

SECTION 101100 – VISUAL DISPLAY BOARDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. White markerboards.
 - 2. Natural-cork tackboards.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data and installation instruction for each material and component part, including data substantiating that materials comply with requirements.
- B. Shop Drawings: For each type of visual display board required.
 - 1. Include dimensioned elevations. Show location of joints between individual panels where unit dimensions exceed maximum panel length.
 - 2. Include sections of typical trim members.
 - 3. Show anchors, grounds, reinforcement, accessories, layout, and installation details.
- C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors and textures available for the following:
 - 1. Chalkboards and Markerboards: Actual sections of porcelain enamel finish for each type of chalkboard and markerboard required.
- D. Samples for Verification: Of the following products, showing color and texture or finish selected. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected. Prepare Samples from the same material to be used for the Work.
 - 1. Visual Display Boards: Sample panels not less than 8-1/2 by 11 inches (215 by 280 mm), mounted on the substrate indicated for the final Work. Include a panel for each type, color, and texture required.
 - 2. Aluminum Trim and Accessories: Samples of each finish type and color, on 6-inch- (150-mm-) long sections of extrusions and not less than 4-inch (100-mm) squares of sheet or plate. Include Sample sets showing the full range of color variations expected.

1.04 QUALITY ASSURANCE

- A. Source Limitations: Obtain visual display boards through one source from a single manufacturer.
- B. Product Options: Drawings indicate size, profiles, and dimensional requirements of visual display boards and are based on the products indicated. Other manufacturers' products with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."
 - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval and only to the extent needed to comply with performance requirements. Where modifications are proposed, submit comprehensive explanatory data to Architect for review.

1.05 PROJECT CONDITIONS

- A. Field Measurements: Verify field measurements before preparation of Shop Drawings and before fabrication to ensure proper fitting. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 1. Allow for trimming and fitting where taking field measurements before fabrication might delay the Work.
 - 2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating chalkboards without field measurements. Coordinate wall construction to ensure actual dimensions correspond to established dimensions.

1.06 WARRANTY

- A. General Warranty: The special porcelain enamel chalkboard warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. 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 Substantial Completion.
 - 2. Warranty Period: Life of the building.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

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

1. Porcelain Enamel Chalkboards and Marker Boards:

- a. Best-Rite Chalkboard Co.
- b. Carolina Chalkboard Co.
- c. Claridge Products and Equipment, Inc.
- d. Ghent Manufacturing, Inc.
- e. Greensteel, Inc.
- f. Lemco, Inc.
- g. Marsh Chalkboard Company.
- h. Nelson Adams Company.

2. Tackboards:

- a. Best-Rite Chalkboard Co.
- b. Carolina Chalkboard Co.
- c. Claridge Products and Equipment, Inc.
- d. Ghent Manufacturing, Inc.
- e. Greensteel, Inc.
- f. Lemco, Inc.
- g. Marsh Chalkboard Company.
- h. Nelson Adams Company.

2.02 MATERIALS

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

- 1. Face Sheet: 0.024-inch- (0.61-mm-), "Vitracite," porcelain enamel clad, Type 1, 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. Cover Coat: Provide manufacturer's standard matte-finish cover coat, with color selected from manufacturer's standards.
- 2. Core: 3/8-inch- (9.5-mm-) thick, particleboard core material complying with requirements of ANSI A208.1, Grade 1-M-1.
- 3. Backing Sheet: 0.015-inch- (0.38-mm-) thick, aluminum-sheet backing.
- 4. Laminating Adhesive: Manufacturer's standard, moisture-resistant, thermoplastic-type adhesive.

B. 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.

- 1. Backing: Factory laminate cork face sheet under pressure to 3/8-inch- (9.5-mm-) thick fiberboard backing.

2.03 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, to suit type of

installation. Provide straight, single-length units. Keep joints to a minimum. Miter corners to a neat, hairline closure.

1. Where size of visual display boards 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. Field-Applied Trim: Manufacturer's standard snap-on trim with no visible screws or exposed joints.
3. Field-Applied Trim: Manufacturer's standard slip-on trim.
4. Field-Applied Trim: Manufacturer's standard screw-on trim with Phillips flat-head screws.
5. Chalktray: Manufacturer's standard, continuous, Red Oak tray to match existing.
6. Map Rail: Furnish map rail at top of each unit, complete with the following accessories:
 - a. Display Rail: Provide continuous cork display rail approximately 1 or 2 inches (25 or 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 for every 48 inches (1220 mm) of map rail or fraction thereof.
 - d. Flag Holder: Provide one flag holder for each room.

