specifications.

1.4. MEASUREMENT AND PAYMENT

1.4.A. No separate measurement or payment will be made for items specified in this Section. Include all costs of furnishing and installing required work in applicable prices offered in Contract for Contract Closeout (Section 01.77.19.01) for which Operations and Maintenance (O&M) Data are required.

1.4.B. Payment constitutes full compensation for furnishing, delivering, handling, and/or installing all material, labor, services, testing, tools, equipment, and for other incidental work necessary to meet Contract requirements applicable. The Design-Builder will not be allowed Payment for rejected items.

1.4.C. Operations and Maintenance (O&M) Data shall be shown in the Schedule of Values.

1.4.D. The progress payments are made to benefit the Design-Builder. These payments are made based upon preliminary field inspections, and preliminary testing data. Progress payments do not constitute acceptance of any portion of the work and do not reduce the Design-Builder's liability to replace unsatisfactory work, material, or equipment.

1.5. GENERAL

1.5.A. The Design-Builder shall provide Operations and Maintenance (O&M) Data for the waterway barrier line and anchor system, warning system, and all mechanical features provided by the Contractor.

1.5.B. All O&M Manuals shall be specifically applicable to this Contract.

1.5.C. All maintenance schedules shall be specifically applicable to this Contract.

1.5.D. The data shall be a complete and concise depiction of the provided equipment, product, or system, stressing, and enhancing the importance of system interactions, troubleshooting, and long-term preventative maintenance and operation.

PART 2 - PRODUCTS

2.1. MANUALS

2.1.A. The Design-Builder shall compile and prepare aggregate O&M data including clarifying and updating the original sequences of operation to as-built conditions. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level.

2.1.B. Separate manuals shall be provided for each specified system. Manuals for different systems shall not be combined.

2.1.C. The Design-Builder shall provide manuals prior to the training of Government personnel.

2.1.D. Manual Quality

1. Documents must be fully legible.
2. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

2.1.E. Manual Content

1. Furnish electronic copies of the final Equipment Operation, Maintenance, and Repair Manuals along with **3** hard copies.
2. Electronic copies shall be in pdf format.
   Pdf file shall be organized in directories and subdirectories to match the required information detailed in this Section or in bookmarked pdf files. Bookmarks shall correspond to each required section/subsection of the O&M Manual.
3. All printed and graphic documents, drawings, and illustrations shall be legible and tabbed.

2.1.F. Information Required

1. Warning Page
   A warning page shall be provided to warn of potential dangers (if they exist), such as high voltage, toxic chemicals, flammable liquids, explosive materials, carcinogens, or high pressures. The warning page shall be placed inside the front cover, in front of the title page.

2. Title Page
   The title page shall show the name of the preparing firm (Designer or Design-Builder) and the date of publication.
3. Table of Contents
   Provide Table of Contents noting, at minimum, each product in the system and each item below. Pdf bookmarks shall match Table of Contents.
4. Equipment Data
   For each O&M Manual, provide clear information about the equipment or system covered. Include at least the following items:
   a. Manufacturer
   b. Manufacturer's model, style, or catalog number
   c. Serial number
   d. Size, capacity, or rating
   e. Year of manufacturer
   f. Date of installation
   g. If the equipment has subsystems such as the engine in a generator, provide this information for each subsystem also.
5. Operating Instructions
   Include specific instructions, procedures, and illustrations for all phases of operation for the installed model and features of each system. Include adequate illustrative material to identify and locate operating controls, indicating devices and locations of areas or items requiring maintenance.
   a. Describe, in detail, starting and stopping procedures for components, adjustments required to obtain optimum equipment performance, and corrective actions for malfunctions.
   b. Provide narrative description of Normal Operating Procedures.
   c. List the configuration settings for all devices.
   d. Provide username and passwords.
6. Manufacturer's Product Data and Instructions
   a. Provide a copy of all information submitted in the applicable specification sections. Include only the compliance confirmed submittal data.
   b. Provide manufacturer's installation instructions.
   c. Performance sheets and graphs showing capacity data, efficiencies, electrical characteristics, pressure drops, and flow rates. Marked-up catalogs or catalog pages do not satisfy this requirement. Performance information shall be presented as concisely as possible and contain only data pertaining to equipment actually installed.
   d. Catalog cuts showing application information.
   e. Include conduit layout, equipment layout, and simplified wiring and control diagrams.
7. Safety Precautions
   List personnel hazards and equipment or product safety precautions for all operating conditions.
8. Operator Service Requirements
   a. Include instructions for services to be performed by the operator such as lubrication, adjustment, and inspection.
   b. Provide information available from the manufacturer that are needed for use in training designated personnel to properly operate and maintain the equipment.

9. Preventive Maintenance Plan and Schedule
   Include information for preventive and scheduled maintenance to minimize corrective maintenance and repair for the installed model and features of each system.
   a. Detailed maintenance instructions describing the nature and frequency of routine maintenance and procedures to be followed. Indicate any special tools, materials, and test equipment that may be required.
   b. Include manufacturer's schedule for routine preventive maintenance, cleaning, inspections, tests, and adjustments required to ensure proper and economical operation and to minimize corrective maintenance. If manufacturer details different maintenance schedules for different conditions, ensure that the required maintenance and schedules to match the site of work is used.
   c. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft.
   d. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.
   e. Provide methods and products to be used to clean item.
10. Corrective Maintenance and Repair Procedures
   a. Include manufacturer's recommended procedures and instructions for correcting problems and making repairs for the installed model and features of each system.
   b. Repair information including diagrams and schematics, guidance for diagnosing problems, and detailed instructions for making repairs.
   c. Provide troubleshooting information that includes a statement of the indication or symptom of trouble and the sequential instructions necessary. Include test hookups to determine the cause, special tools, and test equipment and methods for returning the equipment to operating conditions. Information may be in chart form or in tabular format with appropriate headings.
   d. Include instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.
11. Parts Identification/Lists
   a. Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification.
   b. Provide parts lists with names and contact information of closest sources for the parts.
12. Lubrication Data
   Include preventative maintenance lubrication data, in addition to instructions for lubrication provided under paragraph entitled "Operator Service Requirements":
   a. A table showing recommended lubricants for specific temperature ranges and applications.
   b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types, and grades of lubricants and capacities.
   c. A Lubrication Schedule showing service interval frequency.
13. Removal and Replacement Instructions
   Include step-by-step procedures and a list of required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

14. Special Tool Requirements
When equipment specific or special tools are required to perform regular maintenance on installed equipment, provide tool part number, description, and the company name with address and/or website where tools can be ordered.

15. Supply Lists
Include lists of manufacturer recommended supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. Note which supplies have a long lead-time to obtain. Include spare parts data for each different item of products specified.
    a. Provide the supply part number, description, and the company name with address and/or website where supplies can be ordered.

16. Spare Parts Lists
    a. Include lists of manufacturer recommended spare parts required for routine maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. Note which spare parts have a long lead-time to obtain. Include spare parts data for each different item of products specified.
        (1) Provide the part numbers, description, and the company name with address and/or website where additional spare parts can be ordered.
    b. When manufacturer recommended spare parts have been provided per Section 01.61.00.01, indicate exactly what spare parts have been provided, their shelf life, and what equipment they are used on.

17. Software
When manufacturer specific software has been provided per Section 01.61.00.01, indicate how the provided software is to be used to perform regular maintenance.
    a. Ensure that passwords or other login information is also provided.

18. Warranty Information
    a. Provide a copy of the warranty provided under Section 01.78.36.01.
    b. List and explain the various warranties and clearly identify the servicing and technical precautions prescribed by the manufacturers or Contract Documents to keep warranties in force.
    c. Provide a copy of the equipment warranty tag provided under Section 01.78.36.01.

19. Manufacturer's Representative and Service Organization
For each item, provide the name, address, email, and telephone number of the manufacturer's representative and/or service organization that can provide replacements most convenient to the project site.

2.1.G. If O&M Manual contains CUI data as noted in Section 00.73.73.01, the pages containing the data shall be marked per Section 00.73.73.01.

1. Manufacturer's data, operator manuals, and other general information shall not be marked CUI. Only items specific to this project such as drawings, wiring diagrams, passwords, or system set up data shall be marked. For example, if a generator manual contains operating instructions, the manufacturer's product data sheet, and a line drawing indicating how the generator will be connected to the facility for emergency power. Only the drawing is required to be stamped CUI.

2.2. HARD COVER BINDERS

2.2.A. The manuals shall be 3 ring binders with a hard cover, from which material may readily be removed and replaced. Binders shall be appropriately sized to the amount of material stored in the binder.

1. Binders shall have a separate section for each system or subsystem.

2. Separate the sections with heavy plastic dividers having tabs which identify the material in the Section.
3. The following identification shall be inscribed on the cover: the words "OPERATION, MAINTENANCE, AND REPAIR MANUAL" and the name, location and indication of systems covered.
4. Manuals shall be approximately 8.5" by 11" with large sheets folded in and capable of being easily pulled out for reference.
5. All manuals for a single facility must be similar in appearance.

2.3. MAINTENANCE SCHEDULE

2.3.A. All preventative maintenance, regular maintenance, and corrective maintenance shall be detailed in a Excel spreadsheet. While the O&M Manuals provide this information, it shall be summarized in this document for easy reference. The spreadsheet shall contain the following items as a minimum:

1. Type of maintenance (preventative, regular, corrective, other)
2. System/equipment being maintained
3. Timing of maintenance (e.g. weekly, monthly, after xx hours, after warning light, etc.)
4. Reference to manual name and page number for detailed directions on how to perform maintenance

2.3.B. Include period calibrations in maintenance schedule.

2.4. EMERGENCY DISCONNECT PLAN

2.4.A. Design-Builder shall provide a plan to disconnect electricity, water, and gas to the facility.

1. A site plan shall show the location of the main water valve, the main gas valve, and the main electrical service panel. This plan shall be 8.5" x 11", shall be drawn to scale, and shall denote as built conditions.
2. On a single 8.5" x 11" page, detail how to close the main water valve. Include drawings and instructions to guide someone unfamiliar with the activity. List any required tools.
3. On a single 8.5" x 11" page, detail how to close the main gas valve. Include drawings and instructions to guide someone unfamiliar with the activity. List any required tools.
4. On a single 8.5" x 11" page, detail how to close the main electrical safety switch. Include drawings and instructions to guide someone unfamiliar with the activity.

2.4.B. Each page shall be single sided and laminated. Lamination shall be a minimum of 10 mil.

2.4.C. The emergency disconnect plan shall be provided in pdf format and in **4** hardcopy, laminated sets.

2.5. LAMINATED DIAGRAM-SAFETY CARD

2.5.A. Each system controller and major piece of equipment shall have a laminated card identifying safety warnings, emergency/safety stop procedures, normal cold start procedures, basic wiring diagram, zone layout, valve chart, color codes, etc. as applicable for each item.

1. For example, the HVAC system controller shall have a plan view of the facility with each HVAC zone clearly identified. The emergency/safety stop procedures, normal cold start procedures, and any applicable safety warnings shall also be noted on this card.
2. Floor plans, site layouts, and diagrams shall be drawn to scale and represent as built conditions.
3. COR shall compliance confirm each card prior to creating sets and laminating.

2.5.B. The laminated card shall be single sided unless otherwise allowed by COR.

2.5.C. The laminated card should be 8.5" x 11" whenever possible. If letter size is not sufficient, 8.5" x 14" or 11" x 17" may be allowed on a case by case basis.

2.5.D. The card shall be laminated at a minimum of 7 mil.

2.5.E. These tags shall have a permanent pressure-sensitive adhesive back and card shall be installed on each system controller and each major piece of equipment at a location agreed to with the COR.

2.5.F. In addition to the card installed, the cards shall be provided in pdf format and in **4** hardcopy, laminated sets.

PART 3 - EXECUTION

3.1. DELIVERY OF ITEMS

3.1.A. The Design-Builder shall send the hardcopy items to the address provided by the COR or shall deliver items to the USIBWC facility.

3.1.B. If items are delivered in person, IBWC Form 359 shall be completed and a copy provided to the COR.

--End of Section--

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SECTION 01.78.36.01
WARRANTIES

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

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1.2.B. Section 01.89.16.01-Site Improvements Requirements

1.2.C. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.D. Section 01.40.00.01-◊●◊●◊ Quality Requirements

1.2.E. Section 01.77.19.01-◊●◊●◊ Closeout Requirements

1.2.F. Section 01.78.23.01-Operations and Maintenance Data

1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulation (FAR)

1. FAR 52.246-12, Inspection of Construction
2. FAR 52.246-21, Warranty of Construction

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section include:

1. Copies of all Executed Warranties
2. Material, Equipment, and Fixture List
3. Contact List
4. Sample Equipment Tags

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Warranty Reports

1.6. MEASUREMENT AND PAYMENT

1.6.A. No separate measurement or payment will be made for items specified in this Section. Include all costs of furnishing and installing required work in applicable prices offered in Contract for Contract Closeout (Section 01.77.19.01) for which warranties are required.

1.6.B. Payment constitutes full compensation for furnishing, delivering, handling, and/or installing all material, labor, services, testing, tools, equipment, and for other incidental work necessary to meet Contract requirements applicable. The Design-Builder will not be allowed Payment for rejected items.

1.6.C. The progress payments are made to benefit the Design-Builder. These payments are made based upon preliminary field inspections, and preliminary testing data. Progress payments do not constitute acceptance of any portion of the work and do not reduce the Design-Builder's liability to replace unsatisfactory work, material, or equipment.

1.7. GENERAL

1.7.A. Obtain warranties from responsible subcontractors, suppliers, and manufacturers, within 60 days after completion of the applicable item of work, but no later than the date of warranty commencement.

1.7.B. Except as noted in Paragraph 1.10. below, starting date of warranty is date of substantial completion.

1.7.C. All items from FAR 52.246-21 Warranty of Construction apply except that the length of the warranty shall be as noted in Paragraph 1.8. of this Section.

1.7.D. A warranty requires that if a warranted item fails to meet Contract requirements, it shall be repaired, replaced, or have other remedial actions taken to bring the item into compliance with the Contract requirements.

1.8. WARRANTY OF CONSTRUCTION

1.8.A. Design-Builder warrants that work performed under this Contract conforms to the Contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Design-Builder or any subcontractor or supplier at any tier for a period of at least **2 years**.

1. Specific items shall have individual warranties as noted in Table 7.

Table 7 - Minimum Warranties

Item or System	Minimum Warranty (years)
Buoys/boom modules	10-15
Corrosion Coatings	5-10
Lighting/buoys	3-5

1.8.B. The Design-Builder is responsible for providing warranties on items when the manufacturer's warranty is less than the time period indicated in Paragraph 1.8.A. or when the manufacturer's warranty does not cover full repair and/or replacement as appropriate.

1.8.C. Any item damaged due to failure or malfunction of item warranted under this Contract shall be repaired or replaced at no cost to the Government.

1.8.D. The Design-Builder shall supply the CO with a telephone number, mailing address, email address, and contact name for the point of contact with the Design-Builder for any required warranty work.

1.9. MANUFACTURER'S WARRANTIES

1.9.A. The Design-Builder shall obtain all warranties that would be given in normal commercial practice. All warranties shall be executed in writing for the benefit of the Government.

1.9.B. The Design-Builder shall transfer to the Government warranties and guarantees required by the Contract or received as part of normal trade practice.

1.9.C. If manufacturer's warranties require proof of purchase and/or installation date, such items shall be provided by the Design-Builder and be included with the warranty documentation.

1.10. WARRANTY PERIOD

1.10.A. Commencement of warranty under FAR 52.246-21 Warranty of Construction, this Section, and any other Contract warranty clauses will not occur until substantial completion, unless one of the following apply.

1. The Certificate of Substantial Completion (IBWC Form 255) designates a warranty commencement date, other than the substantial completion date, for certain work or portions of work.
2. By separate written agreement between the Design-Builder and the Government, a designated and completed portion of the work is occupied or used by the Government during the construction period, in which case any warranty related to that work, or portions of work, shall commence when the occupancy or use begins.
3. Item of work is completed after substantial completion date. Warranty begins upon completion of construction, including required submittals, inspections, and tests, unless another date is agreed to between the Design-Builder and the Government.

1.10.B. If items under this Contract are repaired or replaced, the warranty period shall begin anew from that date.

1.10.C. Repair or replacement of one item does not affect the warranty period of another item. Each warranty shall run independent of each other.

1. As an example, assume that Paragraph 1.8 requires a minimum warranty for construction of 3 years but the HVAC manufacturer warrants their compressor for 5 years, the roof is warranted for 20 years, and the parking lot paving is warranted for 4 years. 2 years after substantial completion, the HVAC compressor is repaired. Only the HVAC compressor warranty is reset. All other warranty expiration dates remain unchanged.

1.11. SUBSTANTIAL COMPLETION

1.11.A. Substantial completion means the stage in the progress of the work, as determined and certified by the CO in writing to the Design-Builder, on which the work is sufficiently complete and satisfactory that the property may be occupied or used for the purpose for which it is intended (Section 00.24.00.01 1.5) and USIBWC has full and unrestricted use of the project.

1. All work other than minor items such as touch-up, adjustments, and minor replacements or installations remain to be completed or corrected.
2. Substantial completion shall not have been achieved if all systems and parts are not functional, if the waterway barrier is not connected and not operating normally or the alert system and signs are not installed.

1.11.B. At a minimum, the following items of work shall be completed, including final inspections per Section 01.40.00.01. as well as all QC and surveying documentation required to show that work met project requirements, before substantial completion can be considered.

1. All test criteria passed.
2. Complete waterway barrier line and anchors installed.
3. Alert system installed and working.
4. All signs installed.

1.11.C. USIBWC does not offer partial substantial completion of the Contract except for vegetation establishment.

1. When additional time is allocated for vegetation establishment, the Contractor may submit a Certificate of Substantial Completion upon completion of all construction requirements except for revegetation.
2. An additional Certificate of Substantial Completion can be completed once the vegetation has met the establishment requirements of Section 01.89.16.01.

1.11.D. Substantial completion cannot be met without final inspections per Section 01.77.19.01 as well as all QC and surveying documentation required to show that work met project requirements.

1.11.E. Substantial completion cannot be met if completion of punch list items and remaining work items will interfere or disrupt USIBWC operations.

1.11.F. Failure to list any item on the punch list shall not relieve the Design-Builder of responsibility for complying with the requirements of the Contract.

1.11.G. The Design-Builder shall submit IBWC Form 255, Certificate of Substantial Completion, when they believe that all items of the project have been completed.

1.11.H. Revocation of Substantial Completion
In regards to FAR 52.246-12(i), acceptance of work via substantial completion shall not be final and conclusive until issuance of final payment on this Contract. Additionally these conditions exist for work accepted by the Government:

1. Failure by the Design-Builder to complete the punch list items by the date noted on IBWC Form 255 shall cause the date of substantial completion to be void. A new substantial completion date will be established once punch list items are complete.
   a. If the warranty commencement date was based upon the substantial completion date, then that date shall also be void.
2. If a Certificate of Substantial Completion has been issued but it is found that items covered by this Certificate do not meet the Contract requirements, the Government may revoke the Certificate of Substantial Completion.

1.11.I. Final Acceptance
Upon completion of all construction and all testing under this Contract as well as submittal of all documents and other items required to complete the Contract requirements (e.g. closeout documents, warranties, surveys, record drawings, O&M manuals, etc.), the Government shall fully accept the work and notify the Design-Builder that they may submit their final pay estimate.

1.12. PRIORITY LIST

1.12.A. Warranty service shall be performed within the timeframes noted for the priority codes below. All timeframes noted below are measured from the time notice is given to the Design-Builder of a warranty item.

1. Priority Code A
   These items are critical to operations of USIBWC. The Design-Builder shall perform onsite inspection to evaluate the situation and determine the course of action within 4 hours, initiate work within 6 hours, and work continuously until item is returned to full operating conditions. This timeframe governs for any day of the week or time of day.
   a. This may require the Design-Builder to establish an agreement with a local subcontractor, vendor, or manufacturer.
2. Priority Code B
   The Design-Builder shall perform onsite inspection to evaluate the situation and determine the course of action within 1 business day, initiate work within 2 business days, and work continuously during USIBWC facility business hours until item is returned to full operating conditions.
3. Priority Code C
   The Design-Builder shall perform onsite inspection to evaluate the situation and determine the course of action within 7 calendar days, initiate work within 10 business days, and work continuously during USIBWC facility business hours until item is returned to full operating conditions.
4. Priority Code D
   The Design-Builder shall perform onsite inspection to evaluate the situation and determine the course of action within 7 calendar days. Work shall be initiated and completed based upon a schedule agreed to between USIBWC and the Design-Builder.

Table 8 - Warranty Priority Code A

Item	Issue
Structural Failure	• Facility structure is compromised and is a life-threatening situation

Table 9 - Warranty Priority Code B

Item	Issue
Buoys/debris boom floats	• Links break
Anchor system	• Severe concrete cracks and spalls

Table 10 - Warranty Priority Code C

Item	Issue
Other Construction Defects	• Failure to meet Contract requirements

Table 11 - Warranty Priority Code D

Item	Issue
Permanent Stormwater Structures	• Erosion or damage of structures • Failure of structure to control stormwater

PART 2 - PRODUCTS

2.1. EQUIPMENT WARRANTY TAGS

2.1.A. The Design-Builder shall provide warranty identification tags on all equipment, Design-Builder and Government furnished, installed under this Contract.

2.1.B. Tag Description and Installation

1. The tags shall be similar in format and size to the exhibits provided by this specification, they shall be suitable for interior and exterior locations, resistant to solvents, abrasion, corrosive environments, and to fading caused by sunlight, precipitation, etc.
2. No part of the tag shall be handwritten except for the dates and notes of warranty actions.
3. These tags shall have a permanent pressure-sensitive adhesive back, and they shall be installed in a position that is easily (or most easily) noticeable.
4. Equipment that has differing warranties on its components will have each component tagged.

