

1.05 QUALITY CONTROL

- A. Elevator system manufacturer shall be one regularly engaged in the business of manufacturing, installing and servicing elevators of the type and character required by these specifications, and shall be manufacturer of the entire machines, motors, controllers, controller relays and all other parts of operation equipment, including door operation mechanisms and signal systems, and all mechanisms constituting the various electrical and mechanical safety systems.
- B. The various items of equipment comprising elevator system shall be of types which have been in satisfactory operation for a period of not less than two (2) years.
- C. All items furnished by manufacturer shall be erected, installed, adjusted, checked out, tested and place in operation by competent personnel under supervision and in direct employ of elevator system manufacturer.
- D. Elevator manufacturer shall be completely responsible for the entire elevator installation.
- E. The elevator machines, controllers and associated equipment shall be in strict accordance with the specification requirements and of high quality grade. The elevators must be smooth and safe in operation and shall be the product of firms regularly engaged in the business of manufacturing high class elevators, who are possessed of sufficient financial ability and satisfactory business standing and technical ability, shop equipment and technical organizations, etc., and have demonstrated their ability to design and construct elevators of the grade covered by this specification.
- F. Each elevator specified hereinunder, and to be furnished and installed under this contract, shall not be an assembled elevator, but shall be manufactured in its entirety, exclusive of cabs and doors, by the designer and manufacturer, who shall be fully licensed and authorized to construct and install the elevator equipment covered by these specifications.

6 COORDINATION

- A. Coordinate with all other trades whose work relates to Elevator Installation for placing all required blocking, subframing, backing furring, etc., to ensure proper locations.

- B. Obtain and pay for all permits, inspection fees and certificates required for work in this section. Perform tests in the presence of a representative of the authority requiring the test.

1.07 TEMPORARY USE

- A. Should the Owner or General Contractor desire to use the service of an elevator during the period when work on the elevator is in progress and before the elevator is placed in service, the Owner or General Contractor agrees to sign the elevator contractor's reasonable temporary conditions thereof. Also the Owner or General Contractor agrees to provide, if required, temporary enclosures, guards or other protection of hoistway openings, necessary power signaling devices, lights in the car, elevator operators, and other work required to permit this temporary usage.
- B. The Owner or General Contractor agrees to pay all reasonable costs of power and operation, and that the complete elevator equipment will be returned to the same condition of repair and maintenance as existed when the elevator was placed on temporary service. The Owner or General Contractor agrees to permit the Elevator Contractor make such repairs or replacements and to pay the Elevator Contractor for this added expense at regular billing rates.

1.08 MAINTENANCE – GENERAL

- A. The elevator contractor shall furnish maintenance and 24-hour callback service on the equipment provided for a period of twelve (12) months after completion and acceptance of work. This service shall include regular examinations of the installation by competent and trained employees of this contractor, and shall include all necessary adjustments, greasing, oiling, cleaning, supplies and parts to keep the equipment in perfect operation, except such parts made necessary by misuse, accidents or negligence not caused by the Contractor.
- B. The elevator contractor shall have bona fide proven manufacturer's service facilities in the City of Fort Worth or Dallas, which shall be maintained direct by the manufacturer. This contractor shall also have in inventory within the city the necessary replacement parts for satisfactory servicing.

1.09 MAINTENANCE – DETAILED

- A. Contractor's Services During Warranty Period: Contractor shall provide work and materials, collectively called "Services," as indicated below during the warranty period. "Services" shall include all labor, transportation, supplies, materials, parts, tools, scaffolding, machinery, hoists, employee safety equipment, equipment, lubricants, supervision, and all other work and materials reasonably inferred whether or not expressly stated herein. Services shall be performed as follows:
 1. Diligently and in a first-class, complete and workmanlike manner, free of defect or deficiency, and in conformance with all applicable original manufacturer's specifications.
 2. In conformance with Owner's rules, regulations and requirements for the work at the Property, as modified and supplemented during term of this warranty.
 3. In such manner as to minimize any annoyance, interference, or disruption to occupants of Property or their invitees.
 4. In conformance with all other provisions of this Contract.
 5. In conformance with all applicable legal and code requirements.
 6. By qualified, careful and efficient employees in conformity with best industry practices and to Owner's satisfaction.
 7. Facilitate proactive preventive maintenance, maximize equipment life and maximize beneficial usage of the vertical transportation equipment covered by this Contract. Contractor expressly acknowledges that Owner is relying on

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Contractor's professional expertise in performance of Services to achieve desired results.

