

**SECTION 10 14 00
SIGNAGE**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies ADA compliant interior signage for room numbers, rest room identification, directional signs, and code required signs.

1.2 RELATED WORK

- A. Lighted EXIT signs for egress purposes are specified under Division 26, ELECTRICAL.

1.3 MANUFACTURER'S QUALIFICATIONS

- A. Sign manufacturer shall provide evidence that they regularly and presently manufactures signs similar to those specified in this section as one of their principal products.
- B. Sign Manufacturer shall verify and match existing Fargo VA Standard: 2/90 Signage Systems for interior signage.

1.4 SUBMITTALS

- A. Samples: Sign panels and frames, with letters and symbols, each type with colors, style and type face to match existing Fargo VA System. Approved samples may be used in installation.
- B. Manufacturer's Literature:
 - 1. Showing the methods and procedures proposed for the concealed anchorage of the signage system to each surface type.
 - 2. Manufacturer's printed specifications, anchorage details, installation and maintenance instructions.
- C. Sign Schedule and location, showing location, type and total number of signs required.

1.5 DELIVERY AND STORAGE

- A. Deliver materials to job in manufacturer's original sealed containers with brand name marked thereon. Protect materials from damage.
- B. Package to prevent damage or deterioration during shipment, handling, storage and installation. Maintain protective covering in place and in good repair until removal is necessary.
- C. Deliver signs only when the site and mounting services are ready for installation work to proceed.
- D. Store products in dry condition inside enclosed facilities.

1.6 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):

B209-07.....Aluminum and Aluminum-Alloy Sheet and Plate
 B221-08.....Aluminum and Aluminum-Alloy Extruded Bars, Rods,
 Wire, Shapes, and tubes.

C. Federal Specifications (Fed Spec):

MIL-PRF-8184F.....Plastic Sheet, Acrylic, Modified.

MIL-P-46144C.....Plastic Sheet, Polycarbonate

PART 2 - PRODUCTS

2.1 GENERAL

- A. Signs of type, size and design shown on the attached Sign Message Schedule and Sign Type Drawings; and as specified.
- B. Signs complete with lettering, framing and related components for a complete installation.
- C. Provide graphics items as completed units produced by a single manufacturer, including necessary mounting accessories, fittings and fastenings.
- D. Do not scale drawings for dimensions. Contractor to verify and be responsible for all dimensions and conditions shown by these drawings. Project Engineer to be notified of any discrepancy in drawing, in field directions or conditions, and/or of any changes required for all such construction details.
- E. The Sign Contractor, by commencing work of this section, assumes overall responsibility, as part of his warranty of work, to assure that assemblies, components and parts shown or required within the work of the section, comply with the Contract Documents. The Contractor shall further warrant: That all components, specified or required to satisfactorily complete the installation are compatible with each other and with conditions of installations.

2.2 PRODUCTS

- A. Interior Signage to be equal to signs as manufactured by 2/90 Signage Systems and installed at Fargo VA.
- B. Aluminum:
 - 1. Sheet and Plate: ASTM B209.
 - 2. Extrusions and Tubing: ASTM B221.
- C. Cast Acrylic Sheet: MIL-PRF-8184F; Type II, class 1, Water white non-glare optically clear. Matt finish water white clear acrylic shall not be acceptable.
- D. Polycarbonate: MIL-P-46144C; Type I, class 1.
- E. Vinyl: 0.1 mm thick machine cut, having a pressure sensitive adhesive and integral colors.
- F. Electrical Signs:

1. General: Furnish and install all lighting, electrical components, fixtures and lamps ready for use in accordance with the sign type drawings, details and specifications.
2. Refer to Electrical Specifications Section, Division 26, ELECTRICAL, to verify line voltages for sign locations that require electrical signs.
3. Quality Control: Installed electrical components and sign installations are to bear the label and certification of Underwriter's Laboratories, Inc., and are to comply with National Electrical Code as well as applicable federal, state and local codes for installation techniques, fabrication methods and general product safety.
4. Ballast and Lighting Fixtures: See Electrical Specifications.

2.3 SIGN STANDARDS

A. Topography:

1. Type Style: Helvetica Regular. Initial caps or all caps as indicated in Sign Message Schedule.
2. Symbols: See attached graphic standards.
3. All text, arrows, and symbols to be provided in size, colors, typefaces and letter spacing to match existing system; final text for signs is listed on attached Sign Message Schedule.

2.4 SIGN TYPES

A. General:

1. The interior sign system is comprised of sign types families that are identified by a letter and number which identify a particular group of signs. An additional number identifies a specific type of sign within that family.
2. Sign types, quantities and locations area as indicated on the attached Signage Schedule and Plans.

2.5 FABRICATION

- A. Form work to required shapes and sizes, with true curve lines and angles. Provide necessary rebates, lugs and brackets for assembly of units. Use concealed fasteners whenever and wherever possible.
- B. Extruded members to be free from extrusion marks. Square turns and corners sharp, curves true.
- C. No signs are to be manufactured until final sign message schedule and location review has been completed by the Architect and Project Engineer and forwarded to contractor.

PART 3 - EXECUTION**3.1 INSTALLATION**

- A. Protect products against damage during field handling and installation. Protect adjacent existing and newly placed construction, landscaping and finishes as necessary to prevent damage during installation. Paint and touch up any exposed fasteners and connecting hardware to match color and finish of surrounding surface.
- B. Mount signs in proper alignment, level and plumb according to the sign location plan and the dimensions given on elevation and sign location drawings. Where otherwise not dimensioned, signs shall be installed where best suited to provide a consistent appearance throughout the project. When exact position, angle, height or location is in doubt, contact Project Engineer for clarification.
- C. Contractor shall be responsible for all signs that are damaged, lost or stolen while materials are on the job site and up until the completion and final acceptance of the job.
- D. Remove or correct signs or installation work Project Engineer determines as unsafe or as an unsafe condition.
- E. At completion of sign installation, clean exposed sign surfaces. Clean and repair any adjoining surfaces and landscaping that became soiled or damaged as a result of installation of signs.
- F. Contractor will be responsible for verifying that behind each sign location there are no utility lines that will be affected by installation of signs. Any damage during installation of signs to utilities will be the sole responsibility of the Contractor to correct and repair.

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**SECTION 10 20 00
INTERIOR SPECIALTIES**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies manufactured interior specialties.
- B. Items Specified:
 - 1. TV Brackets. (CC)
 - 2. Wire Coat Rack. (CC)
 - 3. Gas Cylinder Bracket. (CC)

1.2 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
 - 1. All accessories specified.

1.3 QUALITY ASSURANCE

- A. Each product shall meet, as a minimum, the requirements specified, and shall be a standard commercial product of a manufacturer regularly presently manufacturing items of type specified.
- B. Each accessory type shall be the same and be made by the same manufacturer.
- C. Each accessory shall be assembled to the greatest extent possible before delivery to the site.
- D. Include additional features, which are not specifically prohibited by this specification, but which are a part of the manufacturer's standard commercial product.

1.4 PACKAGING AND DELIVERY

- A. Pack accessories individually to protect finish.
- B. Deliver accessories to the project only when installation work in rooms is ready to receive them.
- C. Deliver products to site in sealed packages or containers; labeled for identification with manufacturer's name, brand, and contents.

1.5 STORAGE

- A. Store products in weathertight and dry storage facility.
- B. Protect from damage from handling, weather and construction operations before, during and after installation in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.1 TV BRACKETS

- A. Manufacturer: Equal to Peerless-AV.
 - 1. Model: SmartMount® Articulating Wall Mount, Model No. SA740P.

- a. Construction: Aluminum, Color: Gloss Black.
- b. Features: One-Touch™ tilt technology offers +15°/-5° vertical tilt movement for the ideal viewing angle. Integrated cable management protects, contains and conceals cables for a clean installation.
- 2. Model: Universal Flat Wall Mount, Model No. SF650P.
 - a. Construction: Aluminum, Color: Black.
 - b. Features: Adjustable mounting patterns up to 29.25"W x 17.05"H, all necessary screen attachment hardware.
 - c. Options: Metal stud accessory and integrated security options.

2.2 WIRE COAT RACK

- A. Manufacturer: Equal to Nexel Industries.
- B. Product: Garment Storage, Wall Unit, Model No. GW36C.
- C. Width: 36 inches.
- D. Depth: 24 inches.
- E. Quantity: See plans.

2.3 GAS CYLINDER BRACKET

- A. Manufacturer: Equal to USA Safety, Madison, WI.
- B. Product: 1 Cylinder Capacity, Large Bottle, Wall Bracket, No. GB160FS.
- C. Materials: 11 GA hot rolled steel with polyester powder paint and vinyl edge guarding, 1.5" steel cinch buckle and 54"L polypropylene strap.
- D. Tank Diameters Supported: 9" to 16"
- E. Dimensions: 18"W x 2.45"D x 4.25"H.
- F. Regulation Compliance: OSHA, UFC, NFPA and CGA.
- G. Quantity: One (1)

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before starting work notify Project Engineer in writing of any conflicts detrimental to installation or operation of units.
- B. Verify with the Project Engineer the exact location of accessories.
- C. Verify VA TV size and model with Project Engineer to determine compatibility of specified bracket before installation.

3.2 INSTALLATION

- A. Set work accurately, in alignment and where shown. Items shall be plumb, level, free of rack and twist, and set parallel or perpendicular as required to line and plane of surface.
- B. Install accessories in accordance with the manufacturer's printed instructions and ASTM F446.
- C. Install accessories plumb and level and securely anchor to substrate. Provide metal backing per Section 05 50 00 to support imposed loads at metal stud partitions.

