

## **SECTION 11 24 26**

### **SAFETY TIE-BACKS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Furnish labor, materials, tools, equipment, and services for Safety Tie-Backs, as indicated, in accordance with provisions of Contract Documents.
- B. Completely coordinate with work of other trades.

##### **1.2 DESCRIPTION**

- A. Description of system:
  - 1. Design, fabrication, and installation of safety tie-backs anchored to roof structure for purpose of window washing and general building maintenance including:
    - a. Single eye safety tiebacks.
    - b. Signage indicating safe usage and restrictions.
    - c. Instructional materials.
  - 2. Design and locate anchors to provide accessibility to windows for purpose of cleaning, building maintenance, or both, with conventionally rigged window washing equipment.
  - 3. Provide soffit mounted anchors, wall mounted anchors, or both, to access windows which are difficult to reach from above due to adjacent soffits and other projecting overhangs.
  - 4. Coverage shall include following areas:
    - a. Individual windows, ribbon windows and curtain wall glass which is not easily reachable by ladder from grade.

##### **1.3 QUALITY ASSURANCE**

- A. Manufacturer Qualifications:
  - 1. Manufacturer minimum five (5) years experience in design, fabrication and installation of similar size and scope systems.
  - 2. Manufacturer to carry specific liability insurance for products and completed systems in amount of \$10,000,000.00 to protect against product and system failure.
- B. Installer Qualifications:
  - 1. Installer minimum five (5) years experience in installation of similar systems, or approved by manufacturer.
  - 2. Welding to be executed by certified welders in accordance with AWS requirements.
- C. Occupational Safety and Health Administration (OSHA):
  - 1. 1910, Subpart D Walking and Working Surfaces
  - 2. Appendix C to 1910 Subpart F Personal Fall Arrest Systems
  - 3. OSHA Ruling on Window Cleaning by Boatswain's Chair.
  - 4. 1910.66, Subpart F Powered Platforms
- D. New York State regulations:
  - 1. Department of Labor Advisory Standard 101 - Construction, Operation and Maintenance of Suspended Scaffolds Used for Window Cleaning and Light Maintenance.
  - 2. Advisory Standard 111 - Hoisting Machines Used for Suspended Scaffolds.
  - 3. Department of Labor Industrial Code Rule 21 - Protection of Persons Employed at Window Cleaning – Structural Requirements, Equipment and Procedures.
- E. American Institute of Steel Construction (AISC):
  - 1. AISC S342L-1993, with Supplements Load and Resistance Factor Design Specification for Structural Steel Buildings.
  - 2. AISC Manual of Steel Construction, Allowable Stress Design.

- F. Aluminum Association (AA):
  - 1. AA ADM-1 Aluminum Design Manual; Aluminum Association
- G. American Welding Society (AWS):
  - 1. AWS D1.1-2000 Structural Welding Code - Steel.
  - 2. AWS D1.2-2000 Structural Welding Code - Aluminum.
- H. American National Standards Institute (ANSI)/International Window Cleaning Association (IWCA):
  - 1. ANSI/IWCA I-14.1 Window Cleaning Safety Standard
- I. American Society of Mechanical Engineers:
  - 1. ASME A120.1 Safety Requirements for Powered Platforms for Building Maintenance

#### **1.4 SUBMITTALS**

- A. Shop Drawings:
  - 1. Showing anchorage locations and details.
- B. Project Information:
  - 1. Manufacturer's installation instructions and recommendations.
  - 2. Manufacturer Certificate of liability insurance.
  - 3. Drawings showing proposed rigging arrangements which might be used to reach windows, including boatswain's chair, drop-stage and/or other methods.
- C. Contract Closeout Information:
  - 1. Structural calculations for Window Washing System indicating design conforms to specified design criteria, sealed by the Specialty Structural Engineer.
    - a. Submit concurrent with Shop Drawings.
  - 2. Operating Procedures Outline:
    - a. Include elements in both pictorial and written form to instruct employees in safe use of roof supported building maintenance equipment and window cleaning procedures.
  - 3. Warranty.

#### **1.5 WARRANTY**

- A. Manufacturer five (5) year warranty against failure and replacement of components.