- B. **Materials Included in Services:** Services shall include all materials. The term "materials" shall include all tangible property, whether designated as materials, goods or parts or otherwise. All such materials shall be as follows:
1. New, as specified herein.
 2. Good quality and suitable for their intended uses. Utilize original equipment manufacturers' materials, goods or parts, for all renewal, replacement, repair, and lubrication procedures.
 3. Proration of equipment shall not be allowed.
 4. No consideration shall be given in regard to obsolescence of systems, materials or parts.
- C. **Material Delivery:** All materials shall be delivered F.O.B. to the Property. Whenever materials are specified as "or equal" under this Contract, substitutions must have the written approval of Architect and Owner. All specified materials shall be delivered to the Owner in their original unbroken packages, wrappings or containers. Title to all materials delivered to and stored at the Property which are intended to become part of the completed Services shall pass to Owner upon installation.
- D. **Scheduling, Inspection, Clean-Up and Acceptance:** Contractor shall coordinate with and follow the directives of Owner with respect to scheduling Services and any deliveries hereunder. Contractor shall comply with Owner's requirements for clean-up using containers supplied by Contractor. Contractor shall repair any damage to the Property and adjacent areas caused by Services. Owner shall have full access to inspect Services at all times.
- E. **Protection of Persons and Property:** Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with Services and shall comply with all applicable safety laws and good industry standards, and shall take all reasonable precautions for safety of Owner, Owner's Property, Owner's tenants, Owner's employees, Contractor's employees, and other persons on or about Property.
- F. **Proactive Preventive Maintenance:** Contractor agrees to regularly and systematically examine, clean, lubricate, and adjust equipment and systems as recommended by manufacturer, and as conditions warrant to repair or replace all vertical transportation equipment included under this Contract. Contractor shall maintain elevator machine rooms, hoistways, pits, car tops and equipment in or on these areas in a consistently clean condition.
- G. In performing Services, Contractor agrees to provide parts obtained from or recommended by manufacturer(s) of equipment for replacement or repair. Equivalent parts may be used if approved in writing by Architect and Owner. Parts requiring repair shall be rebuilt to "like new" condition.
- H. Check and adjust the group dispatching system at interval required to ensure all circuits and time settings are consistently and properly adjusted to minimize system response time of registered car and hall calls.
- I. If, as a result of examination or testing of the equipment, corrective action is found to be required, Contractor shall proceed immediately to make repairs, replacements, and adjustments. If Contractor believes such work is not Contractor's responsibility, a written report signed by Contractor shall be delivered to Architect and Owner for further action with exception of a safety or potential safety situation, in which case, Contractor shall immediately correct the problem.

