SECTION 101200 - DISPLAY CASES

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. RELATED DOCUMENTS
          1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
       2. SUMMARY
          1. Section Includes:

Bulletin boards.

Display cases.

* + - * 1. Related Requirements:

Retain Subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

[**Section 062023 "Interior Finish Carpentry"**] [**Section 064113 "Wood-Veneer-Faced Architectural Cabinets"**] for custom wood [**bulletin boards**] [**and**] [**display cases**].

Section 101100 "Visual Display Units" for tackboards.

Section 101300 "Directories" for boards with changeable messages or changeable letters and for bulletin boards within built-in directories.

* + - 1. DEFINITIONS

Retain terms that remain after this Section has been edited for a Project.

* + - * 1. Bulletin Board: Glazed cabinet with tackboard panel, without shelves, typically of shallow depth for display of paper documents.
        2. Display Case: Glazed cabinet with [**tackboard panel back surface and**]adjustable shelves.
        3. Tackboard Panel: A material for holding push-pins or tacks, typically consisting of a facing such as fabric, vinyl, or cork; adhered to a substrate such as fiberboard, hardboard, or particleboard.
      1. PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" Paragraph below if Work of this Section is extensive or complex enough to justify a conference.

* + - * 1. Preinstallation Conference: Conduct conference at [**Project site**] <**Insert location**>.
      1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of product.

Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for [**display cases**] [**and**] [**bulletin boards**]. Include furnished specialties and accessories.

Include electrical characteristics for illuminated [**display cases**] [**and**] [**bulletin boards**]**.**

* + - * 1. Sustainable Design Submittals:
        2. Shop Drawings: For [**display cases**] [**and**] [**bulletin boards**].

Include plans, elevations, sections, and attachment details.

Show location of seams and joints in tackboard panels.

Include sections of typical trim members.

Include diagrams for wiring of illuminated [**display cases**] [**and**] [**bulletin boards**].

Retain "Samples" Paragraph below for single-stage Samples, with a subordinate list if applicable. Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs for two-stage Samples.

* + - * 1. Samples: For each exposed product and for each color and texture specified; not less than 8-1/2 by 11 inches for tackboard panels and 6 inches long for trim with factory finish.
        2. Samples for Initial Selection: For each type of exposed finish.

Include Samples of tackboard panels[**, header panel**] and factory-finished trim involving color finish selection.

* + - * 1. Samples for Verification: For each type of exposed finish for the following.

Tackboard Panel: Not less than 8-1/2 by 11 inches, with facing and substrate indicated for final Work. Include one panel for each type, color, and texture required.

Trim: 6-inch- long sections of each trim profile[**including corner section**].

Retain one option in "Product Test Reports" Paragraph below based on requirements of authorities having jurisdiction. See the Evaluations.

* + - * 1. Product Test Reports: For [**fabrics**] [**tackboard panels**], for tests performed by a qualified testing agency.
      1. CLOSEOUT SUBMITTALS
         1. Maintenance Data: For [**display cases**] [**and**] [**bulletin boards**] to include in maintenance manuals.
      2. FIELD CONDITIONS
         1. Environmental Limitations: Do not deliver or install [**display cases**] [**and**] [**bulletin boards**] for indoor installations until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1. PRODUCTS

Manufacturers and products listed in SpecAgent and MasterWorks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

* + - 1. MANUFACTURERS
         1. Source Limitations: Obtain [**display cases**] [**and**] [**bulletin boards**] from single source from single manufacturer.
      2. PERFORMANCE REQUIREMENTS

Retain "Surface-Burning Characteristics" Paragraph below if tackboard panels or facings are flammable and testing is required by authorities having jurisdiction.

* + - * 1. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

Flame-Spread Index: [**25**] or less.

Smoke-Developed Index: [**50**] [**450**] or less.

Retain "Electrical Components" Paragraph below if illuminated bulletin boards or display cases are included.

* + - * 1. Electrical Components: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
      1. BULLETIN BOARDS <**Insert drawing designation**>

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

AARCO Products, Inc.

