SECTION 10 11 00
VISUAL DISPLAY UNITS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Chalkboards.
   3. Horizontal sliding chalkboards and tackboards.
   4. Vertical sliding chalkboards and tackboards.
   5. Tackboards.
   6. Display Cases.

1.2 SUBMITTALS

A. Product Data: Submit complete printed data and installation details indicating products to be provided as specified.
   1. Submit color charts for selections by the Architect.

B. Shop Drawings: Submit complete installation details. Include dimensioned elevations. Show location of joints between individual panels where unit dimensions exceed maximum panel length.

C. Samples: Submit minimum one-foot square fabricated unit of each type required, complete with factory-applied trim, chalk tray and head rail with accessories as specified for each type of unit demonstrating fabrication.

1.3 PROJECT CONDITIONS

A. Field Measurements: Verify field measurements before preparation of Shop Drawings and before fabrication to ensure proper fitting where required. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.4 WARRANTY

A. Porcelain Enamel Chalkboard Warranty: Submit a written warranty executed by manufacturer agreeing to replace porcelain enamel chalkboards that do not retain their original writing and erasing qualities, become slick and shiny, or exhibit crazing, cracking, or flaking within the specified warranty period, provided the manufacturer's written instructions for handling, installation, protection, and maintenance have been followed.
   1. Warranty Period: 50 years from date of Preliminary Acceptance.
PART 2 - PRODUCTS

2.1 MANUFACTURERS

   A. Manufacturer: Subject to compliance with requirements and availability, provide products by one of the following:

      1. AARCO
      2. A-I
      3. Best-Rite
      4. Claridge
      5. Ghent
      6. General Binding
      7. Marsh
      8. ProSteel
      9. Polyvision

2.2 MATERIALS

   A. Porcelain Enamel Units: Balanced, high-pressure-laminated, porcelain enamel chalkboards of 3-ply construction consisting of face sheet, core material, and backing.

      1. Face Sheet: Minimum 24 gauge (0.024 inch, 0.61 mm) enameling grade steel especially processed for temperatures used in coating porcelain on steel. Coat exposed face and edges with a 3 coat process consisting of primer, ground coat, and color cover coat. Coat concealed face with a 2 coat process consisting of primer and ground coat. Fuse cover and ground coats to steel at manufacturer's standard firing temperatures, but not less than 1200 deg F (649 deg C) or 0.024 inch (0.61 mm), "Vitracite," porcelain enamel clad, Type I, stretcher-leveled aluminized-steel face sheet, as manufactured by Claridge Products and Equipment. Fuse porcelain enamel coating to steel at approximately 1000 deg F (540 deg C).

         a. Chalkboard Cover Coat: Provide manufacturer's standard matte-finish cover coat,


      2. Core: 3/8 inch (9.5 mm) thick, particleboard core material complying with requirements of ANSI A208.1, Grade 1-M-1 and completely free of urea-formaldehyde.

      3. Laminating Adhesive: Manufacturer's standard, moisture-resistant, thermoplastic-type adhesive complying with LEED credit 4.1 for VOC content.

   B. Vinyl Surfaced Units: Vinyl surface for dry erase markers

      1. Basis-of-Design Product: Subject to compliance with requirements, provide Model EZrite AS 50 as manufactured by Walltalkers, a Division of RJF International Corporation.

      2. Provide manufacturer standard backing for products selected.


         a. Laminate Thickness: 26 mils
4. Adhesives: Mildew-resistant, nonstaining adhesive, for use with specific wall covering and substrate application, as recommended by wall covering manufacturer.

5. Provide level 5 finishes on wall construction where vinyl surfaced units are being installed. Refer to Section 09 21 16 “Gypsum Board Assemblies” for information.

C. Natural-Cork Tackboards: Single-layer, 1/4 inch (6.4 mm) thick, seamless, compressed fine-grain, bulletin board quality, natural-cork sheet; face sanded for natural finish; complying with MS MIL-C-15116, Type II.

D. Plastic-Impregnated Cork Tackboards: Seamless sheet, 1/4 inch (6.4 mm) thick, ground natural cork compressed with a resinous binder with washable vinyl finish and integral color throughout, laminated to burlap backing. Provide color and texture as scheduled or as selected from manufacturer's standards.

E. Vinyl-Fabric-Faced Tackboards: Mildew-resistant, washable vinyl fabric complying with FS CCC-W-408, Type II, weighing not less than 13 oz./sq. yd. (440 g/sq. m), laminated to 1/4 inch (6.4 mm) thick cork sheet. Provide fabric with a flame-spread rating of 25 or less when tested according to ASTM E 84. Provide color and texture as scheduled or as selected from manufacturer's standards.

1. Backing: Factory laminate cork face sheet under pressure to 1/4 inch (6.4 mm) thick hardboard backing.

2. Where indicated frameless, provide vinyl wrapped edges.

2.3 SLIDING UNITS

A. Horizontal Sliding Chalkboard and Tackboard Panels: Fabricate panels from manufacturer's standard components. Provide panels required that operate smoothly under manual activation without vibration or chatter.

