DIVISION 14 – CONVEYING EQUIPMENT

14 01 00 – Operation and Maintenance

1. Maintenance Service:
    a. Perform maintenance, including emergency callback service, during normal working hours.
    b. Include 24-hour-per-day, 7-day-per-week emergency callback service.
    c. Response Time: Two hours or less.
    d. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months full maintenance service by skilled employees of the Elevator Installer to run in same time frame as warranty period.
    e. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed and capacity. Provide parts and supplies as used in the manufacture and installation of original equipment. Copies of all monthly maintenance, repair call, and callback slips are to be signed by personnel at the FMS Operation Center. A copy must be left with the Operation Center.
2. Continuing Maintenance Proposal: Provide a continuing maintenance proposal from Installer to Owner, in the form of a standard yearly maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options. Also provide a quote for a five year maintenance agreement
3. Warranty Period: 12 months from date of Substantial Completion.

14 05 00 – Common Work Results for Conveying Equipment

1. All new buildings shall have at least two elevators accessing all floors. If duplex set, each machine shall be capable of operating independently should either machine or group controller fail.
2. Elevator Machine Room
    a. Do not locate next to an office or other quiet area.
    b. All Elevator Machine rooms shall have – at minimum – controller, fire system relays, and main circuit breaker for elevator(s).
3. See Division 26 to connect electrical power and wiring to elevator controllers and car lights with appropriate lockable disconnects.
4. Definition: Defective Elevator Work: Operation or control system failures; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; the need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.
5. Elevator company shall comply with all accessibility requirements, including but not limited to,
    a. Chapter 11 of Building Code of NY State (which references ICC-ANSI A117.1)
    b. Latest Section 4.10 of US Architectural and Transportation Barriers Compliance Board's "Americans with Disabilities Act" (ADA).
    c. Latest edition of ADA Accessibility Guidelines (ADAAG)
    d. Local codes and governing regulations
6. Size
    a. Elevator shall have a minimum posted capacity of 3,000 pounds.
    b. Elevator depth (from inside doors to rail on rear wall)
        i. Elevators shall be 90 inches deep.
        ii. If depth cannot be achieved, consult with Planning & Design and Building Maintenance departments.
7. Components
    a. Pump Units: Positive-displacement type with a maximum of 10 percent variation between no load and full load and with minimum pulsations. Provide motor with soft start solid-state starting.
    b. Hydraulic Silencers: Provide hydraulic silencer containing pulsation-absorbing material in a blowout-proof housing at pump unit.
    c. Casing for Underground Piping (do not use underground piping unless approved by Owner): PVC pipe complying with ASTM D 1785 joined with PVC fittings complying with ASTM D 2466 and solvent cement complying with ASTM D 2564.
    d. Protective Cylinder Casings: PVC pipe casings complying with ASME A17.1, of sufficient size to provide not less than 1 inch clearance from cylinder and extending above pit floor.
    e. Corrosion Protective Filler: A solvent-less, petroleum-based gel formulated for filling the space between hydraulic cylinders and protective casings. Filler is heavier than water, electrically non-conductive, and liquefies at approximately 150 deg. F (Pacific Standard Chemical Co.; Union-Gard 160).
    f. Car Frame and Platform: Welded steel units.

