

**SECTION 10 25 13
PATIENT BED SERVICE WALLS**

SPEC WRITER NOTES:

1. Delete between // // if not applicable to project.
2. Due to the very specialized nature of Patient Bed Service Wall Systems, caution must be exercised before deleting any other item or paragraph not between // //.
3. When paragraphs are deleted, renumber remaining paragraphs.
4. Coordinate this specification section with the drawings.

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies the furnishing, installation and connection of the Patient Bed Service Wall (PBSW), both horizontal & vertical and hidden Headwall unit.

1.2 RELATED WORK

- //A. Sustainable Design Requirements: Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.//
- B. Section 09 06 00, SCHEDULE FOR FINISHES: Color and finishes of the PBSW units.
- C. Section 22 62 00, VACUUM SYSTEMS FOR LABORATORY AND HEALTHCARE FACILITIES.
- D. Section 22 63 00, GAS SYSTEMS FOR LABORATORY AND HEALTHCARE FACILITIES: Requirements for air, oxygen and vacuum outlets in the PBSW.
- E. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: Minimum requirements, test standards, qualifications products and services, manufactured products, and materials/equipment protection for electrical installations.
- F. Section 26 05 19, LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES: Cables and wiring.
- G. Section 26 05 26, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS: Requirements for personnel safety and to provide a low impedance path to ground for possible ground currents.
- H. Section 26 05 33, RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS: Raceways and outlet boxes for wiring.
- I. Section 26 27 26, WIRING DEVICES: Wiring devices to be installed in the PBSW units.

J. Section 26 51 00, INTERIOR LIGHTING: Lighting fixture requirements when installed in or connected to the PBSW units.

K. Section 27 52 23, NURSE CALL/CODE BLUE SYSTEMS: Nurse Call and Code One requirements for installation in the PBSW units.

1.3 SUBMITTALS

A. Obtain Government approval for all materials and equipment before delivery to the job site. Delivery, storage or installation of materials and equipment which has not had prior approval is not permitted.

//B. Sustainable Design Submittals as described below:

//1. Volatile organic compounds per volume as specified in PART 2 - PRODUCTS.// //

1. Adhesive: Maximum VOC content: // 250 // // // g/L or less. //

C. In accordance with Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS and Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES, submit the following:

1. Shop Drawings:

a. Include sufficient information, clearly presented, to determine compliance with construction documents.

b. Include electrical ratings, dimensions, mounting details, front view, side view, equipment and device arrangement, wiring diagrams, material, and connection diagrams.

c. Submit configuration drawings showing devices, including nurse call, medical gases, electrical receptacles and switches. The //Resident Engineer (RE)// //Contracting Officer Representative (COR)// will convey by return of submittal the desired configuration of each style of PBSW system. Limit the quantity and types of devices allowed for each style of unit to the quantity and types of devices specified for that style.

2. Manufacturer's Literature and Product Data: Submit descriptive literature, catalog cuts, test reports, certifications, samples, and other data necessary for the //RE// //COR// to ascertain that the proposed materials and equipment comply with construction documentation requirements. Catalog cuts submitted for approval are to be legible and clearly identify specific materials and equipment being submitted.

3. Manufacturer's qualifications.

4. Product qualifications.

- 5. Service qualifications.
- 6. Operation and Maintenance Manuals: Two (2) weeks prior to the final inspection, deliver four (4) copies of the following to the //RE// //COR//.
 - a. Complete maintenance and operating manuals including wiring diagrams, technical data sheets, and information for ordering replacement parts:
 - 1) Include complete "As installed" diagrams which indicate all items of equipment, their interconnecting wiring and interconnecting piping.
 - 2) Include complete diagrams of the internal wiring for each of the items of equipment, including "As installed" revisions of the diagrams.
 - 3) Identify terminals on the wiring diagrams to facilitate installation, maintenance and operation.
- 7. Certifications: Two (2) weeks prior to the final inspection, deliver four (4) copies of the following certifications to the //RE// //COR//:
 - a. Certification by the manufacturer that the equipment conforms to the requirements of the construction documents.
 - b. Certification by the Contractor that the equipment has been properly installed, adjusted, and tested in accordance with the manufacturer's recommendations.

