**PART 1 - GENERAL**

**1.01 SUMMARY**

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Wall mounted markerboards of size indicated on Drawings.

2. Horizontal sliding markerboards and map rail at media wall cabinets of size indicated on Drawings.

3. Horizontal sliding markerboards and map rail at science classrooms of size indicated on Drawings.

4. Tackboards.

5. Bulletin boards; cork tackboard panel.

C. Related Sections:

1. Section 06 10 00: Rough Carpentry.

2. Section 06 41 00: Architectural Woodwork: Media wall cabinets at classrooms.

3. Section 09 90 00: Paint and Coatings.

**1.02 SUBMITTALS**

A. Shop Drawings: Shop Drawings to indicate gages, profiles, sections of materials, details of construction, hardware, methods of attachment and/or anchoring, as applicable for specified materials.

B. Samples: Submit the following:

1. 3 inch x 5 inch markerboard Samples, provide manufacturer’s full range of colors.

1. 3 inch x 5 inch sliding tackboard Samples, provide manufacturer’s full range of colors and patterns.
2. 3 inch x 5 inch sliding bulletin board Samples, provide manufacturer’s full range of colors.

C. Product Data: Submit manufacturer’s technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

D. Test Reports: Submit certified laboratory test reports as applicable to indicate compliance with specified requirements.

**1.03 QUALITY ASSURANCE**

A. Manufacturer shall have been regularly engaged in the business of manufacturing markerboards for at least 5 years.

B. Comply with requirements and recommendations of applicable portions of Porcelain Enamel Institute - PEI 2.

**1.04 PRODUCT HANDLING**

A. Deliver materials to the Project site with manufacturer's labels intact and legible.

B. Provide all means necessary to protect markerboards before, during and after installation.

**1.05 JOB CONDITIONS**

A. Sequencing, Scheduling:

1. Coordinate with related Work of other sections including gypsum board and tackboards.

2. Do not install markerboards until paint is installed to surfaces concealed behind them.

**1.06 SPECIAL PROJECT WARRANTY**

1. Manufacturer shall provide a 50 year material warranty.

**PART 2 - PRODUCTS**

**2.01 ACCEPTABLE MANUFACTURERS (MARKERBOARDS)**

A. Greensteel, Inc., a division of Polyvision Corporation.

B. Nelson Adams.

C. Claridge Inc.

**2.02 SYSTEM PERFORMANCE**

A. System shall be comprised of factory assembled markerboards, in configurations and sizes indicated on the Drawings or as specified herein.

B. Laminations of panel components shall be by face sheet manufacturer.

**2.03 MATERIALS**

A. Wall-Mounted Markerboards: Greensteel “AZ” Series, as a standard of quality:

1. Dry markerboards shall be porcelain enamel steel manufactured to exceed the performance specifications for porcelain enamel S104 of the Porcelain Institute. Markerboards shall be capable of supporting papers by means of magnets. The writing surface shall resist wear and damage from shock and abrasion and shall not dent, shatter or crack. The surfaces shall retain original color, writing, and erasing qualities and shall not become glossy or shiny in normal use. The gloss variation of a surface shall not exceed 3 units when measured by a 45 degree gloss meter in accordance with the Porcelain Enamel Institute Bulletin 1-18 Gloss Test for Porcelain Enamels and ASTM C 346.

2. Steel: Base metal shall be high quality enameling iron or steel of low metalloid and copper content, especially manufactured and processed for