GUAM WATERWORKS AUTHORITY
"Better Water. Better Lives."
Gloria B. Nelson Public Service Building | 688 Route 15, Mangilao, Guam 96913
Telephone No.: (671) 300-6036

Invitation For Bid:	IFB-05-ENG-2023
Project:	Ugum Water Treatment Plant Rehabilitation GWA Project No. W22-10-BND
Addendum No.:	01
Date:	December 27, 2022

All Potential Bidders:

This addendum is issued to modify the previously issued bid documents and/or given for informational purposes, and is hereby made a part of the bid documents. Failure to acknowledge receipt of this addendum shall be grounds for the bidder's disqualification and rejection of the bidder's proposal.

1. **SECTION 00100 – Invitation for Bid** and other sections on the bid documents where applies, which states:

   "The GUAM WATERWORKS AUTHORITY will receive sealed bids for Ugum Water Treatment Plant Rehabilitation; GWA Project No. W22-10-BND.

   Bids will be accepted until 10:00 am, Chamorro Standard Time, ***January 6, 2023****, at the Gloria B. Nelson Public Service Building, 688 Route 15, Mangilao, GU 96913, Engineering Division, Suite 202, 2nd Floor at which time and place all bids will be publicly opened and read aloud."*

   "All questions or clarifications must be submitted in writing on or before December 27, 2022."

   Has now been changed to read:

   "The GUAM WATERWORKS AUTHORITY will receive sealed bids for Ugum Water Treatment Plant Rehabilitation; GWA Project No. W22-10-BND.

   Bids will be accepted until 10:00 am, Chamorro Standard Time, ***January 20, 2023****, at the Gloria B. Nelson Public Service Building, 688 Route 15, Mangilao, GU 96913, Engineering Division, Suite 202, 2nd Floor at which time and place all bids will be publicly opened and read aloud."*

   "All questions or clarifications must be submitted in writing on or before January 10, 2022."

2. **SECTION 00410 – Bid Form**

Discard previously issued Section 00410 Bid Form in its entirety and replace with the enclosed Section 00410 Bid Form - Addendum 1.

3. **Assessment and Procurement Report Removal and Replacement Scope of Work:**

(a) Insert item E below item D of Section 3.2 Flocculation/Sedimentation Tanks

E. Provide two forty-foot containers to be used as storage for new membrane equipment. These containers shall be new or newly coated and equipped with padlocks. These two containers shall be delivered to the project site and located on site as directed by the Owner. No foundation or electrical works will be required.

(b) Revise item A of Section 3.3 Membrane Cells to read:

A. Provide membrane equipment, see bid form for complete list

(c) Insert item A-1 below item A of Section 3.3 Membrane Cells

A-1. Provide and install new rack lock support and lower guide support brackets at each of the two membrane cells. See record drawings (0211193-241 & 021193-242) for installation specifics. Contractor shall provide all materials and resources needed for the complete bracket install. Owner will provide the bypass needs for each membrane cell. One membrane cell may be worked on at any time. Contractor shall provide for the disinfection and testing for each cell after work is complete and shall not progress to next cell until disinfection results are received and acceptable.

(d) Delete item B Repair three (3) bathrooms of Section 3.9 Administration Building in its entirety and insert new item B below item A.

B. Remove and replace the existing roll up door located at the basement level of the administration building. The door opening is 104 inches X 98 Inches. See attached specification 083300 Overhead Doors.

4. **SPECIFICATIONS**

(a) Include the following additional sections:

A. Section 083300 Overhead Doors

B. Section 331313 Water Storage Tank Disinfection

Bidders are also notified to visit GWA website: http://guamwaterworks.org/bids/ to ensure that all addenda to the bid, answers to questions, and reminders communicated are received by all bidders throughout the solicitation process.

