

SECTION 14200

HYDRAULIC PASSENGER ELEVATOR

PART 1 GENERAL

1.01 SUMMARY

A. Related Sections:

1. 05500 - Metal Fabrications.
2. Division 15 - Mechanical.
3. 16721 - Fire Alarm Detection System
4. Division 16 - Electrical.

1.02 QUALITY ASSURANCE

A. Furnish components and accessories by one manufacturer.

B. Components, accessories, fabricated parts, and structural requirements shall comply with:

1. Florida Department of Education, Office of Educational Facilities - State Requirements for Educational Facilities - 1999 (SREF).
2. Americans with Disabilities Act and Accessibility Guidelines (ADA).
3. Florida Department of Community Affairs - Florida Accessibility Code for Building Construction (DCA).
4. Bureau of Elevators of the Department of Business Regulation as per Chapter 399 of the Florida Statutes.
5. National Electrical Code -1999 (NEC).
6. ANSI A117.1-1995 Buildings and Facilities-Providing Accessibility and Usability for Physically Handicapped People.
7. ANSI/ASME 17.1-1990, Elevators and Escalators.
8. Occupational Safety and Health Act (OSHA).
9. Recall and fireman's service requirements.

C. Any equipment, device, system component, or part provided or installed containing or using date processing shall be Year 2000 (Y2K) compliant. Before substantial completion, provide a manufacturer's statement of Year 2000 compliance and manufacturer's and contractor's warranty against date-related failures.

1.03 DEFINITIONS

A. Hydraulic Passenger Elevator: Includes passenger elevator, as defined by code, to be a car hoisted either directly or

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indirectly by action of a hydraulic plunger and cylinder, either with or without counterweights.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's product data for each elevator or group of elevators.
- B. Shop Drawings: Show floor plan and section of each elevator shaft. Provide information not covered in the Product Data. Shop Drawings shall include:
 - 1. Interior elevations showing location of vandal resistant speaker phone, lockout key switches, vandal resistant operating and signal switches, interior finishes, and other pertinent information.
- C. Submit samples of primary exposed finish materials.
- D. Permits and Manuals: Furnish certificates or operating permits to the Board as required by governing authorities. Furnish bound copies of maintenance instructions, emergency information, spare parts list, and similar information.

1.05 QUALITY ASSURANCE

- A. Pre-Installation Conference: Discuss and coordinate mechanical rooms, elevator hoistways, sump pits, and other items having an impact on the installation of the elevator, and inspection requirements to receive an elevator permit from Miami-Dade County Elevator Inspectors.

NOTE TO SPECIFIER: Include the following paragraph at projects with either elevator ADA upgrades, a replacement fire alarm system, or an upgraded fire alarm system. A simple expansion of the system or adding devices or zones will not require recall and fire service compliance modifications.

- B. Provide or upgrade, as required, elevator controllers, necessary equipment, and connections to comply with recall and fire service requirements.

1.06 SEQUENCING AND SCHEDULING

- A. Coordinate with M-DCPS Office of Information Technology (OIT) for OIT connection requirements as noted in Part 3 of this section.

1.07 WARRANTY

- A. Provide special project warranty, signed by Contractor, Installer, and Manufacturer, agreeing to replace, repair, or restore defective materials and installation of elevator work during warranty period.
- B. Defective is defined to include, but not limited to, operation or control system failures, performances below required minimums, excessive wear, unusual deterioration or aging of materials or finishes, unsafe conditions, need for excessive maintenance, abnormal noise or vibration, and similar unusual, unexpected, and unsatisfactory conditions.
- C. Warranty Period: 12 months starting on date of substantial completion.
- D. Provide coincidental product warranties where available for major components of elevator work.
 - 1. Submit with maintenance manuals.

1.08 MAINTENANCE

- A. Maintenance Service:
 - 1. Provide full maintenance service by skilled, competent employees of the elevator installer for 12 months following date of substantial completion.
 - 2. Include monthly preventive maintenance, performed during normal working hours.
 - 3. Include repair or replacement of worn or defective parts or components and lubrication, cleaning, and adjusting as required for proper elevator operation according to specified requirements.
 - 4. Include 24 hours a day, 7 days a week emergency callback service.
 - 5. Exclude only repair or replacement due to misuse, abuse, accidents, or neglect caused by persons other than installer's personnel.
- B. Instruct the Board's personnel in proper operation and maintenance of elevators.
 - 1. Submit an authorized manufacturer's representative signed letter acknowledging one of the following:
 - a. Manufacturer's intent to supply M-DCPS authorized maintenance contractor with special tools, instruction, computer programs, and any other items necessary to service and maintain the elevator.

