

SECTION 14245

HYDRAULIC ELEVATORS

1 PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract including General and Supplementary Conditions and Division 1 sections, apply to work of this section.

1.2 SECTION INCLUDES

- A. Passenger elevator systems.
- B. Motor and pump, controllers, equipment and fitments.

1.3 SYSTEM DESCRIPTION

- A. Hydraulic Elevator Systems: One unit; buried cylinder and casing, with motor and pump adjacent approximately 15 feet distant from the hoistway.
- B. Characteristics of each elevator are as follows:
 - 1. Rated Net Capacity: 2500 lbs.
 - 2. Rated Speed: 150 ft/min.
 - 3. Nominal Platform Size: 84x62 inches.
 - 4. Clear Net Platform Size: 80x52 inches.
 - 5. Cab Ceiling Height: 90 inches.
 - 6. Hoistway and Cab Entrance Frame Opening Sizes: 42x84 inches.
 - 7. Door Type: Single leaf.
 - 8. Door Operation: Side opening.
 - 9. Number of Stops: 3
 - 10. Number of Openings: 3
- C. Controls System: Conform to the following criteria:
 - 1. Single Car Automatic Collective Operation elevator control system.
- D. Special Operational Features:
 - 1. Key operated Fire Department Service
 - 2. Interconnect with building fire and smoke alarm system, with automatic recall to first floor.
 - 3. Door Edge Protective Device: Infrared multi-beam door reversal device.
 - 4. Emergency Telephone: Single push button operation with automatic dialer.
 - 5. Seismic Design: In accordance with applicable BOCA code.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate the following minimum information on shop drawings:

1. Motor and hydraulic pump, valves, and other component locations.
2. Car, supporting beams, guide rails, and other components in hoistway.
3. Loads on hoisting beams.
4. Applicable seismic design data; certified by a Registered Professional Structural Engineer.
5. Elevator control functions and operational description.

B. Product Data: Provide data on the following items:

1. Signal and operating fixtures, operating panels, indicators.
2. Cab design, dimensions, layout, and components.
3. Cab and hoistway door and frame details.

C. Schematic: Provide legible schematic of hydraulic piping and electric wiring diagrams describing installed equipment. Provide one copy of master schematic, mounted in plastic glazed metal frame, mounted on machine room wall.

D. Samples: Submit two samples, illustrating cab floor material, cab interior finishes, cab and hoistway door and frame finishes.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the following:

1. ASME A17.1 - Safety Code for Elevators and Escalators.
2. UL 10B - Fire Tests of Door Assemblies.
3. Americans with Disabilities Act (ADA).

1.6 MAINTENANCE

A. Include description of elevator system's method of operation, control description, motor control system, cab and hoistway door operation, visual and audio signals, fire fighter's service, and specified non-standard features.

B. Include a parts catalog with complete list of equipment replacement parts.

C. Include legible schematic wiring diagrams of installed electrical equipment.

D. Provide one copy of master hydraulic and electrical schematic and one copy of lubrication chart, each framed with clear plastic glass; mount on machine room wall.

2 PART 2 PRODUCTS

2.1 ELEVATOR SYSTEM AND COMPONENTS

A. Manufacturers:

1. Canton Elevator
2. Dover Elevator
3. Otis Elevator

- B. Structural Components, Cylinder and Casing: Required to construct elevator system and conform to code.
- C. Casing Jacket: PVC.
- D. Sheet Steel: ASTM A366/A366M Class 1 .
- E. Stainless Steel: ASTM A167 Type 304 #4 finish.
- F. Aluminum: ASTM B221 ASTM B221M, extruded.
- G. Plastic Laminate: General Purpose type, fire retardant finish, matte surface finish, color/pattern as selected.
- H. Motors, Pumps, Valves, Regulators, Fluid Tank, Hydraulic Fluid, Controller, Controls, Buttons, Wiring and Devices, Indicators: UL approved.
- I. Spring Buffers, Attachment Brackets and Anchors: Purpose designed, sized according to code with safety factors.
- J. Guides: T-shaped steel cab guide rails with 4" roller guides.
- K. Pump Housing: Sheet steel, acoustically insulated, removable.