MIGUEL C. BORDALLO, P.E.
General Manager

Attachment:
Section 00410 Bid Form - Addendum 1
Specification Section 083300
Specification Section 331313

MCB;kmr/elv

BID FORM

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BID FORM

ARTICLE 1 - BID RECIPIENT

1.01 This Bid is submitted to:

Guam Waterworks Authority
Gloria B. Nelson Public Service Building
688 Route 15 Mangilao, Guam 96913

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with Buyer in the form included in the Bidding Documents to furnish the Goods and Special Services as specified or indicated in the Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Buyer.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date

B. Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, or the furnishing of Goods and Special Services, if required to do so by the Bidding Documents, or if, in Bidder's judgment, any local condition may affect cost, progress, or the furnishing of Goods and Special Services.

C. Bidder is familiar with and is satisfied as to all Laws and Regulations in effect as of the date of the Bid that may affect cost, progress, and the furnishing of Goods and Special Services.

D. Bidder has carefully studied, considered, and correlated the information known to Bidder; information commonly known to sellers of similar goods doing business in the locality of the Point of

Destination and the site where the Goods will be installed or where Special Services will be provided; information and observations obtained from Bidder's visits, if any, to the Point of Destination and the site where the Goods will be installed or Special Services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Point of Destination and the site where the Goods will be installed or where Special Services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of Seller's obligations under the Bidding Documents.

E. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.

F. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing the Goods and Special Services for which this Bid is submitted.

ARTICLE 4 - BIDDER'S CERTIFICATIONS

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

ARTICLE 5 - BASIS OF BID

5.01 Bidder will furnish the Goods and Special Services in accordance with the Contract Documents for the following price(s): **See attached Attachment 1 – Unit Price Bid Form**

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, to be determined and as provided in the Contract Documents. Bidder also acknowledges that each unit price includes an amount considered by Bidder to be adequate to cover Bidder's overhead and profit for each separately identified item.

ARTICLE 6 - TIME OF COMPLETION

6.01 Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule set forth in Article 5 of the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 - ATTACHMENTS TO THIS BID

7.01 The following documents are attached to and made a condition of this Bid:

A. Required Bid security in the form of _____.

B. List of Proposed Major Suppliers;

C. Required Bidder Qualification Statement with Supporting Data; and

ARTICLE 8 - DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 - BID SUBMITTAL

9.01 This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____

(Individual's signature)

Doing business as: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____ _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____

(Signature of general partner - attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

A Corporation

Corporation Name: _____

State of Incorporation: _____

Type (General Business, Professional, Service, other): _____

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____

(Signature of Corporate Secretary)

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

A Limited Liability Company (LLC)

LLC Name: _____

State in which organized: _____

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

A Joint Venture

First Joint Venturer Name: _____ (SEAL)

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

Phone and Facsimile Number, and Address for receipt of official communications to Joint Venture: _____

_____

_____

(Each joint venturer must sign. The manner of signing for each individual, partnership, corporation, and limited liability company that is a party to the joint venture should be in the manner indicated above.)

Attachment 1 – Unit Price Bid Form

UGUM WATER TREATMENT PLANT REHABILITATION

GWA Project No. W22-10-BND

Base Bid - Description of Work:

The base bid items consist of but not specifically limited to mobilization/demobilization, replacement of existing equipment in the river intake, settling basins, membranes, backwash, neutralization tank, pipe gallery/generator building, thickener tank, operation/chemical building, improvements to administration building.

Bidders will complete the work for the following price(s) as broken down per scope item:

Item No.	Description	Unit	Unit Price	Qty	Bid Amount
1.0 - General Conditions					
1.1	Mobilization/Demobilization, Permitting, Insurance, Bonds, and Contractor's Administration	LS	$_____	1	$_____
2.0 – River Intake					
2.1	Remove pumps/motors #1 and #3 (outer left and right pumps) and replace with new pumps/motors including accessories, complete in place (Specs Section 432321.13)	LS	$_____	1	$_____
2.2a	Remove existing MCC for pump #1 and install new VFD including accessories, complete in place (Specs Section 262923)	LS	$_____	1	$_____
2.2b	Remove existing VFD screens for pump #2 and pump #3 and replace with new, complete in place (Specs Section 262923)	LS	$_____	1	$_____
2.3	Remove existing flow meter and replace with new, complete in place (Specs Section 407113)	LS	$_____	1	$_____
2.4	Remove two (2) existing filters, piping, and fittings from the flange connection at the main discharge piping, install two (2) blind flanges to the flange ends of the remaining main discharge piping, demolished pipe and fittings to be disposed of at the site (Specs Section 017320)	LS	$_____	1	$_____

