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SPECIFICATION DIVISION 14

NUMBER SECTION DESCRIPTION

DIVISION 14 CONVEYING SYSTEMS

SECTION 144216 - WHEELCHAIR LIFT

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DIVISION 14 CONVEYING SYSTEMS
SECTION 144216 - WHEELCHAIR LIFT

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

- A. The Contractor under this Division (a lift or elevator contractor) is referred to the Contract Forms and General Conditions of these specifications, all of which apply to this Division.

1.2 SCOPE OF WORK

- A. The work of this division shall consist of the complete ADA-compliant Wheelchair Lift.
- B. Include manufacturer's enclosure.
- C. Install lift within site-built custom enclosure.
- D. Include manufacturer's doors [and / or gates] with frames.
- E. Doors [and / or gates] with frames by architectural trades.
- F. Elevator Contractor shall be familiar with the work by other divisions included in the contract. This must be done in accordance with the codes having Jurisdiction and approval drawings of the lift/elevator contractor.
 - 1. Architectural work- Refer to architectural drawings and specifications.
 - 2. Electrical work- Refer to electrical drawings and specifications.

1.3 SUBMITTALS

- A. Shop Drawings: Provide shop drawings that show a complete layout, including critical dimensions for installation, details, and anchorages for wheelchair lift. Include internal wiring diagram and requirements for connection to building electrical service.
- B. Samples: Submit finish paint color samples of manufacturer's full standard range of surface coating colors and textures in the form of (3) actual coating material samples applied to metal sample cards of approximately 3 inches wide by 5 inches long.
 - 1. If color is already specified on documents, provide (3) samples of that color only.
- C. Permits and Certificates: Submit one copy of each of the following:
 - 1. Installation permit required under Quality Assurance Article.
 - 2. Inspection and acceptance certificates required under Quality Assurance Article.
- D. Manufacturer's Instructions: Submit operation and maintenance manuals and parts list.

1.4 CODES AND REGULATORY AGENCIES

- A. Applicable elevator and lift codes in effect at the time the permit is drawn shall govern the installation process.
- B. Provide a copy of testing documents to the U-M elevator program manager at the time of testing.
- C. Perform work in accordance with applicable codes, the State of Michigan Elevator Code, the National Electrical Code, and the Safety Standard for Platform Lifts and Stairway Chairlifts, ASME A18.1 as adopted by the State of Michigan, as referenced therein and all of the provisions in the University of Michigan's Standard General Conditions.
- D. Give necessary notices, obtain State permits, pay fees in connection with the installation, including sales and use taxes as applicable, and make tests as are called for by the regulations of such authorities. These test(s) or inspection(s) shall be made in the presence of the authorized representative of such authorities and the owner's representative. It is the responsibility of the lift/elevator contractor to provide any variances from the Governing Authority that could be necessary for a complete acceptable lift/elevator installation.
- E. Lifts shall meet the guidelines of the Americans with Disabilities Act using the section relevant to wheelchair lift.
 - 1. Lifts shall meet the requirements of the State of Michigan Department of Labor Building Code relevant to barrier free wheelchair lift.

1.5 FIELD MEASUREMENTS

- A. Check actual space available by accurate field measurement before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.
 - 1. Where necessary, proceed with fabrication without field measurements, and coordinate fabrication tolerances to ensure proper fit of lift units.

PART 2 - PRODUCTS

2.1 APPROVED MANUFACTURERS

- 1. Garaventa Lift.
- 2. Savaria.

2.2 WHEELCHAIR LIFT

- A. Wheelchair Lift, General: Provide vertical-travel wheelchair lift with roped hydraulic-type lift mechanism, with single-chair capacity, and with manufactured hoistway enclosure. Wheelchair lift, hoistway, components, hardware, and operational features shall comply with requirements of this Section and requirements of authorities having jurisdiction.
- B. Provide wheelchair lift with the following characteristics:

1. Lift Number: Existing Lift State Serial Number is _____.
2. Capacity: 750 lbs.
3. Rated Speed: 15 feet per minute.
4. Travel distance: --'--".
5. Platform size: --" W x ---" L. Field verify.
6. Operation: Constant pressure, anti-creep.
7. Power Supply: 120V, single phase, 20 AMP or as required by manufacturer.
8. Integral main power lockable disconnect switch.
9. Drive type: 1:2 cable hydraulic.
10. Emergency Operation: Rechargeable battery operated system, capable of completing a full up and down cycle.