2.04 FABRICATION

- A. Porcelain Enamel Chalkboards and Markerboards: Laminate facing sheet and backing sheet to core material under pressure with manufacturer's recommended flexible, waterproof adhesive.
 1. Cut joints straight and true. Space joints symmetrically. Fit and match panels before shipment to provide a continuous, uniform writing surface.
 2. Length: Furnish panels approximately equal in length with permissible variation not more than 3 inches (75 mm) in either direction of equal spacing. Allow 1/4-inch (6.4-mm) clearance at trim in length and width for fitting. Provide lengths of panels in each space as follows:
 - a. Up to 5 feet (1.524 m), 1 panel.
 - b. More than 5 feet (1.524 m) but less than 9 feet (2.743 m), 2 panels.
 - c. More than 9 feet (2.743 m) but less than 13.5 feet (4.115 m), 3 panels.
 - d. More than 13.5 feet (4.115 m) but less than 18 feet (5.486 m), 4 panels.
- B. Assembly: Provide factory-assembled chalkboard and tackboard units, unless field-assembled units are required.
 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.

2.05 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. 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. Color: As selected by Owner from manufacturer's full range of colors.

PART 3 - EXECUTION

3.01 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.

3.02 INSTALLATION

- A. Deliver factory-built visual display boards 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 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.

- C. Coordinate Project-site-assembled units with grounds, trim, and accessories. Join parts with a neat, precision fit.

3.03 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 101100

SECTION 101200 – DISPLAY CASES

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. This section includes Recessed Trophy and Display Cases

1.02 REFERENCED STANDARDS

- A. ASTM E84
- B. ASTM B221

1.03 SUBMITTALS

- A. Shop Drawings: Provide shop drawings for each type of recessed display or trophy case required.
- B. Product Data: Provide technical data for materials specified. Include Material Safety Data Sheets, when applicable.
- C. Samples:
 - a. Manufacturer's color charts.
 - b. Composition samples of material and trim to illustrate finish, color and texture.
- D. Manufacturer's Instructions: Provide manufacturer's installation instructions.

1.04 OPERATION AND MAINTENANCE

- A. Include data on regular cleaning, stain removal, and precautions

1.05 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame/smoke rating in tackboards in accordance with ASTM E84.

1.06 QUALITY ASSURANCE

- A. Manufacturer shall be a firm engaged in the manufacture of display cases in the United States.
- B. Manufacturer shall have a minimum of 5 years experience in the manufacture of display cases.

1.07 FIELD CONDITIONS

- A. Field measure prior to preparation of shop drawings and fabrication to ensure proper fit.

1.08 WARRANTY

- A. Submit a standard warranty, stating that when installed in accordance with manufacturer's instructions and recommendations, Claridge recessed trophy and display cases are guaranteed for one year against defects in materials and workmanship. Guarantee does not cover normal wear and tear, improper handling, any misuse, or any defects caused by vandalism or subsequent abuse. Guarantee covers replacement of defective material but does not include cost of removal or reinstallation.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Recessed Display and Trophy Cases – 370 and 1370 Series and 390 Series – as manufactured by Claridge Products and Equipment, Inc., Harrison, Arkansas. Phone: 870-743-2200; Toll Free 800-434-4610; Fax: 870-743-1908

