

## Job Unknown

# SPECIFICATION FOR OVERHEAD TRACTION FREIGHT ELEVATOR

## PART 1 - GENERAL

### 1.01 DESCRIPTION

- A. This Specification is intended to cover the complete furnishing and installing of one (1) traction freight elevator as manufactured by Minnesota Elevator, Incorporated or approved equal and installed by \_\_\_\_\_ or approved equal.
- B. All work shall be performed in a professional manner
- C. All work is to include all labor and materials in accordance with project drawings and as specified herein.
- D. In 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. A 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 frame and sill to be plumb, one above the other, and square with the hoistway.
  - 6. Metal frames and sills required around openings. Frames shall be standard channels with 2 ¼" flange width. Steel jambs to extend to floor beam above.
  - 7. 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 doorframes and sills are in place.
  - 8. 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.
  - 9. Mechanical requirements as follows:
    - a) Machine room venting.
  - 10. Electrical requirements as follows:
    - a) Electric power required for lights, power tools, hoists, and all other installation

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related electrical equipment to be provided during installation.

- b) Adequate electrical current that is required for starting, testing, and adjusting the elevator.
  - c) Fused disconnect switch for each elevator per the National Electrical Code with feeder or branch wiring to controller. Size to suit elevator contractor.
  - d) 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.
  - e) Suitable light and convenience outlets in machine room with light switches located within 18 inches of lock jamb side of machine room door.
  - f) Convenience outlet and light fixture in pit with switch located adjacent to the access door.
  - g) 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.
- a) The protection of the hoistway shall include solid panels surrounding each hoistway opening at each floor, a minimum of 48 inches high.
  - b) 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 (ANSI A17), the National Electrical Code, and/or such State and local codes as may be applicable.

### 1.04 SUBMITTALS

- A. Approval drawing requirements:
  - 1. The elevator contractor shall prepare layout drawings showing the proposed arrangement of the elevator equipment.
    - a) All drawings to be fully dimensioned or drawn to scale.
  - 2. As a minimum, drawings for approval shall be submitted for the following major elevator components:
    - a) Layout drawings detailing hoistway elevations, platform sizes, loads, reactions, and machine room details.
    - b) Cab drawings detailing sizes and finishes.
    - c) Freight doors and gate(s) drawings detailing size, type, operation, and finishes.
    - d) Fixture drawings detailing car and hall signal fixtures, designs, finishes, and features.
  - 3. Before proceeding with fabrication and installation of the elevator:
    - a) The clear hoistway size shall be guaranteed.
    - b) The total travel and floor-to-floor heights shall be guaranteed.

### 1.05 PERMITS, TAXES AND LICENSES

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- A. The elevator contractor, as of the date bids are taken, shall pay for all applicable:
  - 1. Sales taxes and use taxes
  - 2. Permit fees
  - 3. Licenses

### 1.06 GUARANTEE

- A. The elevator contractor shall guarantee the materials and workmanship of the apparatus furnished by him under these specifications.
- B. He will make good any defects not due to ordinary wear and tear or improper use or carelessness, which develop within the warranty period.
- C. Warranty period shall be 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.
- B. All work shall be performed by competent employees during regular working hours of regular working days and shall include emergency 24-hour callback service.
  - 1. 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.
- C. Only genuine parts and supplies as used in the manufacture and installation of the original equipment shall be provided.

### 1.08 JOB CONDITIONS

- A. Temporary Use of Elevator: Should use of any elevator be required before final completion, others shall provide (if required):
  - 1. Temporary car enclosures
  - 2. Requisite guards or other protection for elevator hoistway openings
  - 3. Main line switch including 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. This shall be provided without any additional expense to the elevator contractor.
  - 4. The elevator contractor shall be reimbursed for any labor and materials that are not part of the permanent elevator installation but is required to provide temporary elevator service.
  - 5. 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.

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### PART 2 - PRODUCTS

#### 2.01 ELEVATOR SCHEDULE

- A. Control: Microprocessor, AC, variable voltage, variable frequency (AC/VV/VF)
- B. Capacity: \_\_\_\_\_ lbs.
- C. Speed: \_\_\_\_\_ FPM
- D. Operation: SAPB (Single Automatic Push Button)
- E. Car Platform Size: \_\_\_\_\_'-\_\_\_\_\_'' wide by \_\_\_\_\_'-\_\_\_\_\_'' deep
- F. Travel (verify): \_\_\_\_\_'-\_\_\_\_\_''
- G. Power Supply: \_\_\_\_\_ VAC
- H. Machine Location:
- I. Stops:
- J. Openings:
  - 1. Front:
  - 2. Rear:
- K. Clear Hoistway Size: \_\_\_\_\_'-\_\_\_\_\_'' wide by \_\_\_\_\_'-\_\_\_\_\_'' deep
- L. Hoistway Doors: \_\_\_\_\_'-\_\_\_\_\_'' wide by \_\_\_\_\_'-\_\_\_\_\_'' high, vertical bi-parting freight doors
- M. Door Operation: Power freight doors and single-section car gate(s)
- N. Car Enclosure:
  - 1. Walls and canopy shall be 14 gauge solid hot rolled steel panels. Wall panels shall be 24" width maximum. Canopy panels shall be 24" width maximum. Panels shall be bolted or welded together in sections.
  - 2. Wall panel seams shall line up with canopy panel seams.
  - 3. Gate post shall be adjustable to accommodate variation in wall panels.
  - 4. Wall panels shall be interchangeable.
  - 5. Canopy panels shall be interchangeable.
  - 6. Lights to be (2) tube by 4' long fluorescent with top guards.
  - 7. Finish to be air dry enamel.
- O. Signals: Illuminated landing buttons with in-use lights
- P. Special Features:
  - 1. Telephone compartment in car
  - 2. Door open bell
  - 3. Emergency cab lighting and alarm

