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**ARCHITECTURE, ENGINEERING AND CONSTRUCTION**



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DOCUMENTS

SPECIFICATION DIVISION 14

NUMBER SECTION DESCRIPTION

DIVISION 14 CONVEYING SYSTEMS

SECTION 144216 - WHEELCHAIR LIFT

END OF CONTENTS TABLE

1. DIVISION 14 CONVEYING SYSTEMS
   1. SECTION 144216 - WHEELCHAIR LIFT
      1. GENERAL
         1. Summary
            1. Section Includes:

Wheelchair Lift

* + - * 1. Related Requirements

Elevator Contractor shall be familiar with the work by other divisions included in the contract.

edit sections below so it is project specific.

Section 033053 "Miscellaneous Cast-In-Place Concrete"

Section 042010 "Unit Masonry Assemblies"

Section 092116 "Gypsum Board Assemblies"

Section 099100 "Painting"

* + - * 1. General Conditions

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. Scope of work

The work of this division shall consist of complete ADA-compliant Wheelchair Lift.

select model baseD on location type. exterior location must be covered at min, prefer complete enclosure to protect from the weather for significant extention of life expectancy.

Location: [Interior] [Exterior].

Include manufacturer's enclosure.

Select above or below for hoistway.

Install lift within site-built custom enclosure.

Include manufacturer's doors [and / or gates] with frames.

Select above or below for doors, gates and frames.

Doors [and / or gates] with frames by architectural trades.

This must be done in accordance with the codes having jurisdiction and approval drawings of the lift/elevator contractor.

* + - 1. SUBMITTALS
         1. 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.
         2. 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.

If color is already specified on documents, provide (3) samples of that color only.

* + - * 1. Permits and Certificates: Submit one copy of each of the following:

Installation permit required under Quality Assurance Article.

Inspection and acceptance certificates required under Quality Assurance Article.

* + - * 1. Manufacturer's Instructions: Submit operation and maintenance manuals and parts list.
      1. codes and REGULATORY AGENCIES
         1. Applicable elevator and lift codes in effect at the time the state elevator permit is drawn shall govern the installation process.
         2. Provide a copy of testing documents to the U-M elevator program manager at the time of testing.
         3. 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.
         4. 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.
         5. Lifts shall meet the guidelines of the Americans with Disabilities Act using the section relevant to wheelchair lift.

Lifts shall meet the requirements of the State of Michigan Department of Labor Building Code relevant to barrier free wheelchair lift.

* + - 1. Field Measurements
         1. 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.

When approved by Architect, proceed with fabrication without field measurements, and coordinate fabrication tolerances to ensure proper fit of lift units.

* + - 1. quality assurance
         1. Installer Qualifications: Company / individuals licensed by the State of Michigan for lift installations.
         2. Acceptable Elevator / Lift Installers: Subject to compliance with the requirements specified herein, installers offering product approved by the owner are limited to the following listed companies.

a4 access has been removed from this list in summer 2023 due to poor performance on two projects (Bursley and Rackham).

1. 101 Mobility of Ann Arbor

2. Elevator Services, Inc.

3. KONE.

4. Lardner Elevator Co.

5. Schindler Elevator Corp.

6. TK Elevator.

* + - 1. DELIVERY, STORAGE AND HANDLING
         1. Deliver, store, and handle materials, components, and equipment in manufacturer's protective packaging. Store materials, components, and equipment off of the ground, under cover, and in a dry location.
      2. WarrAnty
         1. The elevator contractor shall guarantee all labor, materials and workmanship of the apparatus installed by them to meet the specification, and that they will repair any defects not due to ordinary wear and tear or improper use or care, which may develop within the warranty period from date of final payment, PRODUCTS
    1. PRODUCTS
       1. Approved manufacturers and models

Model needS to be selected baseD on site specific information. if using garaventa, confirm there is a local installer other than A4 Access before completing design.

Garaventa Lift [Model Name or No.].

Savaria [Model Name or No.].

* + - 1. WHEELCHAIR LIFT

Below includes hoistway enclosure from lift mfg. Delete references to "manufactured hoistway enclosure" if unit will be installed in a site-built custom enclosure.

* + - * 1. 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.

eDIT BELOW TO BE PROJECT SPECIFIC.

* + - * 1. Provide wheelchair lift with the following characteristics:

erase item 1 if this is for a brand new lift

Lift Number: Existing Lift State Serial Number is [\_\_\_\_\_].

Capacity: 750 lbs.

Rated Speed: 15 feet per minute.

confirm with code, currently 15' max.

Travel distance: [--'-"].

Platform configuration: As shown on the drawings.

Platform size: [--" W x ---" L]. Field verify.

Operation: Constant pressure, anti-creep.

Confirm power supply below is suitable for connecting to building power

Power Supply: 120V, single phase, 20 AMP or as required by manufacturer.

Integral main power lockable disconnect switch.

Drive type: 1:2 cable hydraulic.

