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memorandum

VIA EMAIL:
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To: Mr. Paul Gingold - CM & Associates Construction Management LLC

From: Adarsh Jagannath, Senior Associate

Subject: 10 Park Place, Newark, NJ - Power Data Memo - VDA No. 62444

ELECTRICAL, MECHANICAL, STRUCTURAL and

ARCHITECTURAL REQUIREMENTS for ELEVATOR

Electrical Power and Ventilation Requirements at 208 / 460 VOLT, 3 PHASE, 60 HERTZ

HYDRAULIC ELEVATOR				
DESIGNATION CAPACITY & SPEED	MOTOR H.P.	FULL LOAD RUNNING AMPS	FULL LOAD ACCELERATION AMPS	HEAT RELEASE BTU/HR/UNIT
PE4: 4,000 lbs. at 125 fpm	50	93	195	33,500

Work by Others for Hydraulic Elevator

Electrical and Mechanical Requirements:

1. The electrical conduit, power feeders and grounding conductors between the load side of the main line disconnect switch and the elevator control equipment.

2. A means for disconnecting the main power supply for each unit which shall be located in the machine room. The disconnecting means shall be an enclosed, externally operated, fused motor circuit switch or circuit breaker capable of being locked in the "OPEN" position. Provide proper grounding in accordance with electric code.

3. Elevator No. PE4 is specified with a battery operated, back up automatic rescue/lowering device. The main line disconnecting means for each elevator shall be provided with a means to differentiate between normal power failure and manual operation of the disconnect switch.

4. Sprinkler and fire protective systems provided inside any given elevator hoistway, machine room, or associated machinery space shall be equipped with some means to disconnect the main line power supply from the affected elevator prior to activation. This means of disconnect shall be manually reset. All sprinkler and fire protective systems shall be installed in accordance with all applicable code requirements.

5. One set of normally open, dry electrical contacts (no voltage present) subject to activation by fire sensing devices located in the elevator machine room, hoistway, or in the elevator lobby, on any landing other than the designated fire recall landing (main floor). The contacts shall be wired to an electrical junction box located inside each elevator machine room for final connection to the elevator control systems by the elevator contractor. Each wire shall be clearly labeled with its control function.

6. One set of normally closed, dry electrical contact (no voltage present) subject to activation following transfer to the building emergency power supply. Also, one set of normally closed, dry electrical contact (no voltage present) to signal the elevator system that the power source will transfer from emergency to normal source. In addition, an adjustable time delay at the automatic transfer switch shall be provided to delay transfer from emergency to normal source. Contacts shall be wired to an electrical junction box located inside each machine room for connection to the elevator control equipment by the elevator contractor. The disconnecting means previously specified, shall disconnect the elevator from both the emergency (standby power) and the normal power system.

7. A separate 120 volt, 15 amp power supply (on emergency power circuit if available) and disconnecting means for each elevator located inside the machine room to operate the lighting fixtures and exhaust fan units inside the elevator car. The fused disconnect switch or circuit breaker shall be capable of being locked in the "open" position. The disconnecting means shall be labeled to identify the appropriate elevator number and marked "car lights".

8. Elevator no. PE4 is specified with an oil cooler. Provide a separate 120 volt, 15 amp power supply (on emergency power circuit if available) and disconnecting means for each elevator located inside the machine room for the oil cooler. The fused disconnect switch or circuit breaker shall be capable of being locked in the "open" position. The disconnecting means shall be labeled to identify the appropriate elevator number and marked "oil cooler".

9. Provide permanent lighting fixtures and 120 volt (GFCI protected) duplex receptacles inside each machine room. Illumination shall be no less than 19-foot candles at floor level. A light control switch must be provided immediately adjacent to the machine room entrance door on the lock-jamb side of the access door. Illumination shall be not less than 200 lx (19 FC) at floor level.

10. A 120 volt duplex (GFCI type) receptacle and a permanent light fixture equipped with a protective guard for each elevator pit. Illumination shall be no less than 100 lx (10-foot candles) at the pit floor and at the pit platform, if provided. A light control switch must be provided and so positioned as to be readily accessible from the pit entrance door or access ladder.

11. A dedicated 120 volt, 15 amp single power supply and disconnecting means inside each machine room to operate the access card reader devices FOR elevator no. PE4 and related card reader control equipment. The disconnecting means shall be fully enclosed, externally operated, fused or furnished with circuit breakers, and arranged to be locked in the “open” position. Access card reader devices shall be provided for installation by the security contractor in the elevator car operation stations. Electrical wiring connecting to and from the card reader master control station, located in the machine room, and the elevator control equipment shall be provided by the elevator contractor.

