



SECTION 14402

HYDRAULIC PASSENGER ELEVATOR

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PART 1 GENERAL

PART 1 1SECTION INCLUDES

- A. Hydraulic Passenger Elevator.

PART 1 2RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete: Concrete for elevator machine foundation, and pit and required sleeves for service penetrations.
- B. Section 06100 - Rough Carpentry.
- C. Section 05500 - Metal Fabrications: Miscellaneous supports, lintels, etc.
- D. Section 07724 - Roof Hatches: Smoke venting hatch at top of hoistway.
- E. Section 07100 - Waterproofing: Pit waterproofing.
- F. Section 08310 - Access Doors and Panels: Fire rated access doors into hoistway.
- G. Section 09260 - Gypsum Board Assemblies: Gypsum shaft walls.
- H. Section 09650 - Resilient Flooring: Floor finish in cab.
- I. Section 09686 - Carpet: Floor finish in cab.
- J. Section 13850 - Detection and Alarm: Fire and smoke detectors and interconnecting devices.
- K. Section 15440 - Sump Pumps.
- L. Division 16 - Electrical:
 - 1. Electrical characteristics and wiring connections.
 - 2. Electrical service to lockable fused disconnect in elevator machine room.
 - 3. Electrical service for machine room, machine room convenience outlets, machine room lighting and lighting in elevator pit.
 - 4. Telephone service.

PART 1 3 REFERENCES

- A. ASME A17.1, /CSA B-44 – Section 5.2 Safety Code for Elevators and Escalators, Limited-Use/Limited Application Elevators.
- B. NFPA 70 - National Electric Code.
- C. CSA - Canadian Electric Code.
- D. ADAAG - Americans with Disabilities Act, Architectural Guidelines.

PART 1 4REGULATORY REQUIREMENTS

- A. Provide passenger elevator in compliance with:
 - 1.ASME A17.1 - Safety Code for Elevators and Escalators, Limited-Use/Limited Application Elevators.
 - 2.NFPA 70 - National Electric Code.
- B. Provide passenger elevator in compliance with:
 - 1.CSA B-44 - Safety Code for Elevators and Escalators, Limited-Use/Limited Application Elevators.
 - 2.CSA - Canadian Electric Code.
- C. ADA: Provide passenger elevator in accordance with the requirements of Americans with Disabilities Act.

PART 1 5SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on elevator, including:
 - 1.Preparation instructions and recommendations.
 - 2.Storage and handling requirements and recommendations.
 - 3.Installation methods.

- C. Shop Drawings:
 - 1. Show typical details of assembly, erection and anchorage.
 - 2. Include wiring diagrams for power, control, and signal systems.
 - 3. Show complete layout and location of equipment, including required clearances and coordination with shaftway.

- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

- E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

- F. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment of cable tension and periodic cleaning and maintenance of all railing and infill components.

PART 1 6PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to start of work of this section.

- B. Review shaftway, electrical, fire alarm and other requirements with appropriate representatives.

PART 1 7DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.

- B. Store components off the ground in a dry covered area, protected from adverse weather conditions.

PART 1 8PROJECT CONDITIONS

- A. Do not use elevator for hoisting materials or personnel during construction period.

PART 1 9WARRANTY

- A. Standard Warranty: Provide a two year limited warranty covering replacement of defective parts and excluding labor. Preventive maintenance agreement required.
- B. Extended Warranty: Provide an additional five year limited warranty covering replacement of defective parts and excluding labor for a total of seven years. Preventive maintenance agreement required.

PART 1 10MAINTENANCE SERVICE

- A. Furnish service and maintenance for elevator system and components for the following period from Date of Substantial Completion.
 - 1. One year.
 - 2. Two years.
 - 3. Three years.
 - 4. Four years.
 - 5. Five years.
- B. Include systematic examination, adjustment, and lubrication of elevator equipment. Repair or replace parts whenever required. Use parts produced by manufacturer of original equipment. Replace wire ropes when necessary to maintain required factor of safety.
- C. Provide emergency call back service for this maintenance period.
- D. Perform maintenance work using competent and qualified personnel approved by elevator manufacturer or original installer.