2.1.C. Tags for Warranted Equipment

1. Tags for equipment shall be similar to Figure 7.
2. Exact format and size will be as compliance confirmed.
3. The Design-Builder warranty expiration date and the final manufacturer's warranty expiration dates will be determined as specified in this Section.
4. Sample Tags
   a. Sample tags shall be submitted for review and compliance confirmation.
   b. These tags shall be filled out representative of how the Design-Builder will complete all other tags.

EQUIPMENT WARRANTY

MANUFACTURER _____
MODEL NO. _____
SERIAL NO. _____
CONTRACT NO. _____
CONTRACTOR NAME _____
DATE PLACED IN SERVICE _____
CONTRACTOR WARRANTY EXPIRES _____
MANUFACTURER WARRANTY EXPIRES _____
WARRANTY ☐ REPAIRED ☐ REPLACED DATE _____
WARRANTY ☐ REPAIRED ☐ REPLACED DATE _____
WARRANTY ☐ REPAIRED ☐ REPLACED DATE

Figure 6 - Equipment Tag Example

PART 3 - EXECUTION

3.1. MINIMUM WARRANTY REQUIREMENTS

3.1.A. For warranties covered by the Design-Builder, provide a written statement noting warranty coverage and length of time.

3.1.B. Verify that warranty documents contain full information.

3.1.C. Include original warranties in submittal to COR. Provide copies of each warranty and each equipment tag in appropriate O&M manual (Section 01.78.23.01).

3.2. MATERIAL, EQUIPMENT, AND FIXTURE LIST

3.2.A. For each item, product, and system installed, note the following on a spreadsheet list:

1. Item Name
2. Manufacturer
3. Manufacturer's Model, Style, or Catalog Number
4. Serial Number
5. Installed Location
6. Specification Reference
7. Drawing Reference
8. Submittal Number
   Provide number of the compliance confirmed submittal only.
9. Warranty Length
10. Date Installed/Constructed
11. Date Accepted
    Provide the applicable date as determined from Paragraph **1.8** above.
12. Initial Warranty Period
13. Responsible Entity for Warranty
    This may be the Design-Builder, a subcontractor, or the manufacturer. Note who USIBWC should contact is a warranty issue arises. While a subcontractor or manufacturer may be listed, the final responsibility for meeting the warranty requirements remains with the Design-Builder.

3.3. INSTALLATION OF EQUIPMENT WARRANTY TAGS

3.3.A. Installation

1. The Design-Builder shall complete the required information on each tag and install tags on equipment by the time of and as a condition of final inspection of the equipment.
2. Dates may be completed upon substantial completion.

3.3.B. Updating Equipment Warranty Tags

1. Repairing or replacing warranted equipment shall include an updated warranty identification tag on the repaired or replaced equipment.
2. Using a fine point permanent marker pen, update the tag by checking whether the equipment was repaired or replaced and indicate the date the work was completed.
3. If the equipment was replaced, furnish a new tag, identical to the original tag, except that the manufacturer, model no., serial no., and date placed in service items shall be updated.
4. Also, check the box indicating that the equipment has been replaced and indicate the date of replacement.

3.4. WARRANTY SERVICE REQUIREMENTS

3.4.A. Following notification by the CO, COR, or authorized Government representative, the Design-Builder shall respond to warranty service requirements in accordance with the timeframes of the Priority Lists.

3.4.B. If the Design-Builder does not perform the construction warranty work within the timeframes specified, the Government will perform the work and back charge the costs to the Design-Builder.

3.4.C. All repairs and/or replacements performed under warranty shall be completed by a technician, applicator, or installer certified to work on the material to be repaired/replaced.

3.4.D. All installations or applications for replacements performed under warranty shall comply with the construction specifications. Repairs shall follow manufacturer's instructions.

3.4.E. The Design-Builder shall submit a warranty report on any warranty item that has been repaired during the warranty period.

1. The report shall include the cause of the problem, date reported, corrective action taken, when the work was completed, and who completed the work.
2. Report shall include pictures documenting at a minimum, new/updated equipment tags, item condition before and after warranty work, and, if replaced, equipment serial number nameplates.
3. Include documentation that items used comply with the materials compliance confirmed during construction.

3.4.F. Unless otherwise directed, the Design-Builder shall coordinate all work through the person that provided notification of the warranty service requirements.

3.5. REPEATED ISSUES WITH WARRANTED ITEMS

3.5.A. On or after the third repair of the same item, or component part thereof, the Government reserves the right to have the Design-Builder replace the item instead of repairing it.

3.5.B. On or after the third replacement of the same item, or component part thereof, the Government reserves the right to have the Design-Builder redesign the system to mitigate the failure.

1. Any design costs, construction costs, and/or equipment costs are the responsibility of the Design-Builder.

3.6. CONTACT LIST

Provide a list of all entities listed under Paragraph 3.2. including their name, address, phone number, internet address, and email.

--End of Section--

SECTION 01.78.39.01
RECORD DRAWINGS

PART 1 - GENERAL

1.1. SECTION INCLUDES

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1.2. RELATED REQUIREMENTS

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1.2.B. Section 01.33.33.01-◊●◊●◊ Document Requirements

1.2.C. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.D. Section 01.77.19.01-◊●◊●◊ Closeout Requirements

1.2.E. Section 02.21.00.01-◊●◊●◊ Surveys

1.3. REFERENCE STANDARDS

1.3.A. American Society of Civil Engineers (ASCE)

1. ASCE 38-22, Standard Guideline for Investigating and Documenting Existing Utilities
2. ASCE 75-22, Standard Guideline for Recording and Exchanging Utility Infrastructure Data

1.3.B. International Boundary and Water Commission (IBWC)

1. USIBWC's Drawing and CAD Standards

1.4. RECORD DOCUMENTS

1.4.A. Required documents to be provided to Government in this Section include:

1. Monthly pay estimate submittals.
2. Record Drawings shall be submitted to the COR for review and approval.
   a. If review of the preliminary Record Drawings reveals errors and/or omissions, the drawings will be returned to the Design-Builder for corrections.

b. The Design-Builder shall make all corrections and return the Record Drawings to the COR within 14) calendar days of receipt.

1.4.B. Full compliance with this Section must be completed prior to submittal of the Design-Builder's final payment application.

1.5. MEASUREMENT AND PAYMENT

1.5.A. No separate measurement or payment will be made for items specified in this Section. Include all costs of required work in applicable prices offered in Contract for Contract Closeout (Section 01.77.19.01) for which Record Drawings are required.

1.5.B. Payment constitutes full compensation for furnishing, delivering, handling, and/or installing all material, labor, services, testing, tools, equipment, and for other incidental work necessary to meet Contract requirements applicable. The Design-Builder will not be allowed Payment for rejected items.

1.5.C. Record drawings shall be shown in the Schedule of Values.

1.5.D. The progress Payments are made to benefit the Design-Builder. The progress payments are made to benefit the Design-Builder. Progress payments do not constitute acceptance of any portion of the work and do not reduce the Design-Builder's liability to replace unsatisfactory work, material, or equipment.

1.6. GENERAL

1.6.A. Record Drawings (as-builts or as-constructed drawings) shall be performed under the supervision of a registered engineer or surveyor, as applicable, licensed to practice in the State of Texas.

1.6.B. The terms "drawings," "Contract Drawings," "drawing files," "working record drawings," and "plans" refer to Contract Drawings which are revised to be used for Record Drawings showing end of project as-built conditions.

1.6.C. Record Drawings are an official record of the project at the time of construction completion. The original "as-designed" Contract Drawings are modified or new drawings are created to show all additions, deletions, and other changes made during construction. Accurate Record Drawings are very important for project operation and maintenance as well as future modifications.

1.6.D. The Design-Builder shall keep one current and updated record copy of all specifications, plans, addenda, supplementary drawings, shop drawings, modifications, and clarifications at the Design-Builder's field office. Specifications, plans, supplementary drawings, and shop drawings shall be annotated to show all changes made during the construction process. These shall be available to the Government on a monthly basis to inspect for accuracy and completeness. Failure by the Design-Builder to maintain a current and satisfactory record copy of the aforementioned documents shall result in retainage of an appropriate amount of the monthly pay estimate, as determined by the Government.

1.7. CONSTRUCTION PAY ESTIMATES

1.7.A. The Design-Builder QSM shall keep a log of all items to be included in the Record Drawings. A copy of markups for the Record Drawings shall be kept onsite during construction. Markups may include a hardcopy of the construction drawings that have changes marked as construction continues, a log of items to include with the Record Drawings, notes, sketches, etc.

1. Markups and the log shall be available for review onsite at any time.
2. The COR may make additions or annotations to these markups.

1.1.F. At least every month the Design-Builder shall review the record drawings maintained by the Construction Contractor (often called red lines) for accuracy and completeness to ensure field changes are recorded. This review shall include: specifications, plans, supplementary drawings, shop drawings, and the project

stormwater pollution prevention plan (SWPPP). These items shall be annotated to show all changes made during the construction process.

1. Reviews shall be made of both the pdf files and of the AutoCAD files provided.
   a. When Construction Contractor produces record drawings primarily from survey data, often there are little to no record drawings to review each month. In that case ensure that the Construction Contractor is keeping a log or other record of items that need to be included in their record drawings. Note any differences between your log and the Construction Contractor's.
2. If items are surveyed for record drawings and the survey data is not available for review, note what has been surveyed to date.
3. Compare the Construction Contractor's record drawings with your log. A list of all discrepancies noted shall be written on CM Contractor letterhead and shall be attached to IBWC Form 242.

1.7.B. The Design-Builder shall submit cross sections per Section 02.21.00.01 3.3.B, a copy of the current AutoCAD files that include up to date survey data and surfaces as well as any applicable pdfs with their pay estimates.

1.8. RECORD DRAWING REQUIREMENTS

1.8.A. Drawings shall be created using USIBWC's standard border, USIBWC's ctb file, and USIBWC's "*Drawing and CAD Standards*."

1. These items are available on USIBWC's website under link 'Std-Drawings' (see Section 00.60.00.01).

1.8.B. Final construction elevations, layout, quantities, coordinates, slopes, dimensions, workmanship, material, and method of constructability shall be clearly shown on the Record Drawings.

1. Design-Builder may modify original construction AutoCAD files or may create new drawings. New drawings shall match the layout, numbering, etc. that of the design/construction Contract Drawings.
2. New drawings shall meet all of the requirements noted in Paragraph 1.10 below.

1.8.C. Record drawing data shall meet ASCE 38 and ASCE 75 utility quality Level A for all utilities constructed, modified, or exposed during construction.

1.8.D. The following information is provided to improve the quality of and to facilitate preparation of the Record Drawings. The most important guideline is that the Record Drawings shall be complete, understandable, and shall show the constructed project. Someone with no knowledge of the design or construction should be able to review the Record Drawings and clearly know what exists in the field and how project was constructed.

1. Use brief written explanations on Record Drawings to describe changes from design. Do not simply reference Contract modification number, RFI number, or other related documents.
   a. RFI or other supporting documentation may be provided on an additional sheet as a supplemental drawing.
2. Legibility of lettering and digit values shall be precise and clear when marking drawings and shall clarify ambiguities concerning the nature and application of change involved.
3. Record Drawings shall only show post construction state. Revise all features, data, and captions to show as-built condition.
4. Delete words similar to "proposed" and ensure that the project specific information is shown.
5. Delete words like "equal to" or "similar to" and replace them with the specific information used during the construction process.
6. Where Contract Drawings or Specifications present options, show only the option used in construction on the Record Drawings.

7. When changes are required on small-scale drawings and in restricted areas, suggest large-scale inserts be drawn or sketched, with leaders to the location where applicable.
8. If required, provide a legend to delineate as-built features. However do not cloud as built features or dimensions.
9. Be sure descriptive markings conform to legend symbols and linetypes shown.
10. Errors in notation on construction drawings shall be corrected and shall clearly show as-built condition.
11. Include shop drawings as additional drawings to show constructed items.

1.8.E. Where the amount of record information required to be included on a drawing would result in a single drawing being difficult to read and interpret, the Design-Builder shall provide supplemental sheets or a series of drawings that collectively include all the record information. For example, multiple drawings of the same structure may be provided with one indicating the structure dimensions and elevations, another showing location of joints, and another indicating reinforcing steel locations.

1.8.F. Record Drawings shall clearly delineate what features are as-built and which features were not modified by construction.

1. "As-Designed" items that are not shown on the Record Drawing shall be frozen instead of deleted.

1.8.G. Record Drawings shall only be printed in black and white unless original drawing had color pictures. Logos are not considered in determining whether the drawing is black and white or color.

1.8.H. Except noted below, the designer's name and engineering stamp shall be completely removed from the Record Drawings. The only firm names allowed on the Record Drawings are the Design-Builder's and their subcontractors (construction contractor, engineers, surveyors, etc.). The only seals and stamps on the Record Drawings shall be those related to the production of the Record Drawings.

1. The signature block within USIBWC's standard border shall not be modified.
2. Design/construction drawings that have no requirements to be modified (e.g. Typical Levee Section, USIBWC Standard Drawings) may be left in the Record Drawings without being stamped and certified by the Design-Builder.

1.8.I. Only personnel proficient in the preparation of engineering drawings and AutoCAD (at least 3 years' experience) shall be employed to modify the original Contract Drawings and prepare additional new drawings.

1.9. CERTIFICATION OF RECORD DRAWINGS

1.9.A. All Record Drawings shall be signed and sealed by a registered, professional engineer or surveyor.

1. All Record Drawings may contain a statement that they are not considered a certified document as to the original design, but only as to the record drawing changes and documentation of final construction.
2. All Record Drawings shall contain a certification similar to: "*I certify that the locations, elevations, depths, and comments regarding construction accurately reflect existing field conditions*."
3. If the engineer signing the drawings did not personally observe and confirm the record conditions or have it done under their direct supervision, then the engineer must clearly indicate the source of the as-built information (e.g., field changes noted are from mark-up drawings supplied by the Design-Builder).
   a. The engineer may include a caveat on the Record Drawings with a notation as to what they actually confirmed based upon information they obtained through observation, construction inspection, interview, samples, or other useful information acquired during construction of project.

1.9.B. Certifications shall be written in text sized no smaller than 0.10 inch.

1.9.C. The Design-Builder may choose to leave the certification unsigned until Record Drawings are found to meet these requirements.

1.9.D. The Designer of Record shall review the Record Drawings and ensure that final product meets the original design intent and that none of the assumptions made during the design process were violated. A memo from the Designer of Record shall be submitted with the Record Drawings noting this review. If the Designer of Record is certifying the Record Drawings, no memo is required.

1.10. MINIMUM DRAWING REQUIREMENTS

1.10.A. Drawings shall follow USIBWC's "*Drawing and CAD Standards.*" Guidance on providing files to USIBWC and creating record drawings is provided in the section entitled "Contractor Drawing Deliverables."

1. The drawing purpose within USIBWC's standard border shall be "RECORD DRAWING."
2. Every sheet shall include Design-Builder's name, USIBWC Contract number, and Record Drawing date.

1.10.B. The drawing number, name, and description shall not be changed.

1. New supplemental drawings created during construction may use an original drawing number with the addition of a letter suffix, i.e. -A.

1.10.C. If Record Drawings are revised after acceptance/completion, thoroughly note so in a revision block.

1.10.D. Record Drawings are required to reflect the same degree of detail as the original drawings. This includes detailing items and providing elevations in profiles.

1.10.E. Unless allowed by the COR, no more than 9 drawings shall be placed in each AutoCAD file.

1.10.F. All drawings shall be placed on their own layout tab in AutoCAD. The layout tab name shall be the drawing number.

1.10.G. Detail locations, depths, and description of any utilities encountered during construction.

1.10.H. Provide applicable shop drawings, RFIs, or other supporting data to show work completed as part of the Record Drawings.

1.11. DRAWING NUMBERS

1.11.A. USIBWC Drawing numbers are shown with the format of #####-###-##. USIBWC's "*Drawing and CAD Standards*" Subsection 4.7.B. explains how the drawing numbers are formatted and how they are revised for Record Drawings.

1.11.B. For drawings with existing USIBWC drawing numbers, revise the last two digits to reflect a record drawing per the above guidance.

1.11.C. For any new drawings created as part of the Record Drawings, including any supplemental data such as shop drawings or RFIs, request a new USIBWC drawing number. The request shall include a reference to which original drawing the supplemental data applies to.

1.11.D. The Design-Builder shall provide a spreadsheet with the original drawing number, the principal feature, and the sub feature as shown in the border of each drawing.

1. If additional drawing numbers are required at any point, the spreadsheet shall be resubmitted with the new drawing information and the COR will assign additional numbers.

PART 2 - PRODUCTS

2.1. RECORD DRAWINGS

2.1.A. The set of drawings in pdf format shall contain all signatures and stamps.

1. Pdf files shall be configured to allow for high quality printing.
2. Pdfs shall be generated from AutoCAD with a minimum of 1200 dpi.
3. Embed all fonts in the pdfs.
4. Pdfs shall be rotated to drawing/sheet orientation.
5. A "set" of drawings includes both the full size and half size drawings.
   a. One pdf shall be full size (22"x34").
   b. One pdf shall be half size (11"x17").
6. Pdf files shall allow extraction of sheets.

2.1.B. Drawing Files

1. AutoCAD 2022 Civil 3D or newer shall be used for drawing files.
2. All other references to AutoCAD within this document refer to Civil 3D version.
3. At this time, USIBWC will not accept drawings in Revit.

2.1.C. The set of drawings in AutoCAD (dwg) format shall not contain signatures nor official seals/stamps but shall fully contain all necessary items to access the data in AutoCAD.

1. Files shall follow USIBWC's "*Drawing and CAD Standards*" section entitled "Contractor Drawing Deliverables."
2. All associated topographic, survey, 2D data, 3D data, and cross referenced files shall be included in this drawing set.
3. Include all shx line type files, ctb pen setting files, etc. required to replicate the drawings shall be included with the drawing set.
4. All data shall exist in model space (AutoCAD model tab).
5. A correctly scaled layout with full border and delineated print area shall be shown in AutoCAD's layout tab.
6. All AutoCAD files shall be georeferenced and contain metadata and GIS projection files.
7. Drawing items shall be associated to correct layers.
8. Record Drawing layer names shall be descriptive in nature and shall start with "RD."

2.1.D. All 3D data shall be exported from the AutoCAD file. This includes, but is not limited to: points, surfaces, profiles, cross sections, and boundaries. Appropriate dxf, xml, cvs, etc. files shall be provided for this data.

2.1.E. All 3D data and objects shall be fully available. For the Record Drawings to be accepted by the Government, **ALL** 3D data including points, contours, breaklines, etc. shall be readable with all attached data. In other words, a point shall exist as a 3D point and not as a block or a 2D point.

2.1.F. Supporting survey data shall be provided with the Record Drawings.

1. The calculations, notes, and survey setup documents shall be provided as noted in Section 02.21.00.01 Paragraph 1.12.D.
2. Associated survey research shall be provided per Section 02.21.00.01 Paragraph **Error! Reference source not found.**.

2.1.G. Record Drawings and completed work may be rejected by the Government until such work is corrected by the Design-Builder and recertified on the Record Drawings by said Engineer or Land Surveyor.

1. AutoCAD project files without full 3D points and lines will be rejected.

PART 3 - EXECUTION

3.1. RECORD DRAWINGS

3.1.A. The Design-Builder shall submit the Record Drawings for review and compliance confirmation after substantial completion.

3.1.B. Review of the Record Drawings by USIBWC will be completed within 21 days. Several submissions of Record Drawings may be required so the Design-Builder shall plan accordingly.

3.1.C. See Section 01.78.36.01 1.11 for explanation of substantial completion.

--End of Section--

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SECTION 01.79.00.01
DEMONSTRATION AND TRAINING

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.78.23.01-Operations and Maintenance Data

1.3. SUBMITTALS

1.3.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.3.B. Required submittals in this Section requiring COR compliance confirmation include:

1. A written training plan to the COR for approval at least 30 calendar days prior to the scheduled training.
2. Upon completion of training, submit 4 complete training manuals and one CD including materials in the complete training manual in pdf format. Each manual shall contain specific training and instruction manuals and handouts.:
3. Training Facilitator Qualifications
   A firm or individual experienced in training or educating maintenance personnel and end-users in training program similar to that required for this project, and who has record of successful training performance.

4. Training Instructor Qualifications
   Instructor shall be factory-authorized service representative, experienced in operation and maintenance procedures and training for each system, subsystem or piece of equipment.
5. Attendance Record
   For each training module, submit the proposed list of participants, sign in sheets and length of instruction time a minimum of 15 days prior to start of training of the module.

1.4. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.5. GENERAL

1.5.A. Section includes administrative and procedural requirements for instructing USIBWC's facilities personnel, including:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.

1.6. DEMONSTRATION AND TRAINING

1.6.A. Prior to Contract closeout, the Design-Builder shall ensure that a comprehensive project-specific Government personnel training program for the systems and equipment designed and installed under this Contract is provided.

1.6.B. Standard Operating Procedures (SOPs)

1.6.C. When operating procedures are not detailed in owner's manuals, the Design-Builder shall write SOPs. These SOPs shall be available prior to the scheduled training provided below.

1.6.D. The Design-Builder shall ensure that factory-trained representatives as required to conduct training sessions on the operation and maintenance of constructed works are furnished. The Design-Builder shall ensure that the trainers are qualified in providing all required training and have expert knowledge of all aspects of the operation and maintenance of their systems and associated components.

1.6.E. The Design-Builder shall ensure that all necessary training materials are provided and that each student is furnished with a detailed and comprehensive manual covering all course subjects.

