PART 1 - GENERAL

1.1 RELATED DOCUMENTS

.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to the Work of this Section.

1.2 SUMMARY

.1 This Section describes the requirements for providing electric security gates as shown on the Drawings and as specified.

.2 Provide complete operating gate assemblies including operable gate sections, fixed sections, guides, hardware, operators, and installation accessories.

.3 Concrete or grout work is specified in Division 3.

.4 Electrical connections, including disconnects, conduit, wire, junction boxes, and field wiring of high or low voltage systems for powered operators and accessories are specified in Division 26.

1.3 SUBMITTALS

.1 General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

.2 Product Data: Submit manufacturer's product data, roughing-in diagrams, and installation instructions for each type and size of security gate. Provide operating instructions, maintenance information, and electrical rough-in instructions.

.3 Shop Drawing: Show construction details; clearance requirements, metal gauges, finish, electrical requirements, design data, and interface requirements for work of other sections of this specification.

1.3 SUBMITTALS (Cont'd)

.4 Submit written certifications and calculations that verify the door assembly's ability to support its own weight and the specified loads.

.5 Door Manufacturer shall submit a reference list including names and telephone numbers of two (2) successful installations of this type within the past two (2) years.

1.4 QUALITY ASSURANCE

.1 Furnish each security gate (barrier) as a complete unit produced by one manufacturer, including hardware, operator, accessories, mounting and installation components.

.2 Door manufacturer shall have at least 10 years experience in manufacturing doors of the type specified.

.3 Single Source: Furnish all security gates and operating units, inclusive of control panels, from one manufacturer for the entire project.

.4 Inserts and anchorages: Furnish setting drawings, templates, instructions, and directions for installation of anchoring devices. Coordinate delivery with work in other divisions to avoid delays.

.5 See concrete and masonry sections of these specifications for installation of inserts and anchorage devices.

PART 2 - PRODUCTS

2.1 MANUFACTURER

.1 Project design is based on materials and systems of: Folger Adam: D Corridor Door Operator and the steel gate (barriers) shown on the drawings.

.2 Similar materials and systems of other manufacturers will be considered for substitution, providing that all items meet specified requirements.

2.2 MATERIALS AND FABRICATION

.1 General: Comply with the following standards for forms and type of materials for required items of work.
.1 Steel Tubing, Electric Welded: ASTM A513
.2 Steel Tubing, Structural Welded: ASTM A500 Grade B
.3 Structural Shapes and plates: ASTM A36
.4 Castings, Cast Iron: ASTM A48
.5 The use of cold formed shapes for structural members or stiffeners fabricated from sheets or strips of any material will not be allowed.

.2 Design Criteria: Gates shall be designed with sufficient structural stiffness and strength. Calculations shall be submitted to prove the adequacy of the door structure based on the formulas and methods contained in the AISC Manual of Steel Construction Allowable Stress Design (Ninth Edition). The calculations shall confirm the structural qualities of the gates using the following design parameters:
.1 There shall be minimal deflection at the mid-span distance of the main structural members of the gates (both vertical and horizontal shall be less than the full spanning dimension divided by [600(L/600)]. Allowable deflections must be verified for both vertical and horizontal structural members.
.2 Flexural stress at the extreme fiber (f) of the main structural members (both vertical and horizontal) shall be less than [27,000] psi.
.3 Uniformly distributed load per unit length (w) shall be calculated from the values Pnet and the appropriate contributory area on the door panel.

.3 Gate construction: Custom metal fabrications as indicated.
.1 Gates to have both horizontal and vertical structural framing, and shall be constructed of standard structural steel, square steel tubing, or rectangular steel tubing sections of ample size and strength for loads and stresses imposed under the specified conditions. Minimum steel tube thickness of the framing members is noted on drawings.

2.2 MATERIALS AND FABRICATION (Cont'd)

.3 (Cont'd)

.2 Gates/barriers shall be of welded construction and all joints shall be ground smooth wherever exposed and/or where sheeting overlaps the framing members.

.3 Frame members shall be true to dimension and square in all directions.

.4 Gates/barriers shall not be bowed, warped, or out of line by more than 3mm over 6100mm.

.5 Exposed welds and welds which interfere with the installation of various parts shall be ground smooth.

.6 Gates, steel connection components, guides, and housing is to be hot-dipped galvanized.

.7 Operator housing is to be heat traced.

2.3 HARDWARE

.1 Provide hardware necessary for a complete installation. Hardware shall be heavy duty type, including all bolts and fittings for the hardware as follows:

.1 Hanger, guide and guide angles to be 6mm thick steel.