1.4 WARRANTY

- A. Construction Warranty: Comply with FAR clause 52.246-21 "Warranty of Construction".

1.5 APPLICABLE PUBLICATIONS

- A. Publications listed below (including amendments, addenda, revisions, supplements and errata) form a part of this specification to the extent referenced. Publications are referenced in text by the basic designation only.
- B. Code of Federal Regulation (CFR):
 - 40 CFR 59.....Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating
- C. National Fire Protection Association (NFPA):
 - 70-20.....National Electrical Code (NEC)
 - 99-21.....Health Care Facilities

- D. National Electrical Manufacturer's Association (NEMA):
WD-6-16.....Wiring Devices - Dimensional
- E. Underwriters Laboratories, Inc. (UL): Certification Directory Listing
for Prefabricated Medical Headwalls

PART 2 - PRODUCTS

2.1 PBSW SYSTEMS

- A. Provide PBSW's that are UL certification directory listed.
- B. Provide units consisting of a structural framework, removable panels and removable equipment console units which are factory assembled to house all permanent bedside services. Services include but are not limited to lighting fixtures, grounding jacks, power outlets, telephone outlets, nurses call patient station, medical gas outlet(s), television remote control unit, and other fittings or devices.
- C. Conform to the following:
 - 1. Applicable requirements in NFPA 70 and NFPA 99.
 - 2. Assembly and all components are to be UL listed or labeled.
 - //3. Adhesives where used are to have a VOC content of //250 // // // g/L or less when calculated according to 40 CFR 59, (EPA Method 24).//
- D. Coordinate the mounting space provisions for the nurse call equipment with Section 27 52 23, NURSE CALL/CODE BLUE SYSTEMS.

SPEC WRITER NOTE: Due to the extremely sensitive nature of patent infringement the following paragraph may be modified only with consultation with VA Central Office (VHA).

- E. Compressed Air, Oxygen and Vacuum System piping and Equipment: Furnish, install and test the piping and equipment in accordance with the construction documents and Section 22 62 00, VACUUM SYSTEMS FOR LABORATORY AND HEALTHCARE FACILITIES and Section 22 63 00, GAS SYSTEMS FOR LABORATORY AND HEALTHCARE FACILITIES.
 - //1. Provide fixed medical gas outlets that are permanently installed in one (1) location and cannot move without special tools and shutting off the medical gas involved. //
 - //2. Movable medical gas outlets:
 - a. Hose connected to gas manifold type:
 - 1) The hoses connected to gas manifold are to be UL listed and labeled for the purpose.

SPEC WRITER NOTE: Due to the extremely sensitive nature of patent infringement do not modify the following paragraph.

- 2) All hoses are to be accessible at all times. Provide bars or other restraining devices to control exposed hoses. A panel may cover the hoses provided it can be easily removed without the use of special tools for hose inspection.

b. Relocatable type:

- 1) Relocatable (snap-in) without the use of tools to any one of several different fixed locations.
- 2) Appropriate relocatable adapter can be used to access available gases from each fixed location.
- 3) Cover all unused locations with a blank (no gas) adapter plate. //

F. Electrical receptacles and switches to comply with the requirements in Section 26 27 26, WIRING DEVICES; grounding in Section 26 05 26, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS; and internal wiring in Section 26 05 19, LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES.

SPEC WRITER NOTE: A schematic diagram of the electrical connections for each style of PBSW system must be shown on the construction documents.

G. Styles:

1. Style A1: A single bed PBSW unit consisting of a // horizontal // // vertical // unit.

//a. Provide horizontal units that consist of a minimum of // three (3) rails // // two (2) rails if the bed light is independently mounted //.

- 1) Provide a middle rail for power, nurse call, and medical gases.
- 2) Provide bottom rail with bed bumper and connection for bed motor power.
- 3) Provide horizontal unit with vertical chase connecting rails to above ceiling junction boxes and gas connection points.//

//b. Provide vertical units that are free standing or wall mounted.