1. Training materials shall become the property of the Government after completion of the training.

1.6.F. Design-Builder shall ensure that the training course will handle up to **12** Government personnel. The training sessions shall be conducted at the Retamal Dam Field Office / worksite or at a Government provided classroom.

1.6.G. The training course will be given for a minimum of two 8-hour sessions. The classes shall be conducted during regular working hours of 7:30 am to 4:30 pm, Monday through Friday and shall exclude Government holidays.

1.6.H. The selected time for training will be scheduled shortly after completion of construction but will be no later than 3 months after the final walk-through inspection. The Government will coordinate with the Design-Builder to schedule this training.

1.7. COORDINATION

1.7.A. After completion of the construction, the Design-Builder shall assign a liaison to coordinate training.

1.7.B. Design-Builder Training Liaison shall coordinate instruction schedule with the OAR, CxA, and O&M personnel. The Liaison shall adjust schedule as required to reasonably accommodate the schedules of participants and to minimize disrupting O&M operations.

1.7.C. Design-Builder Training Liaison shall coordinate with instructors, including providing notification of scheduled dates, times, length of instruction time and course content.

1.7.D. Design-Builder Training Liaison shall coordinate content of training modules with content of compliance confirmed Operations and Maintenance Manuals (Section 01.78.23.01). Do not submit instruction program until training manual has been reviewed and accepted by the COR.

1.8. TRAINING PLAN

1.8.A. The training plan shall include the following elements:

1. Equipment included in training.
2. Intended audience.
3. Location of training.
4. Objectives of training and suggested methods of ensuring adequate training.
5. Subjects covered including description.
6. Duration of training on each subject.
7. Methods (classroom lecture, video, site walk-through, actual operational demonstrations, written handouts, etc.).
8. Media to be used (slides, handouts, powerpoint, etc.).
9. Training equipment required (projector, screen, etc.). Design-Builder shall plan on providing all equipment.
10. Instructor and instructor qualifications for each subject.

1.9. TRAINER QUALIFICATIONS

At least 3 weeks prior to start of training, Design-Builder shall submit qualifications for persons and firms providing instruction.

1.10. TRAINING CONTENT

1.10.A. The core of the training shall be based on manufacturer's recommendations and the operation and maintenance information provided.

1.10.B. Training Program Structure:

1. Basis of system design, operational requirements, and criteria.
2. Documentation and use of O&M Manuals.
3. Relevant health and safety issues.
4. Emergencies.
5. Operations - Start-up, normal operation, shutdown, unoccupied operation, seasonal changeover, manual operation, controls set-up and programming, troubleshooting, and alarms.
6. Adjustments.
7. Troubleshooting.
8. Maintenance as well as special maintenance and replacement sources.
9. Repairs.

1.11. UNRESOLVED QUESTIONS FROM TRAINEES

If, at the end of the training course, there are questions from trainees that remain unresolved, the Design-Builder shall ensure that the instructor sends the answers, in writing, to the COR for transmittal to the trainees, and the training Documentation shall be modified to include the appropriate clarifications.

1.12. VALIDATION OF TRAINING COMPLETION

1.12.A. Design-Builder shall ensure that each attendee at each training session signs a class roster daily to confirm Government participation in the training.

1.12.B. At the completion of all training, Design-Builder shall submit a signed validation letter that includes a sample record of training for reporting what systems were included in the training, who provided the training, when and where the training was performed, and copies of the signed class rosters.

PART 2 - PRODUCTS

2.1. INSTRUCTION PROGRAM

2.1.A. Program Structure
Develop instruction program that includes individual demonstration and training modules for the operation, maintenance, minor repair (completion in under two hours) and calibration of systems and components constructed under this Contract.

2.1.B. Training Modules
Develop learning objective and teaching outline for each module.

2.1.C. Include description of specific skills and knowledge that participant is expected to master.

2.1.D. For each module, include instruction for the following:

1. Basis of System Design, Operational Requirements and Criteria, including, but not limited to:
   a. System, subsystem, and equipment descriptions.
   b. Performance and design criteria.
   c. Operating standards.
   d. Regulatory requirements.
   e. Equipment function.
   f. Operating characteristics.
   g. Limiting conditions.
   h. Performance curves.
2. Discuss relevant health and safety issues:
   a. Lock out/tag out procedures.
   b. Confined spaces.
   c. Inhalation hazards.
   d. Safety guards.
3. Review in detail the following documentation:
   a. Emergency manuals.
   b. Operations manuals.
   c. Maintenance manuals.
   d. Project Record Documents.
   e. Identification systems.
   f. Warranties.
   g. Maintenance service agreements and similar continuing commitments.
4. For emergencies review, without limitation, the following, as applicable:
   a. Instructions on meaning of warnings, trouble indications, and error messages.
   b. Instructions on stopping.
   c. Shutdown instructions for each type of emergency.

d. Operating instructions for conditions outside of normal operating limits.
e. Sequences for electric or electronic systems.
f. Special operating instructions and procedures.

5. Operations, as applicable:
   a. Startup procedures.
   b. Equipment or system break-in procedures.
   c. Routine and normal operating instructions.
   d. Regulation and control procedures.
   e. Control sequences.
   f. Safety procedures.
   g. Instructions on stopping.
   h. Normal shutdown instructions.
   i. Operating procedures for system, subsystem, or equipment failure.
   j. Seasonal and weekend operating instructions.
   k. Required sequences for electric or electronic systems.
   l. Special operating instructions and procedures.
6. Adjustments, as applicable:
   a. Alignments.
   b. Checking adjustments.
   c. Noise and vibration adjustments.
   d. Economy and efficiency adjustments.
7. Troubleshooting, as applicable:
   a. Diagnostic instructions.
   b. Test and inspection procedures.
8. Maintenance, as applicable:
   a. Inspection procedures.
   b. Types of cleaning agents to be used and methods of cleaning.
   c. List of cleaning agents and methods of cleaning detrimental to product.
   d. Procedures for routine cleaning.
   e. Procedures for preventative maintenance.
   f. Procedures for routine maintenance.
   g. Instruction on use of special tools.
9. Repairs, as applicable:
   a. Diagnostic instructions.
   b. Repair instructions.
   c. Disassembly, component removal, repair and replacement, and reassembly instructions.
   d. Instructions for identifying parts and components.
   e. Review of parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1. TRAINING - GENERAL

3.1.A. Design-Builder shall conduct training onsite unless otherwise indicated.

1. Government will provide classroom and seating at no cost to Design-Builder.

3.1.B. Do not start training until Functional Testing/Commissioning is complete, unless otherwise specified or approved by the COR.

3.1.C. Provide training in minimum 2 hour segments.

3.1.D. The Design-Builder is responsible for determining that the training was satisfactorily completed and will provide approval forms.

3.1.E. Training schedule will be subject to availability of Government's personnel to be trained; re-schedule training sessions as required by Government; once schedule has been approved by Government, failure to conduct sessions according to schedule will be cause for Government to charge Design-Builder for personnel "show-up" time.

3.1.F. Review of Facility Policy on Operation and Maintenance Data
During training the Design-Builder shall discuss:

1. The location of the O&M manuals and procedures for use and preservation; backup copies.
2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
3. Typical uses of the O&M manuals.

3.1.G. Product- and System-Specific Training

1. Review the applicable O&M manuals.
2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
4. Provide hands-on training on all operational modes possible and preventive maintenance.
5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
6. Discuss common troubleshooting problems and solutions.
7. Discuss any peculiarities of equipment installation or operation.
8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
9. Review recommended tools and spare parts inventory suggestions of manufacturers.
10. Review spare parts and tools required to be furnished by Design-Builder.
11. Review spare parts suppliers and sources and procurement procedures.

3.1.H. The Design-Builder shall be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within 3 working days.

3.2. INSTRUCTION

3.2.A. The Design-Builder is responsible for hiring a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Design-Builder and COR for number of participants, instruction times, and location.

3.2.B. The Design-Builder shall engage qualified instructors to instruct USIBWC personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

3.2.C. Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Base duration of training on complexity of system, subsystem or piece of equipment.

3.2.D. Training shall be onsite in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

3.2.E. The Design-Builder shall remove all instructional equipment after completion of training. Systems and equipment used shall be returned to condition existing before initial training use.

3.3. DEMONSTRATION

3.3.A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this Section, unless approved in advance by Government.

3.3.B. Demonstrations conducted during Functional Testing need not be repeated unless Government personnel training is required to operate systems.

3.3.C. Demonstration may be combined with Government personnel training if applicable.

3.3.D. Operating Equipment and Systems
Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.

1. Perform demonstrations not less than 2 weeks prior to Substantial Completion.
2. For equipment or systems requiring seasonal operation, perform demonstration for other season within 6 months.

3.3.E. Non-Operating Products
Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.

1. Perform demonstrations not less than 2 weeks prior to Substantial Completion.

--End of Section--

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SECTION 01.80.05.01
GENERAL DESIGN REQUIREMENTS

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.77.19.01-◊●◊●◊ Closeout Requirements

1.2.C. Section 01.78.23.01-Operations and Maintenance Data

1.2.D. Section 01.78.36.01-◊●◊●◊ Warranties

1.2.E. Section 01.78.39.01-Record Drawings

1.3. REFERENCE STANDARDS

1.3.A. ASTM International (ASTM)

1. ASTM A123-17 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
2. ASTM A153-23 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

1.3.B. American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)

1. ASHRAE/ANSI/IES 90.1-2022, Energy Standard for Buildings Except Low-Rise Residential Buildings

1.3.C. Building Owners and Managers Association International (BOMA)

1. BOMA/ANSI Z65.1-2010, Office Buildings: Standard Methods of Measurement

1.3.D. Code of Federal Regulations (CFR)

1. 29 CFR 1910, Occupational Safety and Health Standards (OSHA)

1.3.E. Executive Order (EO)

1. Catalyzing Clean Energy Industries and Jobs through Federal Sustainability, EO 14057

1.3.F. Federal Acquisition Regulation (FAR)

1. FAR 52.223-11 Ozone-Depleting Substances and High Global Warming Potential Hydrofluorocarbons
2. FAR 52.223-12 Maintenance, Service, Repair, or Disposal of Refrigeration Equipment and Air Conditioners
3. FAR 52.223-20 Aerosols
4. FAR 52.223-21 Foams

1.3.G. General Services Administration (GSA)

1. The Facilities Standard for the Public Buildings Services (PBS-P100), 2014

1.3.H. NSF International (NSF)

1. NSF/ANSI Standard 61: Drinking Water System Components - Health Effects

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Design Development Documents
2. Conceptual Layout
3. 30% Design
4. 60% Design
5. 90% Design
6. Pre-100% Design
7. 100% Design

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Ozone-Depleting Substances and Greenhouse Gases, if applicable
2. O&M Manuals per Section 01.78.23.01
3. Warranties per Section 01.78.36.01
4. Record Drawings per Section 01.78.39.01

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GENERAL

1.7.A. The Design-Builder shall consider environmentally responsible design alternatives that are consistent with the Government's program, schedule, and budget for the cost of the work.

1.7.B. If any materials during construction or as part of the final project, contact water that will flow to the Rio Grande, the coating shall meet ASTM A123, ASTM A153, or NSF 61.

1.8. LIFE-CYCLE COST ANALYSIS

1.8.A. Within programming requirements, life-cycle cost assessments must be made, leading to system/feature selections. The design team must evaluate life-cycle costs. The benefit of life-cycle costs may far outweigh the first costs of a project.

1.8.B. The project and all associated system components shall have a life expectancy of no less than 15 years.

1.9. SUSTAINABILITY

1.9.A. The essential principles of sustainable design and development are:

1. Use environmentally preferable products and materials
2. Optimize operations and maintenance practices

1.9.B. These principles must serve as the basis for planning, programming, design, budgeting, construction, commissioning, operation, maintenance, and existing building alterations. These principles must be applied as appropriate to every project scope. Applicable strategies and opportunities to improve sustainable performance must be included in all projects.

1.10. OZONE-DEPLETING SUBSTANCES AND GREENHOUSE GASES

1.10.A. When considering items including, but not limited to, refrigeration equipment, air conditioning equipment, fire suppression systems, refrigerants, fire suppressants, solvents, dusters, freezing compounds, mold release agents, corrosion prevention compounds, foam sealants, aerosols, fluorocarbon lubricants, propellants, and foam insulation, the Design-Builder shall substitute acceptable alternatives to ozone-depleting and hydrofluorocarbon substances to the maximum extent practicable.

1.10.B. Refer to EPA's Significant New Alternatives Policy (SNAP) program for the list of alternatives as well as supplemental tables of alternatives (available at www.epa.gov/snap).

1.10.C. The Design-Builder shall follow the guidelines and reporting required in FAR 52.223-11, FAR 52.223-12, FAR 52.223-20, and FAR 52.223-21 as applicable.

1.11. SAFETY

1.11.A. At each phase of the design, the Design-Builder must identify and mitigate safety and health risks in accordance with the following order of precedence:

1. Eliminate or Reduce the Hazard
   If the hazard cannot be eliminated, the associated risk must be reduced to an acceptable level through design.
2. Isolate the Hazard
   If the hazard cannot be eliminated through design, the risk must be reduced to an acceptable level using engineering controls, protective safety features, or devices.

3. Provide Warning Devices
   If safety devices do not adequately lower the risk of the hazard, cautions and warnings must be provided using detection and warning systems, as appropriate.
4. Develop Procedures and Training
   Where it is impractical to eliminate hazards through design selection or to reduce the associated risk to an acceptable level with detection and warning devices, incorporate special procedures and training. Procedures may include the use of personal protective equipment. For high consequence hazards, warnings, cautions, or other written advisories must not be the only risk reduction method.

1.11.B. Confined Spaces
The Design-Builder must avoid the creation of confined spaces except where required as part of a system (e.g. tanks, pits, etc.). Confined space is defined in 29 CFR 1910.

1.11.C. Fall Protection
The design must consider the inspection, operations, and maintenance of the site, facility, and equipment. Access and fall protection, especially to difficult maintenance needs in high locations, including lighting fixtures, mechanical equipment, and skylights, must be considered in the design.

1.12. EXISTING STRUCTURES

1.12.A. Create an inventory of all existing structures within the worksite. Inventory shall include the condition, photos, description, and survey data for each structure.

1.12.B. Structures noted for removal or determined to be abandoned shall be thoroughly inspected and documented. Confirmation that the structures are no longer needed shall be obtained from the owners and the COR prior to proceeding with designing the removal of these structures.

1. USIBWC only leaves abandoned structures within their property if they are extremely difficult to remove.
2. If a structure is abandoned in place, the Design-Builder may need to design changes to structure prior to abandonment (e.g. fill structure with flowable fill).

1.13. UTILITIES

1.13.A. If utilities need to be removed or relocated, the time required for coordination and removal/relocation shall be clearly identified in the project schedules.

1.14. ENVIRONMENTAL CONSIDERATIONS

1.14.A. If items can be recycled, note whether local options for recycling exist and what they encompass.

1.14.B. Review Section 01.74.19.01 to ensure that disposal considerations for the project are met.

1.14.C. There may be Western burrowing owls (*Athene cunicularia hypugaea*) within the project site. This owl has a breeding and nesting season from March 1 through August 31.

1. Any borrows located shall be surveyed and shown on the construction drawings.
2. Design and construction must take owl communities into account.

1.14.D. Migratory Bird Treaty Act (MBTA) surveys shall be performed by a qualified biologist for any site work that entails mowing, clearing of vegetation, or ground disturbing activities performed during the bird breeding season (March 1 through August 31).

1.15. DESIGN SUBMITTALS

1.15.A. Required submittals include:

1. Conceptual Layout

2. 30% Design
3. 60% Design
4. 90% Design
5. Pre-100% Design
6. 100% Design

1.15.B. Government Review of Designs

1. During Government review of the provided drawings and specifications that represent the Design-Builder's design, the Government will focus on the drawings.
2. The drawings indicate to the Government the final project. The Design-Builder is expected to write technical specifications that ensure that the final project results in what the drawings indicate.

1.15.C. In accordance with the Design-Build Contract, each Phase, and its associated submittals, is subject to review and approval by USIBWC as outlined in this Scope of Work. Two separate types of reviews are intended: one for Scope Compliance Review and one for Code Compliance Review.

1. Code Compliance Review
   The review conducted by the COR to review the Design work to determine that it meets all applicable Code Requirements.
2. Scope Compliance Review
   The review by the COR of the Design Work to determine that the requirements of the Contract Documents, other than elements covered by the Code Compliance Review, are met.
3. The COR may, at their sole discretion, utilize the services of Plan Check Consultant(s) to assist in the Code Compliance Review.
4. Once the USIBWC has compliance confirmed the Design Work, any item within such compliance confirmed Design Work that the Design-Builder desires to subsequently change must be identified by Design-Builder in the form of a submittal identifying and requesting such change, and shall not be incorporated into the Design Work until written compliance confirmation is received by USIBWC.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. DESIGN DEVELOPMENT DOCUMENTS

3.1.A. Upon USIBWC's written Notice to Proceed for Phase 1, Design-Builder shall prepare for approval by COR, Design Development documents.

3.1.B. These documents shall consist of such drawings, outline specifications, and narratives as are needed to establish and describe the size and character of the entire project, and allow the USIBWC to initiate Scope Compliance Review(s).

3.1.C. Design-Builder shall incorporate into the Design Development documents architectural, structural, mechanical, and electrical systems, materials, and such other elements and other systems as described in Contract Documents.

3.2. 30% SUBMITTAL REQUIREMENTS

3.2.A. The complete 30% drawing submittal inclusive of the approved conceptual layout and floor plan shall be provided to USIBWC will provide plans to SHPO.

1. USIBWC shall mail or email items directly to SHPO point of contact per required coordination. Design-Builder shall obtain from COR that items have been provided to SHPO.
2. Per the MOA, USIBWC and the Design-Builder shall allow at least 30 days for SHPO review of the preliminary design.

3.2.B. Design Report
Report shall begin addressing all items within this Section including, but not limited to:

1. Design data and formulas
2. Safety requirements
3. Seismic safety requirements
4. Required acceptance inspections and tests

3.2.C. Additional 30% submittal requirements are detailed in other sections of this Scope of Work.

3.3. 60% SUBMITTAL REQUIREMENTS

3.3.A. All drawings, specifications, construction schedule, and other documents enumerated in above for inclusion in the 30% completed submittals shall be further developed by Design-Builder in sufficient detail as to be deemed 60% complete and buildable. The 60% submittal shall include all required design information to finalize any pending decisions, alternatives, or options for the building and site.

3.3.B. Design-Builder shall submit documentation supporting the design criteria for the structural (including structural loading) for mooring and anchor system.

3.3.C. Prior to completing the 60% design development phase submittals, Design-Builder shall evaluate the programmatic requirements and call to the attention of COR any discrepancy contained therein and request direction regarding any discrepancies.

3.3.D. Include in the 60% submittal draft construction specifications and all other 60% submittal items detailed in other sections of this Scope of Work.

3.4. 90% SUBMITTAL REQUIREMENTS

3.4.A. All drawings, specifications, construction schedule, and other documents enumerated in above for inclusion in the 60% completed submittals shall be further developed by Design-Builder in sufficient detail as to be deemed 90% complete and buildable. All features of work shall be designed and included in this submittal to avoid introducing new ideas or features in the final submittal(s).

3.4.B. Fully describe in the construction specifications the materials and workmanship, and the types, sizes, capacities, finishes, and other characteristics of all materials, products, articles, and devices. Incorporate within each specifications section, in Part 1, a list of all required submittals such as shop drawings, materials lists, samples, and certifications.

3.4.C. Prior to submitting the construction documents, Design-Builder shall have thoroughly checked, coordinated, and revised all documents, to bring them to 90% completed level.

1. General conditions items shall not be included on Drawings or Schedules.
2. Notes must coordinate with and conform to the written Contract Documents.
3. Products and materials specified on the drawings must be identical to the products and materials required in the written construction specifications.

3.5. PRE-100% SUBMITTAL REQUIREMENTS

3.5.A. The 90% submittal will be reviewed as described in above. Comments will then be reviewed by the Design-Builder. The Design-Builder will implement the comments as provided by the Government.

3.5.B. All drawings, specifications, construction schedule, and other documents enumerated in above for inclusion in the 90% completed submittals shall be further developed by Design-Builder in sufficient detail as to be deemed 100% complete and buildable. No new items, features of work, details, or sections should in the pre-100% submittal.

3.5.C. The Construction Documents submittals shall either incorporate any changes or corrections required by COR or the applicable review agencies as a result of their Code Compliance Review of the 100% completed Construction Documents or be accompanied by a written statement as to why such changes were not incorporated. COR may reject Design-Builder's explanation and require Design-Builder to make the changes or corrections to the Construction Documents as previously requested by USIBWC. The COR will be final interpreter of all code requirements and all such decisions will be final.

3.5.D. Unless directed otherwise in writing by USIBWC, the Construction Documents Phase shall not be considered 100% complete until all required agency and USIBWC compliance confirmations have been received by Design-Builder. Design-Builder shall prepare and submit required agency applications as required by COR.

3.5.E. Final Construction Drawings and the Certification page of the specifications submitted to USIBWC shall be signed and stamped by the appropriate Design-Builder Engineer of Record. Licensure shall be valid and active in the State of Texas.

3.5.F. Design-Builder shall be responsible for the content of all Construction Documents. All construction documents prepared or signed by Design-Builder's Engineer of Record shall be complete, coordinated, accurate, and contain directions as will enable a competent Construction Contractor to carry them out.

3.5.G. When Scope Compliance Review by the USIBWC, Code Compliance Review by the COR, and review agency required changes or corrections have been incorporated by Design-Builder, the 100%-completed Construction Documents will be deemed to be final and ready for USIBWC to issue Construction Notice to Proceed.