Emergency Operation: Rechargeable battery operated system, capable of completing a full up and down cycle.

* + - 1. Cylinder and Plunger
         1. 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.
         2. 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. pump unit and controls
         1. 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:

Smooth stops at each landing shall be an inherent feature.

Adjustable pressure relief valve.

Manually operated DOWN valve to lower the lift in an emergency.

Pressure gauge with quick connect fitting.

Pressure gauge isolating valve (shut off valve) manually operated.

Gate valve to isolate cylinder from the pump unit.

Fixed pressure compensator flow control valve to set maximum DOWN direction speed regardless of load.

Electrical solenoid for DOWN direction control.

Emergency power raising and lowering by battery power.

* + - * 1. 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.
        2. 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.
      1. Negative pressure switch
         1. 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. Leveling device
         1. 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.
         2. All limit switches and leveling device switches shall be located in a position to be inaccessible to unauthorized persons.
      3. pit switch
         1. 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.
      4. Guide Rails and brackets
         1. Steel "T" guide rails and brackets shall be used to guide the platform and sling.
         2. 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.
      5. Car Sling
         1. Car sling shall be fabricated from steel members with adequate bracing to support the platform and car.
         2. Guide shoes shall be mounted on the top and bottom of the car sling to engage the guide rails.
         3. Guide shoes to be solid slipper type.
         4. The car sling arms shall be detachable.
      6. car operating panel and call buttons

below list contain features that uofm prefers and are to be used if available from mfg.

* + - * 1. 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 be removable in either position.

Retain below if emergency phone is required in the lift.

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 voice and data specification 272000.

Use Rath model 2100-907-RA telephone. Do not use manufacturer standard phones.

verify actual call button choice with manufacturer. below list contain features that uofm uses on elevators AND should be used if available FOR LIFT.

* + - * 1. 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.
      1. DOORS, gateS and accessories

verify actual choices with manufacturer. below list contains Items that should be included.

* + - * 1. 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. Provide complete with closer and interlock.

Provide doors with hydraulic door closers (spring hinges not permitted).

Select above or below for CLOSERS.

Provide doors with power door operators.

* + - * 1. Doors and Gate Finishes: They 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.
        2. Door Sizes:

iNSERT LOCATIONS below for DOOR(S).

Location(s): [Upper] [Lower] [and middle] landing(s).

iNSERT SIZES below for DOOR(S) AND FRAME(S).

Size: [84" high x 35"] clear open width. Height of door frame to be [90 1/4"].

Select STYLE OF DOORS below. iNCLUDE COLOR OF PLEXIGLAS IF THERE ARE MULTIPLE OPTIONS.

Inserts: [Solid metal panel in lower portion and Plexiglas in upper] [All Plexiglas].

* + - * 1. Gate Sizes:

iNSERT LOCATIONS below for GATE(S).

Location(s): [Upper] [Lower] [and middle] landing(s).

iNSERT SIZES below for GATES(S) AND FRAME(S).

Size: [42 1/4" high x 35"] clear open width.

Select STYLE OF DOORS below. iNCLUDE COLOR OF PLEXIGLAS IF THERE ARE MULTIPLE OPTIONS.

Inserts: [Solid metal panel in lower portion and Plexiglas in upper] [All Plexiglas].

erase section below if you have a pit

* + - * 1. Ramps:

Provide manufacturer's flip-down ramp at lower landing.

erASE SECTION BELOW IF YOU ARE USING A CUSTOM BUILT ENCLOSURE

* + - 1. ENCLOSURE FINISH
         1. Paint Coating: Selected from manufacturer's standard baked powder-coated enamel finish.
      2. COMPONENTS

verify actual choices with manufacturer. below list contains Items that should be included.

Seat below is optional. ERASE IF NOT USED.

* + - * 1. Seat: Side-mounted, spring loaded seat that in retracted position does not impinge on the required clear width of the platform.
        2. Platform entrance safety device: Photo-electric eye.
        3. Guards and Handrails: Provide guards on both sides of platform with handrails.
        4. Fused Safety-Disconnect: Provide unit in accordance with requirements of authorities having jurisdiction. Locate unit as indicated in Installation article of this Section.
      1. ELECTRIC WIRING
         1. 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.
    1. EXECUTION
       1. examination
          1. 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.

DELETE below if no depressed slabs. A ramp will need to be added to the scope of work if there is no pit depression to allow for the structure at the bottom of the lift.

Verify that depressed slab area dimensions and depth are correct.

* + - 1. INSTALLATION
         1. 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:

Securely fasten lifting structures to the structural floor using expansion anchors or similar devices.

Field alteration of factory-fabricated structural elements, including platform and doors is not permitted.

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.

* + - 1. ADJUSTING
         1. 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.
      2. CLEANING
         1. Clean surface finishes promptly after installation of unit. Lubricate hardware and other moving parts.

delete section below for auxiliary units athletics and student life. verify with elevator program manager in case changes are expected.

* + - 1. TRAINING
         1. 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