

**SECTION 14 24 00  
HYDRAULIC ELEVATORS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. This section specifies the engineering, furnishing, and installation for modification of the existing electric hydraulic elevator system as described herein and as indicated on the contract drawings.
- B. Items listed in the singular apply to each and every elevator in this specification except where noted.

**1.2 RELATED WORK**

- A. Section 01 33 23 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FAR 52.236-21) and, SPECIAL NOTES (VAAR 852.236-91), in GENERAL CONDITIONS.
- B. Section 07 84 00, FIRESTOPPING: Sealing around penetrations to maintain the integrity of fire-rated construction.
- C. SECTION 09 06 00, SCHEDULE FOR FINISHES: As a master format for construction projects, to identify interior and exterior material finishes for type, texture, patterns, color and placement.
- D. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: General electrical requirements that are common to more than one section.

**1.3 QUALIFICATIONS**

- A. Approval by the Contracting Officer is required for products or services of proposed manufacturers, suppliers and installers and shall be contingent upon submission by Contractor of a certificate stating the following:
  - 1. Elevator contractor is currently and regularly engaged in the installation of elevator equipment as one of his principal products.
  - 2. Elevator contractor shall have three years of successful experience, trained supervisory personnel, and facilities to install elevator equipment specified herein.
  - 3. The installers shall be Certified Elevator Mechanics with technical qualifications of at least five years of successful experience and Apprentices actively pursuing certified mechanic status. Certificates are required for all workers employed in this capacity.
  - 4. Elevator contractor shall submit a list of two or more prior hospital installations where all the elevator equipment he proposes to furnish for this project functioned satisfactorily to serve varying hospital traffic and material handling demands. Provide a list of hospitals that have the equipment in operation for two years preceding the date of this specification. Provide the names and

addresses of the Medical Centers and the names and telephone numbers of the Medical Center Administrators.

- B. Approval of Elevator Contractor's equipment will be contingent upon their identifying an elevator maintenance service provider that shall render services within one hour of receipt of notification, together with certification that the quantity and quality of replacement parts stock is sufficient to warranty continued operation of the elevator installation.
- C. Approval will not be given to elevator contractors and manufacturers who have established on prior projects, either government, municipal, or commercial, a record for unsatisfactory elevator installations, have failed to complete awarded contracts within the contract period, and does not have the requisite record of satisfactorily performing elevator installations of similar type and magnitude.
- D. Welding at the project site shall be made by welders and welding operators who have previously qualified by test as prescribed in American Welding Society Publications AWS D1.1 to perform the type of work required. VAMC shall require welding certificates be submitted for all workers employed in this capacity. A welding or hot work permit is required for each day and shall be obtained from the COR of safety department. Request permit one day in advance.

**1.4 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification. Elevator installation shall meet the requirements of the latest editions published and adopted by the United States Department of Veterans Affairs on the date contract is signed.
- B. Federal Specifications (Fed. Spec.):
  - J-C-30B.....Cable and Wire, Electrical (Power, Fixed Installation)
  - W-C-596F.....Connector, Plug, Electrical; Connector, Receptacle, Electrical
  - W-F-406E.....Fittings for Cable, Power, Electrical and Conduit, Metal, Flexible
  - HH-I-558C.....Insulation, Blankets, Thermal (Mineral Fiber, Industrial Type)
  - W-F-408E.....Fittings for Conduit, Metal, Rigid (Thick- Wall and Thin-wall (EMT) Type)
  - RR-W-410.....Wire Rope and Strand