.2 Guide Roller Assemblies:

.1 Gates shall have a minimum of two anti-friction bearing guide rollers. The guide rollers shall be of sufficient size to transmit the wind-load from the door panel to the steel door guides.

.3 All components must be new and of high quality. Manufacturer to document evidence of testing to over 500,000 operations.

.4 Turn door rollers from solid 3-3/4" (95mm)diameter steel with 3/8" (9.5mm) deep groove to engage with 1/2" (13mm) solid cold drawn track. Provide anti-friction sealed ballbearings with ardened races and grease shields. Attach with high alloy treated steroller studs. Provide eccentric bushing adjustment to level the doors.

.5 Provide a mechanical clutch and release system produced by a nationally recognized manufacturer, to disengage motor for emergency operation.

2.3 HARDWARE (Cont'd)

.2 Operating Unit: Chain Drive Corridor Gate with Hand Crank Release

.1 Provide each corridor door (gate) operator with a complete system of remote electric locking, unlocking, and motorized movement of the door. Provide a front column at the door for mechanical hand crank release. Each door operator shall include housing and cover, motor-reducer, mechanical clutch assembly, vertical column with concealed 2-point rear locking, hanger, door rollers, track, terminal blocks, limit switches, hand crank assembly, front column, and incidental parts for a complete locking system. Gates shall be electrically operated. The operator shall be mounted above the door head and furnished complete.

.2 Roller chain type size #41 roller chain.

.3 Motor 208 VAC, 60 hz, 1/4 hp.

.4 Hangar and guides to be 1/4" thick steel.

.5 Rollers to be anti-friction ball bearing type hardened members and grease shield.

.6 Roller studs to be high alloy steel with self-locking nut.

.7 Steel housing covers to be thickness shown on drawings. Secure covers to housing with Torx tamper resistant screws. Baffle all openings leaving no more than 6mm clearance. Housing covers to be hot-dipped galvanized.

.8 Minimum standard of quality to be Type D operators by Folger Adam.

.9 The motor must be instantly reversible. The motor control circuit shall incorporate a manual reset overload relay with a positively adjustable rotary type limit switch, using three individual limit switches. Provide an easy emergency disconnect system so door can be manually operated in case of power failure.

2.3 HARDWARE (Cont'd)

.10 Electric Motors: Motors shall be high-starting torque type, of sufficient horsepower and torque output to move door in either direction from any position and produce an average door travel speed of not less than two-thirds, nor more than one foot per second, without exceeding the rated capacity. Motors shall conform to NEMA standards, have class B insulation, service factor of 1.0, and shall be suitable for operation on [460V, 3 phase, 60 hz].

2.4 CORRIDOR GATE FUNCTIONS

.1 Unlock, open and lock open or close gate in not more than ten seconds.

.2 Stop and reverse the movement of any door.

.3 When moving in either direction, and at any point in travel, the force is 133 N. This indicates that the grille gate could be stopped when in motion and forced in the opposite direction. The gate is to stop, and not reverse, in the event that there is a force against the gate in the opposite direction of travel.

.4 Normal force exerted by a door in travel is 55 lbs. This pressure must be adjustable to suit door size and weight.

.5 Lock doors at the top and bottom in the open and closed positions. Locking points to be concealed within the rear vertical lock column. Front locking is not acceptable.

.6 Motors shall be sized specifically for corridor doors, and a minimum of 1/6 horse power. Operators that use cell door sized motors, are not acceptable.

.7 Design mechanism to carry a maximum door weight of from 500 to 1000 pounds.

2.4 CORRIDOR GATE FUNCTIONS (Cont'd)

.8 Provide each operator with a front door receiver and release column. Locate a paracentric prison deadlock waist high in the column for access to the emergency release. Locate mechanical clutch release handle inside column. Provide a tool to manually unlock and crank each door open and closed. Operator shall lock when manually cranked to the open or closed positions.

2.5 SHOP FINISHING

.1 General: Hot dip galvanize of gate assembly including gates, supports and closure pieces.

PART 3 - EXECUTION

3.1 INSPECTION

.1 Verify that conditions are satisfactory for installation of gates/barriers.

.2 Do not proceed with the Work of this Section until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

.1 The installation of gates shall be a factory trained and certified door company of the gate manufacturer or supervised by an authorized representative of the manufacturer.

.2 Install gates and operating equipment complete with necessary hardware, anchors, hangers, and equipment supports in accordance with final shop drawings, manufacturer's instructions, and as specified herein.

.3 Upon completion of installation including work by other trades, lubricate, test and adjust doors to operate easily, free from warp, twist, or distortion.

.4 Commission gate per requirements in Section 01 91 13.

END OF SECTION