### **PART 2 - PRODUCTS**

#### **2.1 DESIGN CRITERIA**

- A. Provide Safety Tie-Backs engineered to support dead, live, and lateral (wind or seismic) loads indicated.
  - 1. Include headers and reinforcing members around openings.
  - 2. Required details defining method of fastening throughout system and attachments to supporting primary structure included in engineering requirement.
- B. Design system to support 5000 LBS minimum load applied to each anchor.
  - 1. Compatible with current window washing practices and standards.
  - 2. Locations shown on Drawings are conceptual.
  - 3. Actual locations are to be determined by designer of system.

#### **2.2 MATERIALS**

- A. Design roof anchorage system including locations and details required to meet listed codes and requirements.
- B. Locations shown on Drawings are conceptual.

- C. Actual locations as determined by equipment supplier in Shop Drawings, but shall comply with following:
  - 1. Locate anchors with direct attachment to structural concrete or steel members.
    - a. Through-slab connections not allowed.
  - 2. Proposed locations are subject to final approval by Architect.
- D. Standards for components:
  - 1. Exposed structural stainless steel: Type 304, with a yield strength of 42 KSI.
  - 2. Non-Exposed structural components: ATSM A36, Type 350W with yield strength of 50 KSI for Hollow Structural Steel and 42 KSI for Plate Steel and other sections.
  - 3. Galvanizing: ASTM A123.
  - 4. Cold-Rolled Sections: ASTM A500 with yield strength of 55 KSI.
  - 5. Fastening devices: ASTM A325 or Type 304 stainless steel.
- E. Provide anchorage components fabricated of materials compatible with substrates to which welded or otherwise attached.
- F. Flashing and Counterflashing:
  - 1. Specified in Section 07 54 23 & 07 31 13.

### **PART 3 - EXECUTION**

#### **3.1 INSPECTION**

- A. Correct unsatisfactory conditions.
- B. Start of work constitutes acceptance of conditions and responsibility for performance.

#### **3.2 INSTALLATION/ERECTION**

- A. Install components required to be attached to or connected with structure.
- B. Coordinate as required.
- C. Install in accord with manufacturer's instructions and approved shop drawings.
- D. No through-wall style anchors may be used unless approved by Architect.
- E. Install top of safety tie-back at 6 IN minimum above adjacent roofing height, taking into account insulation thickness at each tie-back location.
- F. Flashing:
  - 1. Specified in Section 07 54 23 & 07 31 13.
- G. Where contact is made between dissimilar materials, protect to prevent corrosion.
- H. Coordinate components indicated to be installed on other affected building components with those supplier, installers, or both.
- I. Retouch damaged galvanizing.
- J. Design components for attachment directly to structural steel members.

#### **3.3 FIELD QUALITY CONTROL**

- A. Check welds to structure.
- B. Verify water integrity of flashings, with roofer.

### **END OF SECTION**

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## **SECTION 11 52 71**

### **LED HEALTHCARE TV**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Furnish labor, materials, tools, equipment, and services for LED Healthcare televisions, and associated VESA mounts in accordance with provisions of Contract Documents.
- B. Completely coordinate with work of other trades.

##### **1.2 RELATED WORK**

- A. Section 09 22 16, NON-STRUCTURAL METAL FRAMING: Wall Backing.
- B. Division 26: Power outlets and wiring.
- C. Division 27: Networking & Interface with Nurse Call and Pillow Speaker

##### **1.3 QUALITY ASSURANCE**

- A. Installer Qualifications:
  - 1. Experienced and qualified technicians to install LED Healthcare televisions, and associated VESA mounts.

##### **1.4 SUBMITTALS**

- A. Shop Drawings:
  - 1. Indicate location, size, mounting, and operation of each screen; elevation of each kind of screen; location and extent of additional support; and other pertinent data.
  - 2. Indicate location and requirements for electrical connections where applicable.
  - 3. Indicate location and requirements of low voltage connections where applicable.
- B. Product Data:
  - 1. Provide manufacturer's technical data for each type of screen including functional description and construction of specified components.
- C. Contract Closeout Information:
  - 1. Operation and Maintenance Data.