Item No.	Description	Unit	Unit Price	Qty	Bid Amount
3.0 – Settling Basins					
3.1	Remove two (2) existing automatic sluice gates for flocculation basins and replace with new manually operated sluice gates (work will require draining of water inside the basins), including accessories, complete in place (Specs Section 400557)	LS	$_____	1	$_____
3.2	Remove eight (8) existing automatic sluice gates for sedimentation tanks and replace with new manually operated sluice gates (work will require draining of water inside the basins), including accessories, complete in place (Specs Section 400557)	LS	$_____	1	$_____
3.3	Remove and replace sludge collection system (chain and flight) at two (2) contact basins and two (2) recycle basins including accessories, complete in place (Specs Section 464311)	LS	$_____	1	$_____
3.4	Remove accumulated sludge inside the tank including disposal to Inarajan WTP drying beds (Specs Section 022100)	CYD	$_____	533	$_____
4.0 - Membranes					
4.1	Provide the following spare parts delivered to the job site, inclusive of taxes and other miscellaneous fees				SEE REPORT
4.1a	Membrane Module, Spare S10N PVDF	EA	$_____	864	$_____
4.1b	Manifold, Clover Top CS Nylon SS Stud-119006	EA	$_____	220	$_____
4.1c	Manifold, Clover Bottom GFPP Duraprop	EA	$_____	220	$_____
4.1d	Clip, Clover Module CS/CSII	EA	$_____	870	$_____
4.1e	Gasket, Bottom Clover EPDM 9710 3 Hole	EA	$_____	220	$_____
4.1f	O-Ring, EPDM 9710 148.6MMx5.7MM Blue DT	EA	$_____	100	$_____

Item No.	Description	Unit	Unit Price	Qty	Bid Amount
4.1g	O-Ring, EPDM 9710 BS352 WRC Blue Dot	EA	$_____	220	$_____
4.1h	Assembly, Valve MLD FILT ISOL Rack	EA	$_____	220	$_____
4.1i	Nut, Hex M8x1.25MM 316SS 6H 800MPA	EA	$_____	2000	$_____
4.1j	Washer, Spring M8x3.75MM Thk 316SS	EA	$_____	2000	$_____
4.1k	Washer, Flat M8x17MM OD 316SS	EA	$_____	2000	$_____
4.1l	Assembly, Insert CS NLY-GRP Rack Sea	EA	$_____	220	$_____
4.1m	9 Clover Stainless Steel Membrane Racks	EA	$_____	24	$_____
4.1n	Membrane Aeration Hose	EA	$_____	24	$_____
4.1o	Rack Lock Mechanism and Lever	EA	$_____	4	$_____
4.1p	Rack Lower Guides	EA	$_____	4	$_____
4.1q	Rack Lock Support Bracket	EA	$_____	2	$_____
4.1r	Lower Guide Support Bracket	EA	$_____	2	$_____
4.1s	On-Site Manufacturer's Technical Field Service for 10 days, including travel and all miscellaneous expenses	LS	$_____	1	$_____
4.2	Remove two (2) existing electric chain hoists and replace with two (2) 1-ton **variable speed hoists** with single controller each, including necessary electrical work, complete in place (Specs Section 412223.19)	LS	$_____	1	$_____
4.3	Remove and replace the rusted existing steel angle iron and plates between Cell #1 and Cell #2. Contractor to submit shop drawings for approval. (Specs Section 055000)	LS	$_____	1	$_____
4.4	Install new rack lock support and lower guide support brackets at each of the two membrane cells	LS	$_____	1	$_____
4.5	Deliver two 40 ft shipping containers with door locks to Ugum WTP	LS	$_____	1	$_____
5.0 - Backwash					