- 1) The width of the vertical unit to not be less than 406 mm (16 inches) and not more than 813 mm (32 inches).
- 2) Wire electrical devices in accordance with the schematic diagram shown on the construction documents.//

- c. Provide oxygen gas outlet(s): Two (2) each fixed or one (1) each movable.
- d. Provide air outlet (s): Two (2) each fixed or one (1) each moveable.
- e. Provide vacuum outlet(s): Two (2) each fixed or two (2) each movable.
- f. Provide emergency power outlets: a minimum of two (2) NEMA 20R red duplex-receptacles or as shown on the drawings, self-illuminated red. Provide stainless steel or anodized aluminum cover plate.
- g. Provide normal power outlets: a minimum of three (3) NEMA 20R duplex receptacles or as shown on the drawings; one (1) of which is for the bed motor. Provide stainless steel or anodized aluminum cover plates.
- h. Provide Nurses Call audio-visual single bed station.
- i. Provide tele-cart jack.
- j. Provide auxiliary light in vertical unit, with hood and switch. Mount both on a stainless steel or an anodized aluminum face plate installed in a single gang box.
- k. Provide a switch for the overhead/exam light.
- l. Provide a PBSW mounted bed light fixture. Refer to Section 26 51 00, INTERIOR LIGHTING. Power bed light through the PBSW unit.

SPEC WRITER NOTE: Provide power for oxygen concentrators if there is no piped in oxygen.

- //m. Provide power for oxygen concentrators. //
- 2. Style A2: A two (2) bed PBSW system consisting of a // horizontal // // vertical // unit.
 - //a. Provide horizontal units that consist of a minimum of // three (3) rails // // two (2) rails if the bed light is independently mounted //.
 - 1) Provide a middle rail for power, nurse's call, and medical gases.
 - 2) Provide bottom rail with bed bumper and for bed motor power.
 - 3) Provide horizontal unit with vertical chase connecting rails to above ceiling junction boxes and gas connection points.//
 - //b. Provide vertical units that are free standing or wall mounted.

- 1) The width of the vertical unit to not be less than 762 mm (30 inches).
- 2) Wire electrical devices in accordance with the schematic diagram shown on the construction documents.//
- c. Provide oxygen gas outlets: Four (4) each fixed or two (2) each movable.
- d. Provide air outlets: Four (4) each fixed or two (2) each movable.
- e. Provide vacuum outlets: Four (4) each fixed or four (4) each movable.
- f. Provide emergency power outlets: a minimum of two (2) NEMA 20R red duplex receptacles or as shown on the drawings, self-illuminated red. Provide stainless steel or anodized aluminum cover plates.
- g. Provide normal power outlets: a minimum of five (5) each NEMA 20R duplex receptacles or as shown on the drawings; one (1) of which is for the bed motor. Provide stainless steel or anodized aluminum cover plates.
- h. Provide a nurses call audio-visual double bed station.
- i. Provide a tele-cart outlet with two (2) jacks.
- j. Provide auxiliary light in vertical unit, with hood and switch. Mount both on stainless steel or anodized aluminum face plate installed in a single gang box.
- k. Provide separate switches for each overhead/exam light.
- l. Provide PBSW mounted bed light fixtures. Refer to Section 26 51 00, INTERIOR LIGHTING. The bed lights must be powered through the PBSW unit.
- //m. Provide power for oxygen concentrators. //
3. Style B1: Single PBSW system consisting of a // horizontal // // vertical // unit.
 - //a. Provide horizontal units that consist of a minimum of // three (3) rails // // two (2) rails if the bed light is independently mounted //.
 - 1) Provide a middle rail for power, nurse's call and medical gases.
 - 2) Provide bottom rail with bed bumper and for bed motor power.
 - 3) Provide horizontal with vertical chase connecting rails to above ceiling junction boxes and gas connection points.//
 - //b. Provide vertical units that are free standing or wall mounted.