PART 2 PRODUCTS

PART 2 1MANUFACTURERS

- A. Acceptable Manufacturer: Garaventa Lift; United States - P.O. Box 1769, Blaine, WA 98231-1769. Canada - 7505 134A St., Surrey, BC V3W 7B3. ASD. Toll Free: 800-663-6556. Tel: (604) 594-0422. Fax: (604) 594-9915. Email: bramsay@garaventalift.com. Web www.garaventalift.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

PART 2 2HYDRAULIC PASSENGER ELEVATORS

- A. Garaventa Elvoron LU/LA Hydraulic Elevator, 1,400 pounds (635 kg) capacity cable hydraulic elevator:
 - 1.Capacity: 1,400 pounds (635 kg).
 - 2.Car Size: Maximum of 18 SF (1.67 sm).
 - a. Style 1L: 48 inches by 54 inches (1220 by 1372 mm) with one side right sliding doors.
 - b. Style 1L: 42 inches by 60 inches (1067 by 1524 mm) with one side right sliding doors.
 - c. Style 1R: 48 inches by 54 inches (1220 by 1372 mm) with one side left sliding doors
 - d. Style 1R: 42 inches by 60 inches (1067 by 1524 mm) with one side left sliding doors.
 - e. Style 2: 48 inches by 54 inches (1220 by 1372 mm) with sliding doors at each end.
 - f. Style 2: 42 inches by 60 inches (1067 by 1524 mm) with sliding doors at each end.
 - g. Style 3: 51 inches by 51 inches (1295 by 1295 mm) with sliding doors on two sides.
 - h. Style 4: 51 inches by 51 inches (1295 by 1295 mm) with sliding doors on two sides.
 - 3.Travel:
 - a. _____ inches.
 - b. As indicated on the Drawings.
 - 4.Stops:
 - a. 2 stops.

- b. 3 stops.
 - c. 4 stops.
 - d. 5 stops.
 - e. 6 stops.
 - f. As indicated on the Drawings.
- 5.Speed: Nominal 30 feet per minute (0.15 m/sec).
- 6.Pit Depth: Minimum 14 inches (355 mm) required.
- 7.Overhead: Total overhead clearance (Refuse Space) 135 inches (3330 mm) above the finished upper landing floor.
- 8.Drive System: 1:2 Cable Hydraulic, Heavy Duty car sling with roller guide shoes running on 8 lb. per foot steel T-rails, Quiet submersed pump and motor (5 HP), Factory pre-set and tested 2-speed valve for smooth start and stop.
- 9.Power Requirements:
- a. Per manufacturer's shop drawings
 - b. A Separate 115-Volt, 15 Amp Circuit is required for car lighting.
- 10.Controls:
- a. Garaventa-Design PLC Controller with integrated self diagnostics.
 - b. Fully automatic push button at car and landings with Braille markings.
 - c. Automatic car light switch upon entry.
 - d. Digital floor indicator in Car.
 - e. Car arrival lanterns in car door jamb.
 - f. Arrival Gong
- 11.Car and Hoistway Doors: Nominal 36 inch by 80 inch (914 by 2032 mm) two-speed horizontal sliding hoistway and car doors.
- 12.Safety Features:
- a. Emergency back-up power with a manual lowering device.
 - b. Safety brake system.
 - c. Car operator with integral gate switch.
 - d. Automatic bi-directional floor leveling.
 - e. Emergency alarm button in car, Emergency keyed stop switch in car.
 - f. Overspeed valve.
 - g. Final limit switch.
 - h. Low oil protection timer circuit.

13. Standard Features:

- a. Car direction lantern comes with audio and visual signals.
- b. Full height photo-electric door sensors.
- c. Automatic home park feature (can be disengaged during installation if desired).

14. Options:

- a. Integrated hands free telephone.
- b. Fireman service (Phase 1).
- c. Car top prop (required where overhead clearance < 135")
- d. Buffer springs (increases your pit depth).
- e. Keyed hoistway access

15. Machine Location:

- a. As indicated on the Drawings.

