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SPECIFICATION FOR OVERHEAD TRACTION PASSENGER ELEVATORS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Specification is intended to cover the complete furnishing and installing of one (1) traction passenger elevator as manufactured by Minnesota Elevator, Incorporated or approved equal. All work shall be performed in a workmanlike manner and is to include all work and material in accordance with the drawings and as specified herein. In all cases where a device or part of the equipment is herein referred to in the singular number, it is intended that such reference shall apply to as many such devices as are required to complete the installation.

1.02 WORK NOT INCLUDED

- A. To complete this installation, the following items must be performed or furnished by other than the elevator contractor in accordance with governing codes:
1. A properly framed and enclosed legal hoistway, including venting as required by the governing code or authority.
 2. Suitable machine room with legal access and ventilation, with concrete floor. Temperature in machine room to be maintained between 55° F. and 90° F.
 3. Adequate rail bracket supports, bracket spacing as required by governing code. Separator beams and machine beams where required.
 4. Dry pit reinforced to sustain normal vertical forces from rails and impact loads from buffer.
 5. Adequate support for sill angle across full width of hoistway at each landing. Vertical surfaces of entrance sill supports to be plumb, one above the other, and square with the hoistway. Finished floor and grout, if required, between door frames to sill line.
 6. Hoistway walls are to be designed and constructed in accordance with the required fire rating including where penetrated by elevator fixture boxes and to include adequate fastening to hoistway entrance assemblies. Front entrance walls are not to be constructed until after door frames and sills are in place.
 7. Any cutting, including cutouts to accommodate hall signal fixtures, patching and painting of walls, floors or partition is together with finish painting of entrance doors and frames.
 8. Mechanical requirements as follows:
 - a. Machine room venting.
 9. Electrical requirements as follows:
 - a. All electric power for lights, tools, hoists, etc. during erection as well as electric current for starting, testing and adjusting the elevator.
 - b. A fused disconnect switch for each elevator per the National Electrical Code with feeder or branch wiring to controller. Size to suit elevator contractor.
 - c. A 120 volt, AC, 20 amp, single phase power supply with fused SPST disconnect switch for each elevator, with feeder wiring to each controller for car lights.
 - d. Suitable light and convenience outlets in machine room with light switches located within

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18 inches of lock jamb side of machine room door.

- e. Convenience outlet and light fixture in pit with switch located adjacent to the access door.
- 10. Telephone instrument or means within the car for communicating or signaling to an accessible point outside the hoistway or central exchange system or approved emergency service; unless stated elsewhere in the Specifications.
- 11. Guarding and protecting the hoistway during construction. The protection of the hoistway shall include solid panels surrounding each hoistway opening at each floor, a minimum of 48 inches high. Hoistway guards to be erected, maintained and removed by others.

1.03 QUALITY ASSURANCE

- A. All work shall be performed in accordance with the latest revised edition (as of the date bids are taken) of the American National Standard Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks (ASME A17.1), the National Electrical Code and/or such State and local codes as may be applicable.

1.04 SUBMITTALS

- A. Shop Drawings: The elevator contractor shall prepare drawings showing the general arrangement of the elevator equipment and cab. These drawings shall be approved and the hoistway size guaranteed before proceeding with fabrication and installation of the elevator.

1.05 PERMITS, TAXES AND LICENSES

- A. All applicable sales and use taxes, permit fees and licenses, of the date bids are taken, shall be paid for by the elevator contractor.

1.06 GUARANTEE

- A. The elevator contractor shall guarantee the materials and workmanship of the apparatus furnished by him under these specifications and he will make good any defects not due to ordinary wear and tear or improper use or carelessness which may develop within one (1) year from date of completion of each elevator.

1.07 MAINTENANCE

- A. A quality maintenance service consisting of regular examinations, adjustments and lubrication of the elevator equipment shall be provided by the elevator contractor for a period of three (3) months after the elevator has been turned over for the customer's use. All work shall be performed by competent employees during regular working hours of regular working days and shall include emergency 24 hour callback service. This callback service shall not cover adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents caused by persons other than the elevator contractor. Only genuine parts and supplies as used in the manufacture and installation of the original equipment shall be provided.