AJW Architectural Products.

Marsh Industries, Inc.

Pyramid Presentation Products.

Swingframe Mfg.; a division of Access Display Group, Inc.

Waddell Furniture; a division of Ghent Manufacturing, Inc.

Approved equivalent.

Revise "General" Paragraph below if another material, instead of a tackboard panel, is required on back inside surface; tackboard panel is most common.

* + - * 1. General: Factory-fabricated unit consisting of manufacturer's standard wall-mounted cabinet with tackboard panel on back inside surface and operable glazed doors at front.

Retain "Frame and Cabinet Profile" Subparagraph below if cabinet is not detailed on Drawings and basis of design is not used. Note that various manufacturers make other types of frame profiles.

Frame and Cabinet Profile: [**Square**] [**Rounded**] frame section with [**square**] [**rounded**] cabinet corners.

Mounting: [**Surface mounted**] [**Recessed**].

Retain one of two "Size" Subparagraphs below.

Size: As indicated on Drawings.

Many stock and custom sizes are offered by manufacturers. Below are examples only.

Size: 48 inches wide by 36 inches high by 4 inches deep.

Retain "Aluminum-Framed Cabinet" or "Wood-Framed Cabinet" Paragraph below.

* + - * 1. Aluminum-Framed Cabinet: Extruded aluminum; with [**clear anodic**] [**color anodic**] [**manufacturer's standard baked-enamel or powder-coat**] finish.

Retain one color from options in "Color" Subparagraph below with finish option retained in "Aluminum-Framed Cabinet" Paragraph above. First four options below are for color anodic finish and may vary in color range and availability among manufacturers. Last three options are for color anodic, baked-enamel, or powder-coat finish.

Color: [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**] [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - * 1. Wood-Framed Cabinet: [**Red oak**] [**Maple**] [**Walnut**] [**Manufacturer's standard species**] with [**natural lacquered**] [**oiled**] [**stained**] finish.

Retain "Exterior Bulletin Boards" Paragraph below if including exterior bulletin boards. Verify that manufacturers offer exterior units. Confirm that selected tackboard panels are suitable for exterior use.

* + - * 1. Exterior Bulletin Boards: Aluminum-framed units of weather-resistant construction; with vents to dissipate trapped moisture, weather-resistant tackboard panel, and weather-stripped hinged doors.

Retain "Glazed Sliding Doors" or "Glazed Hinged Doors" Paragraph below. Tempered-glass glazing is most commonly available, especially for sliding doors. Other types of glass, such as double strength, and other plastic glazing, such as polycarbonate, may be available.

* + - * 1. Glazed Sliding Doors: [**Tempered glass**] [**Clear acrylic sheet**]; unframed; with extruded-aluminum top and bottom track; supported on nylon or ball-bearing rollers; with plastic top guide and rubber bumpers. Equip each door with ground finger pull and adjustable cylinder lock with two keys.

Delete "Thickness" Subparagraph below if manufacturer's standard thickness is acceptable.

Thickness: Not less than [**5 mm**] [**6 mm**] thick.

Number of Doors: [**One**] [**Two**] [**Three**] [**As indicated on Drawings**].

* + - * 1. Glazed Hinged Doors: [**Tempered glass**] [**Clear acrylic sheet**]; set in frame matching cabinet material and finish. Equip each door with full-height continuous hinge and cylinder lock with two keys.

Delete "Thickness" Subparagraph below if manufacturer's standard thickness is acceptable.

Thickness: Not less than [**5 mm**] [**6 mm**] thick.

Number of doors is often determined by manufacturer, based on size of unit.

Number of Doors: [**One**] [**Two**] [**Three**] [**As indicated on Drawings**].

Retain "Header Panel" Paragraph below if required.

* + - * 1. Header Panel: [**Nonilluminated; with opaque**] [**Illuminated; with translucent**] acrylic sheet panel set within overall cabinet frame; with matching frame that separates header panel from bulletin board.