Item No.	Description	Unit	Unit Price	Qty	Bid Amount
5.1	Remove existing submersible transfer pumps and install new, (Specs Section 431311)	EA	$_____	2	$_____
5.2	Remove existing level sensor/level monitor and replace with new, (Specs Section 407276)	EA		3	
5.3	Remove existing mixer and replace with new, see (Specs Section 464123)	EA		1	
5.4	Remove existing flow meter and replace with new meter complete with screen cover protection (Specs Section 407113)	EA		1	
5.5	Remove accumulated sludge inside the tank including disposal to Inarajan WTP drying beds (Specs Section 022100)	CYD	$_____	46	$_____
6.0 – Neutralization Tank/Sludge Tank					
6.1	Remove and Replace submersible pump and nozzles within the tank, complete in place, (Specs Section 431311)	LS	$_____	1	$_____
6.2	Replace pH/Orp Meter (Specs Section 407513)	EA	$_____	1	$_____
6.3	Remove existing level sensor/level monitor and replace with new, (Specs Section 407276)	EA	$_____	1	$_____
6.4	Remove accumulated sludge inside the tank including disposal to Inarajan WTP drying beds (Specs Section 022100)	CYD	$_____	84	$_____
7.0 – Pipe gallery/Generator Room					
7.1	Remove and replace existing aluminum access doors, jambs, and hardware in the piping room and in the generator room, complete in place. (Specs Section 081116)	LS	$_____	3	$_____
7.2	Provide spare Bray butterfly valves, pneumatic actuators, and status monitors as follows: (Specs Section 400564)				
7.2a	16” Flanged Butterfly Valve, Series 30/31, complete with accessories	EA	$_____	2	$_____
7.2b	14” Flanged Butterfly Valve, Series 30/31, complete with accessories	EA	$_____	3	$_____

Item No.	Description	Unit	Unit Price	Qty	Bid Amount
7.2c	12” Flanged Butterfly Valve, Series 30/31, complete with accessories	EA	$_____	4	$_____
7.2d	10” Wafer Style Butterfly Valve, Series 30/31, complete with accessories	EA	$_____	2	$_____
7.2e	8” Wafer Style Butterfly Valve, Series 30/31, complete with accessories	EA	$_____	4	$_____
7.2f	4” Wafer Style Butterfly Valve, Series 30/31, complete with accessories	EA	$_____	2	$_____
7.2g	2” Wafer Style Butterfly Valve, Series 30/31, complete with accessories	EA	$_____	3	$_____
7.2h	Pneumatic Actuator Part #92-2100-11300-532	EA	$_____	5	$_____
7.2i	Pneumatic Actuator Part #92-1600-11300-532	EA	$_____	4	$_____
7.2j	Pneumatic Actuator Part #92-1270-11300-532	EA	$_____	2	$_____
7.2k	Pneumatic Actuator Part #92-1190-11300-532	EA	$_____	2	$_____
7.2l	Pneumatic Actuator Part #92-1180-11300-532	EA	$_____	4	$_____
7.2m	Pneumatic Actuator Part #92-0630-11300-532	EA	$_____	4	$_____
7.2n	Status Monitors Part #50-0406-12610-532	EA	$_____	14	$_____
8.0 – Thickener System					
8.1	Remove existing thickener assembly and replace with new inclusive of complete drive assembly, with gear motor and weatherproof drive torque control. Drive unit is completely factory assembled, calibrated and tested, Walkway, beam supported (half the diameter), 36” wide with aluminum I-bar flooring, Center Drive platform, Aluminum handrail, Feedwell, Rake arms with plow blades and pickets, Operation and Maintenance manuals, Torque tube, Influent pipe, Finish paint, Weirs, FRP, Field service 2 days/1 trip (See Report)	LS	$_____	1	$_____