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1.08 JOB CONDITIONS

- A Temporary Use of Elevator: Should any elevator be required for use before final completion, others shall provide without expense to elevator contractor, if required, temporary car enclosures, requisite guards or other protection for elevator hoistway openings, main line switch with wiring, necessary power, signaling devices, lights in car and elevator operators together with any other special labor or equipment needed to permit this temporary usage. The elevator contractor shall be reimbursed for any labor and materials which is not part of the permanent elevator installation and which is required to provide temporary elevator service. In addition, the elevator contractor's temporary acceptance form shall be executed before any elevator is placed in temporary service, and the cost of power and operation, maintenance or the equipment and rehabilitation of equipment shall be paid for by others.

PART 2 - PRODUCTS

2.01 MATERIALS

- A Description of equipment: One (1) Traction Passenger Elevator
- 1 Control: Microprocessor, AC, variable voltage, variable frequency (AC/VV/VF)
 - 2 Capacity: _____ lbs.
 - 3 Speed: _____ FPM
 - 4 Operation: Simplex Selective/Collective
 - 5 Car Platform Size: ___'-___" wide by ___'-___" deep
 - 6 Clear Hoistway Size: ___'-___" wide by ___'-___" deep
 - 7 Travel (verify): ___'-___"
 - 8 Power Supply: _____ VAC (verify), 3 phase, 60 cycle
 - 9 Machine Location: _____
 - 10 Stops: ___
 - 11 Openings: ___ In-line
 - 12 Hoistway Doors: ___'-___" wide by ___'-___" high, type: _____
 - a Door Finish: _____
 - b Frame Finish: _____
 - c Sill Finish: _____
 - 13 Door Operation: Automatic, D.C. powered
 - 14 Signals: Illuminated landing and car buttons as detailed later in these specifications
 - 15 Car Enclosure
 - a Canopy: 14 gauge steel, enamel painted
 - b Ventilation: Two-speed exhaust fan in car canopy controlled by key switch in car operating panel
 - c Lighting: Fluorescent
 - d Ceiling: Drop ceiling , translucent eggcrate or Lexan diffuser panels in aluminum frame
 - e Front Return Wall(s): 16 gauge #4 Stainless Steel
 - f Entrance Columns: 16 gauge #4 Stainless Steel
 - g Transom: 16 gauge #4 Stainless Steel
 - h Car Door(s): #4 Stainless Steel
 - i Car Sill(s): Aluminum

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- j Side Walls and Rear Wall:
 - 1. (14 gauge #4 stainless steel)
 - 2. (14 gauge Steel, enamel painted)
 - 3. (lamine panel)
 - 4. (removable raised laminate panel with enamel painted reveals)
- k Handrail(s): #4 Stainless Steel ½”x 1 ½”
- l Base: Enamel painted - Recessed base on removable panel cabs only
- m Accessories:
 - (1) An emergency exit(s) will be provided as required by code.
 - (2) Pad & buttons

16 Hoistway Entrances

- a. Passenger type hoistway entrances with UL label, hollow metal, horizontal sliding will be provided.
- b. Entrance type and clear opening size will be in accordance with data at the beginning of this proposal.
- c. Sills, struts, headers, hanger covers, and frames will be erected by vendor and set in proper relation to the car guide rails. Such erection is to be accomplished prior to construction of rough walls which is the purchaser=s responsibility. Door panels will be installed by vendor after the wall erection is completed.
- d. Entrances will include unit frames, flush design door panels, sight guards, dust covers, and necessary hardware.
- e. Fascia, hanger covers, toe guards, dust covers, and structural members will be fabricated and finished in accordance with vendor standards. Entrance sills are to be aluminum.

17 Special Features

- a ADA telephone located behind perforated speaker pattern in swing car station
- b Infrared curtain unit (ICU) door protection
- c Emergency lighting integral with the car operating panel
- d Braille plates
- e Audible signal
- f Locate all fixtures for handicap usage
- g Seismic Zone ___

B Motor

- 1 AC traction hoisting motor as manufactured by Reuland or Approved equal.
- 2 1200 rpm, AC motor sized to accommodate rated car speed and capacity.