- TT-E-489J.....Enamel, Alkyd, Gloss, Low VOC Content  
QQ-S-766 .....Steel, Stainless and Heat Resisting, Alloys,  
Plate, Sheet and Strip
- C. International Building Code (IBC)
- D. American Society of Mechanical Engineers (ASME):  
A17.1.....Safety Code for Elevators and Escalators  
A17.2.....Inspectors Manual for Electric Elevators and  
Escalators
- E. National Fire Protection Association:  
NFPA 13.....Standard for the Installation of Sprinkler Systems  
NFPA 70.....National Electrical Code (NEC)  
NFPA 72.....National Fire Alarm and Signaling Code  
NFPA 101.....Life Safety Code  
NFPA 252.....Fire Test of Door Assemblies
- F. American Society for Testing and Materials (ASTM):  
A1008/A1008M-09.....Steel, Sheet, Cold Rolled, Carbon, Structural,  
High-Strength Low-Alloy and High Strength Low-  
Alloy with Improved Formability  
E1042-02.....Acoustically Absorptive Materials Applied by  
Trowel or Spray
- G. Manufacturer's Standardization Society of the Valve and Fittings  
Industry (MSS):  
SP-58.....Pipe Hangers and Supports
- H. Society of Automotive Engineers, Inc. (SAE)  
J517-91.....Hydraulic Hose, Standard
- I. Gages:  
For Sheet and Plate: U.S. Standard (USS)  
For Wires: American Wire Gauge (AWG)
- J. American Welding Society (AWS):  
D1.1.....Structured Welding Code - Steel
- K. National Electrical Manufacturers Association (NEMA):  
LD-3.....High-Pressure Decorative Laminates
- L. Underwriter's Laboratories (UL):  
486A.....Safety Wire Connectors for Copper Conductors  
797.....Safety Electrical Metallic Tubing
- M. Institute of Electrical and Electronic Engineers (IEEE)
- N. Regulatory Standards:  
Uniform Federal Accessibility Standards

Americans with Disabilities Act

**1.5 SUBMITTALS**

- A. Submit in accordance with Specification Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, and SAMPLES.
- B. Before execution of work, furnish information to evidence full compliance with contract requirements for proposed items. Such information shall include, as required: Manufacturer's Name, Trade Names, Model or Catalog Number, Nameplate Data (size, capacity, and rating) and corresponding specification reference (Federal or project specification number and paragraph). All submitted drawings and related elevator material shall be forwarded to the Contracting Officer.
- C. Shop Drawings:
  - 1. Complete scaled and dimensioned layout in plan and section view showing the arrangement of equipment and all details of each and every elevator unit specified including:
    - a. Bldg 1 Elevator Pulley Wheel Guard in machine room sub floor.

**1.6 WIRING DIAGRAMS - deleted**

**1.7 ADDITIONAL EQUIPMENT**

- A. Additional equipment required to operate the specified equipment manufactured and supplied for this installation shall be furnished and installed by the contractor. The cost of the equipment shall be included in the base bid.
- B. Special equipment not required by specification, which would improve the operation, may be installed in conjunction with the specified equipment by the contractor at his option at no additional cost to the Government, provided prior approval is obtained from the Contracting Officer's Representative.

**1.8 TOOL CABINET - DELETED**

**1.9 PERFORMANCE STANDARDS**

- A. The elevators shall be capable of meeting the highest standards of the industry and specifically the following:
  - 1. New guarding shall not impede elevator performance, and shall not transfer vibration or noise to the elevator assembly/operation..

**1.10 WARRANTY**

- A. Submit all labor and materials furnished in connection with elevator system and installation to terms of "Warranty of Construction" articles of FAR clause 52.246-21. The one year Warranty shall commence after final inspection, completion of performance test, and upon full acceptance of the installation and shall concur with the guarantee period of service.

- B. During warranty period if a device is not functioning properly or in accordance with specification requirements, or if in the opinion of the Contracting Officer's Representative, excessive maintenance and attention must be employed to keep device operational, device shall be removed and a new device meeting all requirements shall be installed as part of work until satisfactory operation is obtained. Period of warranty shall start anew for such parts from date of completion of each new installation performed.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. See Drawings and Specification 05 50 00 Metal Fabrications

**2.2 MANUFACTURED PRODUCTS**

- A. Materials, devices and equipment furnished shall be of current production by manufacturers regularly engaged in the manufacture of such items. Items not meeting this requirement, but meet technical specifications which can be established through reliable test reports or physical examination of representative samples, will be considered.
- B. When two or more devices of the same class of materials or equipment are required, these units shall be products of one manufacturer.
- C. Manufacturers of equipment assemblies which include components made by others shall assume complete responsibility for the final unit.
1. Individual components of assembled units shall be products of the same manufacturers.
  2. Parts which are alike shall be the product of a single manufacturer.
  3. Components shall be compatible with each other and with the total assembly for the intended service.
- D. If the elevator equipment to be installed is not known to the COR, the Contractor shall submit drawings in triplicate for approval to the COR, Contracting Officer, and VA CFM Elevator Engineer showing all details and demonstrate that the equipment to be installed is in strict accordance with the specifications.

