SECTION 101100 - VISUAL DISPLAY UNITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. Visual display units which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types.

   Section Includes:
   1. Marker boards.
   2. Tack boards.
   3. Porcelain-enamel face sheets

1.3 DEFINITIONS
   A. Tack board: Framed or unframed, tackable, visual display board assembly.
   B. Visual Display Board Assembly: Visual display surface that is factory fabricated into composite panel form, either with or without a perimeter frame; includes chalkboards, marker boards, and tack boards.
   C. Visual Display Surface: Surfaces that are used to convey information visually, including surfaces of chalkboards, marker boards, tack boards, and surfacing materials that are not fabricated into composite panel form but are applied directly to walls.

1.4 ACTION SUBMITTALS
   A. Product Data: For each type of product indicated.
   B. LEED Submittals:
      1. Product Data for Credit IEQ 4.1: For adhesives, documentation including printed statement of VOC content.
      2. Product Data for Credit IEQ 4.4: For composite wood products, documentation indicating that the product contains no urea formaldehyde.
      3. Laboratory Test Reports for Credit IEQ 4: For adhesives and composite wood products, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of
Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers.

C. Shop Drawings: For visual display surfaces. Include plans, elevations, sections, details, and attachments to other work.
   1. Show locations of panel joints.
   2. Include sections of typical trim members.

D. Samples for Initial Selection: For each type of visual display surface indicated, for units with factory-applied color finishes, and as follows:
   1. Actual sections of porcelain-enamel face sheet, tackboard assembly, visual display wall covering.
   3. Include accessory Samples to verify color selected.

E. Samples for Verification: For each type of visual display surface indicated.
   1. Visual Display Surface: Not less than 8-1/2 by 11 inches (215 by 280 mm), mounted on substrate indicated for final Work. Include one panel for each type, color, and texture required.
   2. Trim: 6-inch- (152-mm-) long sections of each trim profile.
   3. Display Rail: 6-inch- (152-mm-) long sections.
   4. Accessories: Full-size Sample of each type of accessory.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for surface-burning characteristics of fabrics.

C. Warranties: Sample of special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For visual display surfaces to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of motor-operated, sliding visual display units required for this Project.

B. Source Limitations: Obtain visual display surfaces from single source from single manufacturer.
C. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 450 or less.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate appearance and aesthetic effects and set quality standards for installation.

1. Build mockup of typical as shown on Drawings. Include accessories.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 WARRANTY

A. Special Warranty for Porcelain-Enamel Face Sheets: Manufacturer's standard form in which manufacturer agrees to repair or replace porcelain-enamel face sheets that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Surfaces lose original writing and erasing qualities.
   b. Surfaces exhibit crazing, cracking, or flaking.

2. Warranty Period: 50 years from date of Substantial Completion.

B. Special Warranty for Electronic Marker boards: Manufacturer's standard form in which manufacturer agrees to repair or replace electronic marker boards that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Porcelain-Enamel Face Sheet: ASTM A 424, enameling-grade steel, uncoated thickness indicated; with exposed face and edges coated with primer, 1.7-to-2.5-mil- (0.043-to-0.064-mm-) thick ground coat, and color cover coat; and with concealed face coated with primer and 1.7-to-2.5-mil- (0.043-to-0.064-mm-) thick ground coat.

1. Matte-Finish Cover Coat
2. Gloss-Finish Cover Coat
B. Porcelain-Enamel Face Sheet: Porcelain-enamel-clad, ASTM A 463/A 463M, Type 1, stretcher-leveled aluminized steel, with 0.024-inch (0.60-mm) uncoated thickness; with porcelain-enamel coating fused to steel at approximately 1000 deg F (538 deg C).
   1. Matte Finish
   2. Gloss Finish

C. Porcelain-Enamel Face Sheet: Manufacturer's standard steel sheet with porcelain-enamel coating fused to steel; uncoated thickness indicated.
   1. Matte Finish

D. Natural Cork Sheet: Seamless, single-layer, compressed fine-grain cork sheet; bulletin board quality; face sanded for natural finish with surface-burning characteristics indicated.

E. Plastic-Impregnated Cork Sheet: Seamless, homogeneous, self-sealing sheet consisting of granulated cork, linseed oil, resin binders, and dry pigments that are mixed and calendared onto fabric backing; with washable vinyl finish and integral color throughout with surface-burning characteristics indicated.

F. Vinyl Fabric: Mildew resistant, washable, complying with FS CCC-W-408D, Type II, burlap weave; weighing not less than 13 oz./sq. yd. (440 g/sq. m); with surface-burning characteristics indicated.

G. Polyester Fabric: Nondirectional weave, 100 percent polyester; weighing not less than 15 oz./sq. yd. (508 g/sq. m); with surface-burning characteristics indicated.

H. Hardboard: ANSI A135.4, tempered.

I. Fiberboard: ASTM C 208.

J. Extruded Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6063.

K. Adhesives: Manufacturer's standard product that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.2 MARKERBOARD ASSEMBLIES

A. Porcelain-Enamel Marker boards: Balanced, high-pressure, factory-laminated marker board assembly of three-ply construction consisting of backing sheet, core material, and 0.021-inch-(0.53-mm-) thick, 0.013-inch- (0.33-mm-) thick, porcelain-enamel face sheet with low-gloss finish.
2.3 TACKBOARD ASSEMBLIES

A. Natural-Cork Tack board: 1/4-inch- (6-mm-) thick, natural cork sheet factory laminated to 1/4-inch- (6-mm-) thick hardboard backing.

B. Plastic-Impregnated-Cork Tack board: 1/4-inch- (6-mm-) thick, plastic-impregnated cork sheet factory laminated to 1/4-inch- (6-mm-) thick hardboard backing.

C. Vinyl-Fabric-Faced Tack board: Vinyl fabric factory laminated to 3/8-inch- (9.5-mm-) 7/16-inch- (11-mm-) 1/2-inch- (13-mm-) thick fiberboard backing.

D. Vinyl-Fabric-Faced Tack board <Insert designation>: 1/4-inch- (6-mm-) thick, vinyl-fabric-faced cork sheet factory laminated to 1/4-inch- (6-mm-) thick hardboard backing.

E. Polyester-Fabric-Faced Tack board: Polyester fabric factory laminated to 3/8-inch- (9.5-mm-) 1/2-inch- (13-mm-) thick fiberboard backing.

F. Polyester-Fabric-Faced Tack board: 1/4-inch- (6-mm-) thick, polyester-fabric-faced cork sheet factory laminated to 1/4-inch- (6-mm-) thick hardboard backing.

2.4 MARKERBOARD AND TACKBOARD ACCESSORIES

A. Aluminum Frames and Trim: Fabricated from not less than 0.062-inch- (1.57-mm-) thick, extruded aluminum; standard size and shape.

B. Chalk tray: Manufacturer's standard, continuous.
   1. Solid Type: Extruded aluminum with ribbed section and smoothly curved exposed ends.

2.5 FABRICATION

A. Porcelain-Enamel Visual Display Assemblies: Laminate porcelain-enamel face sheet and backing sheet to core material under heat and pressure with manufacturer's standard flexible, waterproof adhesive.

B. Visual Display Boards: Factory assemble visual display boards unless otherwise indicated.

C. Factory-Assembled Visual Display Units: Coordinate factory-assembled units with trim and accessories indicated. Join parts with a neat, precision fit.

D. Modular Visual Display Boards: Fabricated with integral panel clips attached to core material.

E. Aluminum Frames and Trim: Fabricate units straight and of single lengths, keeping joints to a minimum. Miter corners to a neat, hairline closure.

2.6 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.7 ALUMINUM FINISHES

A. Clear Anodic Finish.

B. Color Anodic Finish.

C. Baked-Enamel or Powder-Coat Finish.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MATERIAL

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste management and Disposal. Submit documentation to satisfy the requirements of that Section.
   1. Set aside scrap material to be returned to manufacturer for recycling into new product.

END OF SECTION 101100
SECTION 101423 - PANEL SIGNAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Panel Signage which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types.

B. Section Includes:
   1. Room-identification signs.
   2. Field-applied, vinyl-character signs.

C. Related Requirements:
   1. Section 220553 "Identification for Plumbing Piping and Equipment" for labels, tags, and nameplates for plumbing systems and equipment.
   2. Section 230553 "Identification for HVAC Piping and Equipment" for labels, tags, and nameplates for HVAC systems and equipment.
   3. Section 260553 "Identification for Electrical Systems" for labels, tags, and nameplates for electrical equipment.