2.02 MATERIALS

- A. Recessed Trophy and Display Case Fronts
 - a. Tackable Back Panels: (Select from Claridge Cork; Fabricork; Designer Fabric; Hook-Fab; or Tan Nucork)
 - b. Laminate Back Panels: (Select from Walnut or Oak grained low-pressure laminate finish)
 - c. Standard Sizes -370 and 1370 Series: 4' x 4'; 4'x 6'; 4' x 8'; 4' x 10'; 4' x 12'; 4'x 16'. Special sizes on request.
 - d. Standard Sizes – 390 Series: 6' x 6'; 6' x 8'; 6' x 10'; 6' x 12'; 6' x 14'; and 6' x 16'. Special sizes on request.
 - e. Housing: Architect to select from 370 Series with 3-1/2" extruded aluminum angle perimeter trim; 1370 Series with 3-1/2" extruded aluminum perimeter trim with a 2" radius; or 390 Series with 4" wide face.
 - f. Inside depth: Architect to specify inside case depth (up to 24")
- B. Glass Doors: 370 Series - Architect to specify 3/16" tempered hinged or sliding glass doors. (390 Series cases have 1/4" tempered glass sliding doors that slide on ball bearing rollers; fitted with plunger-type locks)
 - a. Sliding glass doors have ground-in finger pulls, doors slide on glides.
 - b. Hinged glass door cases have piano hinge.
 - i. Doors are fitted with flat key tumbler locks.
 - ii. 370 Cases 4' and 6' wide have one pair of doors; 8' and 10' have two; and 12' and 16' have three pair of doors. 390 Cases 6' and 8' wide have two

doors; 10' wide cases have three doors; and 12', 14' and 16' wide cases have four doors.

- C. Glass Shelves: Three adjustable glass shelves furnished with brackets and shelf standards. Architect to specify shelf width – 6, 8, 10 or 12-inch wide.
- D. Metal Trim and Accessories: Provide aluminum extrusions as manufactured by Claridge Products and Equipment, Inc. Trim shall be heavy gauge extruded aluminum and shall meet or exceed ASTM B221 alloy standards. Finish to be etched and anodized satin finish. (Color anodized and powder coat finish trim optional.)
- E. Colors: As selected from manufacturer's standard colors. Over 50 standard tackboard colors to choose from. Color charts furnished on request.
- F. Wood Box: (Optional) Architect to specify depth (up to 24") and finish – walnut or oak grained low pressure laminate.
 - a. Wood box furnished 16" deep unless otherwise specified
 - b. Wood box shipped KD.
- G. Options: Lights; custom sizes; custom styles

2.03 FABRICATION

- A. Shop assembly: Provide factory assembled cases to requirements indicated on shop drawings.
- B. Units shall be of dimensions shown in details and in accordance with manufacturer's shop drawings, as approved by architect.

PART 3 – EXECUTION

3.01 PROJECT CONDITIONS

- A. Verify before installation that interior moisture and temperature approximate normal occupied conditions.
- B. Verify that wall surfaces are prepared and ready to receive cases.

3.02 INSTALLATION

- A. Deliver cases KD to be reassembled on job.
- B. Follow manufacturer's instructions for storage and handling of units before installation.
- C. Install level and plumb, in accordance with manufacturer's recommendations.

3.03 ADJUST AND CLEAN

- A. Verify that all accessories are installed as required for each unit.

- B. At completion of work, clean glass surfaces, back panels and trim, in accordance with manufacturer's recommendations, leaving all materials ready for use.

END OF SECTION 101200

SECTION 101419 – INTERIOR SIGNS

PART 1 - GENERAL

1.01 SUMMARY

- A. Contractor to provide interior signs for rooms identified in the scope of work. Sign contractor to provide all necessary graphic layouts required for client approvals, complete message schedule keyed to floor plans and allow for three meetings with client to present and finalize signage design.
- B. Section includes: Interior non-illuminated directional, control and information surface mounted signage as complete integrated modular system.
- C. Unit prices: Provide unit price for each type unit in designated system for extra possible required signage.

1.02 REFERENCES

- A. Standards of the following as referenced:
 - 1. American National Standards Institute (ANSI).
- B. Industry standards:
 - 1. Department of Justice, Office of the Attorney General, "Americans with Disabilities Act", Public Law 101-336 (ADA).
 - 2. ANSI A117.1: Providing Accessibility and Usability for Physically Handicap People, 1986 edition.
 - 3. Federal Register Part III, Department of Justice, Office of the Attorney General, 28 CFR Part 36: Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, Final Rule, July 26, 1991.
 - 4. Federal Register Part II, Architectural and Transportation Barriers Compliance Board, 36 CFR Part 1191: Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Amendment to Final Guidelines, September 6, 1991.

1.03 DEFINITIONS

- A. Terms:
 - 1. Braille: Grade II Braille including 189 part-word or whole word contractions; see SYSTEM DESCRIPTION Article below.
 - 2. Non-tactile: Letters and numbers on signs with width-to-height ration between 3:5 and 1:1 and stroke width ratio between 1:5 and 1:10 using upper case "X" to calculate ratios. Use Interstate and Helvetica 65 typestyles; upper and lower case lettering is permitted; serif type styles are permitted; see SYSTEM DESCRIPTION Article below.
 - 3. Symbols: Symbol itself is not required to be tactile but equivalent verbal description is required both in tactile letters and Braille for all ADA signage.