C Machine

- 1 Hollister-Whitney machine.

D Ropes

- 1 Provide 8x19tr traction steel cables of sufficient quantity for application. One (1) 8x19tr traction steel governor cable.

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E Hoistway Operating Devices

- 1 Normal terminal stopping devices shall be provided. When an emergency terminal stopping device is also required, it shall be furnished and the controller switches and circuitry arranged in accordance with the requirements of the ANSI Code.

F Pit Switch

- 1 An emergency stop switch shall be located in the pit.

G Platform

- 1 The car platform shall be of steel construction with a plywood subflooring. The underside of the platform shall be covered with a minimum 28 gauge sheet steel.

H Car Frame

- 1 A suitable car frame fabricated from formed or structural steel members shall be provided with adequate bracing to support the platform and car enclosure. The buffer striking plate on the underside of the car frame plank members must fully compress the oil buffer mounted in the pit before the car reaches its down limit of travel. Roller guide shoes shall be mounted on top and bottom of the car frame to engage the guide rails.

I Rails

- 1 Steel elevator guide rails shall be furnished to guide the car and counterweights, erected plumb and securely fastened to the building structure.

J Door Operation

- 1 Doors on the car and at the hoistway entrances shall be power operated by means of a direct current operator mounted on top of the car. The motor shall have positive control over door movement for smooth operation. Each car door shall have a safety shoe to cause instant reopening should contact be made with an obstruction during the closing cycle.
- 2 Door operation shall be automatic at each landing with door opening being initiated as the car arrives at the landing and closing taking place after expiration of a time interval. A car door electric contact shall prevent starting the elevator away from the landing unless the car door is in the closed position.
- 3 Door closing shall be arranged to start within a time consistent with handicap requirements from notification that a car is answering a hall call.
- 4 Doors shall be arranged to remain open for a time period sufficient to meet handicap requirements. The time interval for which the elevator doors remain open when a car stops at a landing shall be independently adjustable for response to car calls and response to hall calls.
- 5 An approved positive interlock shall be provided for each hoistway entrance which shall prevent operation of the elevator unless all doors for the elevator are closed and shall maintain the doors in their closed position while the elevator is away from the landing. Emergency access to the hoistway as required by governing codes shall be provided.

K Infrared Curtain Unit (ICU)

- 1 Provide Gatekeeper as manufactured by Adams parts or approved equal.
- 2 A key operated switch for disconnecting the ICU device shall be provided in the swing car operating panel.

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L Wiring

- 1 All wiring and electrical interconnections shall comply with the governing codes. Insulated wiring shall have flame retardant and moisture-proof outer covering, and shall be run in conduit tubing or electrical wireways. Traveling cables shall be flexible and suitable suspended to relieve strain on individual conductors.

M Leveling Device

- 1 The elevator shall be provided with an automatic leveling device which will bring the car to a stop within 1/4" of the landing level regardless of load or direction of travel. Landing level will be maintained within the leveling zone irrespective of the hoistway doors being open or closed.

N Controller

- 1 A microprocessor AC traction controller as manufactured by MCE (Motion Control Engineering) or approved equal shall be provided including necessary starting switches of adequate size together with all relays, switches and hardware required to accomplish the operation specified. A three phase overload device shall be provided to protect the motor against overloading. AC type, variable voltage, variable frequency.

O Car Stall Protective Circuit

- 1 A protective circuit shall be provided which will stop the motor and return the car to its lowest landing in the event that the car does not reach its designated landing within a predetermined time interval. This circuit shall permit a normal exit from the car, but prevent further operation of the elevator until the trouble has been corrected.

P Operation - Simplex Selective/Collective

- 1 Operation shall be automatic by means of the car and landing buttons. Stops registered by the momentary actuation of the car or landing buttons shall be made in the order in which the landings are reached in each direction of travel after the buttons have been actuated. All stops shall be subject to the respective car or landing button being actuated sufficiently in advance of the arrival of the car at that landing to enable the stop to be made. The direction of travel for an idle car shall be established by the first car or landing button actuated.