#### **PART 2 - PRODUCTS**

##### **2.1 LED PANEL MOUNT**

- A. Large Flat Panel Flush Mount
  - 1. Formed steel, with arc welds and security screws.
  - 2. Hold 42" – 90" (1,067 – 2,286 mm) Flat Panels
  - 3. Distance from wall: 3 inches (76 mm)
  - 4. Max load: 180 Lbs. (81.6 Kg)
  - 5. Maximum hole pattern of 850mm wide by 500 mm tall.
  - 6. Adjustable mounting rails.
  - 7. Articulating arm: 21" (533 mm) extension
  - 8. Tilt between: 15/-5 degrees

##### **2.2 HEALTHCARE TELEVISIONS**

- A. LED Healthcare Televisions
  - 1. Display:
    - a. Screen size (diagonal): 60"

LED Healthcare TV

- b. Backlight: LED
- c. Type: FHD
- d. Resolution: 1920 x 1080
- 2. Video:
  - a. Picture Engine: HyperReal.
  - b. Vide Color Enhancer Plus: Yes.
  - c. Film Mode: Yes.
- 3. Audio:
  - a. Dolby: Doble Digital Plus.
  - b. Speaker Type: 2 Channel down firing with Bass Reflex.
  - c. Sound Output: 20W; Left 10W, Right: 10W.
- 4. Features:
  - a. Wireless LAN: Yes
  - b. ConnectShare (USB 2.0): Yes
  - c. USB HID Support: Yes
  - d. OSD Language: English, Spanish, French
  - e. Digital Clean View: Yes
  - f. HDMI-CEC: Yes
  - g. Auto Channel Search: Yes
  - h. Auto Power Off: Yes
  - i. EPG: Yes
  - j. Caption: Yes
  - k. Wake-up Timer: Yes
  - l. Game Mode
- 5. Hospitality Features
  - a. Hospitality Home Menu
  - b. H.Browser Compatibility: Yes
  - c. Plug&Play Setup: Yes
  - d. RJ 12 & IR Pass Through: Yes
  - e. Power on Mode: Yes
  - f. USB Cloning: Yes
  - g. Logo Display with Time Out Setting: Yes
  - h. Welcome Message: Yes
  - i. Music Mode: Yes
  - j. Music Mode Backlight on/off: Yes
  - k. Auto Source Mode: Yes
  - l. Energy Saving Mode: Yes
  - m. Clock Back up: Yes
  - n. Multi Code Remote Control: Yes
  - o. Security Mode: Yes
  - p. Sound Bar Compatibility: Yes
  - q. Pro:Idiom: Yes
- 6. Input and Outputs
  - a. HDMI: 3
  - b. USB: 1
  - c. Component In (Y/Pb/Pr): 1
  - d. Composite In (AV): 1. Common use for Component Y
  - e. Ethernet (LAN): 1
  - f. Digital Audio Out (Optical): 1
  - g. Audio Out (Mini Jack): 1
  - h. Terrestrial and Cable Input (RF): 1
  - i. RS232C: 1
  - j. Pillow Speaker Jack: 1
  - k. RJ12 for external Control: 1
  - l. RJP Jack (Remote Jack Pack): 1

7. System:
  - a. DTV: ATSC/Clear QAM
  - b. Analog Turner: NTSC
8. Dimensions
  - a. 1369.0 x 795.02 x 88.9 / 53.9" x 31.3" x 3.5"
9. Weight:
  - a. Without Stand: 7.8 kg (17.2 Lbs).
10. VESA Mount
  - a. 200 x 200 mm
  - b. Screw Size: M8
11. Power:
  - a. Power Supply: AC 110-120 volts 50-60 Hz.
  - b. Power Cable: Yes
12. UL Listing:
  - a. Healthcare TV.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine substrates and conditions under which units are to be installed.
- B. Proceed with installation only after unacceptable conditions have been remedied.
- C. Installation constitutes acceptance of responsibility for performance.