- J. Contractor shall lubricate equipment at intervals recommended by equipment manufacturer, or as dictated by use of equipment. All lubricants shall be suitable for purpose intended and shall meet or exceed minimum requirements specified by manufacturer of equipment to which the lubricant is applied. Lubricants, cleaning fluids and all combustible liquids shall be stored in a metal cabinet in the machine room and shall be disposed of in accordance with OSHA and EPA guidelines. Post MSDS data sheets as required. A metal can and lid shall be provided in each machine room for temporary storage of oily rags.
- K. No parts or equipment required by Services may be removed from the Property without written approval of Owner. This does not include renewal parts stocked on the job by Contractor, which shall remain Contractor's sole property until installed on the equipment.
- L. Contractor shall paint equipment at intervals frequently enough to maintain a professional appearance, prevent rusting, and preserve the equipment. All paint shall be suitable for the purpose intended and shall be high quality. Notify and schedule all painting procedures with Owner.
- M. Contractor shall repair damage to car and hoistway door(s) finish when caused by improper adjustment or maintenance of associated equipment.
- N. Contractor shall provide metal spare parts cabinets of suitable size for storage of spare parts and wiring diagrams in each machine room. No open storage of parts or other items shall be permitted. Stock parts cabinets with adequate renewal parts to maximize beneficial usage of equipment.
- O. As-built/as-modified wiring diagrams shall be kept neatly folded and stored, except where mounted on boards, and shall be copied and replaced by the Contractor as their condition warrants.
- P. Contractor shall not be required to install new attachments, or perform newly mandated tests recommended or directed by inspecting entities, insurance companies, and federal, state or municipal governmental authorities subsequent to the date of this Contract unless compensated for such tests or attachments.
- Q. Replace or repair elevator ceiling lighting. Light tubes/bulbs will be supplied by Owner.
- R. Services shall not include:
1. Repairs or replacements required due to negligence, accident or misuse of the equipment by anyone other than the Contractor, their employees, subcontractors, servants or agents, or other causes beyond the Contractor's control except ordinary wear.
 2. Repair or replacement of Property items, such as hoistway or machine room walls, floors, car interior finishes, car finish floor material, hoistway entrance frames, car and hoistway door panels, car and hoistway door sills, signal fixture faceplates, and fire alarm initiating devices.
 3. Mainline and auxiliary disconnect switches, fuses and feeders to elevator control panels in machine room.
 4. Lamps for normal machine room illumination.
 5. Audio and visual devices not provided by Contractor.
 6. Underground hydraulic piping and cylinders.
- S. Services, including unlimited emergency callback service, shall be performed between the hours of 7:30 a.m. and 5:00 p.m. Monday through Friday. Provide emergency callback service under the following conditions:
1. Passenger entrapments.
 2. Elevator group control panel malfunction.

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- T. Response Time for Callback Service:
1. During the hours identified above, Contractor shall arrive at Property in response to passenger entrapment calls within 30 minutes from time of notification.
 2. Outside the hours identified above, Contractor shall respond to callback service within 15 minutes from the time of notification. Once the call is dispatched to the mechanic, the mechanic and/or Contractor's call center operator shall call Owner's representative back and advise the mechanic's estimated time of arrival (not to exceed 60 minutes total from time call is made for an entrapment, or 90 minutes for all other calls).
- U. Removal of elevators from beneficial usage to facilitate Services by Contractor shall be coordinated with and approved by the Owner. Owner agrees to permit Contractor to remove elevators from service for a reasonable time to perform Services.
- V. Contractor shall perform ASME A17.1 equipment tests including, but not limited to, annual no load, slow speed test of car and counterweight safeties, governors and buffers; monthly Firefighters' service operational tests; annual pressure relief tests on hydraulic elevators; annual standby power operation test(s) on elevators, battery pack car emergency lighting, and battery pack car lowering devices. Written reports of all tests shall be submitted to the Owner. Provide Owner with five (5) days prior notification of tests so that a Representative of the Owner may witness all tests. In the event of differing testing requirements between these requirements and local codes or ordinances, the more stringent requirement shall prevail.
- W. Contractor shall affix metal tags to the tested devices clearly indicating the type of test, date of test, Contractor performing test, and applicable code rule.
- X. Contractor shall affix and maintain Car/State number designation on all elevator equipment in the machine room and pit, including hoist machine, pump unit, controller, car crosshead, electrical disconnect, buffer, etc.
- Y. Contractor agrees to maintain minimum performance requirements of designated elevators. In addition, Contractor agrees to maintain the equipment as follows:
1. Door closing force shall be no more than 30 lbf. Door closing force is measured with door(s) at rest and between 1/3 and 2/3 closed.
 2. Car stopping accuracy shall be within $\pm 1/4$ " for all closed loop motion control systems, $\pm 3/8$ " for open loop motion control systems, and assured under all load conditions.
 3. Rated car speed, regardless of load, shall not vary more than $\pm 3\%$ for closed loop motion control traction equipment, $\pm 5\%$ for open loop motion control traction equipment, and $\pm 10\%$ for hydraulic.
- Z. Measured noise levels in a moving car outside the leveling zone shall not exceed 55 dBA under any condition, including car ventilation blower or fan on highest speed. Measured noise levels in car within the leveling zone or when car is stopped shall not exceed 60 dBA. There shall be no discernible sound in the elevator car from hoist machine, ropes, sheaves, pump unit, SCR units, platforms, car enclosure walls, or car guides unless it is mutually determined by Contractor and Owner that such sounds are attributable to the design of the equipment.
- AA. Maintain alignment of car guide rails to a tolerance of 1/16" in 100' in any direction.
- AB. While maintaining performance requirements, Contractor shall maintain a comfortable elevator ride with smooth acceleration, retardation and accurate stop. Door operation shall be quiet and smooth with positive checking.
- AC. While performing maintenance, the Contractor shall at all times keep the jobsite free from all material, debris, and rubbish and shall remove same from the jobsite. The Contractor