3.3. RECORD DRAWINGS

3.3.A. Record Drawings shall show final dimensions (thickness and extents) of buoys and debris boom floats.

3.3.B. Any changes to the placement of, dimensions of, or types of material from what is shown on the Contract Drawings shall be noted on the Record Drawings.

3.3.C. If different suppliers are used for different portions of the project, identify which areas of work match which suppliers.

--End of Section--

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SECTION 01.80.23.01
GENERAL STRUCTURAL REQUIREMENTS

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.78.39.01-Record Drawings

1.3. REFERENCE STANDARDS

1.3.A. American Concrete Institute (ACI)

1. ACI 318-19 (CODE-318-19) Building Code Requirements for Structural Concrete, including Errata March 8, 2023
2. ACI 350 -0 (CODE-350-20) Code Requirements for Environmental Engineering Concrete Structures, including Errata February 8, 2023
3. ACI TMS 402/602 Building Code Requirements and Specifications for Masonry Structures, 2016

1.3.B. American Forest & Paper Association (AF&PA)

1. AF&PA/ANSI SDPWS-2008 Special Design Provision for Wind and Seismic Standard

1.3.C. American Institute of Steel Construction, (AISC)

1. AISC 341-10 Seismic Provisions for Structural Steel Buildings

1.3.D. American Institute of Timber Construction (AITC)

1. AITC Timber Construction Manual, 6th edition, 2012

1.3.E. American Society of Civil Engineers (ASCE)

1. ASCE 7-22, Minimum Design Loads and Associated Criteria for Buildings and Other Structures with Supplement 1 March 21, 2023

1.3.F. Executive Orders (EO)

1. EO 12699, Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction

1.3.G. General Services Administration (GSA)

1. Alternative Path Analysis & Design Guidelines for Progressive Collapse Resistance, 2013

1.3.H. International Code Council (ICC)

1. International Building Code (IBC), 2021
2. International Energy Conservation Code (IECC), 2021
3. International Fuel Gas Code (IFGC), 2021
4. International Mechanical Code (IMC), 2021
5. International Plumbing Code (IPC), 2021
6. International Private Sewage Disposal Code (IPSDC), 2021
7. ICC/ANSI A117.1-2017, Accessible and Usable Buildings and Facilities

1.3.I. National Association of Architectural Metal Manufacturers (NAAMM)

1. NAAMM/ANSI AMP 521-01(R2012) Pipe Railing Manual
2. NAAMM 531-17 Metal Bar Grating Manual
3. NAAMM 532-19 Heavy Duty Metal Bar Grating Manual

1.3.J. National Fire Protection Association (NFPA)

1. NFPA 1-2021, Fire Code, including TIA through 21-4 and Errata through 1-21-2
2. NFPA 24-2022, Standard for the Installation of Private Fire Service Mains and their Appurtenances
3. NFPA 70-2023 Standard for Electrical Safety in the Workplace (also known as the National Electrical Code [NEC]), including Errata through 70-23-2 and TIA through 23-4
4. NFPA 72-2022, National Fire Alarm and Signaling Code, including TIA through 22-4 and Errata 22-1
5. NFPA 101-2021, Life Safety Code, including TIA 21-1
6. NFPA 780-2023, Standard for the Installation of Lightning Protection Systems

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. 30% Design
2. 60% Design
3. 90% Design
4. Pre-100% Design
5. 100% Design

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Record Drawings

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. STRUCTURAL REQUIREMENTS

1.7.A. The Design-Builder shall provide a structural plan for each anchor structure. All structural calculations such as wind, normal flow, flood, and debris impact load calculations shall be provided as part of the design report.

1.8. CONCRETE REINFORCEMENT AND DESIGN

1.8.A. Reinforcement

1. When performing structural designs, please be aware that USIBWC views the cost of rebar as a very small part of this project. The cost of tying the bar usually far exceeds the actual bar cost. Providing a detailed rebar layout that is hard to construct in order to keep the pounds of reinforcement low is not beneficial.
2. Choose rebar placement and size with an eye toward how it will be installed during construction. Whenever possible keep the number of different bar sizes to a minimum.
3. Whenever there is a question about bar size, as long as the maximum reinforcement ratio is not exceeded, use the larger bar.

1.8.B. Unless there is a valid design justification for it, epoxy coated rebar shall not be used.

1.8.C. Design Requirements

1. Concrete shall be designed with an anticipated 50 year life.
2. Unless the Design-Builder can show a valid reason (limiting rebar cost is not a valid reason), all top and bottom (double mat) reinforcement shall be continuous from one side of the structure/beam/slab/etc. to the other side. This varies from the idea of only placing reinforcement where the design moment requires reinforcement.
3. Concrete designs for buildings, including reinforcement and concrete mix, shall be based upon ACI 318.
4. The Design-Builder shall ensure that the minimum concrete mix requirements for all building meet ACI 318 Chapter 19 as appropriate to the site and project conditions. The Design-Builder may strengthen these requirements, but not lessen them.
    a. Per ACI 318 Table 19.3.1.1, USIBWC project is considered exposure "F1."

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION

3.1. 30% MINIMUM SUBMITTAL REQUIREMENTS

3.1.A. Drawings

1. Plans that indicate the location, type of member, size, and material of each structural element for anchor foundations.
2. Schedules (column and any other foundation or structural features)

3.2. 60% MINIMUM SUBMITTAL REQUIREMENTS

3.2.A. Drawings

1. All of the 30% drawings.
2. Details of all connections, assemblies, and similar items.
3. Details of the structural framing systems required to support nonstructural elements and fixed fixtures.

3.3. 90% SUBMITTAL REQUIREMENTS

3.3.A. Drawings

1. All of the 60% drawings.

3.3.B. Preliminary Design Report

1. Structural drawings will be accompanied by computations, stress diagrams, and other pertinent data and shall be complete to the extent that the calculations for individual structural members can be readily interpreted. A statement outlining the basis for the structural design and indicating the manner in which the proposed building will resist vertical loads and horizontal forces shall preface the computations.
2. The computations shall be sufficiently complete as to establish that the structure will resist the loads and forces.Assumed safe bearing pressures on soils and the ultimate strengths of concrete shall be provided in computations and noted on the drawings.
3. Where unusual conditions occur, any additional data that are pertinent to the work shall be submitted.

3.4. PRE-100% SUBMITTAL REQUIREMENTS

3.4.A. Drawings

1. All of the 90% drawings.

3.4.B. Final Design Report

3.5. POST CONSTRUCTION

3.5.A. The final design report shall be reviewed to ensure that any changes made during construction did not change assumptions and values used during design.

3.5.B. If any changes did affect assumptions and/or values, calculations shall be rerun to ensure that all structural requirements are still being met.

3.5.C. Either a revised final design report or a signed and stamped memorandum shall be provided noting that all structural requirements were checked post construction and that the project meets the design requirements.

3.6. RECORD DRAWINGS

3.6.A. Record Drawings shall show final dimensions (thickness and extents) of buoys and debris boom floats.

3.6.B. Any changes to the placement of, dimensions of, or types of material from what is shown on the Contract Drawings shall be noted on the Record Drawings.

3.6.C. If different suppliers are used for different portions of the project, identify which areas of work match which suppliers.

--End of Section--

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SECTION 01.80.26.01
GENERAL CONCRETE REQUIREMENTS

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.43.26.01-◊●◊●◊ Testing and Inspection Agencies

1.2.C. Section 01.57.00.01-◊●◊●◊ Temporary Controls for Work Areas

1.2.D. Section 01.78.39.01-Record Drawings

1.2.E. Section 02.21.13.01-◊●◊●◊ Cultural Resources Surveys

1.3. REFERENCE STANDARDS

1.3.A. American Concrete Institute (ACI)

1. ACI 211.1-22 (PRC-211.1-22) Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
2. ACI 228.1R-19 (PRC-228.1-19) Report on Methods for Estimating In-Place Concrete Strength
3. ACI 304R-00(R2009) (PRC-304 00) Guide for Measuring, Mixing, Transporting, and Placing Concrete
4. ACI 304.2R-17 (PRC-304.2-17) Guide to Placing Concrete by Pumping Methods
5. ACI 308R-16 (PRC-308-16) Guide to External Curing of Concrete

1.3.B. ASTM International (ASTM)

1. ASTM C31-22 Standard Practice for Making and Curing Concrete Test Specimens in the Field
2. ASTM C39-21 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
3. ASTM C94-22a Standard Section for Ready-Mixed Concrete
4. ASTM C143-20 Standard Test Method for Slump of Hydraulic-Cement Concrete
5. ASTM C172-17 Standard Practice for Sampling Freshly Mixed Concrete
6. ASTM C231-22 Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
7. ASTM C1064-17 Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete

1.3.C. National Ready Mixed Concrete Association (NRMCA)

1. NRMCA's Plant Certification Program

1.3.D. NSF International (NSF)

1. NSF/ANSI Standard 61: Drinking Water System Components - Health Effects

1.3.E. Portland Cement Association (PCA)

1. DCCM: Design and Control of Concrete Mixtures (17th Edition)

1.3.F. US Bureau of Reclamation (USBR)

1. USBR Guide to Concrete Repair, 2nd Edition, August 2015

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. The Design-Builder shall submit copies of the ready mix batch plant certifications.
2. Concrete Mix Design(s)
   a. The mix design shall include test results of cylinders produced from this mix.
   b. The mix design shall include gradation results for all aggregates to be used.
3. Testing Laboratory
   Compliance confirmation of engineering testing facilities shall be based on compliance with Section 01.43.26.01, and no work requiring testing will be permitted until the facilities have been compliance confirmed by the COR.
   a. If this information has already been submitted for other quality control work, it does not need to be resubmitted.
4. Concrete Testing Technician
   Prior to performing concrete tests onsite, the Design-Builder shall submit to the COR a certification that the operator is either ACI certified or qualified by a recognized equivalent written and performance testing program for all of the tests to be performed per Section 01.43.26.01.
5. Preservation of Historical and Archaeological Data
   Submit documentation showing that all applicable laws, rules, and regulations are being followed for geological materials (Section 02.21.13.01).
6. Environmental Compliance
   Submit documentation showing that all applicable laws, rules, and regulations are being followed for project-specific locations (Section 01.57.00.01).

1.4.C. Required submittals in this Section that must be provided include:

1. Prior to using any concrete materials or materials associated with concrete placement and curing, the Design-Builder shall submit to the COR all required product information. All proposed products to be used shall meet or exceed the minimum requirements for the products and their proper use within the project.
   a. Materials to be used.
   b. Manufacturer product data.
   c. Manufacturer recommendations for proper use of the product.
   d. Certification of the products to ensure it meets or exceeds the specification requirements.

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Batch/Delivery Tickets
   A legible copy of all batch/delivery tickets shall be furnished to the COR. Attach all tickets with that day's quality control report.
2. Test Results
   a. Test results (preliminary and final) shall be furnished to the COR within 24 hours of completing the test.
   b. Engineering test results shall be certified by a State of Texas registered Professional Engineer (Section 01.43.26.01). These certifications shall state that the tests and observations were performed by or under the direct supervision of the professional engineer and that the results are representative of the materials or conditions being certified by the tests.
3. IBWC Form 235, Concrete Test Results Summary
4. IBWC Form 238, Concrete Placement Card
5. Record Drawings

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GENERAL

All concrete designs and all construction using concrete shall meet the minimum requirements of this Section. Engineer of Record is responsible for determining concrete strength and mix characteristics.

1.8. CLASSIFICATION AND MIX DESIGN

1.8.A. The Design-Builder shall ensure that concrete mix designs are furnished during construction based upon ACI 211.1, "Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete" or ACI Design and Control of Concrete Mixtures.

1.8.B. Concreter shall not exceed the maximum water-to-cementitious-material ratio. A higher-strength class of concrete with equal or lower water-to-cementitious-material ratio may be substituted for the specified class of concrete.

1.8.C. To account for production variability and ensure minimum compressive strength requirements are met, over-design the mix in accordance with Table 12 or Table 13. When a concrete product facility has at least 15 tests for the specified mix, use Table 12. When a concrete production facility does not have field strength test records for at least 15 tests, the required average compressive strength shall be shown in Table 13.

Table 12 - Overdesign to Meet Compressive Strength Requirements (1)

No. of Tests	Standard Deviation, psi				
	300	400	500	600	700
15	470	620	850	1,120	1,390
20	430	580	760	1,010	1,260
30 or more	400	530	670	900	1,130

[1] *When designing the mix, add the tabulated amounts to the minimum design strength.*

Table 13 - Overdesign to Meet Compressive Strength Requirements (2)

Specified f'c Psi	Required Average f'cr psi
Less than 3,000	f'c + 1,000
3,000 to 5,000	f'c + 1,200
Over 5,000	f'c + 1,400

1.8.D. Cementitious Materials

1. The Design-Builder shall provide a cement mill test report for all source of cement.
2. Unless otherwise specified or compliance confirmed, limit cementitious material content to no more than 700 pounds per cubic yard. When supplementary cementing materials are used, "cement" is defined as "cement plus supplementary cementing material."
3. Use Type III cement only in precast concrete or when specified or permitted.
4. For monolithic placements, use cement of the same type and from the same source.
5. Do not use supplementary cementing materials when white hydraulic cement is specified.

1.8.E. Aggregates

1. The Design-Builder shall limit the use of recycled crushed hydraulic cement concrete as a coarse or fine aggregate to nonstructural concrete.
2. Limit recycled crushed concrete fine aggregate to a maximum of 20% of the fine aggregate
3. When white hydraulic cement is specified, use light-colored aggregates.

1.8.F. Chemical Admixtures

1. The Design-Builder to submit admixture certifications and product data sheets to the COR for compliance confirmation.
2. Admixtures must be certified that they do not contain calcium chloride.

1.8.G. Air Entrainment

1. The Design-Builder shall air-entrain all concrete, except for small batches when used for small signs or anchors.
2. If the air content is more than 1 percentage points below or 2 percentage points above the required air, the load of concrete will be rejected.
3. No concrete will be accepted with air content less than 3% air in areas experiencing freezing winter temperatures.

1.8.H. Slump

1. Unless otherwise specified, the mix shall provide concrete using the lowest slump possible that can be placed and finished efficiently without segregation or honeycombing.
2. Concrete that exceeds the maximum acceptable placement slump at time of delivery will be rejected.

3. When compliance confirmed, the slump of a given concrete mix may be increased using chemical admixtures, provided that the admixture-treated concrete has the same or lower water-cement or water-cementitious-material ratio and does not exhibit segregation or excessive bleeding.

1.9. MIXING AND DELIVERING CONCRETE

1.9.A. Concrete shall be mixed and delivered per ACI 304R and ASTM C94.

1.9.B. Batch Plant
The Design-Builder shall mix and deliver concrete by commercially available ready mix batch plants except for extremely small non-structural placements which may be mixed by hand using prepackage concrete mixes.

1. Batch plant shall conform to the requirements of National Ready Mixed Concrete Association (NRMCA) Plant Certification Program (www.nrmca.org/Research_Engineering/Plant_Certification/Main.htm).
2. Copies of the plant certification shall be provided to the COR.

1.9.C. Before unloading, furnish the delivery ticket for the batch of concrete.

1.9.D. Water may be added to the concrete before discharging any concrete from the truck to adjust for low slump provided that the maximum mix design water-cement ratio is not exceeded.

1. After introduction of any additional water or chemical admixtures, mix concrete in accordance with:
   a. When this water is added, do not exceed the mix design water-cementitious-material ratio. Note amount of water added on delivery ticket.
   b. Turn the drum or blades at least 30 additional revolutions at mixing speed (high speed) to ensure thorough and uniform mixing of the concrete.
2. Do not add water or chemical admixtures after any concrete has been discharged. This includes adding water to aid in the finishing of the surface.
3. Maintain concrete delivery and placement rates sufficient to prevent cold joints.
4. Do not use concrete which has become so stiff that concrete cannot be properly placed.

1.9.E. When the concrete contains silica fume, adjust mixing times and batching operations as necessary to ensure the material is completely and uniformly dispersed in the mix. The dispersion of the silica fume within the mix will be verified by using cylinders made from trial batches. If uniform dispersion is not achieved, make necessary changes to the batching operations until uniform and complete dispersion of the silica fume is achieved.

1.9.F. Hand-Mixed Concrete
When permitted, for small placements of less than 2 cubic yards, the Design-Builder is allowed to use up to a 2-sack batch of concrete by hand methods or in a small motor-driven mixer. For such placements, proportion the mix by volume or weight.

1.10. SAMPLING AND TESTING OF CONCRETE

1.10.A. Sampling Fresh Concrete

1. The Design-Builder shall provide all material and labor for testing.
2. Fresh concrete shall be sampled for testing at the discharge end if using tremies, belt conveyors, or pumps.
3. When the COR determines that it is impractical to sample at the discharge end, a sample will be taken at the time of discharge from the delivery equipment after correlation testing has been performed and documented to ensure specification requirements are met at the discharge end.

1.10.B. Quality Control testing will be performed at, or more frequently, than the frequency noted in Paragraph 3.5 below.

1.10.C. Testing of Fresh Concrete

1. Air Content. ASTM C231 using Type B meter
2. Temperature. ASTM C1064
3. Slump. ASTM C143
4. Making and Curing Strength Specimens. ASTM C31

1.10.D. Testing of Hardened Concrete
Compressive Strength. ASTM C39

1.10.E. Adequacy and Acceptance of Concrete

1. Test 7-day and 28-day specimens. Acceptance will be based on the design strength using ASTM C94.
   a. The average of three consecutive compressive strength tests must be equal to or greater than the design strength.
   b. No single cylinder has a compressive strength of less than the specified compressive strength at age identified in mix design for full concrete compressive strength minus 500 psi.
2. For any concrete that fails to meet the required strengths as outlined below, investigate the quality of the materials, the concrete production operations, and other possible problem areas to determine the cause.
3. Take necessary actions to correct the problem including redesign of the concrete mix. The Government may suspend all concrete operations if the Design-Builder is unable to identify, document, and correct the cause of the low strengths in a timely manner.
4. Resume concrete operations only after obtaining compliance confirmation for any proposed corrective actions.
5. The Government reserves the right to sample and test the fresh and hardened concrete for acceptance.

1.10.F. Test Sample Handling
Unless otherwise shown on the Contract Drawings, the Design-Builder shall remove forms and deliver test specimens to curing facilities, in accordance with pertinent test procedures. The Design-Builder shall clean and prepare forms for reuse.

1.10.G. Test Reporting Frequency

1. Test results and concrete batch tickets will be made immediately available to the COR.
2. Tests and test results shall be thoroughly documented in the Design-Builders daily QC report.
3. The Design-Builder shall provide a certified copy of each test report to the COR within 24 hours of each test result or as requested by the COR.

PART 2 - PRODUCTS

2.1. CONCRETE ACCESSORIES AND PRODUCTS

2.1.A. All items used in the construction of concrete including, but not limited to, form releasing agents, epoxy, joint materials, admixtures, curing compounds, waterstops, and grout shall be shown to be nonhazardous to aquatic life. Items used on concrete within waterways, rivers, canal, or reservoirs shall meet NSF 61.

2.1.B. Preformed or Premolded Joint Filler Material

1. The Design-Builder shall provide materials that conform to these requirements:
   a. Closed-cell neoprene/rubber joint material meeting ASTM D1056 Type 2, Class A, Grades 1 or 2.
   b. Sponge rubber/cork joint material meeting ASTM D1752 Type 1.
   c. Fiberboard, fiber, and mineral filler joint materials shall not be used.
2. Joint material shall be installed using pressure sensitive adhesive or other adhesive specified by the manufacturer. Nailing joint material in place is not acceptable.

2.1.C. Backer Rod

1. The Design-Builder shall provide materials that conform to the requirements of ASTM D5249 Type 1.
2. Backer material shall be compressible, nonshrink, nonreactive with sealant, and non-absorptive material type such as extruded butyl or polychloroprene foam rubber

2.1.D. Joint Sealant
Sealants and primers shall conform to ASTM C920, Use I, Class 25, 35, 50, or 100/50.

PART 3 - EXECUTION

3.1. PREPARATION FOR PLACING

3.1.A. Government Notice and Inspection

1. The Contractor shall give the Government a minimum 24 hour advance notice before placing concrete to permit the inspection of forms, reinforcing steel placement, and other preparations.
2. The Concrete Placement Card, IBWC Form 238, shall be completed by the CQCSM and the Inspector prior to the Contractor ordering concrete. Items noted during this inspection shall be corrected prior to concrete placement.

3.1.B. Preparation of Surfaces

1. Thoroughly wet all forms on which concrete is to be placed before placing concrete on them. Remove any remaining puddles of excess water before placing concrete. Provide surfaces that are in a moist, saturated surface-dry condition when concrete is placed on them. Ensure that the subgrade or foundation is moist before placing concrete placed on grade. Lightly sprinkle the subgrade if dry.
2. Pick up all trash, including pieces of tie wire, within the forms prior to placement.

3.2. PLACING CONCRETE

3.2.A. Concrete shall be placed per ACI 304R and ASTM C94.

3.2.B. Water may be added to the concrete before discharging any concrete from the truck to adjust for low slump provided that the maximum mix design water-cement ratio is not exceeded. After introduction of any additional water or chemical admixtures, mix concrete in accordance with:

1. When this water is added, do not exceed the mix design water-cementitious-material ratio. Note amount of water added on delivery ticket.
2. Turn the drum or blades at least 30 additional revolutions at mixing speed (high speed) to ensure thorough and uniform mixing of the concrete.

3.2.C. Do not add water or chemical admixtures after any concrete has been discharged. This includes adding water to aid in the finishing of the surface.

3.2.D. No additional water or any other fluid shall be placed on the concrete to aid in finishing the surface.