For header panels required to comply with United States Access Board's "Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines," indicate colors that produce a light-on-dark or dark-on-light contrast between characters and their background.

Graphic Content and Style: Provide header panel copy that complies with requirements indicated on [**Drawings**] [**artwork supplied on electronic media by Director’s Representative**] for size, style, spacing, content, height, location, material, and colors of graphics.

Color: [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from full range of industry colors**].

Retain "Illumination System" Paragraph below if required. Illumination systems are available for bulletin boards whether they have header panels. Revise text if LED lighting is required; verify availability with manufacturers.

* + - * 1. Illumination System: Concealed top-lighting system consisting of fluorescent-strip fixtures. Include lamps and internal wiring with single, concealed electrical connection to building system. Coordinate electrical characteristics with power supply provided.

Ballasts: Low-temperature, high-power-factor, low-energy, fluorescent lamp ballasts that comply with Certified Ballast Manufacturers Association standards and carry its label.[**Provide exterior ballasts for exterior bulletin boards.**]

Electrical Characteristics: Single-phase, [**120**] [**277**] V.

Retain "Back Panel," "Natural-Cork Back Panel," "Plastic-Impregnated Back Panel," "Vinyl Back Panel," or "Polyester Back Panel" Paragraph below, or delete all and insert requirements for other material. Back panel is the rear interior surface of the bulletin board. Retain "Back Panel" Paragraph if manufacturer's standard tackboard back panel is acceptable. Other materials may be available; verify with manufacturers.

* + - * 1. Back Panel: Manufacturer's standard [**natural-cork**] [**plastic-impregnated-cork**] [**vinyl-fabric-faced**] [**or**] [**polyester-fabric-faced**] tackboard panel.

Insert designations. Use these designations in "Tackboard Panels" Article and on Drawings.

* + - * 1. Natural-Cork Back Panel: Natural-cork tackboard panel <**Insert designation**>.
        2. Plastic-Impregnated Back Panel: Plastic-impregnated-cork tackboard panel <**Insert designation**>.
        3. Vinyl Back Panel: Vinyl-fabric-faced tackboard panel <**Insert designation**>.
        4. Polyester Back Panel: Polyester-fabric-faced tackboard panel <**Insert designation**>.

Delete "Color" Subparagraph below if retaining "natural-cork" option in "Back Panel" Paragraph.

Color: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from full range of industry colors**].

* + - 1. DISPLAY CASES <**Insert drawing designation**>

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

AARCO Products, Inc.

AJW Architectural Products.

Ghent Manufacturing, Inc.

Pyramid Presentation Products.

Waddell Furniture; a division of Ghent Manufacturing, Inc.

Approved equivalent.

Unit in "Recessed Display Case" Paragraph below is also available from some manufacturers as front, face-frame component only, without cabinet, for installation with field-constructed recessed box. Revise text if retaining face-frame only. Several manufacturers offer semi-recessed display cases; revise Section Text if specifying semi-recessed display cases.

* + - * 1. Recessed Display Case: Factory-fabricated display case; with finished interior, operable glazed doors at front, and trim on face to cover edge of recessed opening.

Most common construction for recessed display cases is hardwood-veneer-plywood cabinet box with aluminum frame and trim.

Display Case Cabinet: [**Extruded aluminum**] [**Hardwood veneer plywood**].

Retain "Veneer Species" Subparagraph below for wood cabinet box.

Veneer Species: [**Birch**] [**Maple**] [**Red oak**] [**Walnut**] [**Manufacturer's standard species**] <**Insert species**> with [**natural lacquered**] [**oiled**] [**stained**] finish.

Retain one of two "Face Frame" subparagraphs below.

Face Frame: Aluminum.

Face Frame: [**Wood, species to match interior of cabinet box**] [**Birch**] [**Maple**] [**Red oak**] [**Walnut**] [**Manufacturer's standard hardwood species**] with [**natural lacquered**] [**oiled**] [**stained**] finish.

Retain "Aluminum Finish" Subparagraph below if aluminum components are used to fabricate display cases.

Aluminum Finish: [**Clear anodic**] [**Color anodic**] [**Manufacturer's standard baked enamel or powder coat**].

Retain one color from options in "Color" Subparagraph below with finish option retained in "Aluminum Finish" Subparagraph above. First four options below are for color anodic finish and may vary in color range and availability among manufacturers. Last three options are for color anodic, baked-enamel, or powder-coat finish.

Color: [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**] [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

Revise "Surface-Mounted Display Case" Paragraph below for display cases mounted only to the floor and visible on all four sides, which can be glazed on all four sides and mounted on legs or solid bases.

* + - * 1. Surface-Mounted Display Case: Factory-fabricated display case; with finished interior, and glazed doors at front.

Retain one of four "Construction" Subparagraphs below, or revise text for other construction. Decorative laminate on hardwood-plywood interiors is also available from some manufacturers.

Construction: Hardwood-veneer-plywood bottom panel; glazed side panels; [**hardwood-veneer-plywood**] [**glazed**] top panel; [**aluminum**] [**hardwood**] face frame.

Wood and Veneer Species: [**Birch**] [**Maple**] [**Red oak**] [**Walnut**] [**Manufacturer's standard species**] with [**natural lacquered**] [**oiled**] [**stained**] finish.

Construction: Extruded-aluminum top, bottom, and side panels.

Option in first "Construction" Subparagraph below is for units suspended from wall or mounted on legs.

Construction: Aluminum frame with glazed top, [**bottom,**]and side panels.

The type of construction in "Construction" Subparagraph below is furniture quality. Last option is available for display cases suspended from wall or mounted on legs.

Construction: Hardwood frame; [**birch**] [**maple**] [**red oak**] [**walnut**] [**manufacturer's standard hardwood species**] with [**natural lacquered**] [**oiled**] [**stained**] finish; glazed top, [**bottom,**]and side panels.

Retain "Aluminum Finish" Subparagraph below if aluminum components are used to fabricate display cases.

Aluminum Finish: [**Clear anodic**] [**Color anodic**] [**Manufacturer's standard baked enamel or powder coat**].

Retain one color from options in "Color" Subparagraph below with finish option retained in "Aluminum Finish" Subparagraph above. First four options below are for color anodic finish and may vary in color range and availability among manufacturers. Last three options are for color anodic, baked-enamel, or powder-coat finish.

Color: [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**] [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

Retain one of four options in "Display Case Base" Subparagraph below, or revise text for alternative construction.

Display Case Base: [**No base, for wall mounting**] [**Legs, to match construction of frame**] [**Full-height display case, with minimal base**] [**Manufacturer's standard hardwood-plywood-veneer base, in species to match display case interior**].

Retain "Glazed Sliding Doors" or "Glazed Hinged Doors" Paragraph below.

* + - * 1. Glazed Sliding Doors: Tempered glass; unframed; with extruded-aluminum top and bottom track; supported on nylon or ball-bearing rollers; with plastic top guide and rubber bumpers. Equip each door with ground finger pull and adjustable cylinder lock with two keys.

Delete "Thickness" Subparagraph below if manufacturer's standard thickness is acceptable.

Thickness: Not less than [**5 mm**] [**6 mm**] thick.

Number of Doors: [**Two**] [**Three**] [**As indicated on Drawings**].

* + - * 1. Glazed Hinged Doors: Tempered glass; set in frame matching cabinet material and finish. Equip each door with full-height continuous hinge and cylinder lock with two keys.

Delete "Thickness" Subparagraph below if manufacturer's standard thickness is acceptable.

Thickness: Not less than [**5 mm**] [**6 mm**] thick.

Number of Doors: [**One**] [**Two**] [**Three**] [**As indicated on Drawings**].

* + - * 1. Shelves: 6-mm-thick tempered glass; supported on adjustable shelf standards and supports.