2.3 CYLINDER AND PLUNGER

- A. The cylinder shall be constructed of steel pipe of a sufficient thickness and suitable safety margin. The top of the cylinder shall be equipped with a cylinder head with an internal guide ring and self-adjusting packing.
- B. The plunger shall be constructed of a steel shaft of a proper diameter machined true and smooth. The plunger shall be provided with a stop electrically welded to the bottom to prevent the plunger from leaving the cylinder.

2.4 PUMP UNIT AND CONTROLS

- A. The drive unit and controller shall be enclosed in the mast. The controller and pump unit shall be pre-wired and tested before shipment. Control circuitry is to be PCB mounted as an integral unit. The pump unit shall include the following features:
 1. Smooth stops at each landing shall be an inherent feature.
 2. Adjustable pressure relief valve.
 3. Manually operated DOWN valve to lower the lift in an emergency.
 4. Pressure gauge with quick connect fitting.
 5. Pressure gauge isolating valve (shut off valve) manually operated.
 6. Gate valve to isolate cylinder from the pump unit.
 7. Fixed pressure compensator flow control valve to set maximum DOWN direction speed regardless of load.
 8. Electrical solenoid for DOWN direction control.
 9. Emergency power raising and lowering by battery power.
- B. Normal Terminal Stopping Devices: Normal terminal stopping devices shall be electro-mechanically sensed at the top and bottom of runway to stop the car automatically.
- C. Final Mechanical Stopping Device: Provide a mechanical stopping device to stop the UP travel of the lift in the event that the Upper Normal Terminal Stopping Device fails.

2.5 NEGATIVE PRESSURE SWITCH

- A. Provide a negative pressure switch between the cylinder and the valve to prevent the operation of the lowering valve unless there is positive pressure at the top of the cylinder.

2.6 LEVELING DEVICE

- A. The lift shall be provided with an anti-creep device which will maintain the carriage level within 1/4" (6.35 mm) of the top landing.
- B. All limit switches and leveling device switches shall be located in a position to be inaccessible to unauthorized persons.

2.7 PIT SWITCH

- A. Switch to be located at the base of the mast that when tripped will remove electrical power to the control circuit and stop the operation of the car.

2.8 GUIDE RAILS AND BRACKETS

- A. Steel "T" guide rails and brackets shall be used to guide the platform and sling.
- B. Guide rails shall form part of the structural integrity of the unit and be integral to the enclosure, ensuring stability and minimum platform deflection when loaded.

2.9 CAR SLING

- A. Car sling shall be fabricated from steel members with adequate bracing to support the platform and car.
- B. Guide shoes shall be mounted on the top and bottom of the car sling to engage the guide rails.
- C. Guide shoes to be solid slipper type.
- D. The car sling arms shall be detachable.

2.10 CAR OPERATING PANEL AND CALL BUTTONS

- A. Shall consist of constant pressure illuminated and tactile buttons, an emergency stop switch, alarm button, and an ON/OFF key switch mounted on a removable stainless steel panel (type 304 #4 stainless steel finish). The key shall only be removable either position.
 - 1. Emergency Telephone: Platform shall be equipped with ADA compliant integrated telephone with a stainless steel faceplate. Telephone shall operate in the event of power failure. A telephone line shall be supplied to the lift site as specified in the electrical sections.
 - a. Use Rath model 2100-907-RA telephone. Do not use manufacturer standard phones.
- B. Hallway Call Buttons: ADA-compliant vandal resistant illuminating LED type hall push buttons shall be installed at each floor to permit waiting passengers to call the elevator to the floor.