12. A 120 volt, 15a duplex outlet (on emergency power circuit, if available) adjacent to the fire command center or at a location determined by the architect for the elevator remote monitor and control station.

13. A 2” empty conduit shall be provided between each elevator or group of elevators and the remote control panel, adjacent to fire command center or in the security office / at a location determined by the architect. All wiring and connections shall be provided by the elevator contractor.

14. If required, provide a closed circuit tv camera in each elevator cab enclosure and all required conduit and wiring with final connections to the building security systems. The elevator contractor shall provide a power source on top of each car and wiring from the security items in the cab to a terminal strip located in the elevator machine room**.**

15. Telephone communication wiring, terminating in a junction box located in each elevator machine room or adjacent to the elevator remote control and monitor panel.

16. Provide a dedicated outside telephone line for each elevator or per group of elevators in each machine room if the elevators are remotely monitored by the elevator company.

17. A 120 volts, 15a duplex outlet (on emergency power circuit, if available) in the elevator machine room for intercommunications system.

18. Provide a network port switch for two-way speech and one way video communication in each machine room. A minimum of 4 quad ports per elevator should be provided. The network shall be on emergency power and must provide a minimum download bandwidth of 5 Mbps per gateway, minimum upload bandwidth shall be 1Mbps per gateway.

19. Drains or permanent sump pumps in the pits to prevent the accumulation of water. The drains or sump pumps shall be capable of draining 3,000 gallons per hour per elevator.

20. A fire extinguisher in each machine room.

21. Adequate ventilation for the elevator machine room including a means to maintain temperature range of 55° to 95°F with relative humidity not exceeding 95% non-condensing. The temperature and humidity range shall be permanently posted in the machine room or where specified by equipment manufacturers in the machinery space.

22. Other equipment such as pipes, conduits, ducts, communication devices, etc., not used in connection with the operation of the elevator system are not allowed to be located, pass through the machine room, hoistway, or pit.

Architectural and Structural Requirements:

1. Rated machine room, pit and secondary area access doors that are self-closing, self-locking and that may be opened from the inside without a key.

2. Protecting the hoistway and machine room during construction.

3. Structural supports for rail brackets, intermediate and divider beams, and machine support beams.

4. Machine room slab, hoist beam or hook(s), concrete slabs, elevator pit, supports for buffers, sill recesses/supports, drains, sump pits, sump pumps and grating covers.

5. Access ladders and/or inspection platforms in the elevator pit (final location is to be coordinated with the elevator contractor shop drawings).

6. Grouting of the new entrance sills and frames.

7. Patching, repairing, and installation of masonry and/or dry wall for a plumb, smooth, and legal elevator hoistway. Walls of the hoistway, where entrances are provided, shall be left open until after all elevator entrances have been installed.

8. For floor to floor heights exceeding 14’-0”, provide a steel or concrete beam directly above each entrance frame (final location of the beam is to be coordinated with the elevator contractor shop drawings).

9. Barricades to protect the hoistway openings during the period of installation of the elevator equipment.

10. Protection of each hoistway entrance head and side jamb with plywood, after installation while construction work is in progress.

11. Continuous sill supports for the full width of each hoistway opening, with the recess located not more than 2” from the elevator car sill plumb line.

12. Waterproofing for the elevator pits, as necessary, after setting of all pit supporting steel and rail inserts.
13. Provide each walk-in pit entrance door with a sign reading “danger elevator pit” or the equivalent thereof.

14. Provide each machine room ENTRANCE door with a sign reading “elevator machine room” with letters not less than 51mm (2”) high.

15. If required, provide access to the elevator machine levels and/or room by means of a stairway constructed of non-combustible material, at an angle not to exceed 60° from horizontal. Stairways shall be provided in lieu of straight ladders and shall be furnished with handrails (42" high) on all exposed sides.

16. Inside the hoistway, provide 75° bevel guards on the top sides of all projections, recesses, or setbacks over 4"**,** except on sides used for loading and unloading.

17. For main line location signage, a permanent sign must be located on or adjacent to the Phase 1 key switch. The sign must indicate the location of the mainline disconnect switches for each elevator or bank of elevators. The lettering must be a minimum of 6mm high in red or a color contrasting with a red background.

18. An approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of a fire. The sign shall read: “IN FIRE EMERGENCY, DO NOT USE ELEVATOR, USE EXIT STAIRS”. The emergency sign shall not be required for elevators that are part of an accessible means of egress complying with section 1009.4 of the building code.

Work by Others for Traction Elevators

1. The following requirements shall be applicable based on prevailing conditions at the site of work and/or mandated modifications for code compliance.

   a. Installation of new main line power feed with related disconnect switch designed and located per local law requirements.
   b. Provide remote/auxiliary disconnects where new or existing disconnect switches are not in line-of-sight of the controller.
   c. Installation of auxiliary power feed with related distribution panel(s) and disconnect(s) designed and located per local law requirements.