Item No.	Description	Unit	Unit Price	Qty	Bid Amount
8.2	Remove two (2) existing thickener pumps and replace with new pumps, (Specs Section 432357)	LS	$_____	1	$_____
8.3	Remove accumulated sludge inside the tank including disposal to Inarajan WTP drying beds, (Specs Section 022100)	CYD	$_____	125	$_____
9.0 – Operations/Chemical Building					
9.1	Remove existing flow meter and pH meter at sodium hydroxide feed system and replace with new, (Specs Section 407513)	EA	$_____	1	$_____
9.2	Remove existing chemical pumps and replace with new for proper dosages, (Specs Section 463342)	EA	$_____	5	$_____
9.3	Remove existing hydraulic lift and replace with new, (See Report)	LS	$_____	1	$_____
10.0 – Administration Building					
10.1	Remove front door entrance and replace with new 3'-8.5" wide, aluminum swing door, (Specs Section 081116)	LS	$_____	1	$_____
10.2	Remove leaking roof hatch cover at the Control Room and cover the opening with concrete (See Report)	LS	$_____	1	$_____
10.3	Remove existing and install new roll up door at basement level of Administrative Building. (Specs Section 083300)	LS	$_____	1	$_____
TOTAL BASE BID (TOTAL of Items 1 through 10, inclusive)					$_____
(Please write out total bid amount in words below)					

SECTION 083300 - OVERHEAD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Service doors.
   2. Accessories.

B. Related Documents: The Contract Documents, as defined in Section 011000 - Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 DESCRIPTION OF WORK

A. The extent of overhead coiling doors work is as specified herein. Provide complete operating door assemblies including curtains, guides, counterbalance mechanisms, hardware, operators, motors and all installation accessories.

1.3 REFERENCES

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

B. American Society of Civil Engineers (ASCE):
   1. ASCE / SEI 7, Minimum Design Loads for Buildings and Other Structures.

C. American Society for Testing and Materials (ASTM):
   1. ASTM D 2201, Practice for Preparation of Zinc-Coated and Zinc-Alloy-Coated Steel Panels for Testing Paint and Related Coating Products.
   2. ASTM E 176, Standard Terminology of Fire Standards.
   3. ASTM E 330, Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
   4. ASTM E 1996, Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

D. International Code Council:
   1. International Building Code (IBC), 2009.

E. National Fire Protection Association (NFPA):
   1. NFPA 80, Standard for Fire Doors and Other Opening Protectives.
   2. NFPA 101, Life Safety Code.
   3. NFPA 252, Standard Methods for Fire Tests of Door Assemblies.

F. Underwriters Laboratories, Inc.
   1. UL 10B, Standard for Safety Fire Tests for Door Assemblies.

1.4 SUBMITTALS

A. Section 013300 - Submittal Procedures: Procedures for submittals.
   1. Product Data: Submit manufacturer's product data for doors, grilles, motors, and assemblies, roughing-in diagrams, and installation instructions for each type and size of overhead door and grille. Include operating instructions and maintenance information.
   2. Shop Drawings: Submit for special components and installations which are not fully dimensioned or detailed in the manufacturers data sheets.
   3. Samples: Representative samples of finish, when requested by the Architect.
   4. Assurance / Control Submittals:
      a. Manufacturer’s certificate that the products meet or exceed the specified requirements.
      b. Calculations indicating that the system and anchorages satisfies the Performance Requirements.
      c. Documentation of experience indicating compliance with the specified qualifications requirements.

B. Section 017700 - Closeout Submittals: Procedures for closeout submittals.
   1. Operation and Maintenance Manual.
   2. Warranty: Provide a written special Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 QUALITY ASSURANCE

A. Qualifications:
   1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
   2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience. Installer shall be trained and approved by the fire door manufacturer with trained supervisory personnel observing and directing the work.

B. Furnish each overhead door as a complete unit produced by a single manufacturer, including hardware, accessories, tracks, mountings, and installation components.

C. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry for proper installation of the units. Provide setting drawings, templates, instructions and directions for the installation of anchorage devices. Coordinate delivery with other work to avoid Project delay.
   1. See Section 033000 - Cast-In-Place Concrete

D. Performance Requirements: Provide the capacity to withstand the following loading requirements as defined in IBC 2009 Chapter 16:
   1. Wind Loads for exterior units: According to IBC 2009, Section 1609 and ASCE 7:
      a. Basic Wind Speed: 170 mph; qs of 74.0
      b. Exposure Category: C
      c. Occupancy Category: Per IBC 2009, Table 1604.5
      d. Importance Factor: Per ASCE 7
      e. Terrain Factor: Calculated per ASCE 7
   2. Seismic Loads: According to IBC 2009, Section 1613 and ASCE 7
      a. Seismic Design Category: D

b. Seismic Importance Factor: Per ASCE 7

E. Unless otherwise acceptable to the Architect, furnish all overhead door units by one manufacturer for the entire Project.