3.2.E. Document all concrete placements on IBWC Form 238.

3.3. CONCRETE CURING

3.3.A. All concrete placed as part of this project shall be cured per this Section and ACI 308R.

3.3.B. The Design-Builder shall obtain compliance confirmation of the proposed curing methods, equipment, and materials before placing concrete. The Government may require the same curing methods for like portions of a single structure.

3.3.C. Cure unformed concrete surfaces immediately after completing finishing operations.

3.3.D. <u>Begin required repair and curing immediately after form removal.</u>

3.3.E. Inadequate curing shall delay all concrete placement on the job until remedial action is taken.

3.3.F. The minimum length of the curing period shall be determined by the type of cementitious material as specified in Table 14.

1. The COR may allow shorter curing periods if it can be shown through maturity testing (ACI 306R) or in-place testing (ACI 228.1R) that concrete has reached at least 70% of its design strength.
2. The shortest curing period allowed under any circumstances is 3 days.
3. Concrete shall not be exposed to freeze-thaw cycles until it has reached at least 4,000 psi or 100% design strength, whichever is lower.

3.3.G. Concrete shall be cured by a compliance confirmed method.

3.3.H. A curing day is a calendar day when the temperature, taken in the shade away from artificial heat, is above 50°F for at least 19 hours or, on colder days if the temperature of all surfaces of the concrete is maintained above 50°F, for the entire 24 hours.

Table 14 - Duration of Curing

Type of Cementitious Material	Length of Curing, minimum
Type III Portland cement	3 days
Portland cement when accelerator is used to achieve high early strength, except when pozzolan or GGBF slag is used	3 days
Type I Portland cement	7 days
Type IS or Type IP cement	7 days
Type II Portland cement (including Type I-II)	14 days
Portland cement blended with 25%[1] or less pozzolan or GGBF slag	14 days
Portland cement blended with more than 25%[1] pozzolan or GGBF slag	21 days

[1] *Percentage calculated by weight pozzolan/weight of all cementous materials*

3.3.I. Immediately after placement, concrete shall be protected from premature drying, extremes in temperature, rapid temperature change, and mechanical damage. All materials and equipment needed for adequate curing and protection shall be available and at the placement site prior to the start of concrete placement.

3.3.J. Concrete shall be protected from the damaging effects of rain for 12 hours and from flowing water for 14 days (7 days with Type III cement).

3.4. CONCRETE REPAIR

Any and all concrete repair shall be completed per the requirements in US Bureau of Reclamation's Guide to Concrete Repair and the Standard Specifications for Repair of Concrete, M-47, contained within the manual.

3.5. QUALITY CONTROL TESTING

3.5.A. The Design-Builder shall implement a quality control program to oversee concrete compressive strength. At a minimum, this program shall test concrete compressive strength in accordance with ASTM C31 and ASTM C39 for 6 inch by 12 inch cylinders.

3.5.B. A minimum of at least 1 set of test cylinders shall be taken once every 8 hour shift, once per structure, or for every other concrete truck load (up to 20 cy) placed each day, whichever requires more samples.

1. Each set of test cylinders shall include a minimum of 4 cylinders. 2 cylinders shall be tested at 7 days and 2 cylinders shall be tested at 28 days.
   a. Upon the Contractor's request, the COR may vary the time period for testing of these 4 cylinders.
2. If the Contractor wishes to test cylinders at 3 days, 14 days, 21 days, or other timeframes, additional cylinders must be taken. All additional testing shall be at no additional expense to USIBWC.
3. When the age designated in the mix design for full concrete strength is not 28 days, at least 1 cylinder shall be broken at that age.
4. Concrete cannot be loaded until tests indicate that the concrete is considered structurally adequate.
   a. Concrete is structurally adequate when the average compressive strength of 3 cylinders is equal to at least the design strength and no single cylinder has a compressive strength of less than the specified compressive strength at the age designated in the mix design minus 500 psi.

3.5.C. Perform air, slump, and temperature tests whenever cylinders are taken or whenever there is a question about the quality of the concrete.

3.5.D. Cure the cylinders under the same conditions as the portion of the structure involved for all stages of construction. Ensure safe handling, curing, and storage of all test specimens.

3.5.E. Provide testing personnel to sample and test the concrete. Coring will not be allowed for in situ strength determination to aid Design-Builder's schedule restrictions.

3.5.F. Provide the Government the opportunity to witness all testing operations.

3.5.G. Report all test results to the Government. Test results shall be summarized on IBWC Form 235.

3.5.H. The Government may require additional time for strength gain to account for field curing conditions such as cold weather.

3.6. RECORD DRAWINGS

3.6.A. Record Drawings shall show final dimensions and elevations of all concrete.

3.6.B. Any changes to the placement of, dimensions of, or types of concrete from what is shown on the Contract Drawings shall be noted on the Record Drawings.

3.6.C. If different concrete suppliers are used for different portions of the project or if different concrete mixes are used in different areas, identify which areas of work match which suppliers/mixes.

3.6.D. If different suppliers are used for different rebar, identify which areas of work match which suppliers.

3.6.E. Record Drawings shall show location of all reinforcement bars.

3.6.F. Any changes to the placement of, dimensions of, or types of rebar from what is shown on the Contract Drawings shall be noted on the Record Drawings. Normal shifting of bars per ACI recommendations does not need to be shown.

3.6.G. Section 01.78.39.01 may list additional requirements for concrete structures on the Record Drawings.

--End of Section--

SECTION 01.81.63.01
GENERAL CIVIL/ARCHITECTURAL REQUIREMENTS

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.78.23.01-Operations and Maintenance Data

1.2.C. Section 01.78.36.01-◊●◊●◊ Warranties

1.2.D. Section 01.78.39.01-Record Drawings

1.3. REFERENCE STANDARDS

1.3.A. International Code Council (ICC)

1. International Building Code (IBC), 2021
2. International Energy Conservation Code (IECC), 2021
3. International Fire Code (IFC), 2021
4. International Fuel Gas Code (IFGC), 2021
5. International Mechanical Code (IMC), 2021
6. International Plumbing Code (IPC), 2021

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. 30% Design
2. 60% Design

3. 90% Design
4. Pre-100% Design
5. 100% Design

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. O&M Manuals per Section 01.78.23.01
2. Warranties per Section 01.78.36.01
3. Record Drawings per Section 01.78.39.01

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. 30% MINIMUM SUBMITTAL REQUIREMENTS

3.1.A. Drawings

1. Title sheet with index, general notes, legends, and a small-scale facility/project location map. General notes shall not include General Conditions items.
2. Notes must coordinate with and conform to the written Contract Documents.
3. Site plan
4. Existing civil survey
5. Site profile sections

3.2. 60% MINIMUM SUBMITTAL REQUIREMENTS

3.2.A. Drawings

1. All of the 30% drawings.
2. Elevations and sections
3. Civil detail sheets
4. Site utilities plan

3.2.B. Schedules

1. Other schedules as appropriate.
2. Updated Materials Board

3.3. 90% MINIMUM SUBMITTAL REQUIREMENTS

3.3.A. All 60% items.

3.3.B. Drawings

2. Detail the anchorage of all fixed equipment in accordance with the International Building Code, all applicable parts.

3.4. RECORD DRAWINGS

3.4.A. Record Drawings shall show final dimensions (thickness and extents) of buoys and debris boom floats.

3.4.B. Any changes to the placement of, dimensions of, or types of material from what is shown on the Contract Drawings shall be noted on the Record Drawings.

3.4.C. If different suppliers are used for different portions of the project, identify which areas of work match which suppliers.

--End of Section--

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SECTION 01.86.29.01
ELECTRICAL REQUIREMENTS

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.78.23.01-Operations and Maintenance Data

1.2.C. Section 01.78.36.01-◊●◊●◊ Warranties

1.2.D. Section 01.78.39.01-Record Drawings

1.3. REFERENCE STANDARDS

1.3.A. National Fire Protection Association (NFPA)

1. NFPA 70-2023 Standard for Electrical Safety in the Workplace (also known as the National Electrical Code [NEC]), including Errata through 70-23-2 and TIA through 23-4 (solar lighting wiring)
2. NFPA 101-2021, Life Safety Code, including TIA 21-1
3. NFPA 780-2020, Standard for the Installation of Lightning Protection Systems

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Lightning Risk Assessment
2. 30% Design
3. 60% Design
4. 90% Design
5. Pre-100% Design
6. 100% Design

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Operating Instructions
2. O&M Manuals per Section 01.78.23.01
3. Warranties per Section 01.78.36.01
4. Record Drawings per Section 01.78.39.01

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GENERAL

1.7.A. Design-Builder shall design the waterway barrier line and anchors meet all design requirements.

1.7.B. Regulatory Requirements

1. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning.
2. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

1.8. LOAD REQUIREMENTS

1.8.A. General Electrical Loads

1. NEC

1.9. UTILITIES

1.9.A. Coordinate with utility companies as early as possible.

1.9.B. If design for facility requires an upgrade or change to utility service, the Design-Builder shall coordinate all such work.

PART 2 - PRODUCTS

2.1. UTILITIES

Utilities shall use underground distribution as much as possible.

2.2. MANUFACTURER'S NAMEPLATE

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

2.3. FIELD FABRICATED NAMEPLATES

2.3.A. Provide laminated plastic nameplates meeting ASTM D709 for each equipment enclosure and device.

2.3.B. Each nameplate inscription shall identify the function and, when applicable, the position. The following items shall also be included if not identified on the manufacture's nameplate.

1. Rated voltage
2. Rated full-load amperes
3. Locked-rotor amperes
4. Rated horsepower
5. Service factor
6. Number of phases and frequency of power
7. RPM at rated load
8. Duty rating
9. Insulation system designation
10. Maximum and minimum ambient design temperatures

2.3.C. Nameplates shall be melamine plastic, 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be one by 2.5 inches. Lettering shall be a minimum of 0.25 inch high normal block style.

2.4. WARNING SIGNS

Provide the number of signs required to be readable from each accessible side.

2.5. 30% MINIMUM SUBMITTAL REQUIREMENTS

2.5.A. Drawings

1. Solar electrical LED beacons on buoys.

2.6. 60% MINIMUM SUBMITTAL REQUIREMENTS

2.6.A. Drawings

1. All of the 30% drawings.

2.7. 90% SUBMITTAL REQUIREMENTS

2.7.A. Drawings

1. All of the 60% drawings.
2. Detailed methods for fastening equipment to the buoy to resist wave forces shall be indicated. At minimum, provide the following:
   a. Other systems as required.

2.8. RECORD DRAWINGS

2.8.A. Record Drawings shall show final dimensions (thickness and extents) of buoys and debris boom floats.

2.8.B. Any changes to the placement of, dimensions of, or types of material from what is shown on the Contract Drawings shall be noted on the Record Drawings.

2.8.C. If different suppliers are used for different portions of the project, identify which areas of work match which suppliers.

--End of Section--

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SECTION 01.88.00.01
GENERAL CONSTRUCTION REQUIREMENTS

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1.2. RELATED REQUIREMENTS

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1.2.B. Section 01.33.16.01-Design Submittals

1.2.C. Section 01.43.26.01-◊●◊●◊ Testing and Inspection Agencies

1.2.D. Section 01.78.39.01-Record Drawings

1.3. SUBMITTALS

1.3.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.3.B. Required submittals in this Section requiring COR compliance confirmation include:

3. 90% Design
4. Pre-100% Design
5. 100% Design

1.4. RECORD DOCUMENTS

1.4.A. Required documents to be provided to Government in this Section include:

1. Delivery Tickets
   A legible copy of all delivery tickets shall be furnished to the COR. Attach all tickets with that day's quality control report.
2. Reports-Survey Records
   Submit a copy of the records of each compliance survey the next work day following the survey.

3. Test Results
   a. Test results (preliminary and final) shall be furnished to the COR within 24 hours of completing the test.
   b. Engineering test results shall be certified by a State of Texas registered Professional Engineer (Section 01.43.26.01). These certifications shall state that the tests and observations were performed by or under the direct supervision of the professional engineer and that the results are representative of the materials or conditions being certified by the tests.
4. Record Drawings per Section 01.78.39.01

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. SPECIFICATIONS

1.6.A. The Design-Builder shall be responsible for preparing the project specifications in accordance with Section 01.33.16.01.

1.6.B. Prior to beginning production of the specifications, the Design-Builder shall schedule a meeting with USIBWC's Engineering Services Division, Construction Management Division, and Acquisition Division to discuss specification guidelines. At this meeting, USIBWC shall discuss the guidelines for the preparation of the specifications. Attendees at this meeting shall include all applicable entities of the Design-Builder responsible for preparing the specific technical specifications, to include but not limited to the design consulting firms, design consulting firm's specifications writer, Project Manager, subcontractors, etc.

1.6.C. The Design-Builder shall prepare specifications to cover all required construction materials, construction procedures, testing of raw materials, testing of materials in place, acceptance or rejection procedures, and any other aspect of construction as needed to assure compliance with the design criteria.

1.7. MINIMUM CONSTRUCTION CRITERIA

1.7.A. Metalwork
Requirement that all metalwork conforms to Buy America Act. Add this clause to all construction specifications in Divisions 05 and other sections for items that are constructed or fabricated with iron or steel.
Buy American Compliance
Submit mill test reports or manufacturer's certification to show country of origin as well as documents, certification, or reports from manufacturer noting percentage of recycled content to COR for each lot or shipment of steel and iron materials.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. SOILS AND MATERIALS TESTING

3.1.A. The Engineer of Record shall make initial recommendations for Construction Phase testing and special inspections such as soils and materials testing and welding inspections requirements, if applicable, that are proposed to be handled in the Quality Control Plan.

3.1.B. The Design-Builder is responsible for providing for all testing and inspections.

3.1.C. Testing provided by the Design-Builder shall be performed by manufacturers, testing agencies, or others per Section 01.43.26.01. The Quality Control Plan and specifications must clearly indicate tests and inspections to be provided. Means, methods, results, and report contents for testing and inspection must be specified in the Quality Control Plan. The COR will judge the acceptability of all testing and inspection performed on behalf of the Design-Builder.

3.2. 90% SUBMITTAL REQUIREMENT

3.2.A. Design Consultant shall include, with the 90% completed submittal, a list of requirements for special testing and inspections, such as soils and materials testing and welding inspections requirements, included in the Quality Control Plan.

3.2.B. The COR has the authority as part of the Code Compliance Review to require additional testing based on the final code requirements and interpretation. The COR's decision shall be final.

3.3. RECORD DRAWINGS

3.3.A. Record Drawings shall show final dimensions (thickness and extents) of buoys and debris boom floats.

3.3.B. Any changes to the placement of, dimensions of, or types of material from what is shown on the Contract Drawings shall be noted on the Record Drawings.

3.3.C. If different suppliers are used for different portions of the project, identify which areas of work match which suppliers.

--End of Section--

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SECTION 01.88.59.01
GENERAL GEOLOGICAL MATERIALS REQUIREMENTS

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Reference Standards....1
1.4. Submittals....1
1.5. Record Documents....2
1.6. 30% Minimum Submittal Requirements....2
1.7. 60% Minimum Submittal Requirements....3
1.8. 90% Submittal Requirements....3
1.9. Record Drawings....3
--End of Section--....3

1.2. RELATED REQUIREMENTS

1.2.A. Section 01.32.33.01-◊●◊●◊ Photographic Documentation

1.2.B. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.C. Section 01.43.26.01-◊●◊●◊ Testing and Inspection Agencies

1.2.D. Section 01.55.00.01-Vehicular Access and Parking

1.2.E. Section 01.57.00.01-◊●◊●◊ Temporary Controls for Work Areas

1.2.F. Section 01.57.19.01-◊●◊●◊ Temporary Environmental Controls

1.2.G. Section 01.78.39.01-Record Drawings

1.2.H. Section 02.21.13.01-◊●◊●◊ Cultural Resources Surveys

1.3. REFERENCE STANDARDS

1.3.A. National Environmental Laboratory Accreditation Program (NELAP)

1.3.B. Soil Science Society of America (SSSA)

1. North American Proficiency Testing (NAPT) Program

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Engineering Testing Laboratory
   Compliance confirmation of engineering testing facilities shall be based on compliance with Section 01.43.26.01, and no work requiring testing will be permitted until the facilities have been compliance confirmed by the COR.
   a. If this information has already been submitted for other quality control work, it does not need to be resubmitted.
2. Preservation of Historical and Archaeological Data
   Submit documentation showing that all applicable laws, rules, and regulations are being followed for geological materials (Section 02.21.13.01).
3. Environmental Compliance
   Submit documentation showing that all applicable laws, rules, and regulations are being followed for project-specific locations (Section 01.57.00.01).

1.4.C. Required submittals in this Section that must be provided include:

1. All Geological Materials
   The Contractor shall submit to the COR the results of all required testing necessary to classify the material and necessary for determining if material is in compliance with the requirements herein.

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Delivery Tickets
   A legible copy of all delivery tickets shall be furnished to the COR. Attach all tickets with that day's quality control report.
2. Reports - Survey Records
   Submit a copy of the records of each compliance survey the next work day following the survey.
3. Test Results
   a. Test results (preliminary and final) shall be furnished to the COR within 24 hours of completing the test.
   b. Engineering test results shall be certified by a State of Texas registered Professional Engineer (Section 01.43.26.01). These certifications shall state that the tests and observations were performed by or under the direct supervision of the professional engineer and that the results are representative of the materials or conditions being certified by the tests.
4. IBWC Form 237, Nuclear Gauge Results
5. IBWC Form 240, Nuclear Gauge Moisture Calibration
6. IBWC Form 241, Nuclear Gauge Standard Count
7. Record Drawings

1.6. 30% MINIMUM SUBMITTAL REQUIREMENTS

1.6.A. Drawings

1. Plans that indicate the location, type of member, size, and material of the structural element for anchor foundation.
2. Schedules (column and other foundation or structural features)

1.7. 60% MINIMUM SUBMITTAL REQUIREMENTS

1.7.A. Drawings

1. All of the 30% drawings.
2. Details of all connections, assemblies, and similar items.
3. Details of the structural framing systems required to support nonstructural elements and fixed fixtures.

1.7.B. Calculations will be provided for all expected normal flow, flood, debris impact, wind, line tension, anchor capacity, connector stresses, corrosion protection design life.

1.8. 90% SUBMITTAL REQUIREMENTS

1.8.A. Drawings

1. All of the 60% drawings.

1.8.B. Preliminary Design Report

1. Structural drawings will be accompanied by computations, stress diagrams, and other pertinent data and shall be complete to the extent that the calculations for individual structural members can be readily interpreted.
2. The computations shall be sufficiently complete as to establish that the structure will resist the loads and forces. Assumed safe bearing pressures on soils and the ultimate strengths of concrete shall be provided in computations and noted on the drawings.
3. Where unusual conditions occur, any additional data that is pertinent to the work shall be submitted.

1.9. RECORD DRAWINGS

1.9.A. Record Drawings shall show final dimensions (thickness and extents) of buoys and debris boom floats.

1.9.B. Any changes to the placement of, dimensions of, or types of material from what is shown on the Contract Drawings shall be noted on the Record Drawings.

1.9.C. If different suppliers are used for different portions of the project, identify which areas of work match which suppliers.

--End of Section--

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SECTION 01.89.16.01
SITE IMPROVEMENTS REQUIREMENTS

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Reference Standards....1
1.4. Submittals....2
1.5. Record Documents....2
1.6. Measurement and Payment....2
1.7. General....2
1.8. Examination of Site....3
1.9. Site Coordination Issues....3
1.10. Design Survey Work....3
1.11. Geotechnical Investigations....3
1.12. Amenity and Comfort Criteria....3
1.13. Health and Safety Criteria....3
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2.3. 90% Minimum Submittal Requirements....4
2.4. Record Drawings....4
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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.57.19.01-◊●◊●◊ Temporary Environmental Controls

1.2.C. Section 01.61.16.01-◊●◊●◊ Use of Recovered Materials and Biobased Products

1.2.D. Section 01.74.19.01-◊●◊●◊ Construction Waste Management and Disposal

1.2.E. Section 01.78.23.01-Operations and Maintenance Data

1.2.F. Section 01.78.36.01-◊●◊●◊ Warranties

1.2.G. Section 01.78.39.01-Record Drawings

1.3. REFERENCE STANDARDS

1.3.A. American Association of State Highway and Transportation Officials (AASHTO)

1. Guidelines for Geometric Design of Very Low-Volume Local Roads, 1st Edition, with August 2002 Errata
2. Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th Edition 2013, with 2015 Interim Revisions

1.3.B. Executive Orders (EO)

1. EO 13112, Invasive Species

2. EO 13751, Safeguarding the Nation from the Impacts of Invasive Species

1.3.C. Federal Highway Administration (FHWA)

1. Manual of Uniform Traffic Control Devices (MUTCD), 2009 Edition with Revisions 1, 2, and 3, July 2022

1.3.D. General Services Administration (GSA)

1. Architectural Barriers Act Accessibility Standard (ABAAS). Use current version online.

1.3.E. National Fire Protection Association (NFPA)

1. NFPA 1140-2022, Standard for Wildland Fire Protection

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. 30% Design
2. 60% Design
3. 90% Design
4. Pre-100% Design
5. 100% Design

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Delivery Tickets
   A legible copy of all delivery tickets shall be furnished to the COR. Attach all tickets with that day's quality control report.
2. Reports-Survey Records
   Submit a copy of the records of each compliance survey the next work day following the survey.
3. Test Results
   a. Test results (preliminary and final) shall be furnished to the COR within 24 hours of completing the test.
   b. Agricultural test results shall be certified by a NAPT certified laboratory (Section 01.43.26.01) that the results are representative of the materials or conditions being certified by the tests.
4. O&M Manuals per Section 01.78.23.01
5. Warranties per Section 01.78.36.01
6. Record Drawings per Section 01.78.39.01

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GENERAL

1.7.A. Signs, flag poles, light poles, etc. shall be designed to meet AASHTO's Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

1.8. EXAMINATION OF SITE

1.8.A. Prior to submitting Proposal for the work, it is recommended the Design-Builder perform the following:

1. Visit the Project site to become familiar with existing site conditions.

1.9. SITE COORDINATION ISSUES

Work shall proceed in a manner so as to not hinder USIBWC operations at Retamal Dam Field Office.