Shelf Depth: [**6 inches**] [**8 inches**] [**10 inches**] [**12 inches**].

Number of Shelves: [**Three**] [**As indicated on Drawings**].

First option in "Adjustable Shelf Standards and Supports" Paragraph below specifies standards and knife-type brackets for mounting at rear of shelves, which is most common; second specifies standards and clip-type rests for mounting at ends of shelves.

* + - * 1. Adjustable Shelf Standards and Supports: [**BHMA A156.9, B04102; with shelf brackets, B04112; recess mounted in rear surface**] [**BHMA A156.9, B04071; with shelf rests, B04081; mounted on sides**]. Provide standards extending full height of display case.

Retain "Natural-Cork Back Panel," "Plastic-Impregnated Back Panel," "Vinyl Back Panel," "Polyester Back Panel," "Hardwood Back Panel," or "Back Panel" Paragraph below. Back panel is the rear interior surface of the display case.

Insert designations. Use these designations in "Tackboard Panels" Article and on Drawings.

* + - * 1. Natural-Cork Back Panel: Natural-cork tackboard panel <**Insert designation**>.
        2. Plastic-Impregnated Back Panel: Plastic-impregnated-cork tackboard panel <**Insert designation**>.
        3. Vinyl Back Panel: Vinyl-fabric-faced tackboard panel <**Insert designation**>.
        4. Polyester Back Panel: Polyester-fabric-faced tackboard panel <**Insert designation**>.
        5. Hardwood Back Panel: Hardwood veneer to match display case construction.
        6. Back Panel: <**Insert type of material**>.

Retain "Color" Subparagraph below if retaining "Plastic-Impregnated Back Panel," "Vinyl Back Panel," or "Polyester Back Panel" Paragraph above.

Color: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

Retain "Illumination System" Paragraph below if required. Revise text if LED lighting is required; verify availability with manufacturers.

* + - * 1. Illumination System: Concealed top-lighting system consisting of fluorescent-strip fixtures. Include lamps and internal wiring with single concealed electrical connection to building system. Coordinate electrical characteristics with power supply provided.

Ballasts: Low-temperature, high-power-factor, low-energy, fluorescent lamp ballasts that comply with Certified Ballast Manufacturers Association standards and carry its label.

Electrical Characteristics: Single phase, [**120**] [**277**] V.

Dimensions indicated in "Size" Paragraph below are examples only.

* + - * 1. Size: [**As indicated on Drawings**] [**48 inches**] wide, by [**60 inches**] high, by [**8 inches**] [**16 inches**] [**24 inches**] deep.
      1. TACKBOARD PANELS

Retain types of tackboard panels in this article to suit Project. See the Evaluations.

Delete this article if including only bulletin boards with manufacturer's standard tackboard panel.

Insert designation. Use these designations in "Bulletin Boards" and "Display Cases" articles to indicate where each tackboard panel is required.

