ELEVATOR

RACK AND PINION PASSENGER / SERVICE

I. GENERAL:

This standard is intended to provide specifications for the procurement and installation of Rack & Pinion Passenger / Service elevators. The elevator contractor, in accordance with the specific location requirements, shall provide the required general arrangement drqwings for the elevator installation. No work or other actions shall commence prior to the owner or his agents approval of the submitted drawings.

II. PREPARATORY WORK NOT INCLUDED IN THE ELEVATOR CONTRACT:

II.1. To complete the installation of a Rack & Pinion elevator, the following items can be performed or furnished by other than the elevator contractor in accordance with all governing codes and specifications provided by the elevator manufacturer.

II.1.1. A properly engineered, framed and enclosed legal hoist way, including any venting as required by the governing code, authority or elevator manufacturer.

II.1.2. A construction hoisting beam, if required, with the correct location and size as determined by the elevator contractor for each hoistway.

II.1.3. Adequate guide mast brackets, bracket spacing and supports as required by the elevator manufacturer and all governing codes.

II.1.4. A dry pit constructed to the elevator manufacturers specifications to reinforce or sustain any vertical forces on the guide masts and impacted loads from the car and counter weight buffers.

II.1.5. A vertical iron ladder at the lowest hoist way entrance to any pit over 3'0" in depth which shall extend a minimum of 42" above the bottom sill of the access door. The ladder shall not interfere in anyway with the normal operation of the elevator.

II.1.6. A metal sill angle or concrete haunch across the full width of the hoist way at each elevator landing. The vertical surfaces of the entrance sill supports are to be plumb, one above the other and, square with the hoistway.

II.1.7. Hoistway walls, if required. Walls and elevator fixture penetrations shall be designed and constructed in accordance with NFPA code required fire ratings. Front elevator entrance walls shall not be constructed until the door frames and sills have been installed. If front walls are poured concrete load bearing walls, a rough construction opening shall be provided to accept the elevator entrance frames and filled in after the frames are set in place. The rough opening for the steel framed structures is to be sized and located to suit the landing doors. The elevator contractor shall designate the required construction rough opening size and coordinate all construction scheduling.

II.1.8. Any required cutting to accommodate hall signal fixtures, patching, and painting of walls, floors or partitions together with the finished painting of entrance doors, frames and ladders.

II.1.9. A fused 480 volt, A.C. disconnect switch or circuit breaker for each elevator per the National Electrical Code with feeder or branch wiring to elevator controller. The

type and size of fused disconnect switch or circuit breaker will be determined by the elevator contractor.

II.1.10. A dedicated 120 volt, A.C. 20 amp, single phase power supply with properly sized fused SPST disconnect switch for each elevator, combined with feeder wiring to each controller for the elevator car lights and other accessories.

II.1.11. A waterproof 120 volt A.C. outlet and light fixture in the elevator pit area with the light switch being located adjacent to the access door. The elevator contractor shall designate the desired mounting location in the pit area to insure installation will not interfere with the operation of the elevator car.

II.1.12. A telephone instrument or other means of communication 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 elevator specifications.

II.1.13. Provide, maintain, and remove, at the direction of the elevator contractor, solid guarding and protection panels surrounding each floor hoistway opening during the construction of the elevator. Protective panels shall be a minimum of 48" high from each floor level.

II.1.14. Provide temporary power supplies for all lights, tools, hoists, etc. during the entire construction period. The temporary power supply shall also be available for start - up testing and adjusting the elevator prior to final turn over to the customer. Voltage requirements will be provided by the elevator contractor.

II.1.15. Permanent power shall be required for final testing and commissioning at the time of sign off and turnover of the elevator.

II.2. TEMPORARY USE OF ELEVATOR:

Should any elevator be required for use before final completion and turnover, the requesting party shall provide temporary car enclosures, requisite guards or any other protection for the elevator hoistway openings, main line switch with wiring, necessary power, signal devices, lights in the car and elevator operators together with any other special labor or equipment needed to permit safe temporary elevator service without expense to the original elevator contractor.. The elevator contractor shall also be entitled to reimbursement for any labor and materials, which are not part of the permanent elevator installation as contracted and which is required to facilitate temporary elevator service. In addition, the elevator contractor's temporary acceptance form shall be executed before any elevator is placed into temporary service. The cost of power, operation and maintenance of the equipment and rehabilitation of equipment shall be paid by the requesting party for the temporary use of the elevator.

II.3. EQUIPMENT DESCRIPTION FOR ELECTRIC RACK & PINION ELEVATOR

II.3.1. Type: Rack and Pinion

II.3.2. Load: (Capacity) 3,500 LBS.

II.3.3. Car Speed: 125 fpm

II.3.4. Operation: Selective / Collective

II.3.5. Motor Control: Variable Frequency A.C.

II.3.6. Rise (Lifting Height): To be determined by the required installation location and will be specified in the purchase order contract.

II.3.7. Number of Stops: (including base) To be determined by the required installation location and shall be specified in the purchase order contract.