- b. Service or maintenance of the elevator does not require special tools, computer programs, or any other special items.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hydraulic Passenger Elevators:

- 1. Dover Corporation.
- 2. Esco Elevators, Inc.
- 3. Montgomery KONE.
- 4. Mowrey Elevator Co., Inc.
- 5. Otis Elevator Company.
- 6. Schindler Elevator Co.

B. Vandal Resistant Speaker Phone:

- 1. Communication Equipment and Engineering Co., Plantation, FL.
- 2. Kings III of America, Carrollton, TX.
- 3. K-Tech International, Inc., Torrington, CT.
- 4. Lincoln Land Enterprises, Inc., East Peoria, IL.
- 5. Talk-A-Phone, Inc., Chicago, IL.
- 6. Quality Elevator Products, Inc.
- 7. Rath Microtech, Sussex, WA.

C. Outside Alarm Bell and Sign: Faraday model 3416WB or accepted equivalent.

2.02 EQUIPMENT

A. Type and Quantity: Passenger plunger electric type.

B. Machine and Location: Hydraulic plunger electric with muffler located on ____ floor, remote from hoistway.

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NOTE TO SPECIFIER: Select either a 2100 pound capacity hydraulic elevator with a 3'-0" wide opening center door for locations of 2 stories and with a travel distance of less than 25 feet or a 2500 pound capacity hydraulic elevator with a 3'-6" wide opening side door for locations exceeding 2 stories or with 25 feet or more of travel. If both conditions exist, then specify each and note the location of each elevator and its respective load requirements. Provide speed of at least 125 fpm at 2 story buildings and 125 to 150 fpm at 3 or more stories. Elevators in schools are restricted to the disabled, furniture and equipment transport, and custodial use only, and not for general use. Determine elevator speed, size, and other requirements by an elevator manufacturer's traffic analysis at elevators for general use at schools or other types of facilities.

- C. Load and Speed: (2100)(2500) pounds at speed of _____ fpm.
- D. Travel: From first to ____ floor, approximately ____ feet.
- E. Stops and Openings: ____ stops, ____ openings.
- F. Control: Alternating current with reduced voltage starting.
- G. Operation: Single button collective.
- H. Self Leveling: Automatic 2 way self leveling with anti-creep control.
- I. Door Operator: Direct current adjustable speed arranged to automatically open and close both car and hoistway doors, with retractable safety shoe.
- J. Guide Rail Location: Manufacturer's standard.
- K. Car Guides: Manufacturer's standard.
- L. Passenger Car Enclosure: Dover DLP 1, 14 gage steel car or approved equivalent, with plastic laminate finish, stainless steel entrance columns and front return, and fan and light fixture above solid acrylic ceiling installed with vandal resistant fasteners. Colors as selected by A/E.
- M. Minimum Size of Passenger Car Interior:
 - 1. 2100 pound elevator: 68 inches wide by 51 inches deep.
 - 2. 2500 pound elevator: 80 inches wide by 51 inches deep.
- N. Hoistway Entrance: Furnish (two single slide type 3'-0" wide)(two biparting type 3'6") x 7'-0" high with 24 gage standard frames and B-label door panels.
- O. Door Panels and Jambs of Hoistway Entrances: 16 gage stainless steel, #4 brush finished.
- P. Elevator Controls: Vandal resistant push button controls located and identified by accessibility requirements.
- Q. Hall Station:
 - 1. Spring barrel/tubular type key switch in corridor at each floor at elevators for restricted use.

- a. Model 4073 by Chicago Lock Company.
 - b. Keys: 50 spring barrel/tubular type keys, keyed alike to key code #7022.
 - c. Coordinate delivery and pickup of keys with M-DCPS Central Lock Department.
2. Push button switches in corridor at each floor at elevators for general use at schools or other types of facilities.
- R. Well: Drill well for cylinder, wrap cylinder with approved material and include casing.
- S. Power Supply:
- 1. 480 Volt/3 Phase/3 Wire/Wye.
 - 2. Connect to building emergency generator power system only to perform the protective circuit requirements.
- T. Protective Circuit: Upon relay or valve failure, automatically return car to bottom landing, allow door to open from inside car, then shut down until service is restored by recycling main line switch. (Type zero automatic lowering).
- U. Service Lights: Top of car with service switch.
- V. Inspection Operations Control Unit: Permanently mounted on top of car.
- W. DMC Boards: Locate within cab or within weatherproof enclosures if mounted on top of cab and with exterior corridor/lobby elevator access.
- X. Emergency Lights In Car: Connect ceiling light fixture to building emergency lighting system.
- Y. Outside Alarm Bell and Sign: Provide 6 inch radius elevator alarm bell with weatherproof mounting, 120V/AC with "Elevator Emergency" sign according to applicable codes.