1.6 DELIVERY, STORAGE AND HANDLING

A. Section 016000 - Product Requirements: Transport, handle, store and protect the products.

B. Deliver products cartoned or crated for protection during transit and storage.

C. Provide additional sealed plastic wrapping for factor-finished doors.

D. Deliver products to the Project Site in the manufacturer's original, unopened, new cartons or crates, dry and undamaged with seals and labels intact.

E. Inspect products for damage. Minor damages may be repaired provided the finish items are equal, in all respects, to new work, and acceptable to the Owner's representative; otherwise remove and replace the damaged items.

F. Store under cover in dry, weathertight conditions.

G. Break seals to permit ventilation.

1.7 WARRANTY

A. Section 017700 - Closeout Submittals: Procedures for closeout.

B. Special Warranty:
1. Provide a joint and severable written Warranty signed by the door manufacturer, Contractor and the Installer, agreeing to repair or replace defective materials and workmanship within the warranty period. Warranty shall include responsibility for removal and replacement of other work which may conceal overhead coiling door parts.
2. During the warranty period, repairs and replacements required because of acts of God and other events beyond the Contractor's / Installer's control, and those which exceed the performance requirements, shall be completed by the Contractor / Installer and paid for by the Owner at prevailing rates.
3. Warranty Period: Two (2) years from the date of Substantial Completion of the door installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
1. Atlas Door Co. & Solar Screens.
2. The Cookson Co., Inc.

3. Kinnear Div., Harsco Corp.
4. North American Overhead Door.
5. Overhead Door Corp.
6. Southwestern Steel Rolling Door Co.
7. Windsor Door Co., Div. Ceco Corp.

B. Section 016000 - Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS AND CONSTRUCTION

A. Service Doors: Provide the sizes, and material configurations as shown on the Drawings and as required to meet the Performance Requirements for exterior units. Each door shall be manually-operated by hand chain operator, mechanism fully enclosed, Provide a cylinder locking device, master keyable, operable from inside.

B. Door Curtain: Fabricate overhead coiling door curtains of interlocking slats designed and fabricated to meet the performance requirements, of continuous length for the full width of the door without splices. Unless otherwise indicated, provide slats of the material gage recommended by the door manufacturer for the size and type of door required, and as follows:
1. Steel Door Curtain Slats: Structural quality, cold-rolled galvanized steel (interior) or stainless steel with #4 finish sheets (exterior), as scheduled, manufacturer's standard "flat-face" slats.
2. Endlocks: Stainless steel or malleable iron castings galvanized after fabrication, secured to the curtain slats with galvanized rivets. Provide locks on alternate curtain slats for curtain alignment and resistance against lateral movement.
3. Windlocks: Stainless steel or malleable iron casting secured to the curtain slats with galvanized rivets. Unless otherwise recommended by the door manufacturer, provide windlocks on doors exceeding 16 feet in width. Space windlocks at approximately 24" o.c. along both edges of the curtain.
4. Bottom Bar: Two angles, each not less than 1-1/2" x 1-1/2" x 1/8" thick, galvanized or stainless steel to suit the type of curtain slats.
5. Weather Seal: Replaceable flexible vinyl or neoprene gasket between angles as a
6. weather seal and cushion bumper for manually-operated doors, unless shown as an overlapping joint.
7. Curtain Jamb Guides: Fabricate curtain jamb guides of steel angles, or channels and angles with sufficient depth and strength to retain the curtain loading. Build-up units with 3/16" thick stainless steel sections, or steel galvanized after fabrication. Provide slotted bolt holes for track adjustment.
    a. Where applicable secure continuous wall angles to wall framing with 3/8" bolts, minimum, at not more than 30" o.c., unless closer spacing is recommended by the door manufacturer. Extend wall angles above the door opening heads to support coil brackets, unless shown otherwise. Locate anchor bolts on exterior wall guides to be concealed when the door is in the closed position. Provide removable stops on guides to prevent over-travel of the curtain, and a continuous bar for holding windlocks, if provided.