II.3.8. Number of Openings: To be determined by the required installation location landings and shall be specified in the purchase order contract.

II.3.9. Maintenance: 12 months required after turnover / bimonthly

II.3.10. Power Supply: 440/480 volts, 3 phase, 60 hertz

II.3.11. Lighting Power Supply: 120 volts, single phase, 60 hertz

II.3.12. Car Enclosure: Stainless Steel with appropriate car doors

II.3.13. Clear Car Inside: 5'7" wide x 7'0" deep or as specified by the purchase order contract.

II.3.14. Height under Car Top: 96" or as specified by the purchase order contract.

II.3.15. Type Of Car Door: Manual 2 speed side slide

II.3.16. Type Of Hoistway Entrance: Manual horizontal swing

II.3.17. Hoistway Entrance & Car Opening Size: 3'6" wide x 7'0" high or as specified in the purchase order contract.

II.3.18. Car Operating Panels: (1) at the front, (0) at the rear

II.4. GUARANTEES:

Elevator contractor shall provide to JEA a one (1) year unconditional warranty for materials and workmanship after construction completion and final operational acceptance of each elevator. This warranty shall include materials and installation and shall constitute complete replacement and delivery to the site of materials and installations of same to replace defective materials or defective workmanship with new materials/workmanship conforming to the original design specifications.

II.5. PERMITS & INSPECTIONS:

The elevator contractor shall furnish all required licenses and permits. The elevator contractor shall also be responsible for scheduling all inspections and tests and providing the final inspection and testing reports in the turn-over documentation.

II.6. CODES:

All elevator equipment shall be furnished and installed in accordance with the most current revision of the ASME A17.1 Safety code for Elevators and Escalators, and the Florida Building Code.

II.7. MACHINERY:

The complete elevator drive unit shall consist of at least two-squirrel cage Totally Enclosed Fan Cooled (TEFC) motors, reduction gears(s) drive pinions and a manual reset over-speed governor/safety device mounted on a stable machinery plate. The drive units shall also include an electric disc brake provided with an external manual brake release mounted on the reduction gear. Sound isolation pads shall be installed beneath the machine bedplate to reduce vibration and noise transmission to the building structure. The drive unit shall be mounted on the elevator car frame. All elevator machinery shall be supplied by Alimak / Intervect Elevator Company.

II.8. MOTORS:

The elevator motor(s) shall be alternating current, reversible type designed for elevator service with high starting torque and low starting current. Overload relays shall be provided per all applicable codes.

II.9. BRAKES:

The elevator brakes shall be spring applied, electrically released and designed to provide smooth stops under variable load conditions.

II.10. AUTOMATIC SELF-LEVELING:

The elevator shall be provided with an automatic self-leveling device that will bring the elevator car level with all floor landings regardless of the load or direction of travel. The automatic self-leveling shall correct for all over travel or under travel conditions.

II.11. CAR FRAME AND GOVERNOR / SAFETY DEVICE:AS

The elevator car frame shall be fabricated of formed or structural steel members and shall be provided with adequate bracing to support the platform aaaaaaaaaaaaaaaaaaaaaaasnd car enclosures. The car speed safety devices shall be of integral design with the car frame and shall be of the Rack & Pinion type designed to stop the car should it attain excessive descending speed. The elevator car shall also include safety hooks which are installed to prevent any derailment of the elevator from the guide mast and separation of the safety device pinion from the rack.

II.12. GOVERNOR / SAFETY DEVICE:

The elevator car shall be provided with an integral centrifugal speed governor that shall allow the car to operate safely at its designed speed. The elevator governor shall actuate a switch when excessive speeds occur, disconnecting the power to the break at the same time activating the safety device. The safety device shall be manually reset by the use of special tools.

II.13. HOISTWAY WIRING:

Elevator wiring and electrical interconnections shall comply with all governing codes. Insulated wiring shall have a flame retardant and moisture-proof outer covering and shall be installed in conduit, tubing or electrical wire ways per applicable codes. Traveling cables shall be flexible and properly suspended to relieve strain on individual conductors.

II.14. HOISTWAY OPERATING DEVICES:

Normal terminal stopping devices shall be provided to slow down and stop the car automatically at the terminal landing and to automatically cut off the power and apply the brake should the car travel beyond the terminal landing.

II.15. PIT SWITCH:

An emergency stop switch shall be located in the pit accessible from the pit access door.

II.16. BUFFERS:

Buffers shall be installed in the pit as a means for stopping the car and counterweight at the bottom most limits of travel.

II.17. GUIDE MASTS:

Steel elevator guide masts shall be furnished to guide and support the car and counterweights. The guide masts shall be erected plumb and securely fastened to the building structure.

II.18. ROLLER GUIDES:

The elevator car shall be provided with polyurethane lined roller guides mounted on the top and bottom of the car frame which shall engage with the guide masts to provide for smooth car operation.