2.11 DOORS AND GATES

- A. Doors and Gates shall have a baked powder-coated enamel finish and inserts. Inserts may be solid metal panels or Plexiglas to provide clear unobstructed view of the car while in operation. Provide complete with closer and interlock.
- B. Doors:
 - 1. Location(s): [Upper] [Lower] [and middle] landing(s).
 - 2. Size: [84" high x 35"] clear open width. Height of door frame to be [90 1/4"].
 - 3. Inserts: [Solid metal panel in lower portion and Plexiglas in upper] [All Plexiglas].
- C. Gates:
 - 1. Location(s): [Upper] [Lower] [and middle] landing(s).
 - 2.
 - 3. Size: [42 1/4" high x 35"] clear open width.
 - 4. Inserts: [Solid metal panel in lower portion and Plexiglas in upper] [All Plexiglas].

2.12 FINISH

- A. Paint Coating: Manufacturer's standard baked powder-coated enamel finish, beige. Alternate colors are available from the manufacturer.

2.13 COMPONENTS

- A. Doors: In addition to complying with regulatory requirements, provide doors that are self-closing, swinging type fabricated with internal noise deadening materials and with rubber bumper stops to prevent metal-to-metal contact with jambs.
 - 1. Provide doors with hydraulic door closers (spring hinges not permitted).
 - 2. Provide doors with power door operators.
- B. Seat: Side-mounted, spring loaded seat that in retracted position does not impinge on the required clear width of the platform.
- C. Platform entrance safety device: Photo-electric eye.
- D. Guards and Handrails: Provide guards on both sides of platform with handrails.
- E. Fused Safety-Disconnect: Provide unit in accordance with requirements of authorities having jurisdiction. Locate unit as indicated in Installation article of this Section.

2.14 ELECTRIC WIRING

- A. All wiring and electrical connections shall comply with applicable Codes, insulated wiring shall have flame retardant and moisture proof outer covering and shall be run in conduit or electrical wire ways.

PART 3 - EXECUTION

3.1 ACCEPTABLE LIFT/ELEVATOR INSTALLERS

- A. Acceptable installers: Subject to compliance with the requirements specified herein, installers offering product approved by the owner are limited to the following listed companies. Lift/Elevator installer for project must provide the equipment as specified.
1. 101 Mobility of Ann Arbor
 2. Elevator Services, Inc.
 3. KONE.
 4. Lardner Elevator Co.
 5. Schindler Elevator Corp.
 6. TK Elevator.

3.2 EXAMINATION

- A. Inspect surrounding wall and floor surfaces before beginning installation. Verify that rough opening tolerances are correct and the landing construction is level. Do not proceed with installation until deficiencies have been corrected.
1. Verify that depressed slab area dimensions and depth are correct.

3.3 INSTALLATION

- A. Comply with manufacturer's printed installation instructions for products and applications indicated, except where more stringent requirements apply. Comply with applicable requirements of authorities having jurisdiction, and the following:
1. Securely fasten lifting structures to the structural floor using expansion anchors or similar devices.
 2. Field alteration of factory-fabricated structural elements, including platform and doors is not permitted.
 3. Locate fused safety-disconnect as indicated on Drawings, or if not indicated, in a location near the lift mechanism, but not in the hoistway and not in location accessible to the public.

3.4 ADJUSTING

- A. Test and adjust operation of wheelchair lift. Verify, and adjust as required, indicated dimensional tolerances related to enclosure and platform, and landing and platform. Ensure smooth, non-binding operation of platform, doors and other moving parts and assemblies. Ensure proper operation of safety devices and related interlocks. Adjust limit switches to ensure proper alignment with landings.

3.5 CLEANING

- A. Clean surface finishes promptly after installation of unit. Lubricate hardware and other moving parts.

3.6 TRAINING

- A. Training: Demonstrate proper operation to Owner's personnel. Provide not less than 4 hours of training, by a qualified manufacturer's technician, for Owner's personnel in the proper operation and maintenance of the wheelchair lift.

END OF SECTION 144216