2.3 GRILLES

A. Curtain: Straight grid design, 5/16" solid aluminum rods at approximately 2" o.c. vertically with connecting links at 9" o.c. horizontally.

B. Windlocks and Endlocks: Continuous end links or retainers as standard with the grille manufacturer.

C. Bottom Bar: Aluminum, extruded rectangular tube.

D. Guides: Extruded aluminum channel guides with pile gaskets each side, each guide.

E. Finish: Clear anodized, or as selected.

2.4 SECTIONAL DOORS

A. Door Sections: Fabricate sections of rails and stiles heavy-duty galvanized steel to produce a minimum door thickness of 2", but not less than required to meet the Performance Requirements for exterior units. Provide stiles and rails of the size recommended by the door manufacturer for the size and type of door required. Deflection of doors in the horizontal position shall not to exceed 1/120 of the door width. Panels to be 24 gauge, minimum. Style and design as selected by the Architect.

B. Track: 3", angle-mounted. Secure tracks to meet the Performance Requirements.

C. Hinges and fixtures: 14 gauge galvanized steel; full-floating, ball-bearing rollers with hardened steel races. Roller size shall be adequate for the design requirements.

D. Bottom Weatherstrip: Aluminum.

E. Glass Sections: Glazing sections as indicated on the Drawings.

F. Lock: Galvanized, single-unit, inside mechanism, installed for operation as required by the location.

G. Operation: Manual operated.

H. Finish: Factory painted with polyester top coat over epoxy primer. Field applied finish coat. Color as selected.

2.5 COUNTERBALANCING MECHANISM

A. Counterbalance doors by means of adjustable steel helical torsion spring, mounted around a steel shaft, in a spring barrel, and connected to the door curtain with the required barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.

B. Counterbalance Barrel: Fabricate the spring barrel of hot-formed structural quality carbon steel, welded or seamless pipe, of sufficient diameter and wall thickness to support roll-up of the curtain without distortion of the slats. Limit the barrel deflection to not more than 0.03" per ft. of span under full load.

1. Provide spring balance of one or more oil-tempered, heat-treated steel helical torsion springs. Size springs to counterbalance weight of the curtain, with uniform adjustment accessible from outside the barrel. Provide cast steel barrel plugs to secure the ends of springs to the barrel and shaft.
2. Fabricate torsion rod for the counterbalance shaft of case-hardened steel, of the required size to hold fixed spring ends, and to carry the torsional load.

C. Brackets: Provide manufacturer's standard design mounting brackets, either cast iron or cold-rolled steel plate with bell mouth guide groove for the curtain.

2.6 HOOD

A. Form to entirely enclose the coiled curtain and operating mechanism at the opening head, and act as a weather seal. Contour to suit the end brackets to which the hood is attached. Roll and reinforce top and bottom edges for stiffness.

B. Provide closed ends for surface-mounted hoods, and any portion of the between-jamb mounting projecting beyond the wall face. Provide intermediate support brackets as required to prevent sag.

C. Fabricate steel hoods of not less than 24 gauge stainless steel for exterior, or hot-dip galvanized steel sheet with G90 zinc coating for interior-mountings, complying with ASTM D 2201. (phosphate treat before fabrications.)

D. Provide automatic drop baffle to prevent passage of smoke and flame.

2.7 SECURITY

A. Motor Operated Assemblies: Self-lock gearing.

B. Locking: Interior-mounted slide bolts, lockable by cylinder, at both jambs on the coil side.

2.8 PAINTING

A. Shop clean and prime ferrous metal and galvanized surfaces, exposed and unexposed, except faying and lubricated surfaces, with the door manufacturer's standard rust inhibitive primer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution Requirements: Verification of existing conditions before starting the work.

B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
1. Verify all required dimensions, especially the finished floor or counter top to the underside of the overhead support, by actual measurement.

2. Verify track layout, especially the finished floor or counter top to the underside of overhead support, by actual measurement.