1.10. DESIGN SURVEY WORK

The Design-Builder shall be responsible for all required field survey work.

1.11. GEOTECHNICAL INVESTIGATIONS

1.11.A. The Design-Builder's design consultant(s) shall visit the site at intervals appropriate to the stage of the construction operations, or as otherwise agreed by the Government and the Design-Builder to become generally familiar with and to keep the COR and the Design-Builder informed about the scheduled progress of the project construction and the progress of the portions of the work.

1.11.B. The Design-Builder's design consultant(s) shall have full access to the construction site.

1.12. AMENITY AND COMFORT CRITERIA

1.12.A. Cleanliness

Provide above grade elements, fixtures, and equipment that:

1. Are washed reasonably clean by normal precipitation.

1.12.B. Appearance

1. Fit the new activities on site to the topography.

1.12.C. Finished Surfaces

1. Make finished surfaces smooth and uniform in appearance, without depressions that collect water.
2. Do not leave soil surfaces exposed in finished work. Minimize the amount of time soil surfaces are left exposed.

1.13. HEALTH AND SAFETY CRITERIA

1.13.A. Vermin/Animal Control

Prevent and eliminate standing water that could become stagnant.

PART 2 - PRODUCTS

(NOT USED)

2.1. 30% SUBMITTAL REQUIREMENTS

2.1.A. Detail in the design report the proposed or conceptual design for the site improvements.

2.1.B. Include all other 30% submittal items detailed in other sections of this Scope of Work.

2.2. 60% MINIMUM SUBMITTAL REQUIREMENTS

2.2.A. Drawings

1. Finished grading plan

2.3. 90% MINIMUM SUBMITTAL REQUIREMENTS

2.3.A. Drawings

1. All of the 60% drawings.
2. Other details as appropriate

2.3.B. Specifications

1. Technical specifications shall be provided covering all items noted in the drawings.
2. Specifications shall detail landscape establishment period requirements as well as periodic maintenance requirements.

2.4. RECORD DRAWINGS

2.4.A. Record Drawings shall show final dimensions (thickness and extents) of buoys and debris boom floats.

2.4.B. Any changes to the placement of, dimensions of, or types of material from what is shown on the Contract Drawings shall be noted on the Record Drawings.

2.4.C. Section 01.78.39.01 may list additional requirements on the Record Drawings.

--End of Section--

SECTION 01.91.13.01
GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1. SECTION INCLUDES

Part 1 - General....1
1.1. Section Includes....1
1.2. Related Requirements....1
1.3. Reference Standards....1
1.4. Submittals....1
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3.3. Commissioning Scoping Meeting....6
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3.7. Deficiency Report and Resolution Record....7
3.8. Operations and Maintenance Training....8
3.9. Deferred Testing....8
3.10. Project Documentation....8
--End of Section--....8

1.2. RELATED REQUIREMENTS

1.2.A. Section 01.20.00.01-◊●◊●◊ Measurement and Payment

1.2.B. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.C. Section 01.35.23.01-◊●◊●◊ Safety

1.2.D. Section 01.57.00.01-◊●◊●◊ Temporary Controls for Work Areas

1.2.E. Section 01.57.19.01-◊●◊●◊ Temporary Environmental Controls

1.2.F. Section 01.74.19.01-◊●◊●◊ Construction Waste Management and Disposal

1.3. REFERENCE STANDARDS

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

Certificates of readiness.
Certificates of completion of installation, pre-start, and startup activities.
Contractor's Commissioning Representative Qualifications.
Contractor's Commissioning Plan: Submit within 30 calendar days of authorization to proceed.
Update as necessary during the work to reflect the progress on the components and systems.
Edited functional performance test forms: Submit minimum 30 calendar days prior to testing
Deficiency Report and Resolution Record: Document items of noncompliance in materials, installation or operation. Document the results from start-up/pre-functional checklists, functional performance testing, and short-term diagnostic monitoring. Include details of the components or systems found to be non-compliant with the drawings and specifications. Identify adjustments and alterations required to correct the system operation, and identify who is responsible for making the corrective changes.
Update as necessary during the work to reflect the progress on the components and systems. Submit updated versions monthly.
Closeout Documentation
Closeout documents for commissioned equipment and systems shall be submitted prior to the functional performance testing. These include, but are not necessarily limited to:
Record Documents and Drawings
Start-up certificates for all commissioned equipment with start-up requirements.
Systems Manual
Include TAB, startup, and Control System check-out reports.
O&M Submittals (refer to requirements of technical specifications):
Training plan: Training plan shall include the following for each training session:
Dates, start and finish times, and locations;
Outline of the information to be presented;
Names and qualifications of the presenters;
List of texts and other materials required to support training.

1.5. GENERAL

1.5.A. The Commissioning is a systematic process of assuring by verification and documentation, from the design phase to a minimum of 1 year after construction, that all facility systems perform interactively in accordance with the design documentation and intent, and in accordance with the Government's operational needs, including preparation of operation personnel.

1.6. DEFINITIONS

Basis of Design (BoD)	The basis of design is the documentation, from the designer, of the primary thought processes and assumptions behind design decisions. The basis of design describes the systems, components, conditions and methods used in the design.
Commissioning Authority (CxA)	The Government's designated representative(s) to plan, review, advise, witness, and evaluate the commissioning process of the Design-Builder.
Construction Checklist	A form used by the Design-Builder to verify that appropriate components are onsite, ready for installation, correctly installed and functional.
Contractor's Commissioning Plan (CCxP)	A plan that provides the structure, schedule and coordination planning for the commissioning process proposed specifically for this project. The CCxP includes Personnel (to be approved by the CxA), activities, and a description of the Infrastructure, and a list of all instruments and logging devices that will be used during Commissioning.

Deficiency	A condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents, does not perform properly or is not complying with the Basis of Design.
Monitoring	The recording of parameters (flow, current, status, pressure, etc.) of equipment operation using dataloggers or the trending capabilities of control systems.
Pre-functional Checklist	A list of items to inspect and elementary component tests to conduct to verify proper installation of equipment, provided by the CxA to the Design-Builder. Pre-functional checklists are primarily static inspections and procedures to prepare the equipment or system for initial operation (e.g., belt tension, oil levels ok, labels affixed, gages in place, sensors calibrated, etc.). However, some pre-functional checklist items entail simple testing of the function of a component, a piece of equipment or system (such as measuring the voltage imbalance on a three-phase pump motor of a chiller system). The word "pre-functional" refers to "before" functional testing. Pre-functional checklists augment and are combined with the equipment manufacturer's start-up checklist.
Seasonal Performance Tests	Functional Performance Tests that are deferred until the system(s) will experience seasonal conditions closer to their design conditions.
Systems Manual	A system focused composite document that includes the operational manual and maintenance manual.

1.7. COMMISSIONING TEAM

1.7.A. The Design-Builder shall provide the following individuals, each having the authority to act on behalf of the entity they represent, explicitly organized to implement the commissioning process through coordinated action.

1. Design-Builder's Commissioning Representative
   The Design-Builder's designated individual to coordinate, manage, and execute the commissioning processes and collaborate with the Commissioning Authority.

The Contractor's Commissioning Representative. The (1) Design-Builder's Commissioning Representative shall be approved by the Contracting Officer (CO) and satisfy as many of the following requirements as possible:
Revise the following qualifications to meet project-specific requirements.
Technical training in waterway barriers.
Past commissioning experience.
Knowledge of national codes.
Experience in energy-efficient design and control strategy optimization.

2. Design-Builder's Quality System Manager (QSM)
3. Other Representatives
   May include Project superintendents, installers, suppliers, and specialists.

Members Appointed by Contracting Officer (CO):
Commissioning Authority: The Commissioning Authority
Representatives of the facility user and operation and maintenance personnel.
Architect and engineering design professionals.

1.8. DESIGN-BUILDER'S RESPONSIBILITIES

1.8.A. Design-Builder shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:

1. Perform commissioning tests, as required by the technical specifications with oversight and acceptance of Commissioning Authority. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
2. Record and resolve commissioning issues in cooperation with the Commissioning Authority.
3. Attend commissioning team meetings held on a monthly basis.
4. Integrate and coordinate commissioning process activities with the overall project schedule.
5. Review the Construction Checklist attached at the end of this specification section.
6. Complete electronic construction checklist as contract work is completed and provide to the Commissioning Authority on weekly basis.
7. Coordinate with the Commissioning Authority in the review and acceptance of the commissioning process test procedures as described in the contract documents.
8. Complete commissioning process test procedures.
9. Provide maintenance orientation and inspection for systems, assemblies, equipment, and components based on contract requirements.
10. Provide Design-Builder’s Commissioning Plan and documentation required by the Commissioning Authority for final commissioning documentation.
11. Provide measuring instruments and logging devices to record test data and provide data acquisition equipment to record data for the complete range of testing for the required test period.

1.9. COMMISSIONING DOCUMENTATION

1.9.A. Provide the following information:

1. Review of systems manual, submittals, documents, and other commissioning reports.
2. Identification of installed systems, assemblies, equipment, and components including design changes that occurred during the construction phase.
3. Design-Builder’s Commissioning Plan including process activities and schedule for completing construction checklists and manufacturer's pre-start and startup checklists for systems, assemblies, equipment, and components to be verified and tested.
4. Certificate of completion certifying that installation, prestart checks, and startup procedures have been completed.
5. Certificate of readiness certifying that systems, subsystems, equipment, and associated controls are ready for testing.
6. Test and inspection reports and certificates.
7. Corrective action documents.
8. Testing, adjusting, and balancing reports.

PART 2 - PRODUCTS

2.1. TEST EQUIPMENT

2.1.A. Instrumentation shall meet the following standards:

1. Be of sufficient quality and accuracy to test and measure system performance within the tolerances required to determine adequate performance.
2. Be calibrated on the manufacturer's recommended intervals with calibration tags permanently affixed to the instrument being used.
3. Be maintained in good repair and operation condition throughout the duration of use on this project.
4. All standard testing equipment required to perform startup and initial checkout and required functional performance testing shall be provided by the Design-Builder for the equipment being tested.

2.1.B. All required commissioning equipment (sensors, transducers, data loggers, etc.) not integral to the systems or equipment installed will be provided by the Design-Builders Commissioning Representative, and shall not become the property of the Government.

2.2. FUNCTIONAL PERFORMANCE WORKSHEETS

2.2.A. Functional Performance Test forms, provided in the design package, consisting of the test procedures and expected results of the testing witnessed by the Commissioning Authority.

2.2.B. The Design-Builder shall review and coordinate the forms, customizing them to reflect project-specific worksheets, accounting for the Design-Builder's means, methods, and materials.

PART 3 - EXECUTION

3.1. COMMISSIONING PROCESS

3.1.A. The following activities outline the general commissioning tasks (requiring development, execution, etc.) and order in which they occur. Specific Commissioning requirements are found in the Technical Specification Sections.

1. Commissioning Scoping Meeting.
2. Design-Builder's Commissioning Plan.
3. Start-Up/Pre-Functional Checklists.
4. Functional Performance Testing.
5. Deficiency Report and Resolution Record.
6. Operation and Maintenance Documentation.
7. Operations and Maintenance Training.
8. Deferred testing

3.2. TOTAL BUILDING COMMISSIONING REQUIREMENTS

3.2.A. TBC during the construction, acceptance, and warranty phases is intended to achieve the following specific objectives:

1. Verify that equipment is what was submitted and approved.
2. Verify and document that equipment is installed and started per manufacturer's recommendations, industry accepted minimum standards, and the Contract Documents.

3. Verify and document that equipment and systems receive complete operational checkout by installing Design-Builders.
4. Verify and document equipment capacity and system efficiency.
5. Verify the performance of the building envelope. Document testing and conformance to the Contract Documents.
6. Verify the completeness of operations and maintenance materials.
7. Ensure that the Governments operating personnel are adequately trained on the operation and maintenance of building equipment.

3.3. COMMISSIONING SCOPING MEETING

3.3.A. Commissioning Scoping Meeting:

1. Schedule, coordinate, and facilitate a scoping meeting.
2. Review each building system to be commissioned, including its intended operation, commissioning requirements, and completion and start-up schedules.
3. Establish the scope of work, tasks, schedules, deliverables, and responsibilities for implementation of the Design-Builder's Commissioning Plan.
4. Attendance: Commissioning Team members.

3.4. DESIGN-BUILDER'S COMMISSIONING PLAN

3.4.A. Commissioning Plan

1. Develop a commissioning plan to identify how commissioning activities will be integrated into general construction and trade activities. The commissioning plan shall identify how commissioning responsibilities are distributed. The intent of this plan is to evoke questions, expose issues, and resolve issues with input from the entire commissioning team early in construction.
   a. Identify who will be responsible for producing the various procedures, reports, Government notifications, and forms.
   b. Include the commissioning tasks and activities in the overall project schedule.
   c. List and describe each test/acceptance procedure.

3.4.B. Commissioning Authority
The Design-Builder's Commissioning Plan shall propose the Commissioning Authority to be used

The Commission Plan shall be submitted to the COR within 60 days after mobilization by the Construction Contractor.

3.5. STARTUP/PRE-FUNCTIONAL CHECKLISTS

3.5.A. Startup/Pre-Functional Checklists

1. Complete pre-functional checklists prior to start up.
2. Checklist shall help verify that the systems are complete and operational, so that the functional performance testing can be scheduled.

3.5.B. Verify equipment installed is what was approved on the Submittal.

3.5.C. Manufacturer's start-up checklists and other technical documentation guidelines may be used as the basis for pre-functional checklists.

3.6. FUNCTIONAL PERFORMANCE TESTING

3.6.A. Functional Performance Testing
Test procedures shall fully describe system configuration and steps required for each test; procedures shall be appropriately documented so that another party can repeat the tests with virtually identical results.

3.6.B. Test Methods

1. Functional performance testing and verification may be achieved by:
   a. Direct manipulation of system inputs (i.e. heating or cooling sensors)
   b. Manipulation of system inputs with the building automation system (i.e. software override of sensor inputs)
   c. Trend logs of system inputs and outputs using the building automation system
   d. Short-term monitoring of system inputs and outputs using standalone data loggers.
2. A combination of methods may be required to completely test the complete sequence of operations.
3. The Commissioning Authority shall determine which method or combination of methods is most appropriate.

3.6.C. Setup
Each test procedure shall be performed under conditions that simulate normal operating conditions as closely as possible. Where equipment requires integral safety devices to stop/prevent equipment operation unless minimum safety standards or conditions are met, functional performance test procedures shall demonstrate the actual performance of safety shutoffs in real or closely-simulated conditions of failure.

3.6.D. Sampling
Multiple identical pieces of non-life-safety or noncritical equipment may be functionally tested using a sampling strategy. If, after three attempts at testing the specified sample percentage, failures are still present, then all remaining units shall be tested at the Design-Builders' expense.

3.6.E. Customize functional performance test procedure forms (in the technical specifications) to accommodate actual installed equipment and systems.

3.6.F. Coordinate, execute and record the results of the functional performance testing.

3.6.G. Coordinate retesting as necessary until satisfactory performance is verified.

3.6.H. Verify the intended operation of individual components and system interactions under various conditions and modes of operation.

3.7. DEFICIENCY REPORT AND RESOLUTION RECORD

3.7.A. Deficiency Report and Resolution Record
Document items of noncompliance in materials, installation or operation.

3.7.B. Nonconformance
Nonconformance and deficiencies observed shall be addressed immediately. Notify responsible parties and provide recommended actions to correct deficiencies.

3.7.C. Corrections of minor deficiencies identified may be made during the tests at the discretion of the Commissioning Authority. In such cases the deficiency and resolution shall be documented on the procedure form.

3.7.D. For Identified Deficiencies

1. If there is no dispute on the deficiency and the responsibility to correct it:
2. The Commissioning Authority documents the deficiency and the adjustments or alterations required to correct it. The Design-Builder corrects the deficiency and notifies the Commissioning Authority that the equipment is ready to be retested.

3. The Design-Builder's Commissioning Representative reschedules the test and the test is repeated until satisfactory performance is achieved.

3.7.E. If there is a dispute about a deficiency or who is responsible:

1. The deficiency is documented by the Commissioning Authority on the noncompliance form and a copy given to the Design-Builder's Commissioning Representative.
2. Resolutions are made at the lowest management level possible. Additional parties are brought into the discussions as needed. Design-Builder shall have responsibility for resolving construction deficiencies. If a design revision is deemed necessary and approved by the CO, Architect/Engineer shall have responsibility for providing design revision. The Commissioning Authority documents the resolution process.
3. Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency and notifies the Commissioning Authority that the equipment is ready to be retested. The Design-Builder's Commissioning Representative reschedules the test and the test is repeated until satisfactory performance is achieved.

3.7.F. Cost of Retesting
Costs for retesting shall be charged to the Design-Builder.

3.8. OPERATIONS AND MAINTENANCE TRAINING

3.8.A. Training
Develop a Training Plan. Coordinate and execute the training with the Commissioning Authority.

3.8.B. Stress and enhance the importance of system interactions, troubleshooting, and long-term preventive maintenance and operation programs.

3.9. DEFERRED TESTING

3.9.A. Unforeseen Deferred Test
If a test cannot be completed due to the building structure or other deficiency, the functional testing may be delayed upon recommendation of the Commissioning Authority and the approval of the Contracting Officer. These tests are conducted in the same manner as the seasonal tests, as soon as possible.

3.9.B. Seasonal Testing
Schedule, coordinate, execute, and document additional testing for seasonal variation in operations and control strategies during the appropriate season to verify performance of the HVAC system and controls. Complete testing during the warranty period to fully test all sequences of operation.

3.10. PROJECT DOCUMENTATION

Update O&M manuals and Record Drawings as necessary due to the testing.

--End of Section--

International Boundary and Water Commission
United States Section

SCOPE OF WORK
DIVISION 02
EXISTING CONDITIONS

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SECTION 02.01.00.01
EXISTING CONDITIONS & FACILITIES

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

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1.3. REFERENCE STANDARDS

1.3.A. Federal Acquisition Regulation (FAR)

1. FAR 52.249-10, Default (Fixed-Price Construction)

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Copies of notifications provided by Design-Builder.
2. Utility Location Plan

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

1.6.A. The Design-Builder shall ensure that all existing survey markers, piezometers, benchmarks, cross arm stations, base plates, roadways and roadway appurtenances, utilities (underground and above-ground),

drainage and irrigation facilities, and trees/vegetation within the right of way or adjacent properties not designated for modification, construction, and/or removal are protected.

1.6.B. The Design-Builder shall ensure that damaged or temporarily relocated utilities, facilities, and trees/vegetation to a condition equal to or better than prior to such damage or temporary relocation are restored in accordance with the Contract Documents.

1. The Design-Builder shall plan and conduct operations to ensure the protection of existing features and ongoing and completed construction. Damages occurring during the course of this Contract as a result of the Design-Builder's actions or negligence (or any subcontract of the Design-Builder) shall be repaired by the Design-Builder at no expense to the Government.
2. Damage shall be restored to a condition equal to or better than prior to such damage or temporary relocation, all in accordance with the Contract Documents.
3. Analyses, designs, and details associated with the repairs shall be prepared by a compliance confirmed design firm at no expense to the Government. The Design-Builder shall submit the designs for COR review and shall not begin work until the design has been compliance confirmed.
4. In some cases the repair may require an upgrade. If the upgrade is at the request of the Government, then the Design-Builder shall be responsible for the expense of the design in its entirety including the upgraded features. However, the Government will provide an equitable adjustment in cost to cover the expense of the construction associated with the upgrade.

1.7. USIBWC OWNED RIGHT-OF-WAY

1.7.A. The Design-Builder shall begin site work once preconstruction submittals are complete and the Construction Notice to Proceed has been issued.

1.8. SURVEY MARKERS

1.8.A. The Design-Builder shall ensure that any existing survey markers are not destroyed, removed, or otherwise disturbed without prior authorization from the COR.

1.8.B. All survey markers, brass caps, or monuments discovered during construction, whether noted on the Contract Drawings or not, shall be surveyed to ensure that they can be accurately restored after construction activities have been completed.

1.8.C. The Design-Builder shall ensure that all survey markers noted on the drawings or visible above ground that are disturbed during construction operations are restored after construction. Restoration of the survey markers shall be in accordance Section 02.21.00.01.

1.9. ROADWAYS AND APPURTENANCES

1.9.A. Signs and Markers
The Design-Builder shall ensure that any existing roadway signs or markers, unless otherwise specified in the plans, are not destroyed, removed, or otherwise disturbed. The Design-Builder shall ensure that any existing roadway signs or markers immediately, and as approved by the owner of the roadway, are accurately restored or replaced.

1.9.B. Pavement or Paved Structures
All paved areas cut or damaged during construction shall be replaced with similar materials of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the owner of the pavement of paved structures. The Design-Builder shall ensure that the pavement restoration requirement to match existing sections shall apply to all components of existing sections, including sub-base, base,

and pavement. Temporary and permanent pavement shall conform to the requirements of the affected pavement. Pavements which are subject to partial removal shall be neatly saw-cut in straight lines.