2.2 ELECTRICAL CHARACTERISTICS AND COMPONENTS

- A. Electrical Characteristics:
 - 1. 208 volts, three phase, 60 Hz.
 - 2. Starter Characteristics: Reduced voltage.
- B. Motor: NEMA MG1.
- C. Disconnect Switch: Factory mount disconnect switch in control panel.
- D. Products Requiring Electrical Connection: Listed and classified by Underwriters' Laboratories, Inc., testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.

2.3 CAB FABRICATION

- A. Flooring: Carpet, of type specified in Section 09680
- B. Walls: Plastic laminate on plywood
- C. Front Return Panel: Stainless steel.
- D. Base: Resilient vinyl cove , of type specified in Section 09650
- E. Ceiling: Plastic eggcrate diffuser
- F. Light Fixtures: Fluorescent,

- G. Ventilation: Fan , grille above ceiling;
- H. Control Panel and Face Plate: Stainless steel with illuminating call buttons.
- I. Indicator Panel: above control panel with illuminating position indicators.
- J. Hand Rail: Stainless steel flat bar stock, spaced from wall; placed at rear wall and side walls.
- K. Pad Hooks: Stainless steel button type.
- L. Protective Pads: One set sets, canvas cover, padded, brass grommets.

2.4 CAB ENTRANCES

- A. Cab Doors: Painted steel of hollow panel construction, flush design, rolled profiles, rigid construction.
- B. Cab Door Frames: Stainless steel, welded corner design with smooth invisible joints.
- C. Thresholds: Extruded aluminum type.

2.5 HOISTWAY ENTRANCES

- A. Hoistway Doors: Painted steel hollow sandwich panel construction, flush design, rolled profiles, rigid construction.
- B. Hoistway Door Frames: Stainless steel of rolled profiles, knocked down design.
- C. Door and Frame Construction: 1-1/2 hour fire rating.
- D. Weatherstrip hoistway doors and frames to minimize audible noise.
- E. Sills: Extruded aluminum . . .
- F. Landing Buttons: Illuminating type, one for originating UP and one for originating DOWN calls, one button only at terminating landings; marked with arrows
- G. Car Position Indicator: Illuminating, one per elevator per floor.
- H. Car Direction Indicators: Illuminating, one per elevator per floor.

2.6 FINISHES

- A. Baked Enamel on Steel: Clean and degrease metal surface; apply one coat of primer sprayed and baked; two coats of enamel sprayed and baked; color as selected.
- B. Stainless Steel: #4 Satin Polished.
- C. Aluminum: Clear anodized finish.

3 PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Verify that hoistway, pit and machine room are ready for work of this Section.
- B. Verify shaft and openings are of correct size and within tolerances.
- C. Verify that electrical power is available and of the correct characteristics.

3.2 EXCAVATION AND BACKFILLING FOR CASING

- A. Excavation and Backfilling: Refer to Section 02200
- B. Place plunger casing full depth of shaft. Align within 1/4 inch from plumb. Cut top of casing at hoistway pit slab elevation.
- C. Backfill around plunger and hydraulic lines between plunger and remote machine room casing with structural type fill; placed in 24 inch lifts compacted to 95%

3.3 INSTALLATION

- A. Install in accordance with ASME A17.1.
- B. Install system components and connect to building utilities.
- C. Accommodate equipment in space indicated.
- D. Install elevator hydraulic equipment on vibration isolation pads.
- E. Coordinate installation of hoistway wall construction.
- F. Grout sills in place. Set entrances in vertical alignment with car openings and aligned with plumb hoistway lines.
- G. Adjust for smooth acceleration and deceleration of car so not to cause passenger discomfort.
- H. Adjust automatic floor leveling feature at each floor to achieve 1/4 inch from flush.

3.4 TESTS BY REGULATORY AGENCIES

- A. Obtain required permits to perform tests. Perform tests required by regulatory agencies.
- B. Schedule tests with agencies and Architect/Engineer, Owner, and Contractor present.

...END OF SECTION