PART 2 3CAB DESIGN

A. Cab Design:

1. Interior Walls: Laminate panel sections.

- a. Designer White.
- b. Dove Gray.
- c. Cloud Nebula.
- d. North Sea.
- e. Kensington Maple.
- f. Oregon Oak.
- g. Gray.
- h. Empire Mahogany.
- i. Custom as selected by the Architect.

2. Cab Frame:

- a. Mild steel powder coated black.
- b. Mild steel powder coated white.
- c. Stainless Steel.
- d. Mild steel powder coated in a custom color as selected by the Architect.
- e. Custom as selected by the Architect.

3. Ceiling Finish:

- a. White.
- b. Stainless Steel, brushed finish.
- c. Custom as selected by the Architect.

4.Handrail Finish:

- a. Stainless Steel, brushed finish.
- b. Brass, brushed finish.
- c. Brass antique finish.

5.Car Operating Panel Finish:

- a. Stainless Steel, brushed finish.
- b. Brass, brushed finish.
- c. Brass antique finish.

6.Floor: Unfinished plywood.

7.Lighting: Four recessed halogen down lights.

- a. White Trim.
- b. Black Trim.

8.Car Direction Lantern: Stainless car direction lantern complete with auto and visual signaling device indicating direction of travel and arrival at selected floor.

9.Car Doors: When open the doors provide a 36 inch (915 mm) by 80 inch (2032 mm) clear opening.

- a. Two Speed Horizontal Sliding equipped with full height photo-electric door sensors, color as follows:
 - 1) Matching cab wall finish.
 - 2) Stainless steel, brushed finish.

PART 2 4HOISTWAY ENTRANCES

A. Hoistway Entrances: When open the doors provide a 36 inch (915 mm) by 80 inch (2032 mm) clear opening.

- a. Two Speed Horizontal Sliding equipped with full height photo-electric door sensors, finish as follows:
 - 1) Primed painted.
 - 2) Stainless Steel, brushed finish.

B. Hall Call Stations:

1.Hall Station Type:

- a. Keyless Push Button.
 - b. Keyed Push Button.
- 2.Finish:

- a. Stainless Steel, brushed finish.
- b. Brass, brushed finish.
- c. Brass, antique finish.

PART 3 EXECUTION

PART 3 1EXAMINATION

- A. Do not begin installation until preliminary work including hoistway, landings and machine space has been properly prepared.
- B. Verify shaftway is constructed in accordance with ASME17.1 / CSA B-44 and all local codes.
- C. Verify shaftway and machine room temperature is designed to have maintainable temperatures between 60 degrees F (16 degrees C) and 110 degrees F (43 degrees C).
- D. Verify machine room if required provided with lighting, light switch and convenience outlet and conforms to CEC and clear space requirements and local codes.
- E. Verify shaftway shaft and openings are of correct size and within tolerance.
- F. Verify electrical power is available and of correct characteristics.
- G. If preliminary work is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

PART 3 2PREPARATION

- A. Clean surfaces thoroughly prior to installation.

- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

PART 3 3INSTALLATION

- A. Install elevator in accordance with applicable regulatory requirements including ASME A17.1 /CSA B-44 and the manufacturer's instructions.
- B. Install system components and connect to building utilities.
- C. Accommodate equipment in space indicated.
- D. Startup equipment in accordance with manufacturer's instructions.
- E. Adjust for smooth operation.

PART 3 4FIELD QUALITY CONTROL

- A. Perform tests in compliance with ASME A17.1 /CSA B-44 and as required by authorities having jurisdiction.
- B. Schedule tests with agencies and Architect, Owner, and Contractor present.

PART 3 5FIELD SERVICES

- A. Obtain required permits to perform tests. Perform tests required by regulatory agencies.
- B. Schedule tests with agencies and Architect and Contractor present.
- C. Submit test and approval certificates issued by jurisdictional authorities.

PART 3 6ADJUSTING

- A. Adjust for smooth acceleration and deceleration of car so not to cause passenger discomfort.

- B. Adjust automatic floor leveling feature at each floor to provide stopping zone of 1/4 inch (6 mm).

PART 3 7CLEANING

- A. Remove protective coverings from finished surfaces.
- B. Clean surfaces and components ready for inspection.

PART 3 8PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION