SECTION 08 33 23

OVERHEAD COILING DOORS

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes requirements for furnishing and installing the following:

1. Fire-rated overhead coiling doors at below grade levels of Parking Structure and as required by Code and Program requirements.

B. Related Sections:

1. Metal fabrications are specified in Section 05 50 00.

2. Access doors and frames are specified in Section 08 31 13.

3. Overhead coiling grilles are specified in Section 08 33 26.

1.02 SUBMITTALS

A. Product Data: Manufacturer's descriptive and technical data and illustrations. Include information describing fire-release system, including electrical rough-in instructions.

B. Shop Drawings: Show layouts, elevations, relationship to adjacent work, and anchorage details.

C. Operating and Maintenance Instructions: Complete data for maintenance and operation.

D. Warranty.

1.03 QUALITY ASSURANCE

A. Manufacturer: Regularly providing assemblies of the type required for not less than 5-years, capable of maintaining, repairing, and servicing the Project location within reasonable time when service is called for by the County, and shall retain responsibility for installation of doors.

B. Fire-Rated Assemblies: Provide doors with fire resistance rating required to comply with governing regulations, inspected, tested, listed and labeled by UL, complying with CBC for class of opening. Provide UL label permanently fastened to each fire door assembly.

C. Door finish shall be free of corrosion when the material is subjected to salt spray resistance test ASTM B117 for 1,000-hours.

1.04 WARRANTY

A. Warrant overhead coiling doors to be free from defects in materials and workmanship for a period of 2-years from Date of Substantial Completion. This warranty shall be in addition to and not a limitation of other rights the County may have against the Developer Design/Builder under the Contract Documents.

PART 2 - PRODUCTS

2.01 FIRE-RATED OVERHEAD COILING DOORS

A. Approved Manufacturers: The Cookson Co. Type FDO-A or equal by Cornell Iron Works, Inc., Overhead Door, Pacific Rolling Door or equal.

B. Doors shall carry a UL label. Provide fire locks on doors where recommended by the manufacturer to positively hold the curtain in the guides

C. The door curtain shall be constructed of flat face interconnected strip steel slats conforming to ASTM A653. Slat gauge as recommended by the door manufacturer for door sizes.

D. The finish on the door curtain shall consist of the following:

1. Hot dipped galvanized G90 coating consistent with ASTM A653.

2. Bonderized coating for finish adhesion.

3. Factory-applied thermosetting powder coating applied with a minimum thickness of 2-mils. Custom color to match color sample furnished by the County' s Representative.

E. The bottom bar shall consist of two 1/8-inch thick steel angles mechanically joined together and shall include with manufacturer' s safety edge system. Finish shall match the door curtain.

F. The guides shall consist of 3 steel angles bolted together with 3/8-inch fasteners to form a channel for the curtain to travel. The wall angle portion shall be continuous and fastened to the surrounding structure with minimum 1/2-inch fasteners. Finish shall match the door curtain.

G. The brackets shall be constructed of steel not less than 1/4-inch thick and shall be bolted to the wall angle with minimum 1/2-inch fasteners. Finish shall match the door curtain.

H. The barrel shall be steel tubing of not less than 4-inches in diameter. Oil tempered torsion springs shall be capable of counter balancing the weight of the curtain. The barrel shall be designed to limit the maximum deflection to .03-inch per foot of opening width. The springs shall be adjusted by means of an exterior wheel. Finish shall be one coat of rust-inhibiting primer.

I. The hood shall be fabricated from 24-gauge galvanized steel and shall be formed to fit the brackets. Finish shall match the door curtain.

J. Operation:

1. Fire doors shall have motor operator which shall become operational upon the activation of a fire alarm or smoke detection system or interruption of power to the motor operator. The door shall have a closing speed of not less than 6-inches per second and not more than 24-inches per second as outlined in NFPA Bulletin 80. Once the door has closed, it can be reset by resuming power to the motor operator, clearing the alarm system and pushing the up control station. Mechanical resetting shall never be required.

2. The door shall be operated at a speed of 2/3-foot per second by an open drip-proof electric motor with gear reducer in oil bath. The motor operator shall include a geared limit switch. The motor starter shall be housed in a NEMA 1 housing and include a 24-volt control transformer, a solid state control circuit board, and complete terminal strip to facilitate field wiring. The motor operator shall be activated by a 3 button push-button station in a NEMA 1 enclosure. The motor shall be size as required by the door, voltage as selected by the County' s Representative. The motor operator shall be mounted to the door bracket. Motor operators and controls shall be U.L. listed for use with fire doors.

3. The fire door shall include the safety edge system with the following features.

a. The safety edge system shall be installed on the bottom bar of the door and shall automatically reverse the door if the device detects an obstruction in the downward travel of the door.

b. The safety edge system shall consist of a rubber boot attached below the bottom bar with an electrical switch secured to the back of the bottom bar. The safety edge system shall operate with air wave technology and shall not rely on pneumatic pressure or electrical strip contacts to operate properly. The safety edge system shall create an air wave that shall be detected and reverse the direction of the rolling door.

c. The operation of the safety edge system shall not be subject to interferences by temperature, barometric pressure, water infiltration, or cuts in the rubber boot.

d. The safety edge system shall be connected to the motor operator with a coil cord.

4. Fire doors shall be motor controlled. The motor operator shall allow for the testing of fire doors without mechanically resetting the release mechanism. The motor and controls shall be U.L. approved for use with fire doors. The control panel shall be wired directly into the building' s fire alarm or smoke detector system.

   a. Upon activation of the alarm system, the motor operator shall power close the door. If there is an obstruction in the opening, the door shall automatically open and close again. The safety edge system shall continue to cycle the door up and down until the obstruction is removed and the door can fully close or the door has cycled 3 times, in which case the door shall stop on the obstruction. If at any time the obstruction is removed, with the continuation of the alarm signal, the door will continue to a fully closed position. To reset the door, push the up control station. The door shall return to the fully open position.

   b. If power to the motor operator is interrupted, the automatic closing device shall close the door. The motor operator shall not be mechanically disconnected from the door.

   c. To reset the fire door, resume power to the motor operator, clear the alarm system and push the up control station. The fire door shall never need to be mechanically reset and testing can be performed by any individual by activating the alarm system or by interrupting power to the motor operator.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install door and operating equipment with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports in accordance with manufacturer's instructions and as specified.

B. Install fire-rated and smoke control doors in accordance with NFPA Bulletin 80.

C. Upon completion, lubricate, test and adjust doors to operate easily, free from warp, twist or distortion, and fitting weathertight.

D. Exposed surfaces shall be clean and free from scratches, dents, tool marks, stains, discoloration, and other defects and damage.

E. Train County' s maintenance personnel on procedures and schedules related to door operation, servicing, preventative maintenance, and procedures for resetting closing devices after activation.

F. Test fire door closing sequence when activated by the building' s fire alarm system. Re-set door after successful test.

END OF SECTION