### **3.2 INSTALLATION**

- A. Install LED Panel mount in accordance with reviewed shop drawings at locations and heights indicated in the drawings.
- B. Provide manufacturer's brackets , hanging devices, or both as required by installation indicated.
- C. Securely install LED Panel mount plumb and level to supporting substrate, minimum of two studs.
  1. Use Security Screws
- D. Securely install LED Healthcare Television to mount plumb and level as required by installation.
  1. Use Security Screws.

### **3.3 FIELD QUALITY CONTROL**

- A. Inspection and Testing: Operate each LED Healthcare Television three (3) times to ensure operate as intended via remote control and pillow speaker.

### **3.4 PROTECTION**

- A. Protect LED Healthcare Televisions from damage during construction.
- B. Repair damage to adjacent materials caused by manually operated projection screen work.

### **3.5 CONTRACT CLOSEOUT**

- A. Perform demonstration and instruction to VA personal and COR.

## **END OF SECTION**

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## **SECTION 11 73 00**

### **CEILING MOUNTED PATIENT LIFT SYSTEM**

#### **PART 1 - GENERAL**

##### **1.1 DESCRIPTION**

- A. Ceiling Mounted Patient Lift Systems for the transfer of physically challenged patients are specified in this section.

##### **1.2 RELATED WORK**

- A. Section 01 00 00, GENERAL REQUIREMENTS: Requirements for pre-test of equipment.
- B. Section 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS: Seismic requirements for non-structural equipment.
- C. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: General Electrical Requirements and items, which are common to sections of Division 26.

##### **1.3 QUALITY ASSURANCE**

- A. Certification for compliance is required for Ceiling Mounted Patient Lift Systems. Certifications shall be provided by the manufacturer who will conduct testing to ensure that the ceiling lift and charging system are safe and in compliance with ISO 10535 & UL 60601-1.
- B. Inspection of equipment after installation is required prior to use for patient movement. Inspection shall be in accordance with manufacturer's installation checklist and the facilities installation checklist (Patient Safety Alert AL14-07).
- C. Certification of compliance with VA requirements shall be provided by an independent third party, Inspector of Record (IOR), who will observe installation and manufacturer's testing to ensure that the ceiling structure, ceiling lift, and charging system is safe and compliance with shop drawings, structural calculations, specifications, ISO 10535 requirements, and code requirements. IOR shall be a registered structural engineer in the state of installation.

##### **1.4 SUBMITTALS**

- A. Submit in accordance with specification Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
  - 1. Shop drawings shall show structural supports to the underside of structure. Structural calculations for the support of the track and its attachment to ceiling structure shall be submitted. Shop drawings used in the quoting phase shall be PDFs, and either 2D CAD files or 3D BIM files showing structural support to underside of structure. Shop drawings shall also provide general room layout with bed position and all obstructions to ceiling lift.
  - 2. Once the purchase order is accepted by the vendor, a set of stamped drawings shall be provided by the vendor. Shop drawings and structural calculations shall be signed and stamped by a registered structural engineer, and shall meet all code requirements in the jurisdiction having authority. Structural engineer shall ensure ceiling minimum structure capacity shall support the loads specified in the shop and installation drawings and be in compliance with local structural and seismic codes.
  - 3. Shop drawings shall show obstructions such as curtains, lights and sprinklers, and coordinate their relocation.
  - 4. Manufacturer shall provide BIM (Building Information Model) for clash detection on the request of the Resident Engineer (RE), VA Construction Agent, or General Contractor.
    - a. BIM model shall include structural supports of the Patient Lift System to a Level of Development Specification of 400 or greater in accordance to the definition of AIA G202-2013 Building Information Modeling Protocol Form.

- B. Certificates of Compliance from Manufacturer
- C. Manufacturer's Literature and Data:
  - 1. Lifting Capacity
  - 2. Lifting Speed
  - 3. Vertical Axis Motor
  - 4. Emergency Brake
  - 5. Emergency Lowering Device
  - 6. Emergency Stopping Device
  - 7. Electronic Soft-Start and Soft-Stop Motor Control
  - 8. Current Limiter for Circuit Protection
  - 9. Strap Length
  - 10. All equipment anchors and supports. Submittals shall include weights, dimensions, center of gravity of the structural support, standard connections, manufacturer's recommendations and behavior problems (e.g., vibration, thermal expansion,) associated with equipment or piping so that the proposed installation can be properly reviewed.
- D. Individual Room layouts showing location of lift system installation shall be approved before proceeding with installation of lifts.
- E. Coordination Drawing showing no conflicts with Division 05, 21, 22, 23, 26, 27, 28.
- F. Manufacturer's Checklist for after installation inspection.