Q Emergency Car Lighting

- 1 An emergency power unit employing a 6 volt sealed rechargeable battery and totally static circuits shall be provided that shall illuminate the elevator car and provide current to the alarm bell in the event of normal power failure. The equipment shall comply with the requirements of the ANSI Code. This unit shall be an integral part of the car operating panel.

R Car and Hall Signal Fixtures

1 Swing Car Operating Panel

- a A swing-type car operating panel shall be furnished. Panel will contain a bank of mechanical illuminated buttons marked to correspond to the landings served, an emergency stop button, door open and door close buttons. The emergency call button shall be connected to a bell that serves as an emergency signal. Switches for lights and fan shall also be located in the car operating

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panel.

- (1) A flush mounted, full height (floor-to-transom) applied car operating panel/box is acceptable provided the faceplate is flush with the car return panel giving the appearance of a swing return panel.
 - b Phase II fire instructions are to be engraved or silk screened (applied plates are not acceptable) on the car operating panel.
 - c Elevator number, A No Smoking®, and capacity in pounds are to be engraved or silk screened (applied plates are not acceptable) on the car operating panel.
 - d Car operating panel shall contain all necessary operating components, buttons, and switches as required by ANSI A.17.
 - e Car operating panel shall contain key switches to lock out individual floors.
- 2 Handicap Markings
 - a Braille plates shall be furnished for car buttons, car controls, and hoistway entrance jambs in compliance with NEII and ADA handicap requirements.
 - b Car braille plates are to be flush mounted and permanently attached (A stick-on® plates are not acceptable).
 - 3 ADA Telephone
 - a An ADA approved telephone shall be provided and mounted behind the car operating panel. A pattern of holes for speaker shall be punched into the flush car operating panel faceplate or swing return panel (applied speaker grilles are not acceptable).
 - b Necessary wires shall be included in the car traveling cable.
 - c Connections to the building service system shall be furnished by Owner.
 - 4 Audible Signal (To indicate stopping at a floor)
 - a An audible signal shall sound in the car to tell a passenger that the car is stopping at the floor served by the elevator.
 - 5 Hall Buttons
 - a At each terminal landing a single push button shall be provided.
 - b When a call is registered by momentary pressure on a landing button, that button shall become illuminated and remain illuminated until the call is answered.
 - c The designated fire return floor shall include a fireman=s emergency key switch that meets state and local requirements.
 - d Phase I fire instructions are to be engraved or silk screened (applied plates are not acceptable) on the designated fire return hall station faceplate.
 - 6 Hall Position Indicator
 - a Digital Position Indicator located above entrance at main level.
- S Zoned Hoistway Access Keyswitch
- 1 A keyswitch shall be provided at both top and bottom terminal landings which shall allow limited car operation while car and hoistway doors are opened.

PART 3 - EXECUTION

3.01 INSPECTION

- 1 Prior to beginning the installation of elevator equipment, examine the following and verify that

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no irregularities existing that would affect quality or execution of work as specified.

- 1 Hoistway size and plumbness
- 2 Sill pockets
- 3 Sill supports

- 2 Do not proceed with installation until previous work conforms to project requirements.

3.02 INSTALLATION

3 General

- 1 Install the elevator in accordance with accepted manufacturer's directions and ANSI A17.1.
- 2 Install machine room equipment with clearances, hoists or other means for each maintenance.
- 3 Install items so that they may be removed by portable hoists or other means for each maintenance.

3.03 FIELD QUALITY CONTROL

- 4 Provide all personnel, equipment and instruments required for inspection and testing.
- 5 Have acceptance inspection, required by local authority, performed by enforcing agency.

3.04 ADJUST AND CLEAN

6 Adjustments

- 1 Adjust brackets, controllers, leveling switches, generators, limit switches, stopping switches and safety governors to operate to within accepted design tolerances.
- 2 Adjust car leveling devices so car stops within 1/4" of finished floor.
- 3 Lubricate all equipment in accordance with accepted manufacturer's instructions.

7 Clean Up

- 1 Removal from hoistway surfaces all loose materials and filings resulting from this work.
- 2 Clean machine room floor of dirt, oil and grease.
- 3 Remove crating and packing materials from premises.

END OF SECTION