C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install doors and operating equipment complete with all necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports in accordance with the approved Shop Drawings, manufacturer's instructions, and as required to meet the Performance Requirements.

B. Install fire-rated doors to comply with NFPA 80.

3.3 ADJUSTING

A. Section 017000 - Execution Requirements: Adjusting the installed work.

B. Upon completion of the installation, including work by other trades, lubricate, test and adjust the doors to operate easily, free from warp, twist and distortion, and fitting weathertight for the entire perimeter.

C. Test the operation of automatic closing fire doors, including response to the actuation of a smoke detection device.

3.4 FIELD QUALITY CONTROL

A. Inspect the installations for alignment, level, plumb, secure attachment to the substrates, and operation.

3.5 CLEANING

A. Remove protective material from pre-finished aluminum surfaces.

B. Clean exposed to view parts as recommended by the manufacturer.

C. Remove excess sealant by a method acceptable to the sealant manufacturer.

END OF SECTION 083300

SECTION 331313 - WATER STORAGE TANK DISINFECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Water tank disinfection.
2. Bacteriological testing.

B. Related Requirements:

1. Section 331615 – Epoxy-Coated Bolted Steel Tank Specification for Water Service.

1.2 REFERENCE STANDARDS

A. American Water Works Association:

1. AWWA C652 - Disinfection of Water Storage Facilities.

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Disinfection Procedure:

1. Submit description of procedure, including type of disinfectant and calculations indicating quantities of disinfectants required to produce specified chlorine concentration.
2. Comply with Sections 3 and 4 of AWWA C652.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Certify that disinfectants meet or exceed AWWA C652 requirements.

E. Test and Evaluation Reports: Indicate results of bacteriological and residual chlorine laboratory test reports.

F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

G. Qualifications Statement:

1. Submit qualifications for applicator.

1.4 QUALITY ASSURANCE

A. Perform Work in compliance with AWWA C652.

B. Perform Work according to AWWA C652 standards.

C. Maintain copies of each standard affecting Work of this Section on Site.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Store disinfectants according to manufacturer's recommendations and in a cool, dry place away from combustibles such as wood, rags, oils, and greases.

D. Handle disinfectants according to manufacturer's safety precautions.

PART 2 - PRODUCTS

2.1 DISINFECTANTS

A. Chlorine Forms: According to AWWA C652, Section 4.

B. Furnish materials according to AWWA C652 standards.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for application examination.

B. Inspection:

1. Conduct inspection of tank interior before beginning disinfection.
2. Verify that tank is clean and free of polluting materials.
3. Verify that tank pipe and vent connections are properly made and clear of obstructions.
4. Verify that paint is thoroughly cured according to paint manufacturer's instructions.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for application preparation.

B. Furnish personnel working inside tank during disinfection with equipment to comply with Federal and State regulations for Work conducted in a hazardous atmosphere.

C. Protect aquatic life and vegetation from damage from disinfectant solution purged from tank.

3.3 APPLICATION

A. Use any one or combination of three methods for disinfecting tank in Section 4 of AWWA C652:

1. Chlorination Method 1.
2. Chlorination Method 2.
3. Chlorination Method 3.

B. Disposal:

1. Neutralize disinfectant solution before disposal.
2. Legally dispose of disinfection solution off Project Site.

C. Repair damage caused by disinfectant solution and disinfection procedures.

3.4 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Section 017000 - Execution and Closeout Requirements: Requirements for testing, adjusting, and balancing.

C. Sampling:

1. Collect samples of water from filled tank for bacteriological analysis according to Section 5 of AWWA C652.
2. Take inlet and outlet water samples.

D. Test water samples for bacterial contamination, and residual chlorine according to State Health Standards for potable water.

E. When water samples fail to meet State Health Standards for potable water, perform following corrective measures until water quality conforms to State Health Standards:

1. Inlet and Outlet Water Sample Failure: Eliminate source of contamination in water supply, repeat disinfection, and retest water quality.
2. Outlet Water Sample Failure: Repeat disinfection and retest water quality.

END OF SECTION 331313