II.19. COUNTERWEIGHT:

A structural steel frame with filler weights shall be provided to facilitate proper elevator counterbalance for smooth and economical operation. A counterweight guard shall be furnished and installed at the bottom of the hoistway. The counterweight support ropes shall be steel. The size, construction and number shall ensure proper and safe operation of the elevator and provide industry standard wearing qualities.

II.20. PLATFORM:

The car platform shall be of all steel construction. The entire platform shall rest on a vibration damping material designed to form an isolating cushion between the car and the car frame.

II.21. EMERGENCY CAR LIGHTING:

Each elevator car shall be provided with an emergency power lighting unit employing a sealed rechargeable battery and totally static circuits which shall illuminate the elevator car and provide current to the alarm bell in the event of a normal power failure. The equipment shall comply with the requirements of the latest revision of the ASME A17.1 code.

II.22. HALL BUTTONS:

At each elevator landing a push button fixture with position indicator, manufactured by CJ Anderson, which corresponds with the elevator control system, shall be installed adjacent to the landing door.

II.23. SPECIAL EMERGENCY SERVICE OPERATIONS:

The following Special Emergency Service operational controls shall be provided for each elevator in compliance with the latest revision of the ASME A17.1 code.

II.23.1. Special Emergency Phase I:

The elevator car shall return non-stop to a designated floor after being initiated by either an elevator smoke detector system or a Phase I key switch provided in a landing fixture. The smoke detector system shall be furnished by others to meet this requirement. The elevator contractor shall provide the necessary contacts on the elevator controller to receive signals from the smoke detector system. The smoke detector and Phase I key switch special emergency operation test shall be witness tested by JEA prior to final acceptance of the elevator.

II.23.2. Special Emergency Phase II:

A Phase II key switch shall be provided for in-car control of each elevator when a fire/smoke detector senses a fire at a specific landing. This key switch shall provide in-car control of the elevator when the Phase II emergency is detected and allow continuation of operation to an alternate floor.

II.23.3. If an elevator is on independent service when the elevators are recalled on a Phase I emergency operation, a buzzer shall sound in the car and a jewel type light shall be illuminated on the control panel.

II.24. INSPECTION OPERATION:

An enabling key switch shall be provided in the car operating panel that will permit operation of the elevator from the top of the car for inspection purposes. This enabling key switch shall render all car panel and landing call buttons inoperative during an elevator car inspection. A fixture shall be provided on the top of the car which contains a controls-selecting toggle switch that makes the fixture on top of the car operable and at the same time makes the door operator inoperable. The fixture shall be designed to contain a continuous pressure “UP”

and "DOWN" buttons and an emergency stop button as well as the toggle switch. Corresponding switch labeling shall be provided for this controls device.

II.25. HOISTWAY ACCESS SWITCH:

In accordance with the latest revision of the ASME A17.1 code an enabling key switch shall be provided in the elevator car operating panel to render all car and landing call buttons inoperable. An access key switch shall also be provided at the ground level landing location that will permit operation of the elevator by means of this key switch.

II.26. CONTROLLER:

A solid state (MCE) Motion Control Engineering Inc. (MCE) controller shall be provided at the appropriate landing and shall include all starting switches of adequate size together with the required relays and other hardware necessary to accomplish correct elevator operations.

II.27. DOOR OPERATION:

II.27.1. All elevator landing doors shall be horizontal swing type doors unless specified differently for other applications.

II.27.2. All elevator car doors shall be manually operated, two speed and, two speed panel horizontally mounted sliding type doors.

II.27.3. All elevator doors shall have an approved locking system and all landing doors shall have an approved positive interlocking mechanism. These interlocking devises shall prevent any operation of the elevator unless all doors for that elevator are closed and shall maintain the doors in their closed and locked position while the elevator is away from the landing. Emergency access to the hoistway shall be provided as required by all governing codes.

II.28. SIMPLEX COLLECTIVE OPERATION (FOR ONE ELEVATOR):

Elevator operation shall be fully automatic by means of the car and landing buttons. Stop 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 first car or landing button actuated shall establish the direction of travel for an idle car. "UP" landing calls shall be answered while the car is traveling in the up direction and "DOWN" landing calls shall be answered while the car is traveling down. The car shall reverse after the uppermost or lowermost car or landing call has been answered, and shall proceed to answer car calls and landing calls registered in the opposite direction of travel.

II.29. INDEPENDENT SERVICE:

A key switch shall be provide in each elevator car which can cancel any previously registered car calls, cancel the elevator calls from the landing buttons and allows operation from the car buttons only.

II.30. HEADERS:

Headers of sufficient size and thickness shall be provided for support of the frame and hangers and shall be securely fastened to the strut angles that include the hanger tracks.

II.31. LABELS:

All doors and door frames shall be manufactured and labeled in accordance with the procedures established by Underwriters Laboratories.

II.32. DOCUMENTATION:

All equipment manuals, wiring diagrams, operational instructions or any other written materials associated with the installed elevator shall be turned over to JEA upon final operational acceptance of the elevator.

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