- D. Install accessories in a manner that will permit the accessory to function as designed and allow for servicing as required without hampering or hindering the performance of other devices.
- E. Align accessories even and level, when installed in battery.
- F. Install accessories to prevent striking by other moving, items or interference with accessibility.

3.3 CLEANING

- A. After installation, clean as recommended by the manufacturer and protect from damage until completion of the project.

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**SECTION 10 21 23
CUBICLE CURTAIN TRACKS**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies cubicle curtain track (C.C.T.).

1.2 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples:
1. One 300 mm (12 inch) long piece of cubicle curtain track with carrier access and end stop.
 2. One clip anchor for fastening track to grid system of acoustical ceilings.
 3. One curtain carrier.
- C. Shop Drawings: Showing layout of tracks and method of anchorage.
- D. Manufacturer's Literature and Data:
1. Cubicle curtain track.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Deliver material in original package marked to identify the contents, brand name, and the name of the manufacturer or supplier.
- B. Store in dry and protected location. Store so as to not bend or warp the tracks.
- C. Do not open packages until contents are needed for installation, unless verification inspection is required.

1.4 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
- B221-08.....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
- B456-03(R2009).....Electrodeposited Coatings for Copper Plus Nickel Plus Chromium and Nickel Plus Chromium
- C. The National Association of Architectural Metal Manufacturers (NAAMM):
- AMP 500 Series.....Metal Finishes Manual

PART 2 - PRODUCTS

2.1 CUBICLE CURTAIN TRACKS

- A. Surface mounted:

1. Channel Tracks (Surface Mounted Type): Heavy Duty extruded White PVC vinyl track with smooth inside raceway for curtain carriers, equal to InPro "Whisper Care".
- B. Curtain Carriers: Nylon carriers, with nylon wheels. Equip each carrier with nickel chromium plated brass or stainless steel bead chain and hook assembly. Hook for bead chain may be the same material and finish as the bead chain or may be chromium plated steel. Provide 2.2 carriers for every 300 mm (one foot) of each section of each track length, plus one additional carrier.
- C. End Stop Connectors, Ceiling Flanges and Other Accessories: Fabricate from the same material with the same finish as the tracks or from nylon.
- D. Hangers and Fittings: Fabricate from the same material with the same finish as the tracks. Hangers may be round or square for channel tracks and round for tubular tracks. Design fittings to be compatible with design of tracks and to safely transmit the track load to the hangers.
- E. At end of each section of track, make provision for insertion and removal of carriers. Design to prevent accidental removal of carrier. Any operating mechanism shall be removable with common tools.

2.2 FASTENERS

- A. Exposed Fasteners, Screws and Bolts: Stainless steel or chromium/nickel plated brass.
- B. Concealed Fasteners, Screws and Bolts: Hot-dip galvanized (except in high moisture areas use stainless steel).
- C. Metal Clips: Anchor curtain tracks to exposed grid of lay-in acoustical tile ceilings, with concealed metal (butterfly) type or two piece snap locking type ceiling clip of high strength spring steel.

2.3 FABRICATION

- A. Form tracks and bends of lengths that will produce the minimum number of joints. Make track sections up to 4800 mm (16 feet) without joints. Form corner bend on a 300 mm (12 inch) radius.
- B. Provide steel anchor plates, supports, and anchors for securing components to building construction.
- C. Form flat surface without distortion.
- D. Shop assemble components and package complete with anchors and fittings.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install tracks after finish painting and ceiling finishing operations are complete.
- B. Install track level and hangers plumb and securely anchor to the ceiling to form a rigid installation.

- C. Anchor surface mounted curtain tracks directly to exposed grid of lay-in acoustical tile ceilings with suitable fasteners, spaced approximately 600 mm (24 inches) on center.
- D. Securely fasten end stop caps to prevent their being forced out by the striking weight of carriers.
- E. Remove damaged or defective components and replace with new components or repair to the original condition.

3.2 ACCEPTANCE

- A. Track shall be installed neat, rigid, plumb, level and true, and securely anchored to the overhead construction.
- B. Carrier units shall operate smoothly and easily over the full range of travel.

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**SECTION 10 26 00
WALL PROTECTION**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies wall guards (crash rails or bumper guards), handrail/wall guard combinations and corner guards.

1.2 RELATED WORK

- A. Armor plates and kick plates not specified in this section: Section 08 71 00, DOOR HARDWARE.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings: Show design and installation details.
- C. Manufacturer's Literature and Data:
 - 1. Handrail/Wall Guard Combinations.
 - 2. Wall Guards.
 - 3. Corner Guards.
 - 4. High Impact Wall covering.
- D. Test Report: Showing that resilient material complies with specified fire and safety code requirements.

1.4 DELIVERY AND STORAGE

- A. Deliver materials to the site in original sealed packages or containers marked with the name and brand, or trademark of the manufacturer.
- B. Protect from damage from handling and construction operations before, during and after installation.
- C. Store in a dry environment of approximately 21 degrees C (70 degrees F) for at least 48 hours prior to installation.

1.5 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - A167-99(R2009).....Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
 - B221-08.....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
 - D256-06.....Impact Resistance of Plastics
 - D635-06.....Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position

E84-09.....Surface Burning Characteristics of Building
Materials

C. The National Association of Architectural Metal Manufacturers (NAAMM):

AMP 500-06.....Metal Finishes Manual

D. National Fire Protection Association (NFPA):

80-10.....Standard for Fire Doors and Windows

E. Society of American Automotive Engineers (SAE):

J 1545-05.....Instrumental Color Difference Measurement for
Exterior Finishes.

F. Underwriters Laboratories Inc. (UL):

Annual Issue.....Building Materials Directory

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum Extruded: ASTM B221, Alloy 6063, Temper T5 or T6.

B. Resilient Material:

1. Extruded and injection molded acrylic vinyl or extruded polyvinyl chloride meeting following requirements:
 - a. Minimum impact resistance of 1197 ps (25 ft lbs per sq.ft) when tested in accordance with ASTM D256 (Izod impact, ft.lbs. per inch notch).
 - b. Class 1 fire rating when tested in accordance with ASTM E84, having a maximum flame spread of 25 and a smoke developed rating of 450 or less.
 - c. Rated self extinguishing when tested in accordance with ASTM D635.
 - d. Material shall be labeled and tested by Underwriters Laboratories or other approved independent testing laboratory.
 - e. Integral color with all colored components matched in accordance with SAE J 1545 to within plus or minus 1.0 on the CIE-LCH scales.
 - f. Same finish on exposed surfaces.

2.2 CORNER GUARDS

A. Resilient, Shock-Absorbing Corner Guards: Surface mounted type of 6 mm 1/4-inch corner) formed to profile shown.

1. Snap-on corner guard formed from resilient material, minimum 2 mm (0.078-inch) thick, free floating on a continuous 1.6 mm (0.063-inch) thick extruded aluminum retainer. Provide appropriate mounting hardware, cushions and base plates as required.
2. Provide factory fabricated end closure caps at top and bottom of surface mounted corner guards.
3. Product: Equal to InPro Corporation, 160 Series, Color: Clam Shell, No. 0154.

2.3 WALL GUARDS AND HANDRAILS

A. Resilient Wall Guards and Handrails:

1. Handrail/Wall Guard Combination: Snap-on covers of resilient material, minimum 2 mm (0.078-inch) thick, shall be free-floated on a continuous, extruded aluminum retainer, minimum 1.8 mm (0.072-inch) thick, anchored to wall at maximum 760 mm (30 inches) on center. Equal to InPro Corporation 1200 Series Ergonomic Profile, Color: Clam Shell, No. 0154.
2. Wall Guards (Crash Rails): Snap-on covers of resilient material, minimum 2.8 mm (0.110-inch) thick, shall be free-floated over 50 mm (two-inch) wide aluminum retainer clips, minimum 2.3 mm (0.090-inch) thick, anchored to wall at maximum 600 mm (24 inches) on center, supporting a continuous aluminum retainer, minimum 1.6 mm (0.062-inch) thick; or, shall be free-floated over a continuous extruded aluminum retainer, minimum 2.3 (0.090-inch) thick anchored to wall at maximum 600 mm (24 inches) on center. Equal to InPro Corporation 1600 Series Ergonomic Profile, Color: Clam Shell, No. 0154.
3. Provide handrails and wall guards (crash rails) with prefabricated and closure caps, inside and outside corners, concealed splices, cushions, mounting hardware and other accessories as required. End caps and corners shall be field adjustable to assure close alignment with handrails and wall guards (crash rails). Screw or bolt closure caps to aluminum retainer.

2.4 HIGH IMPACT WALL COVERING

- A. Fabricate from vinyl acrylic or polyvinyl chloride resilient material minimum 6mm (0.06 inch) thick designed specially for interior use. Color: Equal to InPro Corporation, Clam Shell, No. 0154.
- B. Provide adhesive as recommended by the wall covering manufacturer.

2.5 FASTENERS AND ANCHORS

- A. Provide fasteners and anchors as required for each specific type of installation. Color: Equal to InPro Corporation, Clam Shell, No. 0154.
- B. Where type, size, spacing or method of fastening is not shown or specified, submit shop drawings showing proposed installation details.

PART 3 - INSTALLATION

3.1 RESILIENT CORNER GUARDS

- A. Install corner guards on walls in accordance with manufacturer's instructions.

**3.2 RESILIENT HANDRAIL, WALL GUARD COMBINATIONS, AND RESILIENT WALL GUARDS
(CRASH RAIL)**

- A. Secure guards to walls with mounting cushions, brackets and fasteners in accordance with manufacturer's details and instructions.

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**SECTION 10 28 00
TOILET ACCESSORIES**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies manufactured items usually used in toilets, locker rooms and at sinks in related spaces.
- B. Items Specified:
 - 1. Paper towel dispenser. (CC)
 - 2. Waste receptacles. (CC)
 - 3. Toilet tissue dispenser. (CC)
 - 4. Grab Bars. (CC)
 - 5. Clothes hooks, robe or coat. (CC)
 - 6. Metal framed mirror. (CC)
 - 7. Soap dispenser. (VC)
 - 8. Napkin/Tampon Vendor. (CC)

1.2 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
 - 1. All accessories specified.
 - 2. Show type of material, gages or metal thickness in inches, finishes, and when required, capacity of accessories.
 - 3. Show working operations of spindle for toilet tissue dispensers.

1.3 QUALITY ASSURANCE

- A. Each product shall meet, as a minimum, the requirements specified, and shall be a standard commercial product of a manufacturer regularly presently manufacturing items of type specified.
- B. Each accessory type shall be the same and be made by the same manufacturer.
- C. Each accessory shall be assembled to the greatest extent possible before delivery to the site.
- D. Include additional features, which are not specifically prohibited by this specification, but which are a part of the manufacturer's standard commercial product.

1.4 PACKAGING AND DELIVERY

- A. Pack accessories individually to protect finish.
- B. Deliver accessories to the project only when installation work in rooms is ready to receive them.
- C. Deliver products to site in sealed packages of containers; labeled for identification with manufacturer's name, brand, and contents.

1.5 STORAGE

- A. Store products in weathertight and dry storage facility.
- B. Protect from damage from handling, weather and construction operations before, during and after installation in accordance with manufacturer's instructions.

1.6 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - A167-99(R2009).....Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
 - A176-99(R2009).....Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip
 - A269-10.....Seamless and Welded Austenitic Stainless Steel Tubing for General Service
 - A312/A312M-09.....Seamless and Welded Austenitic Stainless Steel Pipes
 - A653/A653M-10.....Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - B221-08.....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
 - B456-03(R2009).....Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium
 - C1036-06.....Flat Glass
 - C1048-04.....Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass
 - D635-10.....Rate of Burning and/or Extent and Time of Burning of Self Supporting Plastics in a Horizontal Position
 - F446-85(R2009).....Consumer Safety Specification for Grab Bars and Accessories Installed in the Bathing Area.
 - D3453-07.....Flexible Cellular Materials - Urethane for Furniture and Automotive Cushioning, Bedding, and Similar Applications
 - D3690-02(R2009).....Vinyl-Coated and Urethane-Coated Upholstery Fabrics
- C. The National Association of Architectural Metal Manufacturers (NAAMM):
 - AMP 500 Series.....Metal Finishes Manual
- D. American Welding Society (AWS):

D10.4-86 (R2000).....Welding Austenitic Chromium-Nickel Stainless
Steel Piping and Tubing

E. Federal Specifications (Fed. Specs.):

A-A-3002.....Mirrors, Glass

FF-S-107C (2).....Screw, Tapping and Drive

FF-S-107C.....Screw, Tapping and Drive.

WW-P-541E(1).....Plumbing Fixtures (Accessories, Land Use) Detail
Specification

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum: ASTM B221, alloy 6063-T5 and alloy 6463-T5.

B. Stainless Steel:

1. Plate or sheet: ASTM A167, Type 302, 304, or 304L, except ASTM A176 where Type 430 is specified, 0.0299-inch thick unless otherwise specified.

2. Tube: ASTM A269, Alloy Type 302, 304, or 304L.

C. Stainless Steel Tubing: ASTM A269, Grade 304 or 304L, seamless or welded.

D. Stainless Steel Pipe: ASTM A312; Grade TP 304 or TP 304L.

E. Steel Sheet: ASTM A653, zinc-coated (galvanized) coating designation G90.

F. Glass:

1. ASTM C1036, Type 1, Class 1, Quality q2, for mirrors.

2.2 FASTENERS

A. Exposed Fasteners: Stainless steel or chromium plated brass, finish to match adjacent surface.

B. Concealed Fasteners: Steel, hot-dip galvanized (except in high moisture areas such as showers or bath tubs use stainless steel).

C. Toggle Bolts: For use in hollow masonry or frame construction.

D. Hex bolts: For through bolting on thin panels.

E. Expansion Shields: Lead or plastic as recommended by accessory manufacturer for component and substrate for use in solid masonry or concrete.

F. Screws:

1. ASME B18.6.4.

2. Fed Spec. FF-S-107, Stainless steel Type A.

G. Adhesive: As recommended by manufacturer for products to be joined.

2.3 FINISH

A. In accordance with NAAMM AMP 500 series.

B. Anodized Aluminum:

1. AA-C22A41 Chemically etched medium matte, with clear anodic coating, Class I Architectural, 0.7-mil thick.
- C. AA-M32 Mechanical finish, medium satin.
 1. Chromium Plating: ASTM B456, satin or bright as specified, Service Condition No. SC2.
 2. Stainless Steel: NAAMM AMP 503, finish number 4.
 3. Ferrous Metal:
 - a. Shop Prime: Clean, pretreat and apply one coat of primer and bake.
 - b. Finish: Over primer apply two coats of alkyd or phenolic resin enamel, and bake.

2.4 FABRICATION - GENERAL

- A. Welding, AWS D10.4.
- B. Grind dress, and finish welded joints to match finish of adjacent surface.
- C. Form exposed surfaces from one sheet of stock, free of joints.
- D. Provide steel anchors and components required for secure installation.
- E. Form flat surfaces without distortion. Keep exposed surfaces free from scratches and dents. Reinforce doors to prevent warp or twist.
- F. Isolate aluminum from dissimilar metals and from contact with building materials as required to prevent electrolysis and corrosion.
- G. Hot-dip galvanized steel, except stainless steel, anchors and fastening devices.
- H. Shop assemble accessories and package with all components, anchors, fittings, fasteners and keys.
- I. Key items alike.
- J. Provide templates and rough-in measurements as required.
- K. Round and deburr edges of sheets to remove sharp edges.

2.5 PAPER TOWEL DISPENSERS (EQUAL TO GEORGIA PACIFIC 'ENMOTION' IMPULSE 10 AUTOMATED TOWEL DISPENSER)

- A. Surface mounted type, 14.8"W X 9.75"D X 13.3"H.
- B. Adjustable Settings: Sheet length, sensor distance, time delay and dispense mode.
- C. Operation: Four (4) D-cell alkaline batteries.
- D. Fabricate of high impact plastic, color: Translucent Smoke.

2.6 SANITARY WASTE RECEPTACLES (EQUAL TO BRODERICK MATRIX SERIES, MODEL B-5270)

- A. Surface mount.
- B. Durable, high impact Grey ABS with high gloss finish.
- C. Color: Grey.

2.7 TOILET TISSUE DISPENSERS (EQUAL TO KIMBERLY-CLARK PROFESSIONAL MICROBAN IN-SIGHT CORELESS STANDARD TISSUE DISPENSER NO. 09604 SMOKE)

- A. Double roll surface mounted type.
- B. Built-in anti-microbial protection.
- C. Size: 11" x 7.65" x 6".

2.8 GRAB BARS

- A. Fed. Spec WW-P-541/8B, Type IV, bars, surface mounted, Class 2, grab bars and ASTM F446.
- B. Fabricate stainless steel:
 - 1. Stainless steel: Grab bars, flanges, mounting plates, supports, screws, bolts, and exposed nuts and washers.
- C. Concealed mount, except grab bars mounted on toilet partitions.
- D. Bars:
 - 1. Fabricate from 38 mm (1-1/2 inch) outside diameter tubing.
 - a. Stainless steel, minimum 1.2 mm (0.0478 inch) thick.
 - 2. Fabricate in one continuous piece with ends turned toward walls.
 - 3. Continuous weld intermediate support to the grab bar.
- E. Flange for Concealed Mounting:
 - 1. Minimum of 2.65 mm (0.1046 inch) thick, approximately 75 mm (3 inch) diameter by 13 mm (1/2 inch) deep, with provisions for not less than three set screws for securing flange to back plate.
 - 2. Insert grab bar through center of the flange and continuously weld perimeter of grab bar flush to back side of flange.
- F. Flange for Exposed Mounting:
 - 1. Minimum 5 mm (3/16 inch) thick, approximately 75 mm (3 inch) diameter.
 - 2. Insert grab bar through flange and continuously weld perimeter of grab bar flush to backside of flange.
 - 3. Where mounted on toilet partitions, provide three equally spaced, countersunk holes, sized to accommodate 5 mm (3/16 inch) diameter bolts.
- G. In lieu of providing flange for concealed mounting, and back plate as specified, grab rail may be secured by being welded to a back plate and be covered with flange.
- H. Back Plates:
 - 1. Minimum 2.65 mm (0.1046 inch) thick metal.
 - 2. Fabricate in one piece, approximately 6 mm (1/4 inch) deep, with diameter sized to fit flange. Provide slotted holes to accommodate anchor bolts.
 - 3. Furnish spreaders, through bolt fasteners, and cap nuts, where grab bars are mounted on partitions.

2.9 CLOTHES HOOKS-ROBE OR COAT

- A. Fabricate hook units either of chromium plated brass with a satin finish, or stainless steel, using 6 mm (1/4 inch) minimum thick stock, with edges and corners rounded smooth to the thickness of the metal, or 3 mm (1/8 inch) minimum radius.
- B. Fabricate each unit as a double hook on a single shaft, integral with or permanently fastened to the wall flange, provided with concealed fastenings.

2.10 METAL FRAMED MIRRORS

- A. Fed. Spec. A-A-3002 metal frame; stainless steel, type 302 or 304.
- B. Mirror Glass:
 - 1. Minimum 6 mm (1/4 inch) thick.
 - 2. Set mirror in a protective vinyl glazing tape.
- C. Frames:
 - 1. Channel or angle shaped section with face of frame not less than 9 mm (3/8 inch) wide. Fabricate with square corners.
 - 2. Use 0.9 mm (0.0359 inch) thick stainless steel.
- D. Back Plate:
 - 1. Fabricate backplate for concealed wall hanging of either zinc-coated, or cadmium plated 0.9 mm (0.036 inch) thick sheet steel, die cut to fit face of mirror frame, and furnish with theft resistant concealed wall fastenings.
 - 2. Use set screw type theft resistant concealed fastening system for mounting mirrors.
- E. Mounting Bracket:
 - 1. Designed to support mirror tight to wall.
 - 2. Designed to retain mirror with concealed set screw fastenings.

2.11 SOAP DISPENSER, AUTOMATIC

- A. Wall mounted, VA provided, Contractor installed.

2.12 NAPKIN/TAMPON VENDOR

- A. Manufacturer: Equal to Bobrick Model B-282 25, 11-7/8"W x 6-1/2"D x 25-7/8"H.
- B. Surface mount. Two dispensing mechanisms in one cabinet, one for boxed napkins, one for tampon packages.
- C. Construction: 18-8S, Type 304 stainless steel, 22 ga. Cabinet, 18 ga. Door, all welded construction, full length stainless steel piano hinge.
- D. Coin mechanisms: Two single coin mechanisms for 25¢ operation.
- E. Locks: Each coin box tumbler lock to be keyed differently than door locks.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before starting work notify Project Engineer in writing of any conflicts detrimental to installation or operation of units.
- B. Verify with the Project Engineer the exact location of accessories.

3.2 INSTALLATION

- A. Set work accurately, in alignment and where shown. Items shall be plumb, level, free of rack and twist, and set parallel or perpendicular as required to line and plane of surface.
- B. Install accessories in accordance with the manufacturer's printed instructions and ASTM F446.
- C. Install accessories plumb and level and securely anchor to substrate.
- D. Install accessories in a manner that will permit the accessory to function as designed and allow for servicing as required without hampering or hindering the performance of other devices.
- E. Position and install dispensers, and other devices in countertops, clear of drawers, permitting ample clearance below countertop between devices, and ready access for maintenance as needed.
- F. Align mirrors, dispensers and other accessories even and level, when installed in battery.
- G. Install accessories to prevent striking by other moving, items or interference with accessibility.

3.3 CLEANING

- A. After installation, clean as recommended by the manufacturer and protect from damage until completion of the project.

- - - E N D - - -

**SECTION 10 44 13
FIRE EXTINGUISHER CABINETS**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section covers recessed fire extinguisher cabinets.

1.2 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data: Fire extinguisher cabinet including installation instruction and rough opening required.

1.3 APPLICATION PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society of Testing and Materials (ASTM):
D4802-10.....Poly (Methyl Methacrylate) Acrylic Plastic
Sheet

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHER CABINET

- A. Equal to JL Industries Clear Vu Model No. 2515 with FX Option.
- B. Recessed type with flat trim glazed with vacuum formed clear acrylic bubble. Inside tub dimension 30" x 14" x 4" size to accommodate 7-1/4" diameter multi-purpose dry chemical extinguisher.
- C. Wall opening: 16" x 32-1/8" x 4-7/8".

2.2 FABRICATION

- A. Form body of cabinet from 0.9 mm (0.0359 inch) thick sheet steel.
- B. Fabricate door and trim from 1.2 mm (0.0478 inch) thick sheet steel with all face joints fully welded and ground smooth.
1. Glaze doors with vacuum formed clear acrylic bubble.
 2. Design doors to open 180 degrees.
 3. Provide continuous hinge, pull handle, and adjustable roller catch.

2.3 FINISH

- A. Finish interior of cabinet body with baked-on semigloss white enamel.
- B. Finish door and frame with baked-on semi-gloss white enamel prime coat suitable for field painting.

PART 3 - EXECUTION

- A. Install fire extinguisher cabinets in prepared openings and secure in accordance with manufacturer's instructions.

B. Install cabinet so that bottom of cabinet is 975 mm (39 inches) above finished floor.

- - - E N D - - -

SECTION 10 51 13
METAL LOCKERS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section covers metal lockers and accessories.

1.2 SUBMITTALS

A. Submit in accordance with Section 01 33 23 SHOP DRAWINGS, PRODUCT DATA, and SAMPLES.

B. Manufacturers literature and data: Locker fabrication, finishes, hardware and installation instructions.

PART 2 - PRODUCTS

2.1 LOCKERS

A. Equal to Lyon, Tennsco or Edsal.

1. Size: 12"W x 15"D x 78"H, and 12"W x 12"D x 78"H, double tier, including 6" legs.

2. Body: 24 gage (0.6 mm).

3. Door: 16 gage (1.5 mm).

4. Frames: 16 gage (1.5 mm).

5. Trim: 20 gage (0.9 mm).

6. Finish: Baked Enamel, Color: To be selected from Manufacturer's Standard Colors.

7. Base: Continuous base cover.

8. Top: Provide sloped top.

9. Quantity: See plans

B. For each Locker: One double prong ceiling hook and three single prong wall hooks, metal plate number, rubber bumper, multipoint auto-locking system, stainless steel recessed handle to accommodate padlock. Provide storage shelf at single tier lockers.

2.2 BENCH:

A. Bench: Laminated maple, 1-1/4" full finished thickness, all corners rounded and sanded, 9-1/2" wide x 17-1/2" high overall assembly height, lengths as indicated on plans.

B. Finishes:

1. Bench: Two (2) coats of clear finish top and edges, one (1) coat of clear finish on bottom.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install in accordance with Manufacturer's instructions.

B. Install lockers plumb and square.

3.2 CLEANING

A. Clean locker interiors and exterior surfaces.

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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 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 an independent third party hired by contractor and approved by VA who will conduct testing to ensure that the ceiling lift and charging system are safe and in compliance with ISO 10535 & UL 60601-1. Certification paperwork and reports shall be provided to VA.
- B. Complete and submit Fargo VA Health Care System BioMed paperwork and required system checks.

1.4 SUBMITTALS

- A. Submit in accordance with specification Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.
- B. Certificates of Compliance
- C. Manufacturer's Literature and Data:
 - 1. Lifting Capacity
 - 2. Lifting Speed
 - 3. Horizontal Displacement Speeds
 - 4. Horizontal Axis Motor
 - 5. Vertical Axis Motor
 - 6. Emergency Brake
 - 7. Emergency Lowering Device
 - 8. Emergency Stopping Device
 - 9. Electronic Soft-Start and Soft-Stop Motor Control
 - 10. Current Limiter for Circuit Protection
 - 11. Low Battery Disconnect System
 - 12. Strap Length

13. All equipment anchors and supports. Submittals shall include weights, dimensions, center of gravity, 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.

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 (IOS):
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):
801-2(1991).....Electromagnetic Compatibility for Industrial-
Process Measurement and Control Equipment-Part
2: Electromagnetic Discharge Requirements

PART 2 - PRODUCTS

2.1 PATIENT LIFT SYSTEM

A. Manufacturer: Equal to Arjo Huntleigh.

2.2 CEILING TRACK SYSTEM

A. The Ceiling Track shall be made from high strength extruded aluminum T66081-T5 at a thickness of 3/16" (4.8mm). Provide anchor supports at a minimum 3 per linear foot at ceiling substrate. The ceiling track shall be finished with baked enamel paint.

2.3 LIFT UNIT

- A. Maxi Sky 600
1. Safe working load Maxi Sky 600: 272 kg (600 lbs)
 2. LED indicator for maintenance required
 3. Soft-start and stop motor control
 4. Power on indicator

5. Emergency brake system
6. Manual emergency lowering device (located on the motor cab)
7. Electrical up and down emergency buttons
8. Emergency stopping device (pull cord) accessible from the ground
9. Low battery indicator (audible and visual LED)
10. Charging indicators
11. Strap length up to 2.3 m (90")
12. Lifting speed:
 - a. 3 cm/sec (1.2"/sec) at 455 kg (1000 lbs)
 - b. 4 cm/sec (1.6"/sec) at 230 kg (500 lbs)
 - c. 7 cm/sec (2.8"/sec) at 0 kg (0 lbs)
13. Batteries: 2x7 Ah will average 150 cycles (loaded at 75 kg/165 lbs)
14. Adjustable horizontal displacement speeds: 10, 14, 15, 20 cm/sec.
15. Automatic return to charge function initiated by user: weight sensor cut-out 9 kg (20 lbs)
16. ASB FR casing (fire retardant)
17. CSA No 601.1, UL No 2601-1 certifications CE marked/IC0 10535
18. Charger unit
19. Power indicator on charging module
20. Clip on charger anywhere on the track
21. 100-240 Vac / 50-60 Hz / 27 Va
22. Protection class IP44 (handset)
23. Infrared remote control

2.4 MOTORS

- A. Vertical Movement-DC Motor
 1. Type: Class A, fully enclosed, permanent magnet.
 2. Rating: 24Vdc, 1.1A, 110W, 4000RPM, 0.3N-m.
 3. Mounting: Secured to chassis.
- B. Horizontal Movement-DC Motor
 1. Type: Fully enclosed, permanent magnet, integral reducer.
 2. Rating: 24Vdc, 1.8A, 62W, 260RPM, 1.0N-m.
 3. Mounting: Secured to chassis.

2.5 BATTERIES

- A. The life cycle (number of charging cycles) for batteries shall be in compliance with IEC 801-2.
- B. Provide rechargeable batteries with up to 120 transfers with a load of 200lbs (74kg) and up to 70 transfers with its maximum load of 440lbs (200kg).

2.6 CHARGER

- A. Charger Input: 100-240 Vac, 50/60 Hz.
- B. Charger Output: 27 Vdc, 1 A max.
- C. Supplemental to the charger provide a clip on charging station with indicator lights.

2.7 STRAPS AND SLING

- A. The straps shall be made of threaded nylon. The straps shall ensure the patient's safety by preventing the patient from falling out of the sling.
- B. The sling shall be made from a polyester/nylon net material that is pliable, breathable and easy to use. The sling shall cradle the body of the patient.

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 18" 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 Project Engineer and a manufacturer's field representative, to show that the patient lift system equipment and control devices operate properly and in accordance with design and specification requirements.

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Installation or Relocation Checklist for Ceiling Mounted Patient Lifts

The commissioning for a patient ceiling lift system(s) shall include, but not be limited to, the following points as components of the commissioning procedures.

Verify that ceiling mounted patient lifts are not installed in treatment units with actively suicidal patients.

Facility:	Manufacturer:
Lift Location:	Model:
VAMC Contact:	Serial Number:
VAMC Contact's Phone Number:	Mfgr Contact:
Installer:	Mfgr Contact's Phone Number:
Installer's Phone Number:	Date:

Pre-Installation		COMPLETE
1	Perform site survey of the pre-existing conditions and as-built drawings above and below finish ceiling at the installation location to confirm existing structural and ceiling conditions.	
2	Obtain structural and related engineering design drawings and calculations for the new lift installation. Design drawings shall be developed for specific lift installation under specific pre-existing conditions of the facility.	
3	If the facility is located in a seismic area, as identified in VA Handbook H-18-8 Seismic Design Requirements, verify that the ceiling mounted patient lift system installation is in compliance with the requirements of VA Directive 7512 Seismic Safety of VA Buildings and VA Master Design Specification 13.05.041 Seismic Restraint Requirements for Non-Structural Components.	
4	Verify that the lift is listed by the manufacturer to be installed and operated in the environment that the lift is operating under. (For example, water tight lifts shall be installed and operated in wet, damp or humid locations such as pools or bathrooms.)	
5	Verify NFPA 13 compliance for fire sprinkler system (including but not limited to fire sprinkler heads and piping).	
6	Verify NFPA 99 and NFPA 70 compliance for proper grounding and bonding.	
7	Verify NFPA 99 and NFPA 70 compliance for access to electrical and safety systems.	
8	Verify required access to mechanical, HVAC, and fire systems components within the lift installation area.	
9	Verify minimum clearances for operation are compliant with manufacturer recommendations. (Ensure room clearance and that the ceiling height is adequate for lift usage.)	
10	Perform pre-installation walkthrough to confirm full understanding and consensus of design drawing(s) and installation conditions.	

NOTES:

Installation		COMPLETE
1	Verify proper connections of the lift's structural system to the building's structure (including seismic bracing if applicable).	
2	Verify proper interface at the ceiling (hard deck or soft tile) and proper installation of all protective features around the support rods and rails/tracks.	

3	Verify proper structural component sizing and physical installation to make sure that proper structural system is in place and properly installed to support the lift.	
4	Verify proper installation of electric motor per manufacturer's instructions to ensure operational rigidity of motor mounting.	
5	Verify proper electrical connections per design drawings and manufacturer's instructions.	
NOTES:		
Post-Installation		COMPLETE
1	Perform walkthrough to ensure compliance of the installation per the design drawing(s) and manufacturer's instructions.	
2	Perform operational test to verify lift functionality.	
NOTES:		
Rails/Tracks and End Stops		PASS FAIL
1	Verification that all fasteners and set screws are properly tightened on the trollies and rails/tracks.	
2	Ensure that the rail/track is free of gaps (unless required by design). If included in installation, verify rail turntable function, exchanger function, gate alignment, and safety block installation.	
3	Confirm track is clean and clear of all debris. (Use manufacturer's recommended cleaning materials to avoid damage to the motor case and other components.)	
4	Verification that all manufacturer specified end stops or docking gates are properly installed.	
NOTES:		
Lift Unit and Straps		PASS FAIL
1	Inspection of lift unit casing for cracks and alignment.	
2	Verification that the lift unit charges properly.	
3	Inspection and activation of hand control for full operation (e.g., up, down, left, right) and "return to charge" function if applicable.	
4	Confirm any and all lift unit indicator lights are functioning. (e.g., red service warning light, charging state light)	
5	Inspection and activation of emergency up/down lift unit control buttons if applicable.	

6	Full extension and inspection of lift strap for loose threads or frays.		
7	Inspection of spreader bar and clips for cracks and for loose or missing rings or cotter pins.		
NOTES:			
Load Testing		PASS	FAIL
1	Verification of any "soft start" or "soft stop" features and that lifting speed does not exceed 2.5 inches per second with "zero" load.		
2	Verification of load testing and deflection testing at lift listed maximum for each lift unit at its maximum rated lift capacity. Conduct this test in three progressive stages starting with a 100 lb load, then 50% of maximum rated lift capacity, then 100% of maximum rated lift capacity.		
3	Verification of any "soft start" and "soft stop" features and that lifting speed does not exceed 1.5 inches per second under maximum rated lift capacity.		
4	Verification of function of emergency stop at maximum rated lift capacity.		
5	Verification of emergency lowering feature at maximum rated lift capacity.		
NOTES:			
Manuals		COMPLETE	
1	Confirm that the manufacturer's operating and maintenance manuals for this lift have been received.		
NOTES:			
Training		COMPLETE	
1	Verify that manufacturer or manufacturer's representative has provided training on the use of patient handling equipment to clinicians and other staff who move and handle patients.		
2	Verify that training and competency are documented prior to release for use with patients.		
NOTES:			

Installing Contractor		COMPLETE
After the activities listed in the above checklist and in the manufacturers installation/operations/owner's manual(s) have been completed, the installing contractor shall release the ceiling mounted lift installation to VA representative.		
SIGNATURE:	DATE:	
TITLE:		

VA Representative		COMPLETE
After the activities listed in the above checklist and in the manufacturers installation/operations/owner's manual(s) have been completed, the VA representative shall release the ceiling mounted lift installation to the Manager of the Service using the ceiling mounted lifts.		
SIGNATURE:	DATE:	
TITLE:		

Manager of the Service Using the Ceiling Mounted Lifts		COMPLETE
Verify and confirm that VA clinical staff have been trained to operate the ceiling mounted patient lift, as required in the Training section.		
SIGNATURE:	DATE:	
TITLE:		

ADDITIONAL NOTES:

SECTION 12 35 53
STAINLESS STEEL CASEWORK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies all stainless steel cabinets and casework, including tops, supporting structures, and miscellaneous items listed in specifications, and drawings. Include delivery to the building, set in place, level, and scribe to walls and floors as required. Furnish and install all filler panels, knee space panels and scribes as shown or required for complete installation.
- B. Related Work: All plumbing and electrical fittings to be furnished and installed by Division 22 and Division 26.

1.2 RELATED DIVISIONS

- A. Divisions 5 & 9: Behind-the-Wall Backing and Metal Studs
- B. Division 9: Base Molding
- C. Division 22: Plumbing
- D. Division 26: Electrical Fittings and Connections
- E. Division 27: Communications

1.3 RELATED PUBLICATIONS

- A. SEFA 3 - Scientific Equipment and Furniture Association
- B. SEFA 8 - Scientific Equipment and Furniture Association
- C. NFPA 30 - National Fire Protection Association
- D. NFPA-45 - National Fire Protection Association
- E. UL - Underwriters Laboratories
- F. ASTM D522 - Bending Test

1.4 QUALITY ASSURANCE

- A. The stainless steel casework manufacturer shall also provide worktops manufactured or shipped from the same geographic location to assure proper staging, shipment and single source responsibility.
- B. General Performance: Provide certification that furniture shall meet the performance requirements described in SEFA 8.
- C. Finish Performance: Provide independent test lab certification that furniture shall meet the performance requirements described in section 2.05 of these specifications.

1.5 SUBMITTALS

- A. Manufacturer's Data: Submit manufacturer's data and installation instructions for each type of casework.
- B. Shop Drawings: Submit shop drawings for furniture assemblies showing plans, elevations, ends and cross-sections.

1. Coordinate shop drawings with other work involved, including mechanical and electrical services when required.

PART 2- PRODUCTS

2.1 MANUFACTURER

- A. The basis of this specification is stainless steel casework manufactured equal to the standards used by Kewaunee Scientific Corporation, 2700 Front Street, Statesville, North Carolina. The specified design is Research Collection. All casework covered by the specification shall be the product of one manufacturer and be fabricated at one geographic location to assure shipping continuity and single-source responsibility.
- B. The selected manufacturer shall warrant that all products be free of defects in material and workmanship for a period of one year. The period shall start at the date of acceptance or immediately of any defective product. The manufacturer shall have a reasonable opportunity to inspect the goods. No products shall be returned before receipt of written shipping instructions from the manufacturer.

2.2 CABINET MATERIAL

- A. Stainless Steel: Cabinet bodies, drawer bodies, shelves, drawer heads and door assemblies shall be fabricated from stainless steel.

2.3 DRAWER AND DOOR STYLE

- A. Inset - Square Edge: Drawers and doors, when closed, shall be recessed to create an overall flush face with 1/8" reveals. The outer drawer and door head shall have a channel formation on all four sides to eliminate sharp raw edges of steel. The top front corners of the door shall be welded and ground smooth. Cabinets shall be available with either Positive or Roller door catches and optional pulls.

2.4 MATERIALS

- A. Stainless Steel: Stainless Steel shall be Type 304; 12, 14, 16, 18 and 20 gauge U.S. Standard. Stainless steel shall be supplied with a #4 finish free of burns, weld marks, or other imperfections.
- B. Hardware and Trim:
 1. Drawer and Door Pulls: Pull Style 4 - 3/8" diameter stainless steel rod and brushed satin finish.
 - a. Drawer and door pulls shall be mounted on 4" centers, offering a comfortable hand grip, and be securely fastened to doors and drawers.

2. Sliding Doors Pulls: Sliding door pulls shall be Aluminum-Recessed Pull Style 9. Finger holes or slots machined into doors will not be acceptable.
3. Hinges:
 - a. Inset 5-Knuckle Hinges: Inset style cabinets shall use 5-Knuckle hinges made of Type 304 stainless steel .089 thick, 2-1/2" high, with brushed satin finish, and shall be the institutional type with a five-knuckle bullet-type barrel. Hinges shall be attached to both door and case with two screws through each leaf. Welding of hinges to door or case will not be accepted. Doors under 36" in height shall be hung on one pair of hinges, and doors over 36" in height shall be hung on three hinges.
4. Drawer Slide:
 - a. Heavy duty, full extension, soft-close, self-closing, zinc plated, ball-bearing slides, rated for 100 pound loads.
5. Locks:
 - a. Pin Tumbler: Locks when shown or called for shall be a pin tumbler with heavy duty interchangeable cylinder. Exposed lock noses shall be dull nickel (satin) plated and stamped with identifying numbers. Locks shall have capacity of at least 2000 primary key changes, and the capacity to be Master Keyed, Grand-master Keyed, Sub-master Keyed, and Mason Keyed.
6. Catches - For steel casework with 5-knuckle hinges:
 - a. Positive Catch: A two-piece heavy-duty cam action positive catch shall be confined within an integral cabinet top or divider rail, while latching post shall be mounted on the hinge side of door. Polyethylene roller type catches are not acceptable.
7. Elbow Catches: Elbow catches and strike plates shall be used on left hand doors of double door cases where locks are used, and are to be burnished cast aluminum, with satin finish.
8. Shelf Adjustment Clips: Shelf adjustment clips shall be die formed, nickel-plated steel.
9. Base Molding: Base molding shall be provided by others.
10. Sink Supports: Sink supports shall be the hanger type, suspended from end panels of sink cabinet by four 1/4" dia. rods, threaded at bottom end and offset at top to hang from two full-depth reinforcements, welded to the top of end panels. Two 3/4" x 1-1/2" x 12 gauge channels shall be hung on the

treaded rods to provide an adjustable sink cradle for supporting sinks.

2.5 CONSTRUCTION

A. Stainless Steel Cabinet Construction:

1. General:

- a. The stainless steel casework shall be of modern design and shall be constructed in accordance with the best practices of the Scientific Laboratory Equipment Industry. First class quality casework shall be insured by the use of proper machinery, tools, dies, fixtures and skilled workmanship to meet the intended quality and quantity for the project.
- b. All cabinet bodies shall be flush front construction with intersection of vertical and horizontal case members, such as end panels, tops, rails, bottoms and vertical posts in same plane without overlap. Exterior corners shall be spot welded with heavy back up reinforcements.
- c. Each cabinet shall be complete so that units can be relocated at any subsequent time without requiring field application of finished ends or other such parts.
- d. Case openings of Inset style cabinets shall be rabbeted on all four sides for both hinged and sliding doors to provide a dust resistant case.
- e. All cabinets shall have a cleanable smooth interior. Bottoms shall be formed down on sides and back to create easily cleanable corners with no burrs or sharp edges.
- f. Cabinets shall be designed using a standardized grid pattern to allow reconfiguration of doors and drawers.

2. Steel Gauges: Gauges of steel used in construction of cases shall be 18 gauge, except as follows:

- a. Leveling bolt reinforcements 12 gauge.
- b. Top and intermediate front horizontal rails, apron rails, hinge reinforcements, and reinforcement gussets, 16 gauge.
- c. Drawer assemblies, door assemblies, bottom, bottom back rail, toe space rail, and adjustable shelves, 20 gauge.

B. Base Cabinets:

1. End uprights shall be formed into not less than an L formation at top, bottom, back and a 3/4" wide front C formation. A pilaster shall be added to the inside front of the upright for cabinet and hinge reinforcement and shall be perforated for the support of drawer channels, intermediate rails, hinge screws, and shelf adjustment holes.

2. A 7/8" high top horizontal rail shall interlock with the flange at top of end panels for strength, but shall be flush at face of unit. Top rails not flush with face of end uprights are not acceptable.
3. Intermediate rails shall be provided between doors and drawers, but shall not be provided between drawers unless made necessary by locks in drawers. Intermediate rails shall be recessed behind doors and drawer fronts, and designed so that security panels may be added as required.
4. Intermediate vertical uprights shall be furnished to enclose cupboards when used in a unit in combination with a half width bank of drawers.
5. Cabinet bottom shall be formed of one piece of steel, except in corner units, and shall be formed down on sides and back to create a square edge transition welded to cabinet end panels. Front edge shall include a C formation to form a 7/8" high bottom front rail and shall be flush with face of end uprights. Cabinet bottom front rails not flush with face of end uprights are not acceptable.
6. Toe space rail shall extend up and forward to engage bottom panel to form a smooth surfaced fully enclosed toe space, 3" deep x 4" high.
7. Back construction shall be one piece with integral channel formed for maximum strength and welded to back of top and bottom flanges of end uprights.
8. Each bottom corner of base cabinets shall have a 3/8" -16 leveling bolt, 2-1/2" long capable of supporting 500 lbs. Access to the leveling bolts shall be through plug buttons in the cabinet bottom. Access to leveling bolts through toe space or leveling bolts requiring special tools to adjust are not acceptable.
9. Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear and formed down 3/4" at each end. Shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf. Shelves shall be adjustable on not more than 1" increments.
10. Steel Door assembly (two-piece) for solid panel swinging doors shall consist of an inner and outer door pan. Outer door pan shall be formed at all four sides. The corners on the full side of the outer door pan shall be welded and ground smooth to

- prevent exposure of sharp edges of steel at these critical points. Inner door pan shall be flanged at all four sides with hinge reinforcements welded in place. The door assembly shall be 3/4" thick and contains sound deadening material. Door assemblies shall be painted prior to assembly, and shall be punched for attaching pulls. Inner pan formation of door shall be indented for in-field installation of locks when required.
11. Doors shall be readily removable and hinges easily replaceable. Hinges shall be applied to the cabinet and door with screws. Welding of hinges to either cabinet or door will not be acceptable.
 12. Drawer Assemblies: Drawer bodies shall be made in one-piece construction including the bottom, two sides, back and front. They shall be fully coved at interior bottom on all four sides for easy cleaning. The top front of the inner drawer body shall be offset to interlock with the channel formation in drawer head providing a 3/4" thick drawer head.
 13. Knee space panels, where shown or specified, shall be 20 gauge, finished same as casework cabinets, and easily removable for access to mechanical service areas.

C. Upper Cabinet Construction:

1. Upper cabinets shall have a completely finished interior same as exterior and shall be designed so that no mounting hardware is visible when installed.
2. End uprights shall be formed at front, bottom and back to provide maximum strength and rigidity. Front edge of end upright shall be 3/4" wide. A pilaster shall be added to the inside front of the upright for cabinet and hinge reinforcement and shall be perforated for hinge screws, and shelf adjustment holes.
3. Cabinet tops shall be formed with a 7/8" high C formation at the front edge and turned down at the back to engage a wall hanging rail.
4. Cabinet flush bottoms shall be formed with a 7/8" high C formation at the front edge.
5. Cabinet false bottoms shall be formed down on all four edges and shall be removable.
6. Cabinet backs shall be welded to the top, bottom and ends. Backs shall be perforated for shelf adjustment holes. Holes shall be enclosed by end uprights.

7. Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear, formed down 3/4" at each end. Shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf. Shelves shall be adjustable on not more than 1" increments.
8. Glazed doors shall be 3/4" thick and consist of an inner and outer door pan welded together to form a single unit. Outer door pan shall be 18 gauge steel, formed into a channel or flanged shape at all four sides. It shall be pierced and formed to create a 3" wide frame with a beveled edge around the glass opening in the center of the door. Inner door pan shall be 18 gauge steel, flanged at all four sides, and pierced for a glass opening in center of the door. Glass shall be held in place by a rubber or vinyl gasket around the entire edge of the glass. Doors shall be glazed with 1/8" tempered glass.
9. Sliding doors shall be suspended from the top in a roll formed steel track fastened to the cabinet top and shall glide on nylon rollers. Track shall be so designed to prevent accidental removal of doors.

2.6 PERFORMANCE REQUIREMENTS

A. Stainless Steel Casework Construction Performance:

1. Base cabinets shall be constructed to support at least a uniformly distributed load 200 pounds per square foot of cabinet top area, including working surface without objectionable distortion or interference with door and drawer operation.
2. Base cabinet leveling bolts shall support 500 pounds per corner, at 1-1/2" projection of the leveling bolt below the cabinet bottom.
3. Each adjustable and fixed shelf 4 feet or shorter in length shall support an evenly distributed load of 40 pounds per square foot up to a maximum of 200 pounds, with nominal temporary deflection, but without permanent set.
4. Full extension soft-close, self-closing ball bearing zinc plated drawer slide shall be rated for 100 pound loads.
5. Swinging doors on floor-mounted inset style casework shall support 200 pounds suspended at a point 12" from hinged side, with door swung through an arc of 160 degrees. Weight load test shall allow only a temporary deflection, without permanent

distortion or twist. Door shall operate freely after test and assume a flat plane in a closed position.

2.7 STAINLESS STEEL WORK SURFACE

A. Material:

1. Stainless steel tops with sinks are made from 14 gauge Type 304 stainless steel with #4 finish.
2. Tops with welded field joints are made from 14 gauge Type 304 stainless steel with #4 finish.
3. All other tops are made from 16 gauge Type 304 stainless steel with #4 finish.

B. Tops: Form tops with 1" lip and 1/2" return flange, and provide 16 gauge stainless steel reinforcing channels applied to underside as required for rigidity and sound dampening. Form edges, flanges and curbs integrally with top, from one sheet of metal.

C. Sink tops: Provide seamless, die formed 3/16" high integral marine edges at sink tops. Unless otherwise noted, provide plain edges at all other tops. Coat underside of all with sound dampening material.

D. Sink bowls: All sink bowls are made from 16 gauge Type 304 stainless steel. Electrically weld stainless steel bowls to opening in top. Grind welds flush and polish to a satin finish to produce an integral unit with invisible joint line. Cover underside of sink bowls with sound dampening material.

E. Joints: Electrically weld all shop joints; grind smooth and polish. Design field joints to be mechanically bolted and supported full length, resulting in a hair line seam with flat; level surfaces each side of joint.

F. Sound dampening material: Material shall be waterborne and non-flammable in its liquid state. Material to contain clay, which will act as a flame retardant. Material shall contain no volatile organic compounds (VOC). Film thickness of spray-applied product shall be approximately 20 mil.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Preparation: Prior to beginning installation of casework, check and verify that no irregularities exist that would affect quality of execution of work specified.

B. Coordination: Coordinate the work of the Section with the schedule and other requirements of other work being prepared in the area at the same time both with regard to mechanical and electrical connections to and in general construction work.

C. Performance:

1. Casework:

- a. Set casework components plumb, square, and straight with no distortion and securely anchor to building structure. Shim as required using concealed shims.
- b. Bolt continuous cabinets together with joints flush, tight and uniform, and with alignment of adjacent units within 1/16" tolerance.
- c. Secure wall cabinets to solid supporting material, not to plaster, lath or gypsum board.
- d. Abut top edge surfaces in one true plane. Provide flush joints not to exceed 1/8".

2. Worksurfaces:

- a. Where required due to field conditions, scribe to abutting surfaces.
- b. Only factory prepared field joints, located per approved shop drawings, shall be permitted. Secure the joints in the field, where practical, in the same manner as in the factory.
- c. Secure worksurfaces to casework and equipment components with materials and procedures recommended by the manufacturer.

D. Adjust and Clean:

- 1. Remove all debris, dirt and rubbish accumulated as a result of the installation of the stainless steel casework to an onsite container provided by others, leaving the premises broom clean and orderly.
- 2. Repair or remove and replace defective work, as directed by Owner and/or his representative upon completion of installation.
- 3. Adjust doors, drawers and other moving or operating parts to function smoothly.
- 4. Clean shop finished casework, touch up as required.
- 5. Clean worksurfaces and leave them free of all grease and streaks.
- 6. Casework to be left broom clean and orderly.

E. Protection:

- 1. Provide reasonable protective measures to prevent casework and equipment from being exposed to other construction activity.

2. Advise Owner and/or his representative of procedures for protection of material, installed casework and fixtures from damage by work of other trades.

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**SECTION 13 49 00
RADIATION PROTECTION**

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Radiation protection with lead materials and lead lined products where indicated on drawings.

1.2 RELATED REQUIREMENTS

- A. Wood Veneer Finish for Doors: Section 08 14 00, INTERIOR WOOD DOORS, and Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Steel Door Frames: Section 08 11 13, HOLLOW METAL FRAMES.
- C. Hardware for Doors: Section 08 71 00, DOOR HARDWARE.
- D. Installation of Doors and Hardware: Section 08 11 13, HOLLOW METAL FRAMES; Section 08 14 00, INTERIOR WOOD DOORS; and Section 08 71 00, DOOR HARDWARE.

1.3 APPLICABLE PUBLICATIONS

- A. Comply with references to extent specified in this section.
- B. ASTM International (ASTM):
 1. A240/A240M-15b - Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 2. C90-14 - Loadbearing Concrete Masonry Units.
 3. C1002-14 - Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 4. C1396/C1396M-14a - Gypsum Board.
 5. D1187/D1187M-97(2011)e1 - Asphalt-Base Emulsions for Use as Protective Coatings for Metal.
- C. Federal Specifications (Fed. Spec.):
 1. QQ-L-201F(2)-65 - Lead Sheet.
- D. National Council on Radiation Protection & Measurements (NCRP):
 1. Report No. 102-89 - Medical X-Ray, Electron Beam and Gamma-Ray Protection for Energies Up to 50 MeV (Equipment Design, Performance and Use).
 2. Report No. 147-04 - Structural Shielding Design for Medical X-Ray Imaging Facilities.

1.4 PREINSTALLATION MEETINGS

- A. Conduct preinstallation meeting minimum 30 days before beginning Work of this section.
 - 1. Required Participants:
 - a. Contracting Officer's Representative.
 - b. Architect/Engineer.
 - c. Inspection and Testing Agency.
 - d. Contractor.
 - e. Installer.

1.5 TESTS

- A. Lead radiation shielding will be tested at the expense of the Contractor after X-ray equipment is installed. Testing Company must be independent of the Construction Contractor and approved by the Fargo VA.
- B. Provide three (3) copies of Test Report for each room tested to the Fargo VA.
- C. Any additional testing required due to correction and replacement of defective work will be done at Contractor's expense.
- D. NOTE: Lead lined gypsum wallboard will not be tested prior to installation.

1.6 SUBMITTALS

- A. Submittal Procedures: Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Submittal Drawings:
 - 1. Show size, configuration, and fabrication and installation details.
 - 2. Show type, location, and thickness of radiation protection.
- C. Manufacturer's Literature and Data:
 - 1. Description of each product.
 - 2. Installation instructions.
 - 3. Warranty.
- D. Test Reports: Certify each product complies with specifications.
 - 1. Lead lined wood doors.
 - 2. Hardware.
 - 3. Lead lined door frames.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 - 1. Regularly manufactures specified products.

2. Manufactured specified products with satisfactory service on five similar installations for minimum five years.
3. Approval by Contracting Officer is required for product or service of proposed manufacturer and suppliers, and will be based upon submission by Contractor of certification that:
4. Manufacturer regularly and presently manufactures lead radiation shielding as specified as one of its principal products.

1.8 WARRANTY

- A. Construction Warranty: FAR clause 52.246-21, "Warranty of Construction."
- B. Manufacturer's Warranty: Warrant lead lined doors against material and manufacturing defects.
 1. Defects Include: Warp or twist exceeding 6 mm (1/4 inch) in any face dimension of door (including full diagonal), measured minimum six months after doors have been hung and finished.
 2. Warranty Period: Two years.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Lead Sheet: Fed. Spec. QQ-L-201, Grade C, thickness as indicated on drawings.
- B. Lead Lined Gypsum Wallboard:
 1. Gypsum Wallboard: ASTM C1396/C1396M, Type X, 16 mm (5/8 inch) thick.
 2. Factory bond sheet lead to one side of wallboard.
 3. Apply sheet lead in thicknesses shown, unpierced and in one piece.
- C. Fasteners:
 1. Cadmium or chromium plated steel screws for securing lead louvers.
 2. Standard Steel Drill Screws: ASTM C1002, with lead washers for application of lead lined sheet materials to metal studs.
 3. Nails:
 - a. Use barbed lead head nails for application of lead lined materials to wood furring strips.
 - b. Length: Sufficient to penetrate furring strips minimum 25 mm (1 inch).
 - c. Cast-Lead Head Thickness: Equal protection of penetrated lead shielding.
- D. Lead Discs Thickness: Equal protection of fastener penetrated lead shielding, diameter 25 mm (1 inch) larger than fastener.

2.2 PRODUCTS - GENERAL

- A. Radiation Shielding Products: Conform to applicable requirements of NCRP Report No. 147 and NCRP Report No. 102.
- B. General: Provide lead lining for items occurring within partitions matching radiation protection equivalent to wall or partition in which they occur:
 - 1. Doors and door frame.
- C. Lead Glass: Clear, thickness as required for equivalent lead protection.
- D. Lead Control Windows: Cast lead, rigid, single unit type without joints, with or without voice passage as shown and with lead stop beads and lead glass.
- E. Cassette Transfer Cabinets: Provide sheet lead lining for cabinets.
- F. Signs: As scheduled in this section.
 - 1. Heavy white paper or cardboard.
 - 2. Height of lettering and number minimum 3 mm (1/8 inch).
 - 3. Fill in blank spaces on signs with millimeter thickness of lead as installed and total mm thickness of lead equivalent (determined by VA Physicist) and height of radiation protection above finished floor where required.
 - 4. Provide manufacturer's standard stainless steel frame with clear acrylic plastic cover, 3 mm (1/8 inch) thick over sign, to hold card size 100 mm by 150 mm (4 inches by 6 inches).
- G. Lead Lined Wood Doors:
 - 1. Refer to Section 08 14 00, INTERIOR WOOD DOORS for quality standards, finishing, installation and related requirements.
 - 2. Flush veneered construction.
 - 3. Construct doors of two separate solid wood cores with a single sheet of lead lining through center.
 - 4. Construct doors with filler strips, crossbanding, face veneers and hardwood edge strips, bonded under heavy pressure.
 - 5. Extend sheet lead lining to door edges, providing X-ray absorption equal to partition in which door occurs.
 - 6. Fasten wood cores together with countersunk steel bolts through lead with bolt heads and nuts covered with poured lead, or with poured lead dowels.

7. Locate bolts or dowels 38 mm (1-1/2 inches) from door edges, and maximum 200 mm (8 inches) on center in both directions over door area.
 8. Finish face of dowels and lead covering of bolt heads and nuts flush with wood cores.
 9. Edge Strips:
 - a. Same as face veneer.
 - b. Minimum 38 mm (1-1/2 inches) at top edge and 63 mm (2-1/2 inches) at bottom edge.
 - c. Glue strips to cores before face veneer is applied.
 - d. Extend vertical edge strips full height of door and bevel 3 mm (1/8 inch) for each 50 mm (2 inches) of door thickness.
 - e. Coat top and bottom edges of doors to receive transparent finish two coats of water resistant sealer before shipment.
 - f. For door to Deep Therapy, provide lead strip on all four edges of door.
 10. Face veneers and finish shall be .050" high pressure decorative laminate to match existing Premium Select White Birch. Refer to Section 08 14 00, INTERIOR WOOD DOORS.
 11. Clearance between Doors and Frames and Floors:
 - a. Jambs and Heads: A maximum 3 mm (1/8 inch) clearance.
 - b. Bottom of door to finish floor: Maximum 19 mm (3/4 inch) clearance.
- H. Hardware:
1. Hardware for doors is specified in Section 08 71 00, DOOR HARDWARE.
 2. Stagger bolts to door pulls on plates which penetrate lead lining relative to opposite plate and recess on side of door opposite pull.
 3. Provide lead plugs or discs over recessed nut ends of bolts, unless otherwise shown.
 4. Countersink nut ends of bolts for surface applied hinges, door closures, and automatic door operators; and cover with lead lined 1.5 mm (0.06 inch) stainless steel pans.
 5. Provide round head screws with dull chromium plated finish to secure stainless steel pans.
 6. Provide mortises for flush bolts, floor hinge arms, and top pivots with sheet lead on both sides. Enclose floor boxes of floor hinges with sheet lead at sides and bottom.

7. Recess lock and latch cases at mill and line with lead butted tightly to lead in door.
8. Protection and installation of doors and hardware as specified in Section, 08 11 13, HOLLOW METAL FRAMES; 08 14 00, INTERIOR WOOD DOORS; and 08 71 00, DOOR HARDWARE.

I. Lead Lining of Frames:

1. Line or cover steel frames and stops for doors with sheet lead free of waves, lumps and wrinkles with as few joints as possible.
2. Fabricate joints in sheet lead to obtain radiation protection equivalent to adjacent sheet lead. Finish joints smooth and neat.
3. Structural steel frames and metal door frames for lead lined doors are specified in Section 05 50 00, METAL FABRICATIONS and Section 08 11 13, HOLLOW METAL DOORS AND FRAMES respectively.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine and verify substrate suitability for product installation.

3.2 INSTALLATION OF LEAD LINED GYPSUM WALLBOARD PANELS

- A. Apply lead lined gypsum wallboard to metal studs where shown.
- B. Predrill or drill pilot holes for nails or screws necessary to prevent deforming fastener and lead shielding and to prevent distorting wallboard.
- C. Apply wallboard vertically with lead linings placed next to supports. Install with 1/2" to 5/8" gap at floor.
- D. Install sheet lead strips behind joints in same thickness used for wallboard.
 1. Lead Strips: 45 mm (1-3/4 inches) wide.
 2. Lead Angles at Corners: 45 mm by 45 mm (1-3/4 by 1-3/4 inch).
 3. Secure the lead strips to supports at outer edges of strips.
- E. Wallboard:
 1. Fasten to supports using screws and lead washers or discs at maximum 250 mm (10 inches) on centers.
 2. Make provisions for connection with lead lined door frames and for cutouts for vision panels.
 3. Joint treatment of lead lined gypsum board panels and fastening depressions as specified in Section 09 29 00, GYPSUM BOARD.

3.3 INSTALLATION OF SUPPLEMENTAL LEAD SHIELDING

- A. Line or cover penetrations of wall lead, pipe chases, columns fasteners and other interruptions with sheet lead.
 1. Install sheet lead free of waves, lumps and wrinkles and with as few joints as possible.
 2. Joints in sheet lead to provide radiation protection equivalent to adjacent sheet lead.
 3. Finish joints smooth and neat.
- B. Provide lead shielding for spaces around outlet boxes, junction boxes, and pipes to achieve radiation protection equaling radiation protection specified for wall or partition in which they occur.

3.4 SIGNAGE SCHEDULE

- A. Install signs on each wall of each room, maximum 300 mm (12 inches) above accessible ceilings, centered along length of each wall.
 1. Space signs maximum 6000 mm (20 feet) on center.
 2. Fasten signs with screws at each corner of sign.
- B. Cystoscopic Surgery protected with sheet lead and lettered as follows (as installed and determined by Contractor Retained Physicist):

SURFACES OF THIS ROOM HAVE BEEN PROTECTED WITH SHEET LEAD OF THE FOLLOWING THICKNESS TO A HEIGHT OF 2100 mm (7 feet) ABOVE FLOOR SLAB:		
COMPONENT	TOTAL LEAD	
	LEAD THICKNESS	EQUIVALENT PROTECTION
DOORS AND FRAMES	3 mm	-
PARTITIONS	3 mm	-
FLOORS	-	3 mm

- C. Signs:
 1. Materials: 1/8" thick non-glare acrylic with solid color graphics mechanically fused under pressure to sign face.
 2. Height of lettering and number not less than 3 mm (1/8 inch).
 3. Size: 4" x 6"
 5. Mounting: Concealed mechanical fastening approved by Project Engineer. Tape or adhesive is not acceptable.

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**SECTION 14 21 00
ELECTRIC TRACTION ELEVATORS**

PART 1 GENERAL

1.1 DESCRIPTION

- A. This section specifies the removal of second floor rear entrance key switches and replacement with illuminated push buttons marked on face to match existing push buttons at the car operating panels of Elevators No. 7 and No. 8, "Victory Elevators".

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. VA Barrier Free Design Handbook (H-18-13)

1.3 QUALIFICATIONS

- A. Approval by the Contracting Officer is required for products and services of proposed manufacturers, suppliers and installers and shall be contingent upon submission by Contractor of certificates 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 shall be submitted for all workers employed in this capacity.
- B. All components shall be the product of the same manufacturer as those to be matched currently in place.
- C. Electrical work shall be performed by Licensed Electricians as requirements by NEC. Certificates shall be submitted for all workers employed in this capacity.

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-766Steel, Stainless and Heat Resisting, Alloys, Plate, Sheet and Strip
- C. International Building Code (IBC)
- D. American Society of Mechanical Engineers (ASME):
 - A17.1-07.....Safety Code for Elevators and Escalators
 - A17.2-07.....Inspectors Manual for Electric Elevators and Escalators
- E. National Fire Protection Association:
 - NFPA 13-10.....Standard for the Installation of Sprinkler Systems
 - NFPA 70-11.....National Electrical Code (NEC)
 - NFPA 72-10.....National Fire Alarm and Signaling Code
 - NFPA 101-09.....Life Safety Code
 - NFPA 252-08.....Fire Test of Door Assemblies
- F. Gauges:
 - For Sheet and Plate: U.S. Standard (USS)
 - For Wire: American Wire Gauge (AWG)
- G. Underwriter's Laboratories (UL):
 - 486A-03.....Safety Wire Connectors for Copper Conductors
 - 797-07.....Safety Electrical Metallic Tubing
- H. Institute of Electrical and Electronic Engineers (IEEE)
- I. 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.
- C. Samples:
 - 1. One each car button sample.

1.6 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 Technical 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 of installation is obtained. Period of warranty shall start anew for such parts from date of completion of each new installation performed, in accordance with foregoing requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Where stainless steel is specified, it shall be corrosion resisting steel complying with Federal Specification QQ-S-766, Class 302 or 304, Condition A with Number 4 finish on exposed surfaces. Stainless steel shall have the grain of belting in the direction of the longest dimension and surfaces shall be smooth and without waves. During installation all stainless steel surfaces shall be protected with suitable material.
- B. Where cold rolled steel is specified, it shall be low-carbon steel rolled to stretcher leveled standard flatness, complying with ASTM A109.

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.

2.3 ELEVATOR CAR OPERATING PANEL

- A. Remove second floor rear door key switches and replace with red LED illuminated brass/gold colored push buttons with second floor rear marked on face to match existing push buttons. Provide corresponding Braille plate to match existing.

PART 3 - EXECUTION

3.1 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. Perform work so that only one of the two elevators is out of service at a time.

3.2 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. Any related work required to accommodate installation shall be included in the Contractor's work.
- C. Structural members shall not be cut or altered. Work in place that is damaged or defaced shall be restored equal to original new condition.

3.3 CLEANING

- A. Prior to final acceptance; clean and polish surfaces with regard to type of material.

3.4 PRE-TESTS AND TESTS

- A. Pre-test the elevators in the presence of the Project Engineer or his authorized representative for proper operation before requesting final inspection. Conduct final inspection at other than normal working hours, if required by Project Engineer.
- B. If equipment fails test requirements and a re-inspection is required, the Contractor shall be responsible for the cost of re-inspection, including salaries, transportation expenses, and other expenses.

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