- 1) Width of the vertical unit to not be less than 762 mm (30 inches). //
- 2) Wire electrical devices in accordance with the schematic diagram shown on construction documents.
- c. Provide oxygen gas outlets: Four (4) each fixed or two (2) each movable.
- d. Provide air outlets: Four (4) each fixed or two (2) each movable.
- e. Provide vacuum outlets: Six (6) each fixed or three (3) each movable.
- f. Provide emergency power outlets: a minimum of two (2) NEMA 20R red duplex receptacles or as shown on the drawings, self-illuminated red. Provide stainless steel or anodized aluminum cover plates.
- g. Provide normal power outlets: a minimum of five (5) NEMA 20R duplex receptacles or as shown on the drawings; one (1) of which is for the bed motor. Provide stainless steel or anodized aluminum cover plates.
- h. Provide a nurses call audio-visual single bed station.
- i. Provide tele-cart jack.
- j. Provide auxiliary light in vertical unit, with hood and switch. Mount both on stainless steel or anodized aluminum face plate installed in a single gang box.
- k. Provide a switch for the overhead/exam light.
- l. Provide a PBSW mounted bed light fixture. Refer to Section 26 51 00, INTERIOR LIGHTING. The bed light must be powered through the PBSW unit.
- //m. Provide power for oxygen concentrators. //
- 4. Style B2: Same as Style B1 except with one (1) additional NEMA 20R red duplex receptacle for a hemodialysis machine.
 - a. Receptacle for the hemodialysis machine shall be connected to a dedicated emergency circuit.
 - b. Mount receptacle approximately 1016 mm (40 inches) AFF and distinctly identify with a stainless steel or anodized aluminum cover plate. Cover plate shall be engraved with the word "DIALYSIS MACHINE ONLY" and panel/circuit feeding the receptacle in 6 mm (1/4 inch) red letters.
- 5. Style C: PBSW consisting of a // horizontal // // vertical // unit.

- //a. Provide horizontal units that consist of a minimum of three (3) rails.
- 1) Provide a top rail for power and lighting.
 - 2) Provide middle rail for power, nurse's call and medical gases.
 - 3) Provide bottom rail with bed bumper and receptacle for bed motor power.//
- //b. Provide the horizontal units with vertical chases connecting rails to above ceiling junction boxes and gas connection points.//
- //c. Provide vertical units that are free standing or wall mounted.
- 1) The width of the vertical unit to not be less than 914 mm (36 inches).
 - 2) Wire electrical devices in accordance with the schematic diagram shown on the construction documents. //
- d. Provide oxygen gas outlets: Four (4) each fixed or two (2) each movable.
- e. Provide air outlets: Four (4) each fixed or two (2) each movable.
- f. Provide vacuum outlets: Six (6) each fixed or three (3) each movable.
- g. Provide emergency power outlets: a minimum of eight (8) NEMA 20R duplex receptacles or as shown on the drawings, non-illuminated red. Provide stainless steel or anodized aluminum cover plates.
- h. Provide normal power outlets: a minimum of two (2) NEMA 20R duplex receptacles; one (1) of which is for the bed motor. Provide stainless steel or anodized aluminum cover plates.
- i. Provide nurses call audio-visual single bed station or type shown on construction documents.
- j. Provide a tele-cart jack only where shown on construction documents.
- k. Provide auxiliary light in vertical unit, with hood and switch. Mount both on stainless steel or anodized aluminum face plate installed in a single gang box.
- l. Provide a switch for the overhead/exam light.
- m. Provide a PBSW mounted, bed light fixture. Refer to Section 26 51 00, INTERIOR LIGHTING.
- //n. Provide power for oxygen concentrators. //

H. PBSW: Provide with the following features:

1. Construct basic structural framework of heavy gauge extruded aluminum or minimum 1.72 mm (0.067 inch; 14 gauge) cold-rolled steel.
2. Construct unit to be self-supporting for above-the-floor, close wall mounting or a freestanding installation.
3. Drill and tap the side frame members to permit the installation of front panel devices at modular intervals at any elevation between the top and bottom.
4. Provide removable front panels:
 - a. Construct panel of the following materials:
 - 1) Fire retarding core material surfaced with a high-pressure plastic laminated facing sheet.
 - 2) Vinyl material heat and pressure applied over a minimum of 1.52 mm (0.060 inch) sheet aluminum back braced for rigidity and sound control.
 - 3) Vinyl material heat and pressure applied over sheet steel minimum 1.52 mm (0.060 inch).
 - 4) Vinyl material heat and pressure applied over sheet aluminum minimum 2.03 mm (0.080 inch).
 - b. Provide color and texture as specified in the Section 09 06 00, SCHEDULE FOR FINISHES.
 - c. Bond the panel edges with an aluminum extrusion or cold-rolled steel trim designed for mounting directly to the structural framework, thus allowing the panels to be easily removed for access to internal components and for servicing of utility connections or future modifications. Secure panels with hidden screws or other means to offer an overall finished appearance. All exposed metal surfaces or trims greater than 3.17 mm (1/8 inch) wide to be of anodized aluminum or stainless steel finished to resist abrasion and affects from hospital cleaning compounds.
5. Back Panels: // Provide Style C units with enclosing back panels. // // Styles A1, A2, B1 and B2 are not have back panels, provided they are edge gasketed to the wall or totally and inconspicuously edge sealed to the wall with a resilient caulking material. // Attach side and back panel made of a minimum 1.52 mm (0.060 inch) sheet steel, or equivalent strength aluminum side and back panels, with flush screws to permit close wall mounting. Finish side panels to

- match or compliment the front panels. Match back panel for free-standing units with the finish of the front and side panels.
6. Mount patient service components in an equipment console made up of a backbox and finish fascia.
 - a. Provide galvanized steel backbox with outlet gang openings on minimum 61 mm (2.4 inches) uniform centers to provide mounting supports of front panel devices. Provide removable metal barriers to separate voltage sources and to facilitate wiring between segregated devices within the same horizontal module.
 - b. Match finish, either anodized aluminum or stainless steel of all fascia and device face plates.
 - c. Fascia or face plates may be omitted for power and grounding receptacles in the consoles if the receptacles are mounted flush in the PBSW cover panel and facilities, including support members, tapped holes, and spacing are provided behind the panel for future addition or relocation of receptacles.
 - d. Provide smooth external surfaces having a finished appearance. Maintain adequate spacing of device plates and similar items to eliminate crevices and facilitate cleaning.
 7. Provide patient services as indicated in paragraphs Styles above, the schematic wiring diagram shown on construction documents, and as follows:
 - a. Electrical components: Factory assembled and prewired to a sectionalized junction box at the top of the unit in accordance with circuiting and switching arrangements shown on the construction documents. Factory assembled prewiring may be stranded in sizes AWG #10 and #12. Provide an equipotential ground bus with lugs suitable for connecting AWG #14 to AWG #6 conductors with a minimum of 48 screw-type terminals, unless otherwise shown.
 - b. Receptacles and cover plates: Receptacles shall be Hospital Grade NEMA 5-20R. Each cover plate for emergency receptacles shall be engraved with the word "EMERGENCY" and panel/circuit feeding the receptacle in 6 mm (1/4 inch) red letters. Each cover plate for normal receptacle shall be engraved with the panel/circuit feeding the receptacle in 6 mm (1/4 inch) black letters.
 - c. Provide medical gas components compatible with those installed elsewhere in the facility, factory assembled, manifolded and

pre-piped, with medical grade type "K" copper pipe, to single point connections of each service at the top of the units.

- d. Provide nurse call services consisting of provisions for adequate space and matching face plates for the equipment and empty conduit to the sectionalized junction box at the top of the unit.
- e. Provide internal power and signal wiring in separate EMT, flexible metal conduits or approved raceway. Normal power circuits and emergency power circuits shall be run in separate raceways.
- f. Provide adequate supports for conduits and piping within the structural frame.
- g. Telephone Outlets/Jacks: Plug-in type as approved by the //RE// //COR//.
- h. Except for anodized aluminum and galvanized or stainless-steel surfaces, clean and factory paint metal surfaces with primer and not less than two (2) coats of baked enamel.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install equipment in accordance with NFPA 70, NFPA 99, and as shown on the construction documents.
- B. Compressed Air, Oxygen and Vacuum System piping and Equipment:
 1. Furnish, install, and test the equipment and piping system in accordance with the construction documents and Section 22 62 00, VACUUM SYSTEMS FOR LABORATORY AND HEALTHCARE FACILITIES, and Section 22 63 00, GAS SYSTEMS FOR LABORATORY AND HEALTHCARE FACILITIES.
 2. Install and make connections as required by PBSW manufacturer for a complete and operational PBSW system for each unit.

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