* + - * 1. Natural-Cork Tackboard Panel <**Insert designation**>: 1/16-inch-thick, natural-cork sheet factory laminated to [**3/8-inch-**] [**7/16-inch-**] thick, fiberboard backing.
        2. Natural-Cork Tackboard Panel <**Insert designation**>: 1/8-inch- thick, natural-cork sheet factory laminated to 3/8-inch- thick, fiberboard backing.
        3. Natural-Cork Tackboard Panel <**Insert designation**>: 1/4-inch- thick, natural-cork sheet factory laminated to 1/4-inch- thick, [**hardboard**] [**particleboard**] backing.
        4. Plastic-Impregnated-Cork Tackboard Panel <**Insert designation**>: 1/8-inch- thick, plastic-impregnated-cork sheet factory laminated to 3/8-inch- thick, fiberboard backing.
        5. Plastic-Impregnated-Cork Tackboard Panel <**Insert designation**>: 1/4-inch- thick, plastic-impregnated-cork sheet factory laminated to 1/4-inch- thick, [**hardboard**] [**particleboard**] backing.
        6. Vinyl-Fabric-Faced Tackboard Panel <**Insert designation**>: Vinyl fabric factory laminated to [**3/8-inch-**] [**7/16-inch-**] [**1/2-inch-**] thick, fiberboard backing.
        7. Vinyl-Fabric-Faced Tackboard Panel <**Insert designation**>: 1/16-inch- thick, vinyl-fabric-faced-cork sheet factory laminated to 3/8-inch- thick, fiberboard backing.
        8. Vinyl-Fabric-Faced Tackboard Panel <**Insert designation**>: 1/8-inch- thick, vinyl-fabric-faced-cork sheet factory laminated to 3/8-inch- thick, fiberboard backing.
        9. Vinyl-Fabric-Faced Tackboard Panel <**Insert designation**>: 1/4-inch- thick, vinyl-fabric-faced-cork sheet factory laminated to 1/4-inch- thick, [**hardboard**] [**particleboard**] backing.
        10. Polyester-Fabric-Faced Tackboard Panel <**Insert designation**>: Polyester fabric factory laminated to [**3/8-inch-**] [**1/2-inch-**] thick, fiberboard backing.
        11. Polyester-Fabric-Faced Tackboard Panel <**Insert designation**>: 1/16-inch- thick, polyester-fabric-faced-cork sheet factory laminated to 3/8-inch- thick, fiberboard backing.
        12. Polyester-Fabric-Faced Tackboard Panel <**Insert designation**>: 1/8-inch- thick, polyester-fabric-faced-cork sheet factory laminated to 3/8-inch- thick, fiberboard backing.
        13. Polyester-Fabric-Faced Tackboard Panel <**Insert designation**>: 1/4-inch- thick, polyester-fabric-faced-cork sheet factory laminated to 1/4-inch- thick, [**hardboard**] [**particleboard**] backing.
      1. MATERIALS

Many manufacturers do not publish data indicating compliance with one or more paragraphs in this article. Consult manufacturers before revising.

"Hardboard," "Fiberboard," "Particleboard," and "Hardwood Plywood" paragraphs below can be used as substrates for tackboard panels. "Particleboard" and "Hardwood Plywood" paragraphs below may also be used to construct bulletin board and display case cabinets.

* + - * 1. Hardboard: ANSI A135.4, tempered.
        2. Fiberboard: ASTM C208.
        3. Particleboard: ANSI A208.1, Grade M-1.
        4. Hardwood Plywood: HPVA HP-1.

"Natural-Cork Sheet," "Plastic-Impregnated-Cork Sheet," "Polyester Fabric," and "Vinyl Fabric" paragraphs below are facings for tackboard panels. Coordinate with "Tackboard Panels" Article.

* + - * 1. Natural-Cork Sheet: Seamless, single-layer, compressed fine-grain cork sheet; bulletin board quality; face sanded for natural finish.
        2. 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 burlap backing; with washable vinyl finish and integral color throughout.
        3. Polyester Fabric: Nondirectional weave, 100 percent polyester; weighing not less than 15 oz./sq. yd.; with flame-spread index of 25 or less when tested in accordance with ASTM E84.

Burlap-weave pattern in "Vinyl Fabric" Paragraph below helps to hide pinholes.