1. Hardware: Manufacturer's standard horizontal sliding hardware consisting of overhead extruded-aluminum track with nylon ball-bearing rollers and channel-shaped bottom guides.

B. Vertical Sliding Chalkboard and Tackboard Panels: Fabricate panels and housing from manufacturer's standard components of size, thickness, and design required to impart sufficient strength for support of panels independently of support from walls.

1. Hardware: Equip each sliding panel with ball-bearing neoprene end rollers designed and fabricated to produce smooth, easy operation without rattles. Counterbalance each panel with lead counterweights on heavy-duty, aircraft-type steel cable over ball-bearing sheaves.

2.4 ACCESSORIES

A. Metal Trim and Accessories: Fabricate frames and trim of not less than 0.062 inch (1.57 mm) thick, extruded-aluminum alloy, size and shape as indicated or if not indicated, manufacturer's standard narrow edge profile, to suit type of installation. Provide straight, narrow style, single-length units. Keep joints to a minimum. Miter corners to a neat, hairline closure.
1. Where size of unit or other conditions require support in addition to normal trim, provide structural supports or modify trim as indicated or as selected by Architect from manufacturer's standard structural support accessories to suit conditions indicated.

2. Chalk Tray: Manufacturer's standard, continuous, solid, extrusion-type, aluminum chalk tray with ribbed section and smoothly curved exposed ends for each chalkboard.

3. Map Rail: Furnish map rail at top of each unit, complete with the following accessories:
   a. Display Rail: Provide continuous cork display rail approximately 2 inches (50 mm) wide, as indicated, integral with map rail.
   b. End Stops: Provide one end stop at each end of map rail.
   c. Map Hooks: Provide 2 map hooks with flexible metal clips for every 48 inches (1220 mm) of map rail or fraction thereof.
   d. Flag Holder: Provide one flag holder for each room.

2.5 FABRICATION

A. Porcelain Enamel Chalkboards: Laminate facing sheet and backing sheet to core material under pressure with manufacturer's recommended flexible, waterproof adhesive.

B. Assembly: Provide factory-assembled units.
   1. Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints, balanced around center of board, as acceptable to Architect.
   2. Provide manufacturer's standard vertical joint system between abutting sections of chalkboards.
   3. Provide manufacturer's standard mullion trim at joints between chalkboards and tackboards.

2.6 FINISHES

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

B. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.

C. Class II Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 607.1.

D. Class II, Color Anodic Finish: AA-M12C22A32/A34 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, integrally colored or electrolytically deposited color coating 0.010 mm or thicker).
   2. Color: Medium bronze.
   3. Color: Dark bronze.
E. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Apply baked enamel complying with paint manufacturer's specifications for cleaning, conversion coating, and painting.

1. Organic Coating: Thermosetting modified-acrylic enamel primer/topcoat system complying with AAMA 603.8 except with a minimum dry film thickness of 1.5 mils (0.04 mm), medium gloss.

2.7 DISPLAY CASES

A. Materials

1. Aluminum Extrusions: Provide manufacturer's standard extruded aluminum sections with not less than the strength and durability properties specified in ASTM B 221 for 6063-T5 alloy.
2. Clear Tempered Glass: Provide clear float glass, thickness as indicated, complying with the requirements of ASTM C-1048, Kind FT, Condition A, Type I, Class 1 - transparent.
3. Case Box: Birch veneer.
5. Rear Wall: Cork.
6. Doors: Aluminum-framed sliding glass doors, complete with operating hardware and keyed lock, keyed to building system.

B. Fabrication: Provide illuminated display case with adjustable glass shelves spaced 12" o.c., 48" high x 72" long x 12" deep, designed for recessed installation, with fluorescent light housed at top of birch veneer case with louvered aluminum access door with keyed lock and lay-in diffuser.

1. Aluminum Finish: Exposed aluminum shall be finished with the manufacturer's standard satin anodized finish with clear anodic coating complying with AA requirements for Class II Architectural Coating (AA-A31).

C. Acceptable Products: Subject to compliance with requirements, provide Series S-12-0648 by Greensteel, or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine wall surfaces, with Installer present, for compliance with requirements and other conditions affecting installation of visual display boards.

1. Surfaces to receive chalkboards or markerboards shall be free of dirt, scaling paint, and projections or depressions that would affect smooth, finished surfaces of chalkboards or markerboards.
2. Surfaces to receive tackboards shall be dry and free of substances that would impair the bond between tackboards and substrate.
3. Do not proceed with installation until unsatisfactory conditions have been corrected.
3.2 INSTALLATION

A. Deliver factory-built units completely assembled in one piece without joints, where possible. If dimensions exceed panel size, provide 2 or more pieces of equal length as acceptable to Architect. When overall dimensions require delivery in separate units, prefit components at the factory, disassemble for delivery, and make final joints at the site. Use splines at joints to maintain surface alignment.

B. Install units in locations and at mounting heights indicated tight to surface, secure, and according to manufacturer's written instructions. Keep perimeter lines straight, plumb, and level. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for complete installation.

3.3 ADJUSTING AND CLEANING

A. Verify that accessories required for each unit have been properly installed and that operating units function properly.

B. Clean units according to manufacturer's written instructions.

END OF SECTION