**2.3 CAPACITY, SIZE, SPEED, AND TRAVEL - DELETED**

**2.4 POWER SUPPLY - DELETED**

**2.5 CONDUIT AND WIREWAY - DELETED**

**2.6 CONDUCTORS - DELETED**

**2.7 TRAVELING CABLES - DELETED**

- 2.8 CONTROLLER AND SUPERVISORY PANEL - DELETED
  - 2.9 MICROPROCESSOR CONTROL SYSTEM - DELETED
  - 2.10A AUXILIARY POWER OPERATION - DELETED
  - 2.10B EMERGENCY RESCUE OPERATION - DELETED
  - 2.11A TWO-STOP AUTOMATIC OPERATION - DELETED
  - 2.11B SINGLE CAR SELECTIVE COLLECTIVE AUTOMATIC OPERATION - DELETED
  - 2.11C DUPLEX SELECTIVE COLLECTIVE AUTOMATIC OPERATION - DELETED
  - 2.11D GROUP SELECTIVE COLECTIVE AUTOMATIC OPERATION - DELETED
  - 2.11E MACHINE ROOM MONITOR (CCTV): GROUP OPERATION - DELETED
  - 2.12 FIREFIGHTERS' SERVICE - DELETED
  - 2.13 MEDICAL EMERGENCY SERVICE - DELETED
  - 2.14 SEISMIC REQUIREMENTS - DELETED
  - 2.15 PUMP UNIT ASSEMBLY - DELETED
  - 2.16 HYDRAULIC SYSTEM - DELETED
  - 2.17 HYDRAULIC PLUNGER ASSEMBLY - DELETED
  - 2.18 HYDRAULIC CYLINDER CASING - DELETED
  - 2.19 CAR BUFFERS- DELETED
  - 2.20 CAR GUIDES - DELETED
  - 2.21 GUIDE RAILS, SUPPORTS, AND FASTENINGS - DELETED
  - 2.22 NORMAL AND FINAL TERMINAL STOPPING DEVICES - DELETED
  - 2.23 CROSSHEAD DATA PLATE AND CODE DATA PLATE - DELETED
  - 2.24 WORKMAN'S LIGHTS AND OUTLETS - DELETED
  - 2.25 TOP-OF-CAR OPERATING DEVICE - DELETED
  - 2.26 CAR LEVELING DEVICE - DELETED
  - 2.27 EMERGENCY STOP SWITCHES - DELETED
  - 2.28 MAIN CAR OPERATING PANEL - DELETED
  - 2.29 AUXILIARY CAR OPERATING PANEL - DELETED
  - 2.30 INDEPENDENT SERVICE - DELETED
  - 2.31 CAR POSITION INDICATOR - DELETED
  - 2.32 AUDIO VOICE SYSTEM - DELETED
  - 2.33 AUTO DIAL TELEPHONE SYSTEM - DELETED
  - 2.34 CORRIDOR OPERATING DEVICE FACEPLATES - DELETED
  - 2.35 CORRIDOR OPERATING DEVICES - DELETED.
  - 2.36 CORRIDOR LANTERN/POSITION INDICATOR - DELETED
  - 2.37 HOISTWAY ACCESS SWITCHES - DELETED
  - 2.38 HOISTWAY ENTRANCES: PASSENGER/SERVICE ELEVATORS - DELETED
  - 2.39 ELECTRIC INTERLOCKS - DELETED
  - 2.40 CAR FRAME: PASSENGER/SERVICE ELEVATORS - DELETED
  - 2.41 CAR PLATFORM: PASSENGER/SERVICE ELEVATORS - DELETED
  - 2.42 CAR ENCLOSURE: PASSENGER/SERVICE ELEVATORS - DELETED
  - 2.43 POWER DOOR OPERATORS: PASSENGER/SERVICE ELEVATORS - DELETED
  - 2.44 HOISTWAY ENTRANCES: FREIGHT ELEVATOR - DELETED
  - 2.45 ELECTRIC INTERLOCKS: BI-PARTING HOISTWAY FREIGHT DOORS - DELETED
  - 2.46 CAR FRAME: FREIGHT ELEVATOR - DELETED
  - 2.47 CAR PLATFORM: FREIGHT ELEVATOR - DELETED
  - 2.48 CAR ENCLOSURE: FREIGHT ELEVATOR - DELETED
  - 2.49 POWER DOOR OPERATORS: BI-PARTING FREIGHT DOORS AND CAR GATE - DELETED
- PART 3 - EXECUTION

### 3.1 PREPARATION

A. Examine work of other trades on which the work of this Section depends.

Report defects to the COR in writing which may affect the work of this trade or equipment operation dimensions from site for preparation of shop drawings.