1.3 DEFINITIONS

A. Accessible: In accordance with the accessibility standard.

1.4 COORDINATION

A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

B. Furnish templates for placement of electrical service embedded in permanent construction by other installers.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. LEED Submittals:
1. Product Certificates for Credit MR 5: For products and materials required to comply with requirements for regionally manufactured materials. Include statement indicating cost for each regionally manufactured material.
   a. Include statement indicating location of manufacturer and distance to Project for each regionally manufactured material.

2. Product Data for Credit IEQ 4.1: For adhesives, documentation including printed statement of VOC content.

3. Laboratory Test Reports for Credit IEQ 4.1: For adhesives, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Shop Drawings: For panel signs.
   1. Include fabrication and installation details and attachments to other work.
   2. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
   3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.
   4. Show locations of electrical service connections.
   5. Include diagrams for power, signal, and control wiring.

D. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
   1. Include representative Samples of available typestyles and graphic symbols.

E. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:

F. Sign Schedule: Use same designations specified or indicated on Drawings or in a sign schedule.

1.6 INFORMATIONAL SUBMITTALS
A. Qualification Data: For Installer.
B. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS
A. Maintenance Data: For signs to include in maintenance manuals.

1.8 QUALITY ASSURANCE
A. Installer Qualifications: Manufacturer of products.
1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Deterioration of finishes beyond normal weathering.
   b. Deterioration of embedded graphic image.
   c. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PANEL SIGNS, GENERAL

A. Regional Materials: Panel signs shall be manufactured within 500 miles (800 km) of Project site.

2.2 PERFORMANCE REQUIREMENTS

A. Thermal Movements: For exterior signs, allow for thermal movements from ambient and surface temperature changes.


C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 SIGNS

A. Room-Identification Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
   2. Laminated-Sheet Sign: Photopolymer face sheet with raised graphics laminated over subsurface graphics to acrylic, phenolic backing sheet to produce composite sheet.
   5. Mounting: Manufacturer's standard method for substrates indicated.
6. Text and Typeface: Typeface as selected by Architect from manufacturer's full range. Finish raised characters to contrast with background color, and finish Braille to match background color.

2.4 FIELD-APPLIED, VINYL-CHARACTER SIGNS

A. Field-Applied, Vinyl-Character Sign: Prespaced characters die cut from 3- to 3.5-mil (0.076- to 0.089-mm) thick, weather-resistant vinyl film with release liner on the back and carrier film on the front for on-site alignment and application.

2.5 PANEL-SIGN MATERIALS

A. Aluminum Sheet and Plate

B. Aluminum Extrusions

C. Steel Materials:
   1. Metallic-Coated Steel Sheet:
   2. Steel Sheet
   3. Steel Members Fabricated from Plate or Bar Stock

D. Stainless-Steel Sheet

E. Acrylic Sheet

F. Polycarbonate Sheet

G. Fiberglass Sheet

H. PVC Sheet

I. Plastic-Laminate Sheet

J. Vinyl Film: UV-resistant vinyl film of nominal thickness indicated, with pressure-sensitive, permanent adhesive on back; die cut to form characters or images as indicated and suitable for exterior applications.

K. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.6 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signage, noncorrosive and compatible with each material joined, and complying with the following:

   1. Use concealed fasteners and anchors unless indicated to be exposed.
2. For exterior exposure, furnish nonferrous-metal stainless-steel or hot-dip galvanized devices unless otherwise indicated.

3. Exposed Metal-Fastener Components, General:

4. Sign Mounting Fasteners:

5. Inserts: Furnish inserts to be set by other trades into concrete or masonry work.

B. Adhesives: As recommended by sign manufacturer and with a VOC content of 70 g/L or less for adhesives used inside the weatherproofing system and applied on-site when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. Adhesives: As recommended by sign manufacturer and that comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch (1.14 mm) thick, with adhesive on both sides.

E. Hook-and-Loop Tape: Manufacturer's standard two-part tape consisting of hooked part on sign back and looped side on mounting surface.

F. Magnetic Tape: Manufacturer's standard magnetic tape with adhesive on one side.

G. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.7 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

B. Surface-Engraved Graphics: Machine engrave characters and other graphic devices into panel surface indicated to produce precisely formed copy, incised to uniform depth.

C. Subsurface-Applied Graphics: Apply graphics to back face of clear face-sheet material to produce precisely formed image. Image shall be free of rough edges.

D. Subsurface-Engraved Graphics: Reverse engrave back face of clear face-sheet material. Fill resulting copy with manufacturer's standard enamel. Apply opaque manufacturer's standard background color coating over enamel-filled copy.

E. Shop- and Subsurface-Applied Vinyl: Align vinyl film in final position and apply to surface. Firmly press film from the middle outward to obtain good bond without blisters or fishmouths.

F. Signs with Changeable Message Capability: Fabricate signs to allow insertion of changeable messages as follows:

G. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.
2.8 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.

D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

2.9 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, [Class I, 0.018 mm] [Class II, 0.010 mm] or thicker.

B. Color Anodic Finish: AAMA 611, [Class I, 0.018 mm] [Class II, 0.010 mm] or thicker.

C. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

2.10 METALLIC-COATED STEEL FINISHES

A. Surface Preparation: Clean surfaces of oil and other contaminants. Use cleaning methods that do not leave residue. After cleaning, apply a conversion coating compatible with the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas and apply galvanizing repair paint, complying with SSPC-Paint 20, to comply with ASTM A 780/A 780M.

B. Factory Prime Finish: After cleaning and pre-treating, apply an air-dried primer compatible with the organic coating to be applied over it.

C. Baked-Enamel or Powder-Coat Finish: After cleaning and pre-treating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat to a minimum dry film thickness of 2 mils (0.05 mm).

2.11 STEEL FINISHES

A. Surface Preparation: Remove mill scale and rust, if present, from uncoated steel, and prepare for coating according to coating manufacturer's written instructions.

C. Baked-Enamel or Powder-Coat Finish: After cleaning and pre-treating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat to a minimum dry film thickness of 2 mils (0.05 mm).

2.12 STAINLESS-STEEL FINISHES

A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MATERIAL

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste management and Disposal. Submit documentation to satisfy the requirements of that Section.

1. Set aside scrap material to be returned to manufacturer for recycling into new product.

END OF SECTION 101423
SECTION 102113 - TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Toilet compartments which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types.

B. Section Includes:
   1. Phenolic-core toilet compartments configured as toilet enclosures, entrance screens and urinal screens.

C. Related Sections:
   1. Section 102800 "Toilet, Bath, and Laundry Accessories" for toilet tissue dispensers, grab bars, purse shelves, and similar accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. LEED Submittals:
   1. Product Data for Credit IEQ 4.4: For particleboard, documentation indicating that product contains no urea formaldehyde.
   2. Laboratory Test Reports for Credit IEQ 4: For adhesives, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Shop Drawings: For toilet compartments. Include plans, elevations, sections, details, and attachments to other work.
   1. Show locations of cutouts for compartment-mounted toilet accessories.
   2. Show locations of centerlines of toilet fixtures.

D. Samples for Initial Selection: For each type of unit indicated. Include Samples of hardware and accessories involving material and color selection.
E. Samples for Verification: For the following products, in manufacturer's standard sizes unless otherwise indicated:
   1. Each type of material, color, and finish required for units, prepared on 6-inch- (152-mm-) square Samples of same thickness and material indicated for Work.
   2. Each type of hardware and accessory.

F. Recycled Content: For products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content. Include statement indicating costs for each product having recycled content.

1.4 INFORMATIONAL SUBMITTALS
A. Product Certificates: For each type of toilet compartment, from manufacturer.

1.5 CLOSEOUT SUBMITTALS
A. Maintenance Data: For toilet compartments to include in maintenance manuals.

1.6 QUALITY ASSURANCE

B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84, or another standard acceptable to authorities having jurisdiction, by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame-Spread Index: 25 or less.
   2. Smoke-Developed Index: 450 or less.


D. Plastic fabrications intended for use in exterior applications shall perform as follows as tested in accordance with ASTM D1435 for a period of Five (5) years. All other installations shall have a ten (10) year manufacturer material warranty.
   1. Color Change: No fading or discoloration.
   2. Dimensional Stability: No Change.
   3. Uniform consistency in thickness and flatness.
1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of toilet fixtures, walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum Castings: ASTM B 26/B 26M.

B. Aluminum Extrusions: ASTM B 221 (ASTM B 221M).

C. Stainless-Steel Castings: ASTM A 743/A 743M.

D. Adhesives: Manufacturer's standard product that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.2 PHENOLIC-CORE UNITS

A. Toilet-Enclosure Style: Overhead braced.

B. Urinal-Screen Style: Wall hung.

C. Door, Panel, Screen, and Pilaster Construction: Solid phenolic-core panel material with melamine facing on both sides fused to substrate during panel manufacture (not separately laminated), and with eased and polished edges and no-sightline system. Provide minimum 3/4-inch- (19-mm-) thick doors and pilasters and minimum 1/2-inch- (13-mm-) thick panels.

D. Pilaster Shoes and Sleeves (Caps): Fabricated from stainless-steel sheet, not less than 0.031-inch (0.79-mm) nominal thickness and 3 inches (76 mm) high, finished to match hardware.

E. Brackets (Fittings):

1. Stirrup Type: Ear or U-brackets, stainless steel.

F. Phenolic-Panel Finish:

1. Facing Sheet Finish: One color and pattern or Two colors and patterns in each room.
2. Color and Pattern: As selected by Architect from manufacturer's full range, with manufacturer's standard through-color core matching face sheet.
2.3 ACCESSORIES

A. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories.

2. Hinges: Manufacturer's standard paired, self-closing type that can be adjusted to hold doors open at any angle up to 90 degrees continuous or cam type that swings to a closed or partially open position.
3. Latch and Keeper: Manufacturer's standard surface-mounted latch unit designed for emergency access and with combination rubber-faced door strike and keeper. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible.
4. Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent in-swinging door from hitting compartment-mounted accessories.
5. Door Bumper: Manufacturer's standard rubber-tipped bumper at out-swinging doors.
6. Door Pull: Manufacturer's standard unit at out-swinging doors that complies with regulatory requirements for accessibility. Provide units on both sides of doors at compartments designated as accessible.

B. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with antigrip profile and in manufacturer's standard finish.

C. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel or chrome-plated steel or brass, finished to match the items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless steel, hot-dip galvanized steel, or other rust-resistant, protective-coated steel.

2.4 FABRICATION

A. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.

B. Floor-Anchored Units: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment nuts at pilasters for structural connection to floor. Provide shoes at pilasters to conceal anchorage.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste Management and Disposal. Submit documentation to satisfy the requirements of that Section.

1. Set aside scrap material to be returned to manufacturer for recycling into new product.
SECTION 102123 - CUBICLE CURTAINS AND TRACK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Cubical curtains and track, which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types.

B. Section Includes:

1. Curtain tracks and carriers.
2. Cubicle curtains.

C. Related Requirements:

1. Section 092216 "Non-Structural Metal Framing" for supplementary metal framing and blocking for mounting items requiring anchorage.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include durability, laundry temperature limits, fade resistance, applied curtain treatment, and fire-test-response characteristics for each type of curtain fabric indicated.
2. Include data for each type of track.

B. Shop Drawings:

1. Show layout and types of cubicles, sizes of curtains, number of carriers, anchorage details, and conditions requiring accessories. Indicate dimensions taken from field measurements.
2. Include details on blocking above ceiling and in walls.

C. Samples: For each exposed product and for each color and texture specified, 10 inches (254 mm) in size.

D. Samples for Initial Selection: For each type of curtain material indicated.

E. Samples for Verification: For each type of product required, prepared on Samples of size indicated below:

Victor Valley Community College District
New Science/Health Building
Outline Specifications

CUBICLE
CURTAINS AND TRACKS
102123 - 1
1. Curtain Fabric: 10-inch- (254-mm-) square swatch or larger as required to show complete pattern repeat, from dye lot used for the Work, with specified treatments applied. Mark top and face of material.
2. Mesh Top: Not less than 10 inches (254 mm) square.
3. Curtain Track: Not less than 10 inches (254 mm) long.
5. IV Hanger: Full-size unit.
6. IV Track: Not less than 10 inches (254 mm) long.
7. IV Carrier: Full-size unit.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For curtains, track, and hardware to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Curtains: Provide curtain fabrics with the following characteristics:

1. Launderable to a temperature of not less than 160 deg F (71 deg C).
2. Flame resistant and identical to those that have passed NFPA 701 when tested by a testing and inspecting agency acceptable to authorities having jurisdiction.

   a. Identify fabrics with appropriate markings of a qualified testing agency.

2.2 CURTAIN SUPPORT SYSTEMS

A. Extruded-Aluminum Curtain Track: Not less than 1-1/4 inches wide by 3/4 inch high (32 mm wide by 19 mm high); with manufacturer's standard wall thickness.

   1. Curved Track: Factory-fabricated, [12-inch- (305-mm-) radius bends.
   2. Finish: Satin anodized.

B. Curtain Track Accessories: Fabricate splices, end caps, connectors, end stops, coupling and joining sleeves, wall flanges, brackets, ceiling clips, and other accessories from same material and with same finish as track.

   1. End Stop: Removable with carrier hook.

C. Curtain Carriers: Two nylon rollers and nylon axle with chrome-plated steel hook.

D. Exposed Fasteners: Stainless steel.

E. Concealed Fasteners: Hot-dip galvanized.
2.3 CURTAINS

A. Cubicle Curtain Fabric: Curtain manufacturer's standard, 100 percent polyester; inherently and permanently flame resistant, stain resistant, and antimicrobial.

B. Curtain Grommets: Two-piece, rolled-edge, rustproof, nickel-plated brass; spaced not more than 6 inches (152 mm) o.c.; machined into top hem.

C. Mesh Top: Not less than 20-inch- (508-mm-) high mesh top of No.50 or 40 or 42 nylon mesh.

D. Beaded-Chain Curtain Drop: 6 inches (152 mm), 9 inches (229 mm), 12 inches (305 mm), or 15 inches (381 mm), 18 inches (457 mm) long; nickel-plated steel with aluminum hook.

E. PVC-Strip Curtain Drop: 16 inches (406 mm), or 18 inches (457 mm) long with chrome-plated steel hook.

F. Curtain Tieback: Nickel-plated brass chain; one at each curtain termination.

2.4 CURTAIN FABRICATION

A. Fabricate curtains as follows:

1. Width: Equal to track length from which curtain is hung plus 10 percent added fullness, but not less than 12 inches (305 mm) added fullness.
2. Length: Equal to floor-to-ceiling height, minus depth of track and carrier at top, and minus clearance above the finished floor as follows:
   a. Cubicle Curtains: 15 inches (381 mm).
3. Top Hem: Not less than 1 inch (25.4 mm) and not more than 1-1/2 inches (38 mm) wide, triple thickness, reinforced with integral web, and double lock stitched.
4. Bottom Hem: Not less than 1 inch (25.4 mm) and not more than 1-1/2 inches (38 mm) wide, double thickness and double lock stitched.
5. Side Hems: Not less than 1/2 inch (13 mm) and not more than 1-1/4 inches (32 mm) wide, with double turned edges, and single lock stitched.

B. Vertical Seams: Not less than 1/2 inch (13 mm) wide, double turned and double stitched.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste Management and Disposal. Submit documentation to satisfy the requirements of that Section.
   1. Set aside scrap material to be returned to manufacturer for recycling into new product.
END OF SECTION 102123
PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. Accordion Folding Partition which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types
B. Section Includes:
   1. Manually operated, accordion folding partitions.
   2. Manually operated, fire-rated accordion folding partitions.
C. Related Sections:
   1. Section 055000 "Metal Fabrications" for supports that attach supporting tracks to overhead structural system.
   2. Section 083513 "Folding Doors" for small-size, non-acoustically rated, fire-rated, and non-fire-rated accordion folding doors.
   3. Section 087100 "Door Hardware" for hardware to the extent not specified in this Section.

1.3 DEFINITIONS
A. NIC: Noise Isolation Class.
B. NRC: Noise Reduction Coefficient.
C. SAA: Sound Absorption Average.
D. STC: Sound Transmission Class.

1.4 PERFORMANCE REQUIREMENTS
A. Delegated Design: Design accordion folding partitions, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
B. Seismic Performance: Accordion folding partitions shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

C. Acoustical Performance: Provide accordion folding partitions tested by a qualified testing agency for the following acoustical properties according to test methods indicated:

1. Sound-Transmission Requirements: Accordion folding partition assembly tested in a laboratory for sound transmission loss performance according to ASTM E 90, calculated according to ASTM E 413, and rated for not less than the STC value indicated.

2. Noise Reduction Requirements: Accordion folding partition assembly, identical to partition tested for STC, tested for sound-absorption performance according to ASTM C 423, and rated for not less than the NRC or SAA value indicated.

3. Acoustical Performance Requirements: Installed accordion folding partition assembly, identical to partition tested for STC, tested for NIC according to ASTM E 336, determined by ASTM E 413, and rated for not less than the NIC value indicated 10 dB less than STC value indicated.

D. Fire Resistance: Provide fire-rated accordion folding partition assemblies with fire-resistance ratings indicated.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. LEED Submittals:

1. Certificates for Credit MR 6 or Credit MR 7: Chain-of-custody certificates certifying that accordion folding partitions comply with forest certification requirements. Include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body. Include statement indicating cost for each certified wood product.

2. Product Data for Credit IEQ 4.4: For composite wood and agrifiber products used in accordion folding partitions, documentation indicating that products contain no urea formaldehyde.

3. Laboratory Test Reports for Credit IEQ 4: For composite wood and agrifiber products and accordion folding partitions, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Indicate storage and operating clearances. Indicate location and installation requirements for hardware and track, blocking, and direction of travel.

2. Indicate facing-material seam locations if any.

3. Wiring Diagrams: For power, signal, and control wiring.

D. Samples for Initial Selection: For each type of exposed material, facing material, and finish indicated.
1. Include similar Samples of accessories involving color selection.

E. Samples for Verification: For each type of exposed material, facing material, and finish indicated, prepared on Samples of size indicated below:

1. Textile: Full width by not less than 36-inch- (914-mm-) long section of fabric from dye lot to be used for the Work, with specified treatments applied. Show complete pattern repeat.
2. Facing Material: Manufacturer's standard-size unit, not less than 3 inches (75 mm) square.
3. Edge Material: Not less than full width by 3 inches (75 mm) long.
4. Hardware: Manufacturer's standard exposed door-operating device.

F. Delegated-Design Submittal: For accordion folding partitions indicated to comply with performance requirements and design criteria, including analysis data and calculations signed and sealed by the qualified professional engineer responsible for their preparation.

1. Design Calculations: Calculate requirements for seismic restraints.

1.6 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:

1. Suspended ceiling components.
2. Structural members to which suspension systems will be attached.
3. Size and location of initial access modules for acoustical tile.
4. Items penetrating finished ceiling, including the following:
   a. HVAC ductwork, outlets, and inlets.
   b. Speakers.
   c. Sprinklers.
   d. Smoke detectors.
   e. Access panels.

B. Qualification Data: For manufacturer.

C. Seismic Qualification Certificates: For accordion folding partitions, accessories, and components, from manufacturer.

D. Product Certificates: For each type of accordion folding partition, from manufacturer.

E. Material Certificates: For each textile dye lot, signed by manufacturers.

F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each accordion folding partition.

G. Field quality-control reports.
H. Warranty: Sample of special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For accordion folding partitions to include in maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:

1. Facing materials and finishes for exposed trim and accessories. Include precautions for cleaning materials and methods that could be detrimental to finishes and performance.
2. Seals, hardware, track, carriers, and other operating components.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.

B. Installer Qualifications: An employer of workers trained and approved by manufacturer.

C. Fire-Test-Response Characteristics: Provide partitions with finishes meeting the following as determined by testing identical products by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

1. Surface-Burning Characteristics: As determined by testing per ASTM E 84.
   a. Flame-Spread Index: 25 or less.
   b. Smoke-Developed Index: 450 or less.

2. Fire Growth Contribution: Meeting acceptance criteria of local code and authorities having jurisdiction when tested according to NFPA 265 or NFPA 286.

1.9 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of accordion folding partition openings by field measurements before fabrication.

1.10 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of accordion folding partitions that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Faulty operation of accordion folding partitions.
   b. Deterioration of metals, metal finishes, and other materials beyond normal wear.
2. Warranty Period: Five years from date of Substantial Completion.
3. Warranty Period for Pantographic Frames, Trolleys, and Tracks: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL

A. General Requirements for Accordion Folding Partitions: Partitions shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.2 ACCORDION FOLDING PARTITION

A. Accordion Folding Partition: Accordion folding frame with pantograph sections designed for horizontal extension and retraction, covered with decorative facing material, reinforced for hardware attachment, supported by overhead suspension system, and equipped with manufacturer's standard air-release method to prevent billowing.

B. Partition Type: Single fixed jamb partition, Single sliding jamb partition, Bi-parting partition with fixed jambs, Bi-parting partition with sliding jambs with the following hardware:

C. STC Rating: 30, 35, 40, 45.

D. Sound Absorption: NRC or SAA not less than.

E. Facing Material: Vinyl-coated fabric or equal.

1. Color/Pattern: As selected by Architect from manufacturer's full range.

2.3 COMPONENTS

A. Posts and Seals: Provide types of posts and seals that produce accordion folding partitions complying with performance requirements.

1. Posts: Steel or aluminum; formed with deep-nesting and interlocking interfaces and fabricated to ensure rigidity of accordion folding partition.

2. Perimeter Seals: Manufacturer's standard vinyl, neoprene, or woven silica vertical seals, horizontal top and bottom seals, and closures for lead posts and jambs.

B. Hardware: Manufacturer's standard manually operated pulls, latches, locks, and bolts as required to operate accordion folding partitions; with decorative, protective finish.

C. Trim: Manufacturer's standard with decorative, protective finish.
D. Tiebacks: As required to maintain accordion folding partitions in stacked position; with manufacturer's standard finish.

2.4 SUSPENSION SYSTEMS

A. Suspension Tracks: Steel or aluminum mounted directly to overhead structural support, with adjustable steel hanger rods for overhead support, designed for type of operation, size, and weight of accordion folding partition indicated. Size track to support partition operation and storage without damage to suspension system, accordion folding partitions, or adjacent construction. Limit track deflection to no more than 0.10 inch (2.54 mm) between bracket supports. Provide a continuous system of track sections and accessories to accommodate configuration and layout indicated for partition operation and storage.

   1. Track: Surface mounted or recessed.

B. Carriers: Trolley system as required for size and weight of partition and for easy, quiet operation; with manufacturer's standard ball-bearing carriers at lead post and manufacturer's standard ball-bearing carriers at intermediate panel supports.

   1. Wheels: Manufacturer's standard.

C. Track Switches and Accessories: Manufacturer's standard switches as required for type of operation, storage, track configuration, and layout indicated.

D. Aluminum Finish: Mill finish or manufacturer's standard, factory-applied, decorative finish unless otherwise indicated.

E. Steel Finish: Factory-applied, corrosion-resistant, protective coating unless otherwise indicated.

2.5 WOOD MATERIALS, GENERAL

A. Certified Wood: Fabricate products with wood-based components produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

B. Composite Wood and Agrifiber Products: Fabricate products with composite wood and agrifiber products that do not contain urea formaldehyde.

C. Composite Wood and Agrifiber Products: Fabricate products with composite wood and agrifiber products that comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
2.6 FACING MATERIALS

A. General: Provide facing materials with appropriate backing that comply with indicated fire-test-response characteristics, and that are factory attached to accordion folding partitions with concealed fasteners.

B. Carpet Wall Covering: Manufacturer's standard nonwoven, needle-punched carpet with fibers fused to backing, from same dye lot, treated to resist stains.

C. Woven Fabric: Manufacturer's standard 100 percent polyolefin woven fabric, from same dye lot, treated to resist stains.

D. Vinyl-Coated Fabric: Manufacturer's standard mildew-resistant, washable, vinyl-coated fabric wall covering; complying with CFFA-W-101-D for Type II or Type III; Class A.

1. Antimicrobial Treatment: Additives capable of inhibiting growth of bacteria, fungi, and yeasts.

E. Vinyl Film: Manufacturer's standard vinyl film laminated to partition substrate.

F. Plastic Laminate: High-pressure decorative laminate; NEMA LD 3, Grade HGS.

G. Wood Veneer: Genuine wood veneer; clear, vertical grain, straight, and kiln dried; of wood species indicated, laminated to noncombustible or fire-retardant-treated wood core with moisture-resistant adhesive.

H. Paint: Manufacturer's standard baked enamel.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste Management and Disposal. Submit documentation to satisfy the requirements of that Section.

1. Set aside scrap material to be returned to manufacturer for recycling into new product.

END OF SECTION 102233
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Wall and door protection which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types.

B. Section Includes:

1. Wall guards.
2. Corner guards.

C. Related Sections:

1. Section 055000 "Metal Fabrications" for metal angle corner guards pipe guards wheel guards.
2. Section 087100 "Door Hardware" for metal armor, kick, mop, and push plates.

1.3 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide handrails capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Uniform load of 50 lbf/ft. (0.73 kN/m) applied in any direction.
2. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
3. Uniform and concentrated loads need not be assumed to act concurrently.

1.4 ACTION SUBMITTALS

A. Product Data: Include construction details, material descriptions, impact strength, fire-test-response characteristics, dimensions of individual components and profiles, and finishes for each impact-resistant wall protection unit.

B. LEED Submittals:

1. Certificates for Credit MR 7: Chain-of-custody certificates certifying that wood rails comply with forest certification requirements. Include evidence that manufacturer is Victor Valley Community College District New Science/Health Building Outline Specifications
certified for chain of custody by an FSC-accredited certification body. Include statement indicating cost for each certified wood product.

2. 

Product Data for Credit IEQ 4.1: For adhesives, documentation including printed statement of VOC content.

3. 

Product Data for Credit IEQ 4.4: For particleboard, documentation indicating that products contain no urea formaldehyde.

4. 

Laboratory Test Reports for Credit IEQ 4: For adhesives and composite wood products, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. 

Shop Drawings: For each impact-resistant wall protection unit showing locations and extent. Include sections, details, and attachments to other work.

D. 

Samples for Initial Selection: For each type of impact-resistant wall protection unit indicated.

1. Include similar Samples of accent strips and accessories involving color selection.

E. 

Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below. Include Samples of accent strips to verify color selected.

1. Wall and Corner Guards: 12 inches (300 mm) long. Include examples of joinery, corners, end caps, top caps, and field splices.
2. Handrails: 12 inches (300 mm) long. Include examples of joinery, corners, and field splices.
3. Impact-Resistant Wall Covering: 6 by 6 inches (150 by 150 mm) square.

1.5 

INFORMATIONAL SUBMITTALS

A. 

Qualification Data: For qualified Installer.

B. 

Material Certificates: For each impact-resistant plastic material, from manufacturer.

C. 

Material Test Reports: For each impact-resistant plastic material.

D. 

Warranty: Sample of special warranty.

1.6 

SUBMITTALS

A. 

Certified Wood Products: Chain-of-custody certificates certifying that products specified to be made from certified wood comply with forest certification requirements. Include evidence that mill is certified for chain of custody by an FSC-accredited certification body.

1. Submit FSC certification numbers; identify each certified product on a line-item basis.
2. Submit copies of invoices bearing the FSC certification numbers.
3. Include statement indicating costs for each certified wood product.

B. 

VOC Content: For installation adhesives, including printed statement of VOC content.
1. Indicate VOC limits of the product. Submit MSDS highlighting VOC limits.
2. Submit Green Seal Certification to GS-36 and description of the basis for certification.
3. Submit manufacturer’s certification that products comply with SCAQMD Rule 1168 in areas where exposure to freeze/thaw conditions and direct exposure to moisture will not occur. In areas where freeze/thaw conditions do exist or direct exposure to moisture can occur, submit manufacturer’s certification that products comply with Bay Area AQMD Reg. 8, Rule 51 for containers larger than 16 oz and with California Air Resource Board (CARB) for containers 16 oz or less.

C. Composite Wood Products: For composite-wood products used in wood core, fabric wrapped panels, documentation indicating the product contains no urea formaldehyde.
   1. Engineered Wood Products: Provide documentation that composite wood and agrifiber products contain no added urea-formaldehyde resins.
      b. ANSI A208.2-2002, Medium Density Fiberboard (MDF) for Interior Applications.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each impact-resistant wall protection unit to include in maintenance manuals.
   1. Include recommended methods and frequency of maintenance for maintaining optimum condition of plastic covers under anticipated traffic and use conditions. Include precautions against using cleaning materials and methods that may be detrimental to plastic finishes and performance.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

B. Source Limitations: Obtain impact-resistant wall protection units from single source from single manufacturer.

C. Product Options: Drawings indicate size, profiles, and dimensional requirements of impact-resistant wall protection units and are based on the specific system indicated. Refer to Section 014000 "Quality Requirements."

D. Revise subparagraph below to suit Project.
   1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect’s approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

E. Surface-Burning Characteristics: Provide impact-resistant, plastic wall protection units with surface-burning characteristics as determined by testing identical products per ASTM E 84, NFPA 255, or UL 723 by UL or another qualified testing agency.

G. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by a FSC-accredited certification body.

H. Forest Certification: For the following wood products, provide materials produced from wood obtained from forests certified by and FSC-accredited certification body to comply with FSC STD-01-001, “FSC Principles and Criteria for Forest Stewardship”.

I. Engineering Wood Products:
   1. Determine formaldehyde concentrations in air from wood products under test conditions of temperature and relative humidity in accordance with ASTM D6007 or E1333.
   2. Determine Volatile Organic Compounds (VOC), excluding formaldehyde, emitted from manufactured wood-based panels in accordance with ASTM D6330.

1.9 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install impact-resistant wall protection units until building is enclosed and weatherproof, wet work is complete and dry, and HVAC system is operating and maintaining temperature at 70 deg F (21 deg C) for not less than 72 hours before beginning installation and for the remainder of the construction period.

1.10 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of impact-resistant wall protection units that fail in materials or workmanship within specified warranty period.

   1. Failures include, but are not limited to, the following:
      a. Structural failures.
      b. Deterioration of plastic and other materials beyond normal use.

   2. Warranty Period: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Recycled Content: Use materials and products that contain the maximum amount of recycled content allowed that retains material integrity.
B. Certified Wood: Use wood based products made from wood obtained from forests certified by and FSC accredited certification body to comply with the Forest Stewardship Councils “Principles and Criteria.”

C. Composite Wood and Agrifiber: Use only composite wood and agrifiber products free of urea formaldehyde resin binders.

D. Engineered Wood Products:
   1. Toxicity/EQ: products shall contain no added urea-formaldehyde.

2.2 ACCESSORIES

A. Adhesive: Low VOC material, mildew-resistant, nonstaining adhesive, for use with specific wall covering and substrate application. Adhesive must comply with Bar Area AQMD Reg. 8, Rule 51 for containers larger than 16 oz and with California Air Resources Board (CARB) for containers 16 oz or less, and as specified.

2.3 MATERIALS

A. PVC Plastic: ASTM D 1784, Class 1, textured, chemical- and stain-resistant, high-impact-resistant PVC or acrylic-modified vinyl plastic with integral color throughout; extruded and sheet material, thickness as indicated.

B. Polycarbonate Plastic Sheet: ASTM D 6098, S-PC01, Class 1 or 2, abrasion resistant; with a minimum impact-resistance rating of 15 ft-lbf/in. (800 J/m) of notch when tested according to ASTM D 256, Test Method A.

C. Aluminum Extrusions: Alloy and temper recommended by manufacturer for type of use and finish indicated, but with not less than strength and durability properties specified in ASTM B 221 (ASTM B 221M) for Alloy 6063-T5.

D. Stainless-Steel Sheet: ASTM A 240/A 240M.


F. Solid Wood: Clear hardwood lumber of species indicated, free of appearance defects, and selected for compatible grain and color.

G. Particleboard: ANSI A208.1, Grade M-2., made with binder containing no urea formaldehyde., that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

H. Fasteners: Aluminum, nonmagnetic stainless-steel, or other noncorrosive metal screws, bolts, and other fasteners compatible with items being fastened. Use security-type fasteners where exposed to view.
I. Adhesive: As recommended by impact-resistant plastic wall protection manufacturer and with a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

J. Adhesive: As recommended by impact-resistant plastic wall protection manufacturer and that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.4 WALL GUARDS

A. Crash Rail: Heavy-duty assembly consisting of continuous snap-on plastic cover installed over concealed retainer system; designed to withstand impacts.

B. Bumper Rail: Assembly consisting of continuous snap-on plastic cover installed over concealed, continuous retainer; designed to withstand impacts.

C. Rub Rail: Assembly consisting of continuous snap-on cover installed over concealed, continuous retainer.

2.5 CORNER GUARDS

A. Surface-Mounted, Resilient, Plastic Corner Guards: Assembly consisting of snap-on plastic cover installed over continuous retainer; including mounting hardware; fabricated with 90- or 135-degree turn to match wall condition.

B. Flush-Mounted, Resilient, Plastic Corner Guards: Assembly consisting of snap-on plastic cover that is flush with adjacent wall surface, installed over continuous retainer; including mounting hardware; fabricated with 90- or 135-degree turn to match wall condition; full wall height.

C. Fire-Rated, Resilient, Plastic Corner Guards: Assembly consisting of snap-on plastic cover that is flush with adjacent wall surface, installed over continuous retainer and intumescent fire barrier; including mounting hardware; fabricated with 90- or 135-degree turn to match wall condition; full wall height.

D. Surface-Mounted, Opaque-Plastic Corner Guard: Fabricated from PVC plastic, acrylic-modified vinyl sheet or opaque polycarbonate sheet; with formed edges; fabricated with 90- or 135-degree turn to match wall condition.

E. Surface-Mounted, Transparent-Plastic Corner Guards: Fabricated from clear polycarbonate plastic sheet; with formed edges; fabricated with 90- or 135-degree turn to match wall condition.

F. Surface-Mounted, Metal Corner Guards: Fabricated from one-piece, formed or extruded metal with formed edges; with 90- or 135-degree turn to match wall condition.
2.6 END-WALL GUARDS

A. Surface-Mounted, Resilient, Plastic End-Wall Guard: Assembly consisting of snap-on plastic cover installed over continuous retainer, continuous retainer at each corner, with end of wall covered by semi rigid, impact-resistant sheet wall covering; including mounting hardware.

B. Flush-Mounted, Resilient, Plastic End-Wall Guard: Assembly consisting of snap-on plastic cover that is flush with adjacent wall surface and that covers entire end of wall, installed over continuous retainer, continuous retainer at each corner, with end of wall covered by semi rigid, impact-resistant sheet wall covering; including mounting hardware.

C. See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers. Retain one of first two subparagraphs and list of manufacturers below. See Section 016000 "Product Requirements."

D. Fire-Rated, Resilient, Plastic End-Wall Guard: Assembly consisting of snap-on plastic cover that is flush with adjacent wall surface and that covers entire end of wall, installed over continuous retainer and intumescent fire barrier; including mounting hardware; full wall height.

E. Surface-Mounted, Metal, End-Wall Guards: Fabricated from one-piece, formed or extruded metal that covers entire end of wall; with formed edges.

2.7 FABRICATION

A. Fabricate impact-resistant wall protection units to comply with requirements indicated for design, dimensions, and member sizes, including thicknesses of components.

B. Preform curved semi rigid, impact-resistant sheet wall covering in factory for radius and sheet thickness as follows:

C. Assemble components in factory to greatest extent possible to minimize field assembly. Disassemble only as necessary for shipping and handling.

D. Fabricate components with tight seams and joints with exposed edges rolled. Provide surfaces free of wrinkles, chips, dents, uneven coloration, and other imperfections. Fabricate members and fittings to produce flush, smooth, and rigid hairline joints.

E. Miter corners and ends of wood handrails for returns.

2.8 METAL FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste Management and Disposal. Submit documentation to satisfy the requirements of that Section.

1. Set aside scrap material to be returned to manufacturer for recycling into new product.

END OF SECTION 102600
SECTION 102800 – TOILET AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Toilet and Laundry Accessories which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types.

B. Section Includes:

1. Public-use washroom accessories.
2. Warm-air dryers.
3. Under lavatory guards.

C. Related Sections:

1. Section 088300 "Mirrors" for frameless mirrors.
2. Section 093000 "Tiling" for ceramic toilet and bath accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include the following:

1. Construction details and dimensions.
2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Material and finish descriptions.
4. Features that will be included for Project.
5. Manufacturer's warranty.

B. Samples: Full size, for each accessory item to verify design, operation, and finish requirements.

1. Approved full-size Samples will be returned and may be used in the Work.

C. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
1. Identify locations using room designations indicated.
2. Identify products using designations indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Warranty: Sample of special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Source Limitations: For products listed together in the same Part 2 articles, obtain products from single source from single manufacturer.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.7 WARRANTY

A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, 0.031-inch (0.8-mm) minimum nominal thickness unless otherwise indicated.

B. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.036-inch (0.9-mm) minimum nominal thickness.

C. Galvanized-Steel Sheet: ASTM A 653/A 653M, with G60 (Z180) hot-dip zinc coating.


E. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.
F. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).

G. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.


2.2 PUBLIC-USE WASHROOM ACCESSORIES

A. Combination Toilet Tissue Dispenser:
   1. Description: Combination unit with double-roll toilet tissue dispenser and the following:
   2. Mounting: Recessed, Partition mounted, dual access with two tissue rolls per compartment.
   3. Toilet Tissue Dispenser Capacity: 4-1/2- or 5-inch- (114- or 127-mm-) diameter tissue rolls.
   5. Material and Finish: Stainless steel, No. 4 finish (satin).

B. Grab Bar:
   1. Mounting: Flanges with [concealed] [exposed] fasteners.
   2. Material: Stainless steel, 0.05 inch (1.3 mm) thick.
      a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.
   3. Outside Diameter: 1-1/4 inches (32 mm), 1-1/2 inches (38 mm).
   4. Configuration and Length: As indicated on the drawings.

C. Vendor:
   1. Type: Sanitary napkin, Sanitary napkin and tampon.
   2. Mounting: Fully recessed, designed for 4-inch (100-mm) wall depth, Semi-recessed, Surface mounted.
   3. Capacity:
   4. Operation: No coin (free) or Single coin (25 cents) or Two coin (50 cents).
   5. Exposed Material and Finish: Stainless steel, No. 4 finish (satin).
   6. Lockset: Tumbler type with separate lock and key for coin box.

D. Sanitary-Napkin Disposal Unit:
   1. Mounting: Partition mounted, dual access.
   2. Door or Cover: Self-closing, disposal-opening cover and hinged face panel with tumbler lockset.
E. Seat-Cover Dispenser:
   1. Mounting: Surface mounted.
   4. Lockset: Tumbler type.

F. Mirror Unit:
   1. Frame: Stainless-steel angle, 0.05 inch (1.3 mm) thick or Stainless-steel channel.
   2. Integral Shelf: 5 inches (127 mm) deep.

2.3 WARM-AIR DRYERS
A. Warm-Air Dryer:
   1. Mounting: Surface mounted.
   2. Operation: Electronic-sensor activated with timed power cut-off switch.
      a. Operation Time: 30-40 or 80 seconds.
   3. Cover Material and Finish: As selected by the Architect.
   4. Electrical Requirements: Power as selected by Engineer.

2.4 UNDERLAVATORY GUARDS
A. Under lavatory Guard:
   1. Description: Insulating pipe covering for supply and drain piping assemblies that prevent direct contact with and burns from piping; allow service access without removing coverings.

2.5 CUSTODIAL ACCESSORIES
A. Utility Shelf:
   1. Description: With exposed edges turned down not less than 1/2 inch (13 mm) and supported by two triangular brackets welded to shelf underside.
   2. Size: 16 inches (406 mm) long by 6 inches (152 mm) deep.
3. Material and Finish: Not less than nominal 0.05-inch- (1.3-mm-) thick stainless steel, No. 4 finish (satin).

B. Mop and Broom Holder:

1. Description: Unit with shelf, hooks, holders, and rod suspended beneath shelf.
2. Length: 36 inches (914 mm).
5. Material and Finish: Stainless steel, No. 4 finish (satin).

C. Paper Towel (Folded) Dispenser:

1. Mounting: Surface mounted.
2. Minimum Capacity: 400 C-fold or 525 multifold towels.
4. Lockset: Tumbler type.
5. Refill Indicators: Pierced slots at sides or front.

2.6 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MATERIAL

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste management and Disposal. Submit documentation to satisfy the requirements of that Section.

1. Set aside scrap material to be returned to manufacturer for recycling into new product.

END OF SECTION 102800
SECTION 104413 - FIRE PROTECTION CABINETS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Fire extinguisher cabinets which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types.

B. Section Includes:

1. Fire-protection cabinets for the following:
   a. Portable fire extinguishers.

2. Section 104416 "Fire Extinguishers."

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Show door hardware, cabinet type, trim style, and panel style. Include roughing-in dimensions and details showing recessed-, semi recessed-, or surface-mounting method and relationships of box and trim to surrounding construction.

B. Shop Drawings: For fire-protection cabinets. Include plans, elevations, sections, details, and attachments to other work.

C. Samples: For each type of exposed finish required.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples 6 by 6 inches (150 by 150 mm) square.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For fire-protection cabinets to include in maintenance manuals.
PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Rated Fire-Protection Cabinets: Listed and labeled to comply with requirements in ASTM E 814 for fire-resistance rating of walls where they are installed.

2.2 FIRE-PROTECTION CABINET

A. Cabinet Type: Suitable for fire extinguisher, extinguisher and hose valve, hose, rack, valve, and extinguisher, hose, rack, and valve, and hose valve.

B. Cabinet Construction: Nonrated, 1-hour fire rated, 2-hour fire rated.

C. Cabinet Material: Cold-rolled steel sheet Stainless-steel sheet.

D. Recessed Cabinet:
   1. Trimless with Hidden Flange: Flange of same metal and finish as box overlaps surrounding wall finish and is concealed from view by an overlapping door.

E. Semirecessed Cabinet: One-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend).

F. Surface-Mounted Cabinet: Cabinet box fully exposed and mounted directly on wall with no trim.


I. Door Glazing: Tempered break glass.

J. Retain one of two "Acrylic Sheet Color" subparagraphs below if retaining acrylic sheet in "Door Glazing" Paragraph above; retain "Acrylic Bubble Color" Subparagraph below if retaining acrylic bubble in "Door Glazing" Paragraph.

K. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.
   1. Provide manufacturer's standard.
   2. Provide continuous hinge, of same material and finish as trim, permitting door to open 180 degrees.

L. Accessories:
   1. Mounting Bracket:
   2. Break-Glass Strike:
   3. Lettered Door Handle:
4. Door Lock:
5. Identification:
6. Alarm:

M. Materials:

1. Cold-Rolled Steel: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.
   a. Finish: Baked enamel or powder coat.
   b. Color: As selected by Architect from full range of industry colors and color densities.

2. Aluminum: ASTM B 221 (ASTM B 221M), with strength and durability characteristics of not less than Alloy 6063-T5 for aluminum sheet. ASTM B 221 (ASTM B 221M) for extruded shapes.
   a. Finish: Clear anodic.
   b. Color: As selected by Architect from full range of industry colors and color densities.

3. Stainless Steel: ASTM A 666, Type 304.
   a. Finish: No. 4 directional satin finish.

   a. Finish: Polished, Satin, As selected by Architect from full range of industry finishes.

   a. Finish: Mirror polish, Satin polish, Satin oxidized oil rub, Clear baked enamel, As selected by Architect from full range of industry finishes.

7. Tempered Float Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 3 mm thick, Class 1 (clear), Class 2.
8. Break Glass: Clear annealed float glass, ASTM C 1036, Type I, Class 1, Quality q3, 1.5 mm thick, single strength.
9. Tempered Break Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 1.5 mm thick.
10. Wire Glass: ASTM C 1036, Type II, Class 1, Form 1, Quality q8, Mesh m1 (diamond), 6 mm thick.
11. Transparent Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), with Finish 1 (smooth or polished), Finish 2 (patterned, textured).
2.3 FABRICATION

A. Fire-Protection Cabinets: Provide manufacturer's standard box (tub) with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.

B. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles.

C. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

2.4 GENERAL FINISH REQUIREMENTS


B. Protect mechanical finishes on exposed surfaces of fire-protection cabinets from damage by applying a strippable, temporary protective covering before shipping.

C. Finish fire-protection cabinets after assembly.

D. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste Management and Disposal. Submit documentation to satisfy the requirements of that Section.

1. Set aside scrap material to be returned to manufacturer for recycling into new product.

END OF SECTION 104413
SECTION 104416 - FIRE EXTINGUISHERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Fire extinguishers which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types.

B. Section includes portable, hand-carried fire extinguishers and mounting brackets for fire extinguishers.

C. Related Requirements:

   1. Section 104413 "Fire Protection Cabinets."

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher and mounting brackets.

1.4 INFORMATIONAL SUBMITTALS

A. Warranty: Sample of special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fire extinguishers to include in maintenance manuals.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.

   1. Failures include, but are not limited to, the following:
a. Failure of hydrostatic test according to NFPA 10.
b. Faulty operation of valves or release levers.

2. Warranty Period: Six (6) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

1. Provide fire extinguishers approved, listed, and labeled by FM Global.

2.2 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

1. Valves: Manufacturer's standard.
3. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B, and bar coding for documenting fire-extinguisher location, inspections, maintenance, and recharging.

B. Stored-Pressure Water Type : UL-rated 2-A, 2.5-gal. (9.5-L).

C. Stored-Pressure Antifreeze Water Type: UL-rated 2-A, 2.5-gal. (9.5-L).

D. Stored-Pressure Water-Mist Type: UL-rated 2-A:C, 2.5-gal. (9.5-L).

E. Pressurized, AFFF-Foam Type : UL-rated 2-A:10-B, 1.6-gal. (6-L) 3-A:20-B, 2.5-gal. (9.5-L).

F. Pressurized, FFP-Foam Type : UL-rated 3-A:20-B, 2.5-gal. (9.5-L).

G. Wet-Chemical Type: UL-rated 2-A:1-B:C:K, 1.6-gal. (6-L) 2.5-gal. (9.5-L).

H. Regular Dry-Chemical Type: UL-rated.

I. Regular Dry-Chemical Type in Steel Container: UL-rated 2-B:C, 1-lb (0.4-kg), 10-B:C, 2.5-lb (1.1-kg), 10-B:C, 5-lb (2.3-kg), 40-B:C, 5.5-lb (2.5-kg), 40-B:C, 6-lb (2.7-kg), 60-B:C, 10-lb (4.5-kg), 120-B:C, 20-lb (9.1-kg)

J. Regular Dry-Chemical Type in Aluminum Container: UL-rated 2-B:C, 1-lb (0.4-kg), 10-B:C, 2.5-lb (1.1-kg), 10-B:C, 5-lb (2.3-kg), 40-B:C, 5.5-lb (2.5-kg), 60-B:C, 10-lb (4.5-kg), 120-B:C, 20-lb (9.1-kg).

K. Regular Dry-Chemical Type in Brass Container: UL-rated 40-B:C, 6-lb (2.7-kg), 60-B:C, 10-lb (4.5-kg), 120-B:C, 20-lb (9.1-kg).
L. Multipurpose Dry-Chemical Type: UL-rated.

M. Multipurpose Dry-Chemical Type in Steel Container: UL-rated 1-A:10-B:C, 2.5-lb (1.1-kg), 2-A:10-B:C, 5-lb (2.3-kg), 3-A:40-B:C, 5-lb (2.3-kg), 3-A:40-B:C, 6-lb (2.7-kg), 4-A:60-B:C, 10-lb (4.5-kg), 10-A:120-B:C, 20-lb (9.1-kg)

N. Multipurpose Dry-Chemical Type in Aluminum Container: UL-rated 1-A:10-B:C, 2.5-lb (1.1-kg), 2-A:10-B:C, 5-lb (2.3-kg), 3-A:40-B:C, 5-lb (2.3-kg), 3-A:40-B:C, 6-lb (2.7-kg), 4-A:60-B:C, 10-lb (4.5-kg), 10-A:120-B:C, 20-lb (9.1-kg)

O. Multipurpose Dry-Chemical Type in Brass Container: UL-rated 2-A:10-B:C, 5-lb (2.3-kg), 3-A:40-B:C, 6-lb (2.7-kg), 4-A:60-B:C, 10-lb (4.5-kg), 4-A:80-B:C, 10-lb (4.5-kg), 10-A:120-B:C, 20-lb (9.1-kg)

P. Purple-K Dry-Chemical Type in Aluminum Container: UL-rated 10-B:C, 2.5-lb (1.1-kg), 30-B:C, 5-lb (2.3-kg), 120-B:C, 20-lb (9.1-kg).

Q. Purple-K Dry-Chemical Type in Brass Container: UL-rated 80-B:C, 10-lb (4.5-kg), 120-B:C, 20-lb (9.1-kg).

R. Carbon Dioxide Type: UL-rated 5-B:C, 5-lb (2.3-kg), 10-B:C, 10-lb (4.5-kg), 10-B:C, 15-lb (6.8-kg), 10-B:C, 20-lb (9.1-kg).

S. Dry-Powder Type: UL-rated Class D, 30-lb (13.6-kg).

2.3 MOUNTING BRACKETS

A. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.

1. Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to mounting surface.


PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste Management and Disposal. Submit documentation to satisfy the requirements of that Section.

1. Set aside scrap material to be returned to manufacturer for recycling into new product.
SECTION 105613 - METAL STORAGE SHELVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Metal Storage Shelving which meets the certification goals as established by the Victor Valley Community College District (VVCCD) Program for the individual Project requirements, of the following types.

B. Section Includes:

1. Four-post metal storage shelving.
2. Post-and-beam metal storage shelving.

1.3 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design metal storage shelving, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Structural Performance for Post-and-Beam Metal Storage Shelving: Capable of withstanding the loads indicated according to MH 28.2.

C. Seismic Performance: Metal storage shelving shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1. Seismic Component Importance Factor: 1.5.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, construction details, material descriptions, dimensions of individual components and profiles, and finishes for metal storage shelving.

B. LEED Submittals:

1. Product Data for Credit IEQ 4.4: For particleboard, documentation indicating that product contains no urea formaldehyde.
2. Laboratory Test Reports for Credit IEQ 4: For composite wood products, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Shop Drawings: For customized metal storage shelving. Include plans, elevations, sections, details, and attachments to other work. Include installation details of connectors, lateral bracing, and special bracing.

D. Samples for Initial Selection: For units with factory-applied color finishes. Include similar Samples of accessories involving color selection.

E. Samples for Verification: For the following components, of size indicated below:
   1. Vertical Posts: 12 inches (305 mm) tall.
   2. Shelves: Full size, but not more than 24 inches wide by 12 inches deep (610 mm wide by 305 mm deep).
   3. Connectors for Beam to Post: Full size.

F. Delegated-Design Submittal: For metal storage shelving indicated to comply with performance requirements, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
   1. Design Calculations: Calculate requirements for seismic restraints.

1.5 INFORMATIONAL SUBMITTALS

A. Seismic Qualification Certificates: For metal storage shelving, accessories, and components, from manufacturer.

B. Product Certificates: For each type of metal storage shelving from manufacturer.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal storage shelving to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain metal storage shelving from single source from single manufacturer.
1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install metal storage shelving until spaces are enclosed and weather tight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.9 COORDINATION

A. Coordinate sizes and locations of blocking and backing required for installation of metal storage shelving attached to wall and ceiling assemblies.

B. Coordinate locations and installation of metal storage shelving that may interfere with ceiling systems including lighting, HVAC, speakers, sprinklers, access panels, electrical switches or outlets, and floor drains.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with G60 (Z180) zinc (galvanized) or A60 (ZF180) zinc-iron-alloy (galvannealed) coating.

D. Steel Tubing: ASTM A 513, Type 2.

E. Stainless-Steel Tubing: ASTM A 554, Grade MT-304.

F. Steel Wire: ASTM A 899.

G. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304.

H. Particleboard: ANSI A208.1, made with binder containing no urea formaldehyde.

I. Hardboard: ANSI A135.4.

J. Composite Wood Products: Products shall comply with the testing and product requirements of the California Department of Health Services’ "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

K. Floor Anchors: Galvanized-steel, post-installed expansion anchors power-actuated fasteners or threaded concrete screws. Provide number per unit recommended by manufacturer unless additional anchors are indicated in calculations.
L. Wall Anchors: Manufacturer's standard, galvanized-steel anchors designed to secure metal storage shelving to adjacent wall. Provide one per shelving unit for each shelving unit adjacent to a wall unless additional anchors are indicated in calculations.

2.2 POST-AND-BEAM METAL STORAGE SHELVING

A. General: Factory-formed, field-assembled, freestanding, post-and-beam metal storage shelving system, designed for shelves to be supported by beams that span between and are supported by corner posts, with beams adjustable over the entire height of shelving unit. Fabricate initial shelving unit with a post at each corner. Fabricate additional shelving units similarly, so each unit is independent as add-on units, designed to share two corner posts with initial shelving unit. Provide fixed top and bottom beams, adjustable intermediate beams, and accessories indicated.

B. Load-Carrying Capacity per Shelf: 400 lb (181 kg), 1000 lb (454 kg), 2000 lb (907 kg), As indicated on Drawings.

C. Posts: Fabricated from cold-rolled steel; in manufacturer's standard, manufacturer's standard angle or open-box, 1-1/2-by-1-1/2-inch (38-by-38-mm) angle, open-box shape; with perforations at 1-1/2 inches (38 mm) o.c. to receive beam-to-post connectors.

D. Beams: Fabricated from cold-rolled steel; in manufacturer's standard shape; with projecting manufacturer's standard beam-to-post connectors at each end designed to engage posts. Provide beam at each side of each shelf, with center supports as required for load-carrying capacity of shelf.

E. Particleboard Shelves: 5/8 inch (16 mm) thick; factory cut.

F. Flat Metal Shelves: Fabricated from steel sheet as follows:

G. Ribbed-Metal-Decking Shelves: Fabricated from 0.036-inch- (0.91-mm) nominal thickness steel sheet.

H. Shelf Quantity: Three shelves per shelving unit in addition to top and bottom shelf.

I. Accessories:
   1. Tie Plates: Cold-rolled steel, finished to match posts; designed for joining posts of adjacent shelving units.
   2. Supports: Back-to-wall and back-to-back type that bolt to posts; as required for shelving unit stability.
   3. Record Boxes: Knocked-down, corrugated fiberboard with white finish and contrasting contents legend; with prepunched handles and matching separate lid.
   4. Record Box Support Rails: 1-1/2-by-1-1/2-inch (38-by-38-mm) metal angle, with length to match depth of shelving unit; fabricated from same material and with same finish as beams.

J. Finish: Baked enamel or powder coat.
2.3 FABRICATION

A. Shop Fabrication: Prefabricate shelving components in shop to greatest extent possible to minimize field fabrication; temporarily preassemble shelving components where necessary to ensure that field-assembled components fit together properly. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Fabricate metal storage shelving square and rigid, with posts plumb and true and shelves flat and free of dents or distortion. Fabricate connections to form a rigid structure, free of buckling and warping.

C. Form metal in maximum lengths to minimize joints. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing the Work. Form backs of shelving units up to 48 inches (1219 mm) wide from one piece.

D. Form edges and corners free of sharp edges or rough areas. Fold back and crimp exposed edges of unsupported sheet metal to form a 1/2-inch- (13-mm-) wide hem on the concealed side; ease edges of metal plate to radius of approximately 1/32 inch (0.8 mm). Shear and punch metals cleanly and accurately. Remove burrs.

E. Weld corners and seams continuously to develop strength, minimize distortion, and maintain the corrosion resistance of base metals. At exposed locations, finish welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface. Weld before finishing components to greatest extent possible. Remove weld spatter and welding oxides from exposed surfaces before finishing.

2.4 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.5 METALLIC-COATED STEEL-SHEET FINISHES

A. Surface Preparation: Clean surfaces with nonpetroleum solvent so surfaces are free of oil and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint, complying with SSPC-Paint 20, to comply with ASTM A 780.

B. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry thickness.
2.6 STEEL FINISHES

A. Surface Preparation: Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning" or SSPC-SP 8, "Pickling."

B. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry thickness.

2.7 STAINLESS-STEEL FINISHES

A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MATERIAL

A. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste management and Disposal. Submit documentation to satisfy the requirements of that Section.

   1. Set aside scrap material to be returned to manufacturer for recycling into new product.

END OF SECTION 105613