g. Provide non-proprietary microprocessor operation system.
h. Emergency Lowering: On failure of building power, cars that are at a floor are lowered to the lowest terminal floor, open their doors, and shut down. Cars that are between floors are lowered to the lowest terminal floor, open their doors, and shut down.
i. Key Switches: All key switch cylinders shall be by Best (except FE0K1 for Fire Service). Cores shall be supplied by Owner.
j. Provide a Door Hold feature that holds car at floor with doors open and all other buttons and calls inactive except Fire Service and Fire Service Recall. Door Hold key switch to be on COP.
k. Provide Phase I and Phase II fire emergency service per ANSI/ASME A17.1 and any other requirements in accordance with local laws and ordinances. Fire Service key shall be FE0K1. Emergency operation shall be actuated by the operation of three-position (Reset, Normal, Firemen Service) key operated switches located at the Lobby Floor. Fire Service Recall (Phase I): By activation of Fire Alarm System, the elevator will enter Fire Service Recall and go to the first floor lobby (known as the Designated floor) if any of the elevator lobby smoke detectors on any floor (except the first floor elevator lobby) or any hoistway or elevator machine room smoke detectors are activated. If the first floor lobby smoke detector is activated, the elevator will enter Fire Service Recall and travel to the second floor (known as the Alternate floor). All other smoke detector or fire alarm activations will not affect elevator service (except hoistway or machine room detectors). Upon Fire Service Recall, the Fire buzzer and display lamp in the cab will be activated. If a hoistway or machine room smoke detector is activated, the "Fire" light in the COP and designated floor hall fixture lobby will flash. When Fire Service Recall is activated by the building fire alarm system panel, Fire Service Recall must be manually reset at the first floor lobby after the fire alarm system has been reset. This is accomplished by inserting the FE0K1 key into the Fire Service key switch at the first floor lobby and turning the switch to the "Reset" position and then back to the "Normal" position. The car will then return to normal service, if and only if, the fire alarm system has been fully reset.
l. Fire Alarm Shunt Trip: If a heat detector in the elevator machine room or hoistway is activated, or if the flow switch for the fire sprinkler line to the hoistway or elevator machine room is activated, the shunt trip breaker supplying electrical power to the elevator system shall be tripped removing power from the elevator system (including Emergency Lowering).
m. Shunt trip breaker (with auxiliary contacts for lowering system) for elevator shall be located in elevator machine room.
n. COP layout drawing to be approved by Owner before COP is released for production.
o. Emergency Communication System: Provide an analog hands-free phone that complies with ASME A17.1 and the U.S. Architectural and Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines (ADAAG)." On activation, phone dials preprogrammed number of monitoring station. Phone provides two-way voice communication without using a handset and provides visible signals that indicate when system has been activated and when monitoring station has responded. Phone is contained in COP with identification, instructions for use, and is powered by the telephone line without a battery for memory or any other purpose.
p. Door Edge Device: Provide electronic safe edge on elevator entrance doors that cause doors to stop and reopen upon detecting an obstruction. Include photoelectric curtain with timed cutout that projects beams across car entrance. The beams, when interrupted, cause doors to stop and reopen. Include Nudging Feature: After car doors are prevented from closing for a predetermined adjustable time, through activating door reopening device, a loud buzzer shall sound and doors shall begin to close at reduced kinetic energy.
q. Luminous Ceiling: LED light fixtures using 4 foot T-8 lamps and ceiling panels of translucent acrylic or other permanent rigid plastic complying with flammability requirements.
r. Piping: Provide size, type, and weight piping recommended by manufacturer, and provide flexible connectors to minimize sound and vibration transmissions from power unit.
s. Provide dielectric couplings at plunger/cylinder units.
t. Provide vandal resistant signal equipment for elevator with vandal resistant Braille that use LED lamps. Fabricate lighted elements of acrylic or other permanent, non-yellowing translucent plastic.
u. Engrave Fireman’s Service instructions into COP above Fire Service key switch.
v. Integrate emergency phone into COP.
w. Elevator unit number to be engraved at top of COP above CPI.
x. Fire Department Communication System (if required): Provide jack in COP and required conductors in traveling cable for fire department communication system specified in Division 26 (if required).
y. Provide waterproof well casings to retain walls of well hole.

z. Install cylinders in well casings. Before installing cylinders, remove water and debris from well casing and provide permanent waterproof seal at bottom of casing.
aa. Install cylinders plumb and accurately centered for elevator car position and travel. Anchor securely in place, supported at pit floor. Seal between protective casing and pit floor with 4 inch of non-shrink, non-metallic grout.
bb. Sump pump for the hoist way pit shall be equipped with an oil sensing switch (SEE water Inc. Oil Smart or Owner approved equal).
cc. Do not use Otis Gen II or Gen III machines as a basis of design. The shaft is the smallest of all machines and this prevents modernization by other companies in the future.

14 27 13 – Custom Elevator Cab Finishes

1. General
    a. Prohibit the use of stainless steel finishes unless infeasible.
2. Products
    a. Flooring
        i. Nora rubber; confirm product with FMS
    b. Walls
        i. Plastic laminate finish
    c. Ceiling
        i. Suspended with concealed frame
        ii. Perforated metal not accepted
    d. Lighting
        i. Perimeter linear LED; all sides of cab

14 50 00 – Documentation

1. Product Data
    a. Include capacities, sizes, performances, operations, safety features, finishes, and similar information.
2. Shop Drawings
    a. Show plans, elevations, sections, and large-scale details indicating service at each landing, machine room layout, COP drawing with Best brand key switches with their model number and mechanical operation, cut sheet for sump pump with oil sensing switch detail, hall fixture drawings, coordination with building structure, relationships with other construction, and locations of equipment and signals. Indicate variations from specified requirements, maximum dynamic and static loads imposed on building structure at points of support, motor horsepower, motor duty rating, and maximum and average power demand.
3. Manufacturer Certificates
    a. Signed by elevator manufacturer certifying that hoistway, pit, and machine room layout and dimensions, as shown on Drawings, and electrical service, including emergency generator, as shown and specified, are adequate for elevator system being provided.
4. Maintenance and Programming Manuals
    a. Include Operation, Programming, and Maintenance manuals, parts listing with sources indicated, recommended parts inventory listing, emergency instructions, and similar information. Include diagnostic and repair information available to manufacturer's and Installer's maintenance personnel. Submit for Owner's information at Project closeout as specified in Division 1.
5. Inspection and Acceptance Certificates and Operating Permits
    a. Provide to Owner as required by authorities having jurisdiction for normal unrestricted elevator use. Do not provide a display frame in cab for certificates or permits.

END OF DIVISION 14