4. Tactile: 1/32" raised capital letters without serifs, at least 5/8" height and not more than 2" height based on upper case "X". Braille is required whenever tactile is required; see SYSTEM DESCRIPTION Article below.

1.04 SYSTEM DESCRIPTION

- A. Signage under this section is intended to include items for identification, direction, control and information of building, and to be installed as a complete integrated system.

1. Interior sign plaques and way finding signs

2. Vinyl Die Cut graphics

3. Dedication Plaque

4. Bulletin Boards and Directories.

- B. ADA design requirements:

1. Signage requiring tactile graphics:

- a. Wall mounted signs designating permanent rooms and spaces, such as room numbers, restrooms, electrical closets, mechanical rooms and fire stair identifications.
- b. Individually applied characters are prohibited.

2. Signage not requiring tactile graphics but requiring compliance to other ADA requirements: All other signs providing direction to or information about function of space, such as directional signs (signs with arrow), informational signs (operating hours, policies, etc.), regulatory signs (no smoking, do not enter) and ceiling and projected wall mounted signs.

- C. ADA performance requirements:

1. Tactile graphics sign mounting requirements:

- a. Single doors: Mount 60" to sign centerline above finished floor and on wall adjacent to latch side of door, as shown on drawings.
- b. Openings: Mount 60" to sign centerline above finished floor adjacent to opening.
- c. No wall space adjacent to latch side of door, opening or double doors: Mount 60 " to centerline above finished floor on nearest adjacent wall.

D. VINYL APPLIED CHARACTERS

Vinyl Applied Characters: 3M Series 220 high performance vinyl,

Color: White.

Height: As indicated on Drawings.

Character Style: Helvetica.

1.05 SUBMITTALS

- A. Product data:

1. Manufacturer's signed statement regarding compliance with QUALITY ASSURANCE Article.
2. Manufacturer's product literature indicating units and designs selected.
3. Evidence of manufacturer's computerized data retrieval program for tracking of project for sign typography, message strip requirements and other pertinent data from schedule input to final computerized typography on finished product.

B. Shop drawings:

1. Indicate materials, sizes, configurations, applicable substrate mountings.
2. Typography sample for message strips and header copy.
3. Artwork for special graphics.

C. Samples:

1. Full size samples for specific sign types, if requested by architect, in colors specified. Samples will not be returned for use in project.
2. Submit 6" x 6" color samples as required by the architect.

D. Contract close out:

1. Furnish appropriate checklist for aiding in reordering after Date of Substantial Completion. Maintain computer schedule program for ordering new signage as required by Owner.
2. Provide an 8½" x 11" re-order form for each sign type and component of each sign type. Forms must be keyed to sign type shown in bid documents using same sign type number.

1.06 QUALITY ASSURANCE

- A. Manufacturer qualifications: Work under this section from manufacturers regularly engaged in work of this magnitude and scope for minimum of five years.
- B. Pre-installation conference: Closely coordinate tolerances required in this section for completely coordinated and smooth installation.
- C. Installer must be regularly engaged in work of this magnitude and scope for minimum of five years.
- D. All work shall conform to applicable codes.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver all signs in fiber board foam, packed and protected for timely installation, minimizing on-site storage time.
- B. Sign contractor to store all signs in a secured area, out of weather and protected, during installation.

1.08 SEQUENCING AND SCHEDULING

- A. Schedule system installation after related finishes have been completed, and in schedule with the project phased construction.