- B. Before fabrication, take necessary job site measurements, and verify where work is governed by other trades. Check measurement of space for equipment, and means of access for installation and operation. Obtain dimensions from site for preparation of shop drawings.
- C. Ensure the following preparatory work, provided under other sections of the specification has been provided. Work required prior to the completion of the installation:
  - 1. Provide fire extinguisher in machine room.
- D. Supply for installation, inserts, anchors, bearing plates, brackets, supports and bracing including all setting templates and diagrams for placement.

### **3.2 SPACE CONDITIONS - DELETED**

### **3.3 INSTALLATION**

- A. Perform work with competent Certified Elevator Mechanics and Apprentices skilled in this work and under the direct supervision of the Elevator Contractor's experienced foreman.
- B. Install machinery, guides, controls, car and all equipment and accessories in accordance with manufacturer's instructions, applicable codes and standards.
- C. Isolate and dampen machine vibration with properly sized sound-reducing anti-vibration pads.

### **3.4 ARRANGEMENT OF EQUIPMENT**

- A. Clearance around elevator, mechanical and electrical equipment shall comply with applicable provisions of NEC. Arrange equipment in machine room so that major equipment components can be removed for repair or replacement without dismantling or removing other equipment in the same machine room.

### **3.5 WORKMANSHIP AND PROTECTION**

- A. Installations shall be performed by Certified Elevator Mechanics and Apprentices to best possible industry standards. Details of the installation shall be mechanically and electrically correct. Materials and equipment shall be new and without imperfections.
- B. Recesses, cutouts, slots, holes, patching, grouting, refinishing to accommodate installation of equipment shall be included in the Contractor's work. All new holes in concrete shall be core drilled.
- C. Structural members shall not be cut or altered. Work in place that is damaged or defaced shall be restored equal to original condition.
- D. Finished work shall be straight, plumb, level, and square with smooth surfaces and lines. All machinery and equipment shall be protected

against dirt, water, or mechanical injury. At final completion, all work shall be thoroughly cleaned and delivered in perfect unblemished condition.

- E. Exposed gears, sprockets, and sheaves shall be guarded from accidental contact in accordance with ASME A17.1 Section 2.10.

### **3.6 CLEANING**

- A. Clean work area after completion.
- B. Prior to final acceptance, remove protective covering from finished or ornamental surfaces. Clean and polish surfaces with regard to type of material.

### **3.7 PAINTING AND FINISHING**

- A. see Section 09 06 00, SCHEDULE FOR FINISHES

### **3.8 PRE-TESTS AND TESTS**

- A. Pre-test the elevators and related equipment in the presence of the COR or his authorized representative for proper operation before requesting final inspection. Conduct final inspection at other than normal working hours, if required by COR.
  - 1. Procedure outlined in the Inspectors Manual for Hydraulic Elevators, ASME A17.2 shall apply.
    - a. Final test shall be conducted in the presence of and witnessed by an ASME QEI-1 Certified Elevator Inspector.
    - b. Government shall furnish electric power including necessary current for starting, testing, and operating machinery of each elevator.
- B. Inspection of workmanship, equipment furnished, and installation for compliance with specification.
- C. Evidence of malfunction in any guarding of equipment that occurs during the testing shall be corrected, repaired, or replaced at no additional cost to the Government, and the test repeated.
- D. If equipment fails test requirements and a re-inspection is required, the Contractor shall be responsible for the cost of re-inspection; salaries, transportation expenses, and per-diem expenses incurred by the representative of the COR.

### **3.9 INSTRUCTION OF VA PERSONNEL- DELETED**

### **3.10 INSPECTIONS AND SERVICE: GUARANTEE PERIOD OF SERVICE- DELETED**

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