shall remove from the site all material, tools and equipment belonging to him, and leave the site with an appearance acceptable to Owner.

- AD. Contractor shall provide the necessary labor hours for routine cleaning and maintenance service. **MINIMUMS** are 1 hour per week for geared machine, 1.5 hours per week for each gearless machine, and 1 to 2 hours bi-weekly on hydraulic machines.
- AE. Contractor shall conspicuously post Preventive Maintenance Schedule and Work Log in each machine room. Alternately, collect maintenance and testing logs electronically within elevator computer control system. Data shall be accessible by Owner via copy or printout at all times. Log or electronic printout shall include all entries for routine preventive maintenance, repairs, tests, callbacks and supervisor's surveys. Entries shall include date work is completed, mechanic's or supervisor's name, brief description of work completed including elevator number and number of elevators serviced, and the approximate time required for work excluding travel time to and from Property. Owner shall be allowed to inspect and copy log or electronic printout and maintenance schedule at any time. **CONTRACTOR'S EMPLOYEES MUST SIGN-IN AND SIGN-OUT OF EACH BUILDING EACH TIME VISITED AND LEAVE SIGNED SERVICE TICKETS LISTING WORK PERFORMED WITH THE FACILITIES MANAGEMENT SUPERVISOR.**
- AF. Contractor shall maintain Owner's complete set of straight-line wiring diagrams in good condition. Drawings shall be consistently modified with "as-built" conditions with any changes or modifications to circuits resulting from control modifications, parts replacement or equipment upgrades made by Contractor during term of warranty. Owner shall be allowed to reproduce these "as-built" drawings and retain sole possession of these drawings.
- AG. At least quarterly, or more often if requested, Contractor shall provide and review with the Owner a summary of all callbacks. The intent of this review is to minimize callbacks by developing consistent communication between the Contractor and Owner relative to callback trends, equipment downtime and their causes.
- AH. State or City inspection fees in regard to operation of equipment covered by this Contract shall be paid by the Owner. Fees for reinspections due to failure to eliminate deficiencies covered by Services shall be paid by Contractor.
- AI. **OWNER'S RESPONSIBILITIES:**
1. Provide clear, safe and timely access to Property and elevator equipment rooms.
 2. Maintain equipment room lighting, telephone lines to controller terminal(s), equipment room electrical switch gear and electrical feeders to elevator controllers.
 3. Provide Contractor with car light tubes/bulbs for Contractor to replace.
 4. Maintain equipment room heating and air-conditioning systems.
 5. Maintain fire alarm initiating devices in elevator lobbies, machine rooms, hoistways, etc.
 6. Prevent storage of Property equipment or supplies in elevator equipment rooms and obstruction of equipment room access corridors and doors.
 7. Maintain standby power generator systems and related switch gear and feeders.
 8. Maintain equipment rooms, hoistways, wellways, and pits in a code-compliant and dry condition.
 9. Coordinate with Contractor in regard to Owner-required equipment retrofits such as elevator security systems, new car interior finishes, car interior TV systems, etc.
 10. During construction and/or retrofit, make provisions to limit infiltration of dust and debris into elevator equipment and equipment spaces. Routinely clean walls and floors of hoistways and equipment spaces.