PART 2 - PRODUCTS

2.01 MANUFACTURED UNITS

- A. Acceptable product suppliers:
 - 1. Designer Sign Systems, 352 Washington Avenue, Carlstadt, NJ 07072
Phone: (201) 939-5577; Fax: (201) 939-7043 (basis for specifications)
 - 2. Lettera Signs, 1209 Bronx River Avenue, Bronx NY 10472
Phone (718) 991-1000, fax (718)542-4218
 - 3. APCO , 388 Grant Street, SE, Atlanta Georgia,
Phone: 404-688-9000, fax 404-577-3847

2.02 SUBSTITUTIONS

- A. Prior to presentation of bid proposals, bidders shall submit to the architect/designer a written request for approval of materials, article or piece of equipment which they propose as equal or superior to that specified.
 - 1. Submissions of such items for consideration by the architect/designer shall be made a minimum of five (5) days prior to bid opening. Submission shall include:
 - a. Specifications or other descriptive literature addressing each of the points called for in the specifications, preferably in the same order as the specifications.
Literature should address only the products the supplier intended to provide, not the manufacturer's entire product line.
 - b. Submissions must be addressed to architect or as directed by owner.
Ref. SPECIFIC JOB NAME
- B. If, in the judgment of the architect/designer, the material, article or piece of equipment is acceptable, approval will be given in an addendum (a) issued to all bidders on record by the architect/designer, a minimum of five (5) days prior to bid opening.

2.03 ADA and SUBSURFACE PLAQUE CONSTRUCTION

- A. Tactile copy and Grade II Braille are to be precision embossed a minimum of .032" and formed as an integral part of the sign face. Braille is to be the same color as the sign background with no interruption of the smooth, clean surface of the sign. All plaque edges to be clean, smooth, free of all saw and tooth marks and painted to match the background color of the sign. ADA compliant fabrication is required for all signs. Phenolic photopolymer is NOT acceptable. Lettering, Braille and symbols to be raised 1/32". Braille cell to be 1/4", character height to be 5/8" min., 2" max. Interline spacing to be half of cap height. Braille cell to be 1/4" min. below line of copy above.

B. Manufacturer's standard embossed, monolithic tactile plaque sign construction to meet relevant ADA requirements indicated for materials, thickness, finish, colors, designs, shapes, sizes and details of construction. Installed dimensional tolerances to be plus/minus 1/32".

1. Sign Face: .010" transparent polycarbonate with a mar resistant ADA compliant fine velvet finish; precision embossed to form copy and Grade II Braille as an integral part of the sign face. Background color is applied subsurface. Copy colors are a subsurface applied abrasion resistant pigment with a satin finish. Embossed copy and Braille cavities are backfilled, providing solid copy and Braille. Braille is the same color as the sign face background with no interruption of the surface of the sign face. Sign face is laminated to .125" plastic base.
2. Raised copy/Braille: Sign copy and Braille to be raised 1/32" min. from plaque first surface by by manufacturer's embossing process. Precisely formed, uniformly opaque Braille to meet relevant ADA regulations and the requirements indicated for size, style, spacing, content, position and colors. Embossed graphic cavities are backfilled providing solid copy and Braille. Translation of sign copy to be the responsibility of the manufacturer.
3. Subsurface reverse screened acrylic sign components, consisting of .080 matte acrylic panels laminated to 1/8 clear acrylic back plate. All edges to be clean and smooth free of any tooling marks. Screen printed images to be produced with screen mesh suitable to provide consistent crisp, clear images (minimum 280 mesh).
4. All symbols and letter forms are to faithfully reproduce specified letter, alpha/numeric and symbol forms.
5. Mounting: Plaque sign mounts with 3M 1/32" double-sided vinyl tape, or foam tape. (VERIFY WALL PAINT FINISH TO DETERMINE PROPER TAPE TO BE USED).
Option: Mechanical mounting using tape mounting as noted above and also using 4 tamper proof screws to nylon wall shields for masonry and sheet rock construction.
6. Dedication plaque

Stainless steel building dedication plaque. Fabricate from tempered 3/16" stainless steel plate, alloy #304 with a #6 horizontal grain finish. Graphics to be acid etched to 1/32" minimum. All copy to be clear and free of ragged edges or other imperfections. Fill copy with a two part epoxy ink suitable for the use intended. All edges to be clean, smooth and free of any tooling marks. Clear coat entire plaque with a semi gloss sealer suitable for both interior and exterior use. Plaque to mount with 1/4" diameter stainless steel pins welded or drilled and tapped to the rear surface.

7. Directories and bulletin boards

- a. Wall mounted directory and bulletin boards 2-1/2" deep in sizes as shown on the drawings. Custom engineered one piece seamless fiber reinforced polyester (FRP) monolith consisting of initial gel coat sealing layer with multi layers of thermoset polyester resin and glass fiber strands molded in form moulds maintaining module configuration to 3/16" thickness. Provide structural reinforcement within each unit to prevent racking and misalignment. Top and bottom edges to have manufacturer's standard bevel edge. Glazing to be E.I. Dupont de Nemours and Company Inc. Lucite 8 SAR 3/16" thickness super abrasion resistant clear acrylic plastic.
- b. Unit to have manufacturer's standard bevel edge. Glazing to be E.I. Dupont de Nemours and Company Inc. Lucite 8 SAR 3/16" thickness super abrasion resistant clear acrylic plastic.

2.04 FABRICATION

A. Shop Assembly:

1. Fabricate units to configurations indicated on reviewed shop drawings. Internally reinforce units in accord with reviewed shop drawings.
2. Provide copy required on inserts, message strips, headers or bases and covers required on reviewed shop drawings and in accord with ADA requirements.
3. Fill directories with combination of reviewed copy on message strips on blank message strips.
4. Wrap each individual unit with clear polyethylene (see-through) pack and ship by floor in numerical order, tagged sequentially to message schedule.
5. A final copy of the message schedule provided in this bid package is to be provided to the client for their review and approval prior to any fabrication.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verification of conditions:

1. Examine areas to receive signage; notify architect/designer in writing of unacceptable substrate.
2. Beginning work indicates acceptance of substrate. Subsequent modifications to substrate or modules becomes this section's complete responsibility.

3.02 INSTALLATION

- A. Contact the architect/designer if there are any questions as to suitability of the installation location or installation surface.
- B. Install signs in locations with mounting types indicated in accord with reviewed shop drawings. Square, plumb and level units.
- C. Install inserts not more than 48 hours prior to Date of Substantial Completion complete with correct copy in place. Conform to ADA requirements for tactile graphics signage.

3.03 CLEANING

- A. Clean exposed surfaces using non-abrasive cleaning agents such as soap and water or as recommended by manufacturer not more than 48 hours prior to Date of Substantial Completion in accordance with manufacturer's written cleaning instructions.
- B. Maintain signs according to maintenance instructions as provided by the manufacturer.

3.04 SCHEDULES

- A. Contractor to coordinate schedule with Owner.
- B. Refer to Room Finish Schedule for Signage Requirements.

Set 1: Assembly Spaces/ Offices / Storage / Janitor's Closets/ Mechanical Rooms/ Kitchen
Room name and room number; Words and numbers must be converted to Grade 2 Braille and applied to the sign.

Set 2: Toilet Rooms
Room name and number; ADA and sex pictograms. Words and numbers must be converted to Grade 2 Braille and applied to the sign. ADA room signage shall be provided as detailed on drawing A6.11 and the requirements of the New York State Education Department.

Set 3: Stair
Room name, stair designation, stair pictogram; Words and numbers must be converted to Grade 2 Braille and applied to the sign.

Set 4: Classrooms
Room name and room number; Words and numbers must be converted to Grade 2 Braille and applied to the sign. Interchangeable teacher name plate insert.

Set 5: Maximum Occupancy Signs
Maximum occupancy for places of assembly, Maximum Occupancy signage shall be provided as detailed on drawings and per the requirements of the New York State Education Department.

END OF SECTION 101419

SECTION 104400 – FIRE PROTECTION SPECIALTIES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Fire extinguishers.
2. Extinguisher cabinets.
3. Accessories.

B. Related Requirements:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
2. Section 01 33 00 - Submittal Procedures: For administrative and procedural requirements for processing of submittals during the construction phase.
3. Section 01 77 00 - Closeout Procedures: For administrative and procedural requirements for completion of the Work.

1.02 REFERENCES

A. Reference Standards:

1. ASTM International (ASTM):
 - a. ASTM E814-11a, Standard Test Method for Fire Tests of Penetration Firestop Systems.
2. International Code Council (ICC):
 - a. International Building Code (IBC) – 2015 Edition.
3. Intertek Testing Services/Warnock-Hersey International (ITS/WHI)
4. National Fire Protection Association (NFPA):
 - a. NFPA 10-2010, Standard for Portable Fire Extinguishers: For criteria covering installations for Class A, B, C, D, and K hazards as well as the selection, inspection, maintenance, recharging, and testing of portable fire extinguishing equipment.
 - b. NFPA 70-2011, National Electrical Code.
5. Underwriters Laboratories, Inc. (UL)
6. United States Code (USC):
 - a. Americans with Disabilities Act of 1990, as amended by the ADA Amendments Act of 2008: For restrictions relating to cabinet projections in corridors.