## **1.5 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are listed in the text by the basic designation only.
- B. International Organization for Standardization (ISO):
  - 10535-06 ..... Hoist for the Transfer of Disabled Persons-Requirements and Test Methods
- C. Underwriters Laboratories (UL):
  - 60601-1(2003) ..... Medical Electrical Equipment: General Requirements for Safety
  - 94-2013 ..... UL Standards for Safety Test for Flammability of Plastic Materials for Parts in Devices and Appliances-Fifth Edition
- D. International Electromagnetic Commission (IEC):
  - 60601-1-2(2015) ..... Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral Standard: Electromagnetic disturbances – Requirements and tests.
- E. VA Patient Safety Alert AL14-07

## **PART 2 - PRODUCTS**

### **2.1 CEILING TRACK SYSTEM**

- A. The Ceiling Track shall be made from high strength extruded aluminum or VA approved equal. Provide anchor supports at ceiling substrate.
- B. Installed rail shall be security tested for 1.5 times greater than the motor's weight capacity and maximum allowable deflection of a horizontal rail is no more than 1mm (1/16th inch) per 200mm (7.87 inch) of track length. (As per ISO 10535 standards.)

## **2.2 LIFT UNIT**

- A. The Lift Unit shall be constructed of a steel frame system driven by a gear reduced high torque motor or VA approved equal.
- B. The Lift system shall have the following features.
  - 1. Lifting capacity: 750-1000 lbs (340.194- 498.952 kg) for bariatric lifts
  - 2. Electronic soft-start and soft-stop motor control
  - 3. Emergency lowering device
  - 4. Emergency stopping device
  - 5. Current limiter for circuit protection in case of overload.
  - 6. Safety device that stops the motor to lift when batteries are low.
  - 7. Horizontal axis motor:
  - 8. Emergency brake (in case of mechanical failure)
  - 9. Strap length:
  - 10. Cab: VO plastic-fire retardant, UL 94

## **2.3 MOTORS**

- A. Vertical Movement-DC Motor

## **2.4 BATTERIES**

- A. The life cycle (number of charging cycles) for batteries shall be in compliance with IEC 6100-1-2.
- B. Provide rechargeable batteries with up to 35 transfers with a load of 200lbs (74kg) (for repositioning) a minimum of 17 transfers with its maximum load.

## **2.5 CHARGER**

- A. Charger

## **2.6 STRAPS AND SLING**

- A. The straps shall meet ISO 10535 guidelines. The straps shall ensure the patient's safety by preventing the patient from falling out of the sling.
- B. The sling shall meet ISO 10535 guidelines. The sling shall cradle the body of the patient. Bariatric slings shall be rated to a minimum of 750 lbs.

# **PART 3 - EXECUTION**

## **3.1 INSTALLATION**

- A. Install ceiling mounted patient lift system as per manufacturer's instruction and under the supervision of manufacturer's qualified representative and as shown on drawings.
- B. If the distance in between the suspended ceiling and anchors is more than 12" consult with manufacturer to determine if lateral braces will be required.

## **3.2 INSTRUCTION AND PERSONNEL TRAINING**

- A. Training shall be provided for the required personnel to educate them on proper operation and maintenance for the lift system equipment.

## **3.3 TEST**

- A. Conduct performance test, in the presence of the COR and Inspector of Record (IOR), and a manufacturer's field representative, to show that the patient lift system equipment and control devices operate properly and in accordance with design, specification, and code requirements.

**3.4 INSPECTION**

- A. Inspection of installed ceiling mounted patient lift systems shall be conducted in accordance with the manufacturer's installation checklist and the VA installation checklist (Patient Safety Alert AL14-07) prior to use for patient movement.
- B. Periodic Inspection shall be provided by the manufacturer on a yearly basis in compliance with ISO 10535.

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