* + - * 1. Vinyl Fabric: ASTM F793, Type II, [**burlap weave**] <**Insert texture and pattern**>; weighing not less than 13 oz./sq. yd.; with flame-spread index of 25 or less when tested in accordance with ASTM E84.
        2. Extruded-Aluminum Bars and Shapes: ASTM B221, Alloy 6063.
        3. Aluminum Tubing: ASTM B429, Alloy 6063.
        4. Clear Tempered Glass: ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality Q3, with exposed edges seamed before tempering.
        5. Transparent Acrylic Sheet: ASTM D4802, Category A-1 (cell-cast sheet), with Finish 1 (smooth or polished), colorless sheet with visible light transmittance of 92 percent measured in accordance with ASTM D1003.
        6. Opaque Acrylic Sheet: ASTM D4802, Category A-1 (cell-cast sheet).
        7. Translucent Acrylic Sheet: ASTM D4802, Category A-1 (cell-cast sheet), with Finish 1 (smooth or polished). Provide white-colored sheet unless otherwise indicated, of density required to produce uniform brightness and minimum halation effects.
        8. High-Pressure Plastic Laminate: NEMA LD 3.
        9. Fasteners: Provide screws, bolts, and other fastening devices made from same material as items being fastened, except provide hot-dip galvanized, stainless steel, or aluminum fasteners for exterior applications. Provide types, sizes, and lengths to suit installation conditions. Use security fasteners where exposed to view.
      1. FABRICATION
         1. Fabricate [**bulletin boards**] [**and**] [**display cases**] to requirements indicated for dimensions, design, and thickness and finish of materials.
         2. Use metals and shapes of thickness and reinforcing required to produce flat surfaces, and to impart strength for size, design, and application indicated.
         3. Fabricate cabinets and door frames with reinforced corners, mitered to a hairline fit, with no exposed fasteners.
         4. Fabricate shelf standards plumb and at heights to align shelf brackets for level shelves.
      2. GENERAL FINISH REQUIREMENTS
         1. Comply with NAAMM/NOMMA 500 for recommendations for applying and designating finishes.
         2. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
         3. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. 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.
      3. ALUMINUM FINISHES

Retain finishes in this article to suit Project. If retaining more than one, indicate location of each on Drawings or by inserts.

* + - * 1. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.
        2. Color Anodic Finish: AAMA 611, AA-M12C22A32/A34, Class II, 0.010 mm or thicker.

"Baked-Enamel or Powder-Coat Finish" Paragraph below references AAMA standard for pigmented organic coating on extrusions and panels.

* + - * 1. Baked-Enamel or Powder-Coat Finish: AAMA 2603, except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine walls, with Installer present, for compliance with requirements for installation tolerances, surface conditions of wall, and other conditions affecting performance of the Work.
          2. Examine roughing-in for electrical power systems to verify actual locations of connections before installation of illuminated units.

Retain the paragraph below if power is provided by a separate Electrical Work Contract.

Electrical connections to be performed by the Electrical Work Contract.

* + - * 1. Examine walls and partitions for proper backing for [**bulletin boards**] [**and**] [**display cases**].
        2. Examine walls and partitions for suitable framing depth if recessed units will be installed.
        3. Proceed with installation only after unsatisfactory conditions have been corrected.
      1. PREPARATION

Retain this article if recessed units are required.

* + - * 1. Prepare recesses for display cases as required by type and size of unit.
      1. INSTALLATION
         1. General: Install units in locations and at mounting heights indicated on Drawings, or if not indicated, at heights indicated below. Keep perimeter lines straight, level, and plumb. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for complete installation.

Mounting Height: 72 inches above finished floor to top of cabinet.

* + - * 1. Bulletin Boards: Attach units to wall surfaces with concealed clips, hangers, or grounds.
        2. Recessed Display Cases: Attach units to wall framing with fasteners at not more than 16 inches o.c. Attach aluminum trim over edges of recessed display cases and conceal grounds and clips. Attach trim with fasteners at not more than 24 inches o.c.
        3. Surface-Mounted Display Cases: Attach units to wall surfaces with concealed clips, hangers, or grounds fastened at not more than 16 inches o.c. Secure tops and bottoms of display cases to walls.
        4. Floor-Mounted Display Cases: Attach display cases with [**bases**] [**legs**] to floor with concealed anchors.
        5. Comply with requirements specified elsewhere for connecting illuminated [**bulletin boards**] [**and**] [**display cases**].
        6. Install display case shelving level and straight.
      1. ADJUSTING AND CLEANING
         1. Adjust doors to operate smoothly without warp or bind and so contact points meet accurately. Lubricate operating hardware as recommended in writing by manufacturer.
         2. Touch up factory-applied finishes to restore damaged areas.

END OF SECTION 101200