

PART 1-GENERAL

SECTION INCLUDES

- A. Design, fabricate, and construct a demountable (invisible) flood control system.

1.2 REFERENCES

- A. U.S. Army Corps of Engineers Engineering Design Manuals.
- B. American Welding Society (AWS):
 - Structural Welding Code D1.1.
- C. American Society for Testing and Materials (ASTM)
- D. American Society of Civil Engineers (ASCE):
 - ASCE 7-1995 Minimum Design Loads for Buildings and Other Structures.

1.3 MEASUREMENT AND PAYMENT

- A. Measurement will be length along the centerline of the floodwall.
- B. Payment for removable floodwall, at the contract price per lineal foot, shall be compensation in full for all costs of furnishing, the removable floodwall including the floodway aluminum tubes, gaskets, vertical members, sill member, and anchors.
- C. The unit price on the bid form is the price per linear foot the Owner will pay for the invisible floodwall in place.

1.4 SYSTEM DESIGN REQUIREMENTS

- A. Design, fabricate, and construct a demountable flood control system to the extent shown, complying with the following design requirements.
 - 1 Hydrostatic Pressure: As determined by USACE Engineering Design Manuals.
 - 2. Seepage/Leakage; Minimal leakage (0.05 gph/square foot) when subjected to hydrostatic and hydrodynamic pressure determined above.
 - 3. Wind Loads : As determined by ASCE 7 Design loads.
 - 4. All joints will have gaskets.
- B. Demountable flood control system shall establish watertight infill at areas shown by means of a modular system requiring minimal labor force. After foundation, sidewalls, base plates, and other permanent features are installed, system shall be designed to permit complete installation of demountable components by hand labor, to the extent possible.
- C. System component modular design shall permit use of each similar component at every similar location (accept as specifically noted on drawings).

- D. Each section of demountable floodwall, closures barrier, and dike system shall be independent of adjacent sections, allowing erectors to install demountable system components either continuously or in sections.

1.5 SUBMITTALS

- A. Product Data: Submit manufacturer's complete catalog file, including material and component list.

- B. Samples: Samples of the following materials which the Contractor proposes for use shall be submitted to the Engineer for approval at least thirty (30) days prior to use:
 - 1 S.S.Coil Loop Anchor
 - 1 Coil Threaded Bolt
 - 1 S.S.“Headless” Coil Threaded Bolt
 - Sample of Aluminum Panel with installed gaskets
 - Sample EPDM with HAT Adhesive applied.

- C. Shop Drawings: Submit complete shop drawings demonstrating compliance of flood control system with Contract Documents. Drawings shall include shop and erection details, wall details, bulkheads, base, and end conditions, including system components.

- D. Operation and Maintenance Manual: Submit operation and maintenance manuals for flood control system.

1.6 QUALIFICATIONS

- A. The work shall be performed by a U.S. based manufacturer, specializing in the specified flood control system, having experience supplying and installing the specified system under similar conditions for a minimum of ten (10) years in the United States.

1.7 QUALITY CONTROL TEST

- A. Test Reports: Certified test reports may be submitted in lieu of performing project specific tests.

- B. The Contractor shall demonstrate installation procedure to interested parties upon completion.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Components shall be undamaged when delivered to site and shall be handled and stored so as to prevent damage, including attention to gaskets.

- B. Protect from exposure to damaging liquids, oils and greases.

1.9 WARRANTY

- A. Furnish the manufacturer's warranty for system and for component repair or replacement. The warranty shall be issued directly to the Owners. The warranty period shall be for one (1) year from the date of Owners acceptance of work.

1.10 SPARE PARTS

- A. Furnish spare gaskets for maintenance and replacement in the amount of ten percent of each type of gasket.

1.11 FABRICATION

- A. The metals used in fabrication shall be free from kinks, sharp bends and other conditions which would be detrimental to the finished product. Manufacturing processes shall be done neatly and accurately, make bends by control means to insure uniformity of size and shape. All manufacturing shall be done in the United States using only domestic materials.
- B. Vertical hold down clamps and all fabricated steel shall be galvanized.
- C. Anchor Assembly: Typical manufactured concrete anchor to include bolts for erection and “headless” bolts for protecting hole during period when wall is not in use.

1.12 MANUFACTURERS – Required:

- A. Compliance with Federal Contract & Labor Laws
- B. Federal Supplementary Conditions, [includes “BUY AMERICAN”]

Flood Control America, LLC. Invisible Flood Control Wall (IFCW™)

Contacts:

George Fryklund
29 Goodmans Hill Road
Sudbury, MA 01776
(978) 440-8902
Fax: (978) 440-8903

John Fryklund
P.O. Box 240217
Apple Valley, MN 55124
(952) 892-6292
Fax: (952) 892-7271

PART 2- PRODUCTS

MATERIALS

Beam Material: ASTM A-572.

Angle Brace: ASTM A-36

Plate and Bar: ASTM A-36

Sole Plate Material: ASTM A-569 Commercial quality Hot rolled 36 KSI minimum yield.

Bolts and Nuts: ASTM A-325

Anchor Bolts: Meadow-Burke (or equivalent) CB- 2, 1" Diameter x 6" length; "Headless" 6" long.

Anchors: Meadow - Burke (or equivalent) CX - 8, 1" diameter, stainless steel.

Steel Plate, Shapes, and Bars at Steel Support Components: ASTM A-36M (A36). Hot dip galvanize per ASTM A-123.

Fabricate galvanized steel support members with gasket for use with 3-M adhesive (HAT) for vertical gaskets.

Aluminum Extrusions: ASTM B-221M (B221). Alloy 6063-T6. Extrude aluminum tubes for demountable flood control system, with profiles for receiving and locking replaceable gaskets. Tube profiles shall establish nesting of tubes for vertical interlocking.

Gaskets: Each portion of extrusion shall be configured to form seal between:

1. Base gasket – 70 Durometer Pero. EPDM PRE-SET BULB
2. Standard gasket between planks - Closed Cell EPDM Custom Sponge Gasket
3. Vertical supports – Closed Cell EPDM Sponge Gasket with 1" 3M 4987 Heat Activated Tape Applied.

Gaskets shall be custom fabricated for flood control applications, easily replaceable in extrusions and at support channels, free from cracks, burns, warp, checks, chipped or blistered surfaces, and shall have a smooth surface.

EPDM gasket material meets "Typical Performance Characteristics" as defined in the following ASTM specification:

Compression/Deflection –D - 1056,

Compression Set – D- 395 (Method B),

Dimensional Stability – D- 1056 (Method D865),

Ozone Resistance – D - 1149,

Brittleness – D - 746,

Water Absorption – D – 1056

Flame Propagation – C – 509 (Option II)