#### 2.02 HOISTWAY & MACHINE ROOM EQUIPMENT

- A. Motor
  - 1. AC traction hoisting motor shall be provided as manufactured by Reuland Electric Company or approved equal.
  - 2. 1200 RPM, AC hoist motor size to accommodate rated car capacity and speed.
- B. Ropes
  - 1.  $\frac{5}{8}$ " diameter car ropes, 8x19tr traction steel cables of sufficient quantity for application and capacity.

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2. One (1)  $\frac{3}{8}$ " , 8x19tr traction steel governor cable

### C. Hoistway Operating Devices

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

### D. Pit Switch

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

### E. Platform

1. The car platform shall be of steel construction with channel iron stringers and non-skid steel flooring.
2. Toe guards to be minimum 16 Ga. sheet steel.

### F. Car Frame

1. A suitable car frame fabricated from structural or formed steel members shall be provided with adequate bracing to support the platform and car enclosure.
2. The buffer striking plate on the underside of the car frame plank members must fully compress the spring or oil buffer mounted in the pit before the car reaches its down limit of travel.
3. Guide shoes to be solid or swivel type shoes suitable for freight elevators and car capacity.

### G. Guides

1. Steel elevator guide rails shall be furnished to guide the car and counterweights, erected plumb and securely fastened to the building structure.
2. Guide rails shall be of sufficient size for application.
3. Rail forces shall be shown on elevator layout drawings. If requested, rail force calculation formulas shall be provided.

### H. Wiring

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

### I. Leveling Device

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

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- J. Controller
  1. A microprocessor AC traction controller as manufactured by Motion Control Engineering (MCE) or approved equal shall be provided.
  2. Include starting switches of adequate size, together with all relays, switches, and hardware required, to accomplish operation specified.
  3. A three-phase overload device shall be provided to protect the motor against overloading.
  
- K. 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.
  2. This circuit shall permit a normal exit from the car, but prevent further operation of the elevator until the trouble has been corrected.
  
- L. Operation – Single Automatic Push Button (SAPB)
  1. Operation shall be SAPB as defined in ANSI A17 code.

## 2.03 SIGNAL EQUIPMENT

- A. Car-Operating Panel
  1. A car-operating panel shall be furnished inside the cab.
    - a) Panel will contain a bank of mechanical illuminated buttons marked to correspond with the landings served.
    - b) Emergency stop button. The emergency call button shall be connected to a bell that serves as an emergency signal.
    - c) Door open and door close buttons shall be included.
    - d) Lights switch shall also be located in the car-operating panel.
    - e) Phase II firefighters' operating instructions to be engraved, silk-screened, or permabonded on the car operating panel.
    - f) Elevator number, "No Smoking", and capacity in pounds are to be engraved, silk screened, or permabonded on the car operating panel.
    - g) Car operating panel shall contain all necessary operating components, buttons, and switches as required by ANSI A.17.
  
- B. Hall Buttons
  1. At each landing a single call button shall be provided.
  2. Door open, door close, and an in-use light shall be provided in each hall station.
  3. 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.
  4. The designated fire return floor shall include a fireman's emergency key switch that meets state and local code requirements.
  5. Phase I firefighters' operating instructions are to be engraved, silk screened, or permabonded on the designated fire return hall station faceplate.
  
- C. Zoned Hoistway Access Key Switch

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1. A key switch shall be provided at both the top and bottom terminal landings.
2. These key switches, when activated, shall allow limited car operation while car and hoistway doors are opened.

### D. Emergency Car Lighting

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

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Prior to beginning the installation of the elevator equipment, examine the following and verify that no irregularities existing that would affect quality or execution of work as specified.
  1. Hoistway size and plumbness.
  2. Do not proceed with installation until previous work conforms to project requirements.

### 3.02 INSTALLATION

- A. Elevator installation shall be in accordance with accepted manufacturer's directions and ANSI A17.1.
- B. Install machine room equipment maintaining proper clearances that are required by all applicable codes.
- C. Install items that require frequent maintenance so that they may be easily removed by portable hoists or other means.

### 3.03 FIELD QUALITY CONTROL

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

### 3.04 ADJUST AND CLEAN

- A. Adjust brackets, controllers, leveling switches, generators, limit switches, stopping switches, and safety governors to operate to within accepted design tolerances.
- B. Adjust car-leveling devices so the car stops within ¼" of each finished floor level.
- C. Lubricate all equipment in accordance with accepted manufacturer's instructions.

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- D. Remove from hoistway surfaces all loose materials and filings resulting from this work.
- E. Clean machine room floor of dirt, oil, and grease.
- F. Remove crating and packing materials from premises.

END OF SECTION