1.03 ACTION SUBMITTALS

A. Submit in accordance with Section 01 33 00.

1. Product Data:
 - a. Cabinets: Materials description for fire extinguisher cabinets include roughing-in dimensions, details showing mounting methods, relationships to surrounding construction, door hardware, cabinet type and materials, trim style and door construction, door style and materials.
 - b. Extinguishers: Materials description for fire extinguishers; include ratings and classifications.
 - c. Installation instructions for each product specified.
2. Shop Drawings:
 - a. Small-scale plans showing locations of fire extinguisher cabinets and individual fire extinguishers.

- b. Schedules showing each type of cabinet and extinguisher to ensure proper fit and function.
- c. Indicate installation procedures and accessories required for a complete installation.
- 3. Samples:
 - a. Extinguisher Cabinet Door and Trim Finishes: For each type of exposed finish required, prepared on samples of size indicated below:
 - 1) Size: 6 inches (150 mm) square.

1.04 INFORMATIONAL SUBMITTALS

- A. Warranty: Sample of special warranty.

1.05 QUALITY ASSURANCE

- A. Comply with standards referenced in Article 1.02 - REFERENCES.
- B. Provide fire extinguishers, cabinets and accessories produced by a single manufacturer.
- C. Provide fire extinguishers of type approved by UL, State Fire Marshal's Office, and local regulatory agencies, if any.
- D. Fire-Rated, Fire Protection Cabinets: Listed and labeled to comply with requirements in ASTM E814 for fire-resistance rating of walls where they are installed.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle fire protection specialties and related materials using means and methods that will prevent damage, deterioration, or loss.
 - 1. Deliver components in manufacturer's original packaging, properly labeled for identification.

1.07 WARRANTY

All Fire Protection Products (except fire extinguishers) carry a one year warranty after date of shipment against defects in materials or workmanship. Fire extinguishers carry a longer warranty. We will replace or repair any product found defective within this period. No other warranty expressed or implied is valid. Manufacturer's warranty, terms and conditions apply in all cases. Please see complete [warranty](#) on our website for more details.

PART 2 - PRODUCTS

2.01 FIRE PROTECTION SPECIALTIES MANUFACTURERS

- A. Acceptable Manufacturers:

JL Industries, Inc., a division of Activar Construction Products Group
9702 Newton Av S
Bloomington, MN 55431

(800) 554-6077
(952) 835-6850
(952) 835-2218 (FAX)
SALES@ACTIVARCPG.COM
www.activarcpg.com

- B. Substitutions: Manufacturers seeking approval of their products are required to comply with the Owner's Instructions to Bidders, generally contained in the Project Manual.

