SPECIAL SPECIFICATION

SECTION 14840S

JIB CRANE

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Furnishing and installing manually operated jib crane and accessories.

1.02 DESIGN REQUIREMENTS

A. Design and Deflection Requirements:

1. Live Load Rated capacity plus hoist/trolley weight.

2. Dead Load Component weights

3. Impact Factor 25 percent

4. Deflection L/450

B. Jib Crane designs shall be in conformance with CMAA-70.

1.03 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Jib Crane and accessories shall be delivered to the site painted, except as otherwise specified.

B. Jib Crane and accessories at the site shall be stored off the ground, in an enclosed area, and stored/handled in such a manner as to prevent soiling, corrosion, and/or damage.

1.04 SUBMITTALS

A. Provide the following:

1. Shop and installation drawings shall show all quantities, sizes, dimensions, components, fasteners, welds, connections, bearings, pivots, fittings, etc. for the fabrication and installation of the jib crane.

2. Product information showing compliance with these Specifications.

3. Inspection test reports concerning installation of jib crane and accessories.

4. Jib crane operations and maintenance manual.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Steel Shapes, Plates, and Bars: ASTM A 36

B. Standard Hex Head Bolts with Hex Nuts: ASTM A 307 Grade A.

C. High Strength Hex Head Bolts with Heavy Hex Nus: ASTM A 325.

D. Standard and Heavy Hex Nuts: ASTM A 563.

E. Plain Washers: ANSI B18.22.1 Type A-W.

F. Plain Hardened Washers: ASTM F 436.

G. Welding Filler Metal: AWS A5.1 or A5.5 E70XX for SMAW welding process, AWS A5.18 ER70S-X for GMAW welding process, AWS A5.17 or A5.23 F7X-EXXX for SAW welding process, and AWS A5.20 E7XT-X for FCAW welding process.

2.02 EQUIPMENT

A. Wall bracket type crane

1. 2,000 lbs. rating.

2. 180 degree rotation.

3. Structural steel I-beam boom.

4. Steel hinge fittings.

B. Hoist and Trolley

1. Manually operated chain hoist with manually operated trolley. Rated capacity 2,000 pounds.

2. Brake Mechanism: Automatic in operation, Weston type, or approved equal, having a factor of safety not less than 2 for the rated capacity .

3. Lift Hook: Forged, with safety type latch.

4. Provide chain bucket.

2.03 FABRICATION

A. Sheared and flame cut edges shall be true to line and free from rough corners and projections.

B. Re-entrant cuts/corners shall be filleted to a radius of not less than ½ inch.

C. Holes shall be punched, subpunched and reamed, or drilled in accordance with Section 1.23.4 of AISC "Specifications for Structural Steel." Holes shall not be made by flame cutting.

D. Holes shall be 1/16 inch larger than the nominal bolt diameter.

E. Bent plate shall be in accordance with AISC "Minimum Radius for Bending."

F. Welding shall be done in a sequence which minimizes distortion and shrinkage.

2.04 FINISHES

A. Jib crane, except bushings, bearings, pivot pins, and grease fittings shall be painted.

2.05 MARKING

A. Booms shall have load capacity signs of 2,000 pounds both sides.

PART 3 - EXECUTION

3.01 PREPARATION

A. At the time of installation, all provisions for support and stabilization of the jib crane shall be complete.

3.02 INSTALLATION

A. Jib crane shall be located so as to conform accurately with the Drawings within the allowable tolerances and installed in accordance with the manufacturer's written instructions and specifications:

1. Boom Level: L/300

B. Connections shall be to concrete column as shown on the Drawings and in accordance with manufacturer's requirements.

3.03 FIELD QUALITY CONTROL

A. Jib crane shall be inspected after installation.

B. Load Test: Conduct load tests for hoists. Sandia will provide test weights and be present.

1. Raise a load equal to about 50% of the rated load to no higher than to clear its support and stop. Adjust brakes if necessary. Raise load about 3 feet above its support and stop. Lower load about 12 inches and stop. Check drift of load during stopping. Run load block to lowest position with load to remove construction stretch from ropes.

2. Set the overload protection system to 125% of the design capacity. Follow the same procedures as described above in a. above, except with 125% of rated load.

3.04 ADJUSTING

A. After-installation, the Contractor shall adjust all components and fittings as required for proper functioning.

B. After installation, the Contractor shall check and adjust all lubrication as required for proper functioning.

3.05 REPAIR AND CLEANING

A. Abraded and scarred areas on painted surfaces, including bolt heads and nuts, shall be repaired with all repairs equal to the original finish and not visible.

B. At time of final cleanup, all exposed surfaces shall be cleaned.

3.06 DEMONSTRATIONS

A. After installation, the jib crane supplier shall demonstrate operation of the crane to Sandia's operators.

B. After installation, the jib crane supplier shall review operating and maintenance manuals with Sandia's operators and maintenance personnel.

END OF SECTION