      1) Voltage shall be 110VAC with one 15 Amp circuit breaker or fuse for lighting of each individual elevator car enclosure.
      2) Circuit breakers and/or fused disconnects shall be lockable in the "OFF" position in accordance with applicable code.

   d. The top surface of any setback or projection in the hoistway that measures 4" or more in width shall be beveled at an angle of not less than 75 degrees from horizontal, constructed from prime painted 14 gauge cold-rolled steel and installed so as to conform with ASME A17.1 elevator safety code as modified by, and/or in addition to codes and standards accepted by the AHJ.
   e. Installation of new permanent 4ft LED lighting fixtures with protective guards and 110-volt duplex GFI receptacles inside the machine room. Illumination shall be no less than 30 foot-candles at floor level. A light control switch shall be provided immediately adjacent to the machine room entrance door. Provide necessary receptacles as required by Elevator Contractor to supply power to auxiliary elevator equipment and/or remotely located monitors.
   f. Provide machinery spaces of the secondary level directly below the machine room with permanent 4ft LED lighting fixtures having protective guards and a duplex GFI receptacle. Illumination shall be no less than 19 foot-candles at floor level. A light control switch shall be provided immediately adjacent to the secondary level entrance door/ladder in accordance with code.
   g. Provide each elevator pit with a 110volt GFI duplex receptacle and a permanent 2ft LED lighting fixture equipped with protective guard. Illumination shall be no less than 10 foot-candles at pit floor level. A light control switch shall be provided and so positioned as to be readily accessible from the pit entrance door or ladder.
   h. Installation of hoistway and machine room smoke relief provisions in accordance with local laws.
   i. Provide each machine room, secondary space and pit with a self-closing, self-locking access door. Locking means shall be spring-type arranged to permit the doors to be opened from the inside without a key.

j. Owner is responsible for the following:

1) Penetrations in the shaft.
2) Removal of any radiators and or unrelated piping and wiring.
3) Removal and/or closing and or securing shaft windows.

k. Provide a smoke detector system meeting the requirements of A17.1 and/or the Local Governing Authority.

l. Installation of fire emergency control interface provisions for automatic recall of the elevator(s) through operation of the fire detection system. Provisions shall be made for alternate designated fire recall landing with connection contingent on Codes recognized by the local governing authority. The interfacing contacts shall be wired to an electrical junction box located inside each elevator machine room for connection to the elevator control systems by the Elevator Contractor. Each wire shall be clearly labeled with its control function. Coordinate the type of interface required for the specific elevator control apparatus with the Elevator Contractor.

m. Where sprinkler fire protective systems are provided inside any elevator hoistway, machine room or associated machinery space, provisions shall be made for the disconnecting of the main line power supply from the affected elevator prior to activation. This means of disconnect shall be manually reset in accordance with code.

n. Installation of HVAC provisions inside the machine room so as to maintain ambient temperature and humidity levels that are within the range specified by the microprocessor-control equipment manufacturers.

o. Provide a class “ABC” fire extinguisher in electrical machinery and control spaces. Locate the extinguisher in close proximity to the access door.

p. Repair, secure, replace, seal or remove existing skylights located at the top of elevator hoistway(s) and/or in machine room(s) to avoid damage to elevator systems due to rain, debris, etc., which may enter through or fall from the skylight.

q. Provide necessary telephone wiring with connection to local telephone service for remote elevator monitoring and/or two-way voice emergency communications systems.

1) Terminate the telephone wiring in junction boxes or standard phone jack terminals in the machine room.
2) Coordinate the quantity and termination method of individual phone connections with the Elevator Contractor.
3) Identify each phone line for connection by the Elevator Contractor to the appropriate elevator device(s).
4) Telephone wiring, where required by applicable codes, shall be installed in conduit.

r. Sumps in pits where provided, shall be covered. The cover shall be level with the pit floor so as not to produce a tripping hazard.

s. Where the pit extends more than 3 feet below the sill of the pit access door, provide a permanent fixed metal ladder.

1) Ladder shall extend no less than 48” above the sill of the access door. Handgrips shall extend from the ladder to a point no less than 48” above the sill of the access door where the ladder does not comply.
2) The rungs shall be a minimum of 12” wide. Where prevailing conditions prevent a 12” wide rung, the rung may be reduced to no less than 9”.
3) The rungs shall be spaced 12” on center.
4) A clear distance of no less than 4 ½” from the centerline of the rungs and handgrips to the nearest permanent object in back of the ladder shall be provided.

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