NOTE TO SPECIFIER: The vandal resistant speaker phone is mandatory. Do not delete.

- Z. Vandal Resistant Speaker Phone:
- 1. Equip with a vandal resistant speakerphone/automatic dialer activated via push button.
 - 2. Connect Speaker Phone to the security system (Smart

- Dial) for a direct voice-to-voice contact to M-DCPS District Communication Management Center (DCOM).
3. Provide grade II braille labels to read "EMERGENCY PHONE" and "PUSH TO TALK - AUTOMATIC SHUTOFF".
 4. Speaker phones shall be line powered, no external power source needed.

NOTE TO SPECIFIER: The following paragraph is required for elementary schools only.

5. Program a "9" in the dialer before the 7 digit emergency contact number.

PART 3 EXECUTION

3.01 PREPARATION

- A. Insure the following items are complete before starting elevator installation by elevator installer.
 1. Pits:
 - a. Waterproof, designed to provide a dry pit area.
 - b. Floor, approximately level.
 - c. Provide metal ladder on each elevator pit for pit deeper than 36 inches.
 - d. Provide 2 moisture proof light fixtures and a grounded duplex receptacle adjacent to elevator pit stop switch with 2 adjacent elevators having 3 light fixtures.
 - e. PVC or plastic pipe is not allowed in pit.
 2. Sump Provisions:
 - a. Set sump pump into sump and cover entire sump area with metal cover.
 - b. Do not use sump pump or sump hole to meet requirements of dry pit area.
 - c. See Section 15450 for sump pump.
 3. Hoistway:
 - a. Provide positive venting of smoke and hot gases to outside for hoistways serving more than 3 floors.
 - b. Locate 3 square feet minimum vents in side of hoistway for each elevator car.
 - c. Provide enclosures with flush surfaces with beams, floor slabs, or other building construction having

- projections not exceeding 2 inches inside general line of hoistway unless top of projection is beveled at minimum 75 degree angle to horizontal.
- d. Bevel setbacks at minimum 75 degree angle to horizontal.
- e. Grout door entrance frames, headers, and sills solid for fire rating.
- f. Grout and point up voids, holes, slots, and other openings in hoistway to maintain fire ratings. Remove nails, snap ties, form straps, and wood.
- g. Fire Ratings: 2 hours for floor penetrations, 1-1/2 hours for entrances.

4. Elevator Equipment Room:

- a. Plumbing pipes inside the elevator equipment room are not allowed.
- b. Door Rating: 1-1/2 hours with a 24" x 24" fusible link louver.
- c. 2 hour rating of walls and roof of the elevator room.

3.02 INSTALLATION

- A. Perform work according to the requirements of NEC and ANSI/ASME 17.1-1990 including revisions and authorized changes in effect on date of this specification, local codes governing the requirements of installation, and as required as "First Quality" in the elevator industry.
- B. Obtain approval of shop drawings before proceeding with fabrication.
- C. Leveling tolerance: 1/4", up or down, regardless of load and direction of travel.
- D. Paint exposed metal work unless otherwise specified.
- E. Install car control panel according to accessibility requirements.
- F. Hall Call Station Keys: Furnish 24 barrel keys, cut alike. Obtain a receipt from person authorized by the Board to receive the keys.

NOTE TO SPECIFIER: Include the following requirements with appropriate electrical section.

- G. Install alarm bell and sign on facade of building where

directed by A/E.

1. Connect bell to emergency power supply in elevator machine room.
- H. Provide a conduit with a pullstring from main telephone room to the elevator equipment room. OIT will install wire to the elevator equipment room jack. Install wire from elevator equipment room jack to the elevator speaker phone.
- I. Speaker Phone: Connect to the security system (Smart Dial) for a direct voice-to-voice contact to M-DCPS Security office.

3.03 FIELD QUALITY CONTROL

A. Testing:

1. On installation of equipment and when in full operating condition, test equipment to demonstrate compliance with codes, regulations, and Construction Documents.
2. Provide necessary labor and equipment for on-site observations, testing and retesting, and cost of same as part of the Work.
3. Perform performance evaluation test with detailed check lists on elevator.

B. Correction of Defects:

1. Make any changes necessary if tests indicate equipment is defective, at variance with specified requirements, or dangerous or objectionable in operation.
2. Remedy any defects and pay expenses of labor and equipment of subsequent tests or on-site observations until equipment is accepted.

- C. Elevator Permit: Do not use elevators until the elevator inspection and permit from Miami-Dade Elevator Inspection Department has been performed and obtained.

END OF SECTION