2.02 FIRE EXTINGUISHERS

- A. Contractor is to provide and install Fire Extinguishers and cabinets as noted on plans.
- B. Pressurized Water Type: Extinguisher unit containing water and compressed air; nontoxic.
 - 1. Construction: Butt-welded 304-L stainless steel cylinder with stainless steel discharge lever and fixed carry handle, O-ring seal, replaceable valve stem seal, visual pressure gage, pull pin, and UL-labeled chemical engine hose.
 - 2. Effectiveness (Rating): Class A fires.
- C. Multi-Purpose Chemical Type: Extinguisher unit containing a fluidized and siliconized mono ammonium phosphate powder; nonconductive and nontoxic.
 - 1. Construction: Heavy duty steel cylinder with metal valve and siphon tube, O-ring seal, replaceable valve stem seal, visual pressure gage, pull pin and upright squeeze grip.
 - 2. Finish: Factory powder-coated; Red.
 - 3. Effectiveness (Rating): Class A, B, and C fires.
- D. Carbon Dioxide Type: Extinguisher unit containing liquid carbon dioxide under pressure; nonconductive.
 - 1. Construction: Lightweight, high pressure, aluminum cylinder with O-ring seal, metal valve, replaceable molded valve stem seal, and pull pin.
 - 2. Finish: Factory powder-coated; Red.
 - 3. Effectiveness (Rating): Class B and C fires.
- E. Regular Dry Chemical Type: Extinguisher unit containing a siliconized dry sodium bicarbonate base; nontoxic.
 - 1. Construction: Heavy duty steel cylinder with metal valve and siphon tube, O-ring seal, replaceable valve stem seal, visual pressure gage, pull pin, and upright squeeze grip.
 - 2. Finish: Factory powder-coated; Red.
 - 3. Effectiveness (Rating): Class B and C fires.
- F. Halotron® Type: Extinguisher unit containing a clean extinguishing agent Halotron® 1 approved by the EPA, accepted and specified by the government, and approved by the FAA for use in airports; nonconductive.
 - 1. Construction: Drawn steel cylinder with steel siphon tube, O-ring seal, power cone discharge system, replaceable valve stem seal, visual pressure gage, pull pin, and upright squeeze grip.
 - 2. Finish: Factory powder-coated; Red.
 - 3. Effectiveness (Rating): Class A, B, and C fires.
- G. Class K Wet Chemical Type: Extinguisher unit containing a low "pH" potassium acetate solution.
 - 1. Construction: Stainless steel cylinder with protective nozzle tip orifice seal and nonmetallic nozzle tip finger guard, O-ring seal, replaceable valve stem seal, visual pressure gage, pull pin, and upright squeeze grip.
 - 2. Effectiveness (Rating): Class K fires.
- H. Water Mist Type: Extinguisher unit containing water; nontoxic.
 - 1. Construction: Nonmagnetic cylinder and misting nozzle, O-ring seal, replaceable valve stem seal, visual pressure gage, and pull pin.
 - 2. Finish: Factory powder-coated; White.
 - 3. Effectiveness (Rating): Class A and C fires.

- I. Accessories:
 - 1. Mounting Brackets:
 - a. Standard Brackets: Provide manufacturer's standard steel bracket, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated.

2.03 EXTINGUISHER CABINETS

- A. Cabinet with Acrylic Bubble Door: Clear Vu Series
 - 1. Cabinet Style: Semi-recessed
 - 2. Components:
 - a. Tub (Recessed and Semi-recessed cabinets): Cold-rolled steel.
 - b. Stainless Steel Door and Trim Construction: Flush doors with 5/8 inch (15.88 mm) door stop attached by continuous hinge and equipped with zinc-plated handle with roller catch.
 - 1) Finish: Factory-applied ground and polished finish.
 - a) Standard Finish: #4 directional satin finish.
 - c. Bubble: Acrylic bubble with 2-1/2 inch (63.50 mm) projection.
 - 1) Standard Color: 25 - Clear.
 - d. Trim Style and Depth:
 - 1) Semi-Recessed Cabinet:
 - a) Square Edge: 1-1/2 inch
 - 3. Fire-Rating: Fire-Rated for 1-hour and 2-hour combustible and noncombustible wall systems

2.04 SOURCE QUALITY CONTROL

- A. Ship extinguishers to the Project site fully charged, EXCEPT those which contain water as an extinguishing agent, if any.
- B. Obtain Fire Extinguishers and Fire Extinguisher Brackets from same manufacturer to ensure compatibility.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine walls and partitions for suitable framing depth and blocking where recessed and semi-recessed cabinets will be installed, and blocking where surface mounted cabinets will be installed.
 - 1. Notify the Contractor in writing of conditions detrimental to proper and timely completion of the installation.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install cabinets in locations and at mounting heights indicated, or if not indicated, at heights to comply with applicable regulations of governing authorities.
 - 1. Prepare recesses in walls for fire extinguisher cabinets as required by type and size of cabinet and style of trim and to comply with manufacturer's instructions.

2. Securely fasten mounting brackets and fire extinguisher cabinets to structure, square and plumb, to comply with manufacturer=s instructions.
3. Maintain fire ratings where cabinets are recessed into fire-rated wall systems.

3.03 FIELD QUALITY CONTROL

- A. Ensure that each extinguisher is fully charged, and that inspection of each extinguisher has been performed, as evidenced by the National Association of Fire Equipment Distributors certification tag, just prior to turnover.

3.04 ADJUSTING AND CLEANING

- A. Remove temporary protective coverings and strippable films, if any, as fire protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.
- C. On completion of fire protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.
- D. Touch up marred finishes, or replace fire protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire protection cabinet and mounting bracket manufacturers.
- E. Replace fire protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 104400