1. Temporary Resurfacing
   Wherever required by the public authorities having jurisdiction, the Design-Builder shall ensure that temporary surfacing is promptly placed after backfilling and shall ensure that such surfacing is maintained for the period of time fixed by said authorities before proceeding with the final restoration of improvements.
2. Permanent Resurfacing
   In order to obtain a satisfactory junction with adjacent surfaces, the Design-Builder shall ensure that so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement that said pavement is saw-cut back and the edge trimmed. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw-cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.

1.9.C. Sidewalks or Private Roads
Wherever sidewalks or private roads have been removed for purposes of construction, the Design-Builder shall ensure that suitable temporary sidewalks or roadways are promptly placed after backfilling and shall ensure that they are maintained in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions. If no such period of time is so fixed, the Design-Builder shall ensure that said temporary sidewalks or roadways are maintained until the final restoration thereof has been made.

1.10. UTILITIES

1.10.A. The Design-Builders shall ensure that the state's 811 (www.texas811.org www.nm811.org www.azbluestake.com www.digalert.org) is contacted at least 48 hours in advance of any construction work to allow utility operator to check and mark locations of existing utilities within the project limits.

1.10.B. The Design-Builder is required to hire a utility locator to survey the project limits to locate any utilities not indicated in the Contract Drawings. The Design-Builder shall immediately notify the COR of any located utilities not indicated in the Contract Drawings; immediate verbal notification is to be followed-up with written notification to the COR within 48 hours.

1.10.C. The Design-Builder shall ensure that all underground utilities and other improvements which may be impaired during design or construction operations shall be protected, regardless of whether or not the utilities are indicated in the Contract Documents. The Design-Builder shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

1. Special attention is called to the existing structures that are called out in the Contract Drawings.

1.10.D. The Design-Builder shall be responsible for exploratory excavations it deems necessary to determine the exact locations and depths of any utilities, including irrigation facilities, which may interfere with its work.

1. All such exploratory excavations shall be performed as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of design to avoid possible delays to the Design-Builder’s progress.
2. When such exploratory excavations show the utility location as indicated in the Contract Documents to be in error, the Design-Builder shall so notify the COR.

1.10.E. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.

1.10.F. It is the Design-Builder's responsibility to document (either by photographs or video) ALL areas where any structures or utilities are located PRIOR to conducting work around these structures.

1. The COR shall be notified in writing of any existing leaks or other visible damage prior to construction work.
2. Any leaks and/or damage not detected prior to the Design-Builder beginning work around the pipes or utilities will be repaired and/or replaced by the Design-Builder at no cost to the Government.
3. If vegetation obscures pipes, structures, or utilities, the Design-Builder shall carefully remove obscuring vegetation in order to clearly document the pipe/utility and its condition.

1.10.G. Utilities to be Moved

1. When utility lines that are to be removed are encountered within the area of operations, the Design-Builder shall notify the Government a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

1.10.H. Utilities to be Removed

1. Where the proper completion of the work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is indicated, the Design-Builder shall ensure that in a manner satisfactory to the Government and the owner of the facility that the utilities are removed and, without unnecessary delay, temporarily replaced or relocated.
2. The Design-Builder shall ensure that, in all cases of such temporary removal or relocation, restoration to the former location shall be accomplished in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.
3. Abandoned utilities shall be removed within the area of construction.

1.10.I. Government's Right of Access
The right is reserved to the Government and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the work of this Contract.

1.10.J. Underground Utilities Indicated
It is the Design-Builder's sole responsibility to field-verify locations and elevations of all the underground utilities indicated in the Contract Documents and coordinate with the utility owners for access, permit, and/or fee as required by the owners and project, prior to design and construction.

1. It is NOT the responsibility of the USIBWC to provide or verify the said information for any of these utilities in the field.
2. The Design-Builder shall ensure that existing utility lines that are indicated or the locations of which are made known to the Design-Builder prior to work that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced, unless otherwise repaired by the owner of the damaged utility.
3. If the owner of the damaged facility performs its own repairs, the Design-Builder shall reimburse said owner for the costs of repair.

1.10.K. Underground Utilities Not Indicated
In the event that existing utility lines that are not indicated or the locations of which are not made known to the Design-Builder prior to excavation, are damaged, the Design-Builder shall make a verbal report of

such damage shall be made immediately to the Government Inspector and COR and a written report thereof shall be made promptly thereafter.

1. The Design-Builder shall immediately notify the utility owner of the damage, except under no circumstances shall the Design-Builder notify licensed drainage and/or irrigation districts or structure owners.
   a. In the case of drainage and/or irrigation districts or private structure owners, the Government shall be responsible for contacting the owner.
   b. Any repairs made to drainage and/or irrigation structures without concurrence or direction by USIBWC shall be at the Design-Builders expense and responsibility.
2. All utilities shall be fully documented on the Record Drawings.

1.10.L. Costs of Repairs
Costs of repairing utilities, even when damage is not due to failure of the Design-Builder to exercise reasonable care in locating and identifying utilities, will be the responsibility of the Design-Builder.

1. Costs include equipment on the project which was actually working on that portion of the work which was interrupted or idled by repair or relocation of such utility facilities and which was necessarily idled during such work.

1.10.M. Compliance Confirmation of Repairs
All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement owner before being concealed by backfill or other work.

1.10.N. Maintaining in Service
Unless indicated otherwise, oil and gasoline pipelines, power and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles and overhead power, and communication wires and cables encountered along the line of the work shall remain continuously in service during all the operations under the Contract.

1.10.O. Record Drawings
All utilities found or relocated during construction shall be included in the Record Drawings in accordance with Section 01.78.39.01.

1.11. UTILITY LOCATION PLAN

1.11.A. Utility location plan shall detail the depth and size of located utilities, as well as their location relative to landmarks.

1.11.B. As utility surveys and locates are updated, the Utility Location Plan shall also be updated.

1.11.C. The Utility Location Plan shall also note the method and scheduling of how utilities will be surveyed/located.

1.12. NOTIFICATION BY THE DESIGN-BUILDER

1.12.A. The Design-Builder shall ensure that prior to any work in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines, all buried electric power, communications, or television cables, all traffic signal and street lighting facilities, and all roadway and state highway rights-of-way, or other existing structures, the Design-Builder shall notify the respective authorities representing the entities, owners, or agencies responsible for such facilities are notified not less than 3 working days nor more than 7 working days prior to excavation so that a representative of said entities, owners, or agencies can be present during such work if they so desire.

1.12.B. Copies of these notices shall be provided to the COR.

1.13. PROTECTION FROM ELEMENTS

1.13.A. The work area and Project-Specific Locations may be subject to flooding and the Design-Builder shall be responsible for protecting the Work, existing conditions, and adjacent properties from floods and from any flood damage during the course of construction and prior to acceptance of the work by the Government.

1.13.B. Until final written acceptance of the project improvements by the CO, the Design-Builder shall have the charge and care thereof and shall take every precaution against injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. Protection of the worksite shall be in accordance with the Contract and Federal Acquisition Regulations (FAR). The Design-Builder shall ensure that all injuries or damages to any portion of the project including material sites occasioned by any of the above causes before final acceptance are rebuilt, repaired, restored, and made good and shall bear the expense thereof except damage to the work as otherwise specified herein.

1.13.C. Flood Caused Suspension of work

1. In the case of suspension of work from any cause whatsoever, the Design-Builder shall be responsible for the project and shall take such precautions as shall be necessary to prevent damage to the project, provide for normal drainage and shall erect any necessary temporary structures, signs, or other facilities at no additional cost to the USIBWC.
2. During such period of suspension of work, the Design-Builder shall ensure that acceptable growing condition all living material in newly established plantings, seedings, and soddings furnished under the Contract are properly and continuously maintained and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

1.13.D. Damage from the Elements

1. All damage and loss (whether caused by fire, flood, or any other casualty or happening) to work to be constructed or performed pursuant to the Contract (whether or not covered by partial payments made by the Government) shall be at the risk of the Design-Builder until final acceptance of the work by the Government, and no such damage or loss shall relieve the Design-Builder of, or in any way affect, the obligations to complete and deliver the work in accordance with the Contract requirements, irrespective of any insurance carried by the Design-Builder.
2. The Design-Builder shall assume full responsibility and expenses for removing, protecting, and returning to the worksite, any and all equipment under their care which might be endangered by said fire, flood, or happening.
3. Repair Work
   a. Repair of work shall be pursuant to the original Contract requirements.
   b. Such repair work shall consist of restoring the in-place construction to the same state of completion to which such work had advanced prior to the occurrence.
   c. Any re-design, re-excavation, replacement of embankment, or other work made necessary by damage from floods, hurricanes, storms, or water of whatever source or quantity during the course of construction and until final acceptance by the Government, shall be performed by the Design-Builder at their expense.
   d. The USIBWC reserves the right to make changes in the Contract Drawings and Scope of Work applicable to the portions of the work to be repaired and if such changes increase the cost of repairing the damage over the USIBWC's estimate of the cost of repair without the changes, the Design-Builder shall be paid for such increased costs and the increased cost amount shall not be considered in determining the cost of repair.
   e. Nothing in this Section shall be construed to relieve the Design-Builder of full responsibility for the risk of injury, loss, or damage to materials not yet incorporated in the work and to

materials, tools, and equipment used to perform the work, or to relieve the Design-Builder of responsibility required under other Specifications of the Contract Documents.

f. The provisions of this Section shall not be applicable to the repair of damage caused by an occurrence to any portion of the work accepted by the USIBWC.

4. For any interference or delay in operations which might be caused by such incident(s).
   a. Weather caused delays shall be reviewed under Contract clause Time Extensions for Unusually Severe Weather.
   b. Delays caused by fire, flood, unusually severe weather, or Acts of God shall be reviewed under FAR 52.249-10, Default (Fixed Price Construction) if the Government is notified within the required timeframe detailed in FAR 52.249-10(b)(2).
   c. All other interference and delays due to damage or loss are the responsibility of the Design-Builder.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

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SECTION 02.21.00.01
SURVEYS

PART 1 - GENERAL

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.78.39.01-Record Drawings

1.3. REFERENCE STANDARDS

1.3.A. American Society of Civil Engineers (ASCE)

1. ASCE 38-22, Standard Guideline for Investigating and Documenting Existing Utilities
2. ASCE 75-22, Standard Guideline for Recording and Exchanging Utility Infrastructure Data

1.3.B. Federal Geographic Data Committee (FDGC)

1. Geospatial Positioning Accuracy Standards, Part 1: Reporting Methodology, FGDC-STD-007.1-1998
   www.fgdc.gov/standards/projects/accuracy/part1/chapter1
2. Geospatial Positioning Accuracy Standards, Part 2: Standards for Geodetic Networks, FGDC-STD-007.2-1998
   www.fgdc.gov/standards/projects/accuracy/part2/chapter2

3. Geospatial Positioning Accuracy Standards, Part 3: National Standard for Geospatial Data Accuracy, FGDC-STD-007.3-1998
www.fgdc.gov/standards/projects/accuracy/part3/chapter3
4. Geospatial Positioning Accuracy Standards, Part 4: Standards for Architecture, Engineering, Construction (A/E/C) and Facility Management, FGDC-STD-007.4-2002
www.fgdc.gov/standards/projects/accuracy/part4/FGDC-endorsed-standard
5. Geospatial Positioning Accuracy Standards, Part 5: Standards for Nautical Charting Hydrographic Surveys, FGDC-STD-007.5-2005
www.fgdc.gov/standards/projects/accuracy/part5/FGDC-STD-007.5-2005.pdf

1.3.C. International Boundary and Water Commission (IBWC)

1. USIBWC's Drawing and CAD Standards

1.3.D. National Geodetic Survey

1. DSDATA Format Specifications dated December 15, 2020
www.ngs.noaa.gov/DATASHEET/dsdata.pdf

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Survey Plan
   a. A complete Survey Plan which shall be submitted and compliance confirmed prior to beginning survey work.
   b. Survey Plan shall include how lines and grades will be maintained, checked, and during construction.
6. Surveyor Resumes and Proof of Licensure
   a. Resumes of the registered land surveyors conducting the work shall be submitted and compliance confirmed prior to beginning survey work.
   b. During the course of the work, a resume for each new registered land surveyor working on the project shall be submitted and compliance confirmed prior to the beginning of work by such new registered land surveyor.
7. Sample Field Book or Data Layout
   A sample of the proposed survey field books or electronic data layout to be maintained by the Design-Builder's surveyor. The sample shall have sufficient information and detail, including example calculations and notes, to demonstrate that the field books will be organized and maintained in a professional manner.
8. Predesign Survey

1.5. RECORD DOCUMENTS

1.5.A. Required documents to be provided to Government in this Section include:

1. Field Data, Calculations, and Records
   a. Associated survey research
   b. All field notes, computations, and setup information shall be provided.
   c. Calculations of the accuracy of the survey.
   d. OPUS solutions and other brass caps/benchmarks surveyed to verify setup.

e. One copy of actual field data (original field book or electronic data) and calculations entered by the Design-Builder's Surveyor in the field book shall be submitted within 2 days of completion of such field data collection, or calculations, except that the COR may request a copy of each day's field notes that are entered in the field books at the conclusion of that day.

f. The Design-Builder shall coordinate with the COR for concurrence regarding submittal of electronic copies, prior to submitting in electronic format. Submittal format shall be included in the Design-Builder's Survey Plan.

2. All Survey Point Data

a. After completion of construction, the Design-Builder shall submit all survey point data collected and any other associated survey documents, to the USIBWC if not already submitted. These documents will become the property of the USIBWC.

b. When survey data is submitted in electronic format (e.g.: ascii, csv, xls, xlsx), a stamped cover letter identifying the filenames and survey dates shall be submitted concurrently.

3. Permanent Survey Marker Documents

1.6. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.7. GENERAL

1.7.A. The Design-Builder shall establish required benchmarks and shall perform all design surveys. The Design-Builder shall ensure that construction staking for use in the work is established.

1.7.B. The Design-Builder shall further:

1. Safeguard all points, stakes, grade marks, monuments, and benchmarks made or established on the work. Reestablish same if disturbed and rectify all work improperly installed because of not maintaining, not protecting, or removing without authorization established points, stakes, marks, and monuments.

2. Provide such facilities as may be necessary for the COR to check line and grade points placed by Design-Builder.

3. The Design-Builder shall give notices and comply with all laws, ordinances, rules, and regulations bearing on the conduct of the work. If the Design-Builder observes that the Contract or the proposed design are at variance therewith, they shall promptly notify the COR in writing.

1.7.C. Any control points indicated in the Contract Drawings may or may not be present at the time of award. Horizontal and vertical control shall be based upon indicated and local benchmarks.

1.8. DESIGN-BUILDER'S SURVEYOR

1.8.A. The Design-Builder shall employ and retain as needed at the worksite a surveyor with the experience and capability of performing all surveyor and layout tasks required of the Design-Builder. The surveyor shall be a land surveyor registered in the State of Texas. All field surveys will be performed under the direct supervision of this registered surveyor. Tasks included are:

1. Provide all surveying equipment required including transit, level, stakes and required surveying accessories.

2. Furnish all required lines and grades for construction of all facilities, structures, pipelines and site improvements.

3. Keep professional, accurate, well organized, and legible notes of all measurements and calculations made while surveying and laying out the work.

1.8.B. Even if surveying is allowed by engineers in state engineering/surveying rules and statutes, all survey drawings shall be signed and sealed by a registered surveyor and all field surveys will be performed under the direct supervision of a registered surveyor.

1.8.C. Primary control survey monuments damaged or destroyed by the Design-Builder, the Construction Contractor, or any subcontractors will be reestablished by the Design-Builder. If the Design-Builder fails to reestablish said monuments, the Government shall do so at the Design-Builder's expense and will be deduct these costs from amounts due, or become due from the Design-Builder.

1.8.D. From established primary control points, the Design-Builder shall establish all lines and grades and elevations necessary to design and to control the construction work and shall be responsible for all measurements that are required for execution of the work to the tolerances prescribed in the Contract.

1.8.E. The Design-Builder shall ensure that such additional stakes, markers, and other controls as may be necessary for control, intermediate checks and guidance of construction operations are established, placed, and replaced as required.

1. Wooden stakes used to mark finished grade elevations (with or without whiskers) cannot be used in any soil, gravel, or earthen material. The wooden stakes may not be left in place at the end of construction and when they are pulled out, they create holes that create softer areas in the finished grade.

1.8.F. The Design-Builder shall provide staking and controls for Government inspection unless waived by the COR.

1. Utilities and Pipelines
   a. Stake out utilities and pipelines including elevations.
   b. Checkout prior to and during construction.
2. Along Alignment
   a. Original, final, and intermediate cross sections as required.
   b. For the structure sites and other locations as necessary to confirm construction in accordance with lines, grades, elevations, etc. in the construction drawings and to maintain and complete the Record Drawings.
   c. At any location where construction stops or starts.

1.9. SURVEY CONTROL

1.9.A. Coordinate System and Units
Horizontal and vertical controls shall be based upon Texas State Plane Coordinate System (TXSPC), South (4205) Zone. Survey shall be completed in US survey feet.

1.9.B. All horizontal data shall be accordance with the North American Datum of 1983 (NAD83).

1.9.C. All vertical data shall be in accordance with the North American Vertical Datum of 1988 (NAVD88).

1.9.D. All surveys shall be completed in US survey feet.

1.9.E. Conversions from ground coordinates to grid coordinates shall be provided.

1.9.F. The Design-Builder or their Construction Contractor may use a project specific coordinate system for the construction documents as long as the tie in information to the state plane coordinate system is provided and as long as the project coordinate system is significantly different than the associated state plane coordinates.

1.9.G. Whenever possible established benchmarks shall be used as project control. Lacking appropriate local benchmarks, it is preferred that control be based upon existing concrete structures.

1.10. SURVEY ACCURACY

1.10.A. Temporary survey references set by the Design-Builder, Construction Contractor, or any subcontractors for use on this project shall be established and maintained to ensure that the minimum level of surface accuracy is met.

1.10.B. Topographic and quantity surveys shall be within 0.10 feet horizontally and within 0.05 feet vertically at a scale of 1:500 (1"=40') with at a 95% confidence level.

1.10.C. Structure and building surveys shall be within 0.01 feet horizontally and within 0.01 feet vertically at a scale of 1:500 (1"=40') at a 95% confidence level.

1.10.D. Accuracy calculations shall be based upon Federal Geographic Data Committee (FGDC) Geospatial Accuracy Standards, Parts 1 through 5.

1.10.E. Survey calculations shall include an error analysis sufficient to demonstrate the required accuracy.

1.10.F. Utility surveys shall match the quality level of the design.

1. Scoping layouts, proposals, and 30% designs require at least ASCE 38/ASCE 75 quality Level C and D utility surveys.
2. As designs progress through the 60% design, utilities affected by the proposed construction shall be surveyed to at least ASCE 38/ASCE 75 quality Level B.
3. The 90% designs shall contain surveys meeting ASCE 38/ASCE 75 quality Level A for all utility tie ins and utilities that might affect timely progress of construction. This includes any utilities that need to be relocated or that might be exposed during construction.

1.10.G. All benchmarks, brass caps, IBWC ROW monuments, and other reference structures shall be surveyed. Surveyed data shall be compared to project or published data to verify project setup.

1.11. SURVEY DRAWINGS

1.11.A. At least 1 survey drawing shall be provided as part of the design process. Any survey drawings created by the Design-Builder shall meet these requirements.

1. Survey drawings shall include all control points, all USIBWC boundary points/pipes/benchmarks, benchmarks, and brass caps within the project area and that were used during the survey.
2. Survey drawings shall include USIBWC ROW boundary with a line and curve table, including coordinates. Legal description and metes and bounds are not required.
3. Except for project/alignment layout drawings, all drawings shall provide coordinates and distances in ground. Drawings shall clearly note when coordinates are NOT provided in ground distances.
4. Drawings shall clearly note the coordinate system, unit, geoid, ground to grid conversion factor, datum, date of ground survey(s), accuracy at 95% confidence level, and person/company who performed the survey.

1.11.B. Stand-alone survey drawings shall be signed and stamped by the licensed surveyor who performed and/or oversaw the work.

1.11.C. Survey drawings shall be created per USIBWC's "*Drawing and CAD Standards*." See Section 01.78.39.01 Paragraph 2.1. for other drawing requirements.

1.12. SURVEY RECORDS

1.12.A. The Design-Builder shall ensure that a complete, accurate log of all control, and survey work as it progresses is maintained.

1.12.B. The Design-Builder shall ensure that all survey data shall be in accordance with recognized professional surveying standards.

1. All original field notes and computations shall be recorded by all surveyors in the Design-Builder furnished field books and shall be signed by a registered surveyor.
2. The completeness and accuracy of all survey work and the completeness and accuracy of the survey records, including the field books, shall be the responsibility of the Design-Builder.
   a. Failure to organize and maintain survey records in a professional manner to allow reasonable and independent verification of all calculations by the Government and to allow reasonable identification by the COR of all elevations, dimensions and grades of the work shall be cause for rejection of the survey records, including the field books.
3. Surveyor field notes and field books shall be available for review as part of the Record Drawing Agenda Item to be discussed at each Progress Meeting.

1.12.C. Quantity Calculations
When quantity calculations are required as part of either design or construction, the following requirements must be met.

1. Computer programs used for calculating quantities shall be approved by the COR, and the program shall be provided to the Government so that independent verification of computed quantities can be made.
2. The original plotted sections shall indicate the original ground line and the final lines and grade, as applicable. The elevation and offset shall be shown at each break point or shot on each section so that these elevations and offsets can be used by the Government to verify quantity calculations.

1.12.D. All field notes, computations, and setup information shall be provided. Include calculations of the accuracy of the survey, OPUS solutions, and equipment setup summary reports. Include brass caps/benchmarks surveyed to verify setup.

1.12.E. Full details of all points used for project control shall be provided.

1.12.F. All survey data shall be submitted. Survey data shall be fully available in the AutoCAD files and shall be provided in comma delimited ASCII file.

1. The data shall be identified (point number, northing, easting, elevation, description), the coordinate system, datum, and date of survey shall be noted as well as the name of the individual/company who performed the survey.
2. When abbreviations are used for description, ensure that all abbreviations are defined.
3. All 3D data shall be exported from the AutoCAD file. This includes, but is not limited to: points, surfaces, profiles, cross sections, and boundaries. Appropriate dxf, xml, cvs, etc. files shall be provided for this data.

1.12.G. Illegible notes or data, or erasures on any page of the field books will also be considered sufficient cause for rejection of part or all of the field book.

1.12.H. Corrections by ruling or lining out errors will be satisfactory only if initialed by the surveyor.

1.12.I. Copied notes or data will be permitted. Survey notes shall be legible and shall be scanned into pdf format.

1.13. PERMANENT SURVEY MARKERS

1.13.A. Any permanent survey markers including, but not limited to, brass caps, rebar, metal stakes, pipes, etc. as well as USIBWC ROW witness posts that are disturbed by design or construction operations shall be replaced by the Design-Builder, at the Design-Builder's expense, prior to final Contract acceptance by the Government.

1. Replacement shall be performed by a professional licensed surveyor.

2. All monuments shall be set in a such a manner that the accuracy of their relative position is not less than second-order Class II (1:20,000), in accordance with the specifications establish by the FGDC Geospatial Positioning Accuracy Standards Part 4, Table A-1 (FGDC-STD-007.4-2002).
3. Documentation of Marker Replacement
   a. A copy of the survey notes documenting the setting of the survey marker and calculations of the accuracy of the survey shall be kept by the responsible surveyor and a copy shall be submitted to the COR.
      (1) Include OPUS solutions and other brass caps/benchmarks surveyed to verify setup.
      (2) Include ties to 2 next closest permanent survey markers.
   b. Metadata for each ROW marker (property boundary), benchmark, or brass cap established shall be provided and shall meet the requirements of NGS DSDATA Format.
4. Replacements
   a. Brass caps and benchmarks shall be replaced with new caps. All caps shall be no less than 2.5 inches in diameter. All other items shall be replaced in kind unless state surveying rules and regulations require a more stringent survey marker.
   b. At a minimum, replaced caps shall be stamped with:
      (1) IBWC
      (2) Contract Number
      (3) Year Set
      (4) Surveyor License/Registration Number
   c. USIBWC ROW markers and witness posts shall be replaced per Drawing 26369.
   d. Survey marker replacement may be verified by USIBWC surveyors.

1.13.B. IBWC provided brass caps that are set into newly constructed structures are not required to meet this Subsection.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION

3.1. VERIFICATION OF CONTRACT SURVEY DATA

3.1.A. During initial site layout and before existing conditions are disturbed the Design-Builder shall verify, in writing, the basic survey data provided on the Contract Documents. Verification shall be initiated from the point shown the Contract Documents or from the Contract drawing reference point designated by the COR and shall include, as a minimum, benchmark elevations, horizontal control points, and topographic survey to ensure that the survey data adequately reflects existing conditions.

3.1.B. The Design-Builder shall not proceed with design or construction until survey verification is provided to the COR.

3.1.C. Before any existing benchmark references on the Contract Drawings is disturbed, the Design-Builder shall establish a new benchmark which has been compliance confirmed by the COR.

3.1.D. Contract Documents may include older surveys using old datums.

3.1.E. Verification shall be certified by Design-Builder's surveyor.

3.2. PREDESIGN SURVEY

3.2.A. Prior to any design operations, the Design-Builder shall survey the entire project site.

3.2.B. This topographic survey shall be of sufficient detail to produce a 6 inch contour map.

3.2.C. Provide all monuments and brass caps shown on the construction drawings or used in the setup of the project.

3.2.D. Provide all breaklines in AutoCAD (dwg or xml) file.

3.2.E. This survey shall be used to determine the existing conditions prior to site disturbances.

3.2.F. This survey will be used in conjunction with construction surveys to produce the as-built drawings.

3.2.G. Predesign survey drawings meeting 1.11. above shall be provided.

1. Provide both pdf and AutoCAD survey drawings.
2. Include all survey data per Paragraph 1.12.F.
3. Actual cross sections are not required, but information provided shall be sufficient to show that all of the items in **Error! Reference source not found.**. have been met.

3.2.H. The calculations, notes, and survey setup documents shall be provided as noted in Paragraph 1.12.D.

3.2.I. Associated survey research shall be provided per Paragraph **Error! Reference source not found.**.

3.3. AS CONSTRUCTED SURVEYS

3.3.A. The Design-Builder's surveyor shall check construction progress to verify that all work is in compliance with the Contract requirements. The Design-Builder has a responsibility to perform quality assurance checks on their Construction Contractor.

3.3.B. All areas disturbed by construction shall be surveyed.

3.3.C. The Design-Builder's shall ensure that surveys are performed, plotted, and submitted as work progresses.

3.3.D. The Design-Builder's shall ensure that surveys of the site are performed at the following points of construction, including, but not limited to:

1. Prior to any design/construction work under this Contract.
2. Upon discovery of any utilities within the construction area.
3. As required to measure and/or verify work.
4. All subgrades prior to placement of any materials.
5. After completion of all structural construction.

3.3.E. The Design-Builder's surveyor shall perform additional surveys as necessary for providing Record Drawings.

3.4. SCHEDULING

3.4.A. The Design-Builder shall schedule surveying to ensure that all required surveys are completed. Required surveys may be noted in this Section, as required for Record Drawings, or as required for measurement in other sections.

3.4.B. If evidence is found that construction is proceeding without required surveys, the Inspector or the COR may halt each portion of construction until survey data is received.

3.4.C. Failure to plan surveying in order to move to the next stage in construction shall not be the basis for any delay claim.

3.5. AS CONSTRUCTED DATA

3.5.A. All 3D data shall be exported from the AutoCAD file. This includes, but is not limited to: points, surfaces, profiles, cross sections, and boundaries. Appropriate dxf, xml, cvs, etc. files shall be provided for this data.

--End of Section--

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SECTION 02.21.13.01
CULTURAL RESOURCES SURVEYS

PART 1 - GENERAL

1.1. SECTION INCLUDES

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1.2. Related Requirements....1
1.3. Reference Standards....1
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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.B. Section 01.57.00.01-◊●◊●◊ Temporary Controls for Work Areas

1.3. REFERENCE STANDARDS

1.3.A. Code of Federal Regulations (CFR)

1. 22 CFR 1104, International Boundary and Water Commission, Protection of Archaeological Resources
2. 36 CFR 800, Protection of Historic Properties (NHPA)

1.3.B. National Park Service (NPS)

1. Archaeology and Historic Preservation: Secretary of the Interior's Standard and Guidelines, as amended

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. For every source of geological materials, provide documentation of State Historic Preservation Officer (SHPO) approval, cultural resources survey performed by Design-Builder or Construction Contractor, or request survey by USIBWC.

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

1.6.A. This Section covers all geological materials used on the project whether specified for use or used for the Design-Builder's benefit.

1.6.B. To ensure preservation of historical and archaeological data, prior to use of any geological materials from offsite sources, the source must first be compliance confirmed by the COR to ensure compliance with Section 106 of NHPA (36 CFR 800) as well as USIBWC NHPA implementing regulations (22 CFR 1104).

1.6.C. The Design-Builder shall take no action to use or alter the proposed location until written compliance confirmation for use of the site is received from the COR.

1. Minor soil disturbance to take soil samples for qualification testing is exempt from this requirement.

1.7. CULTURAL RESOURCES INVESTIGATION REPORT

1.7.A. A cultural resource survey must be completed to ensure that source of geological materials is not destroying or endangering any cultural resources. The survey can be completed in one of three ways: previously by another Government agency, by USIBWC, or by the Design-Builder and/or the Construction Contractor.

1.7.B. Review by State SHPO
Cultural surveys may be reviewed by the applicable SHPO. SHPO reviews require a minimum of 30 days.

1.8. IDENTIFICATION OF CULTURAL RESOURCES

1.8.A. Design-Builder Controlled Site
If any cultural resources are found to be impacted by the collection, movement, or disposal of geological materials, USIBWC's cultural resource specialist will consult with the applicable State Historic Preservation Officer (SHPO). This consultation will take approximately 45 days in addition to any time noted above.

1.8.B. All costs of mitigating adverse effects to cultural resources, if required, shall be borne by the Design-Builder. It is the responsibility of the Design-Builder to ensure that project activities do not impact cultural resources.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION
(Not Used)

--End of Section--

SECTION 02.22.13.01
EXISTING CONDITIONS ASSESSMENT

PART 1 - GENERAL

1.1. SECTION INCLUDES

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1.2. RELATED REQUIREMENTS

1.2.A. Section 01.32.33.01-◊●◊●◊ Photographic Documentation

1.2.B. Section 01.33.00.01-◊●◊●◊ Submittal Procedures

1.2.C. Section 02.21.00.01-◊●◊●◊ Surveys

1.3. REFERENCE STANDARDS

1.3.A. Federal Transit Administration (FTA)

1. FTA Report No. 0123 "Transit Noise and Vibration Impact Assessment Manual," September 2018 https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

1.3.B. International Society of Explosives Engineers (ISEE)

1. ISEE Field Practice Guidelines for Blasting Seismographs, 2020 https://www.isee.org/digital-downloads/675-isee-field-practice-guidelines-for-blasting-seismographs-2020/file

1.4. SUBMITTALS

1.4.A. Submittals shall be transmitted by the Design-Builder in accordance with the requirements of Section 01.33.00.01. The Design-Builder Quality System Manager (QSM) shall be responsible for certifying that all submittals are in compliance with the Contract requirements.

1.4.B. Required submittals in this Section requiring COR compliance confirmation include:

1. Vibratory Control Plan
   At least 30 days prior to start of such work, the Design-Builder shall provide a vibratory control plan to the COR.

2. Vibration Specialist Qualifications
3. Equipment Calibration
   Provide calibration reports for all vibration-monitoring instruments used on the project.
4. Condition Survey
   A preconstruction Condition Survey shall be conducted by the Vibration Specialist prior to the commencement of any vibration producing activity.
   a. Provide written Condition Survey Report(s)
   b. Provide documentation of landowner/occupant response to request for Condition Survey.
5. Vibration Monitoring Report
   Periodic reports shall be provided to the COR.
6. Vibration Monitoring Data
   If not included with Vibration Monitoring Reports, all vibration data collected shall be provided.

1.5. MEASUREMENT AND PAYMENT

The work performed by the Design-Builder under this Section shall not be paid for directly but shall be included in the various Bid Items under this Contract.

1.6. GENERAL

1.6.A. Vibration producing activities (such as vibratory compaction, pavement breaking, pile driving, or operation of heavy construction equipment) are common in construction projects. The level of vibration control shall detail concerns and require the Design-Builder to do a prescribed condition survey and to employ a qualified vibration specialist to establish a safe vibration level and monitor the vibrations.

1.6.B. Construction equipment often produces vibrations at less than 40 Hz which easily resonate within buildings and amplify damage. Construction equipment vibrations are also of long duration; for long duration vibrations, even small resonant vibration components whose peak particle velocity (PPV) is below any standard for damage can become dangerous to a building.

1.6.C. Operation of any of the following equipment qualifies as a vibration producing activity to USIBWC and shall be monitored. Models shown are typical examples and shall not limit the inclusion of other equipment.

1. Plate compactor
2. Dozer, CAT D-5 or above
3. Excavator, CAT 918 or above
4. Water wagon/water pull such as CAT 613

1.6.D. The Design-Builder is advised that structures are located close to the proposed work and that construction activities shall be conducted so as to preclude damage to same. The Design-Builder shall be responsible for any damage caused by construction activities.

1.6.E. Vibration Controls

1. The Design-Builder shall employ a qualified Vibration Specialist to establish a safe vibration level for all structures from vibration producing activities as well as any additional structures that the Vibration Specialist determines may be in danger from vibration damage. This specialist shall also supervise the vibration-monitoring program.
2. During all vibration producing activities, the Vibration Specialist shall monitor vibration levels to ensure that they do not exceed the safe level established to preclude damage to all structures.
3. The vibration monitoring equipment shall be capable of continuously recording the peak particle velocity and providing a permanent record of the entire vibration event. Copies of all vibration

records and associated construction activity (vibratory compaction, pavement breaking, etc.) data shall be provided to the COR.

1.6.F. Based upon project conditions, the Design-Builder may place additional restrictions on all aspects of vibration controls, vibration monitoring, and the preconstruction Condition Survey for their Construction Contractor.

1.7. QUALIFICATIONS OF VIBRATION SPECIALIST

1.7.A. The vibration-monitoring personnel shall have the qualifications specified herein.

1.7.B. These personnel may be on the staff of the Design-Builder or may be on the staff of a specialist subcontractor. However, they shall not be employed nor compensated by the Construction Contractor, other subcontractors, nor by persons or entities hired by subcontractors, who will provide other services or materials for the project.

1.7.C. The Contractor's vibration-monitoring personnel shall include a qualified Vibration Specialist who is registered in the State of Texas as a Professional Engineer or as a Professional Geoscientist in Geophysics.

1.7.D. The Vibration Specialist shall:

1. Have at least 4 years of experience in the installation and use of vibration-monitoring instrumentation and in interpreting instrumentation data for construction activities.
2. Be onsite and supervise the initial installation of each vibration-monitoring instrument.
3. Supervise interpretations of vibration-monitoring data.

1.7.E. The Design-Builder's vibration-monitoring personnel shall be subject to compliance confirmation by the COR.

1.8. CONDITION SURVEY

1.8.A. A preconstruction Condition Survey shall be conducted on all structures, prior to the commencement of any vibration producing activity.

1. In lieu of naming the structures, a radius of 200 feet from the vibration producing activity can be used. This distance can be adjusted based on the type of activity, the sensitivity of the receptors, and concurrence with the COR.
2. Some types of structures are very susceptible to damage in the frequency range produced by construction equipment. Additionally local geology may transmit vibrations in these frequency ranges well past the minimum 200 feet.
3. The Vibration specialist shall review structures in the area and determine if any structures outside the minimum 200 feet from the vibration producing activity should be included in the Condition Survey.

1.8.B. The Condition Survey may be broken up by different phases or portions of the project instead of covering the whole project from the onset.

1.8.C. Crack displacement monitoring gauges shall be installed as appropriate across any significant existing cracks to help verify any additional structural distress if it should develop. The appropriate location, number, and type of gauges will be established by the Vibration Specialist. The gauges will be read prior to vibration producing activities, as well as during these activities. Data shall be obtained on a weekly basis for as long as vibration-producing activities are being conducted. A report shall be submitted which summarizes the data. The Vibration Specialist shall be alerted if any significant movement is detected by the monitoring gauges.

1.8.D. Construction Site Condition Documentation
In addition to the Condition Survey, the Design-Builder is required to document the project site before work begins.

1. Preconstruction Survey
   The Design-Builder shall survey the entire project site per Section 02.21.00.01.
2. Preconstruction Video and Photographs
   a. The Design-Builder shall video tape (including date and time stamp) all construction sites before any work takes place and shall submit a copy to the COR.
   b. See Section 01.32.33.01 for information about preconstruction video recordings and photographs.
3. Noteworthy events at the sites during construction shall be also be videotaped and photographed by the Design-Builder.

1.8.E. The Condition Survey shall be conducted by the Vibration Specialist.

1.8.F. A report shall be issued that will summarize the preconstruction condition of the structures and will identify areas/structures of concern, including potential personnel hazards (falling debris) and structural elements that may require support or repair.

1. Copies of any photos taken as part of the Condition Survey shall be provided along with information on IBWC Form 148.
2. Copies of any video taken as part of the Condition Survey shall be submitted.

1.9. VIBRATION CONTROL PLAN

1.9.A. The Vibratory Control Plan shall include, but not be limited to the following:

1. Proposed construction methods
2. Vibration monitoring plans including the format for reporting the vibration readings, proposed locations for seismographs, and frequency of monitoring.
3. Anticipated vibration levels at the closest structures and/or most probably affects structures
4. Condition survey format
5. Public relations activities

1.9.B. Long duration, low frequency vibrations associated with construction are worrisome because they produce resonant amplification of vibrations in buildings as opposed to the relatively infrequent, short duration, higher frequency vibrations caused by blasting. Blasting vibration standards are generally not useful for construction vibration regulation, nor is their use in construction situations defensible scientifically, therefore use of blasting standards within your Vibration Control Plan will not be accepted.

1.9.C. Minimum vibration controls shall be based upon damage criteria in FTA Report No. 0123 Table 7-5. This table notes that non-engineered timber and masonry buildings (Category III) have a PPV damage threshold of 0.2 inches per second (in/s) while buildings that are extremely susceptible to vibration damage (Category IV) have a PPV damage threshold of 0.12 in/s. The Vibration Specialist shall apply these limits to non-build structures as applicable.

1.9.D. Areas susceptible to liquefaction and old/historic or damaged structures may require more stringent vibration controls to prevent damage. The Vibration Specialist shall review the Condition Survey and determine if more vibration controls more restrictive than those listed above are required. As such, the Vibration Control Plan should be submitted after the Condition Survey has been conducted.

1.9.E. The Vibratory Control Plan shall be submitted regardless of whether vibratory equipment is used or not. The Construction Contractor shall not be allowed to mobilize without a compliance confirmed Vibratory Control Plan.

1.9.F. Quality Control

1. A record of laboratory calibration shall be provided for all vibration-monitoring instruments to be used onsite.
2. Certification shall be provided to indicate that the instruments are calibrated and maintained in accordance with the equipment manufacturer's calibration requirements and that calibrations are traceable to the US National Institute of Standards and Technology (NIST).
3. Calibration must be of the assembled sensor. Component calibrations of individual sensors are not appropriate.
4. Upon approval of the COR, this information may be provided in each Vibration Monitoring Report instead of in the Vibration Control Plan.

1.10. VIBRATION MONITORING REPORT

1.10.A. Reports shall use Fast Fourier Transform (FFT) frequencies instead of zero crossing (ZC) frequencies. If both frequencies are shown they shall be clearly identified as FFT or ZC.

1.10.B. All reports shall include the following:

1. Project identification, including Project Name, and County as shown on the Contract Drawings.
2. Location of the monitoring equipment by coordinates and project station, including address of adjacent structure.
3. Length of time including starting and ending dates/times of monitoring at each location.
4. Location and type of vibration sources (e.g. traffic, demolition equipment, etc.).
5. Duration of vibration producing activities.
6. Identification of the PPV trigger level used during monitoring.
7. Waveform Event Report showing the detailed characteristics of any detected vibration whose PPV is above the "trigger level" set for the instrument. Vibration traces for all three directions shall be shown in the report.
8. Monitor Log listing the times of operation of the seismograph and the events above the trigger level detected.
9. An FFT Report giving a detailed plots of the entire velocity versus frequency distribution of each vibration whose PPV is above the "trigger level" set for the instrument.
10. Histogram Event Report providing a graphical depiction of the general vibration levels during the entire run of the seismograph, as well as indications of the largest vibrations detected during the run, shall be included. Any data collected that is not contained in the Histogram Event Report shall be exported to ASCII and provided as an attachment.
11. Appendix graphs of the strip charts printed during the monitoring periods.

1.10.C. All reports shall be signed by the Vibration Specialist.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1. DATA COLLECTION

3.1.A. Follow seismograph set-up and installation practices specified in the ISEE Field Practice Guidelines for Blasting Seismographs.

3.1.B. The Design-Builder shall collect seismograph data prior to any vibration-producing demolition or construction activities to document background vibrations at each monitoring location.

1. This monitoring shall consist of a continuous recording of the maximum single-component PPV.
2. The background monitoring shall be performed for a minimum of two non-consecutive workdays, spanning the hours during which demolition and construction activities will take place.

3.1.C. The Design-Builder shall monitor vibration during demolition and other vibration producing construction activities.

1. This monitoring shall consist of a continuous recording of the maximum single-component PPV.
2. During the monitoring, the Design-Builder shall document all events that are responsible for the measured vibration levels, and submit the documentation to the COR.

3.2. VIBRATION MONITORING REPORT

3.2.A. Periodically throughout construction and upon completion of all construction activities, the Vibration Specialist shall provide the COR with a Vibration Monitoring report. This report shall summarize all monitoring for the period covered and shall note specific incidents of concern.

3.2.B. Vibration monitoring data may be submitted with the Vibration Monitoring Report or as a separate submittal.

--End of Section--

International Boundary and Water Commission

Established in 1889, the International Boundary and Water Commission (IBWC) has responsibility for applying the boundary and water treaties between the United States and Mexico and settling differences that may arise in their application. The IBWC is an international body composed of the United States Section and the Mexican Section, each headed by an Engineer-Commissioner appointed by their respective president. Each Section is administered independently of the other. The United States Section of the International Boundary and Water Commission (USIBWC) is a federal government agency and is headquartered in El Paso, Texas. The IBWC operates under the foreign policy guidance of the Department of State. The Mexican Section is under the administrative supervision of the Mexican Ministry of Foreign Affairs and is headquartered in Ciudad Juarez, Chihuahua, Mexico.

Mission

Our mission is to protect Americans from exposure to Mexican sewage, ensure fair allocations of water from the Colorado and Rio Grande Rivers, efficiently and effectively maintain and operate critical flood infrastructure, and reduce border flood hazards.

www.ibwc.gov

Questions and comments about this or other IBWC projects can be submitted to:
forms.office.com/g/tZNR9Cv0qL

International Boundary and Water Commission

United States Section

Construction Management Division
4191 N Mesa
El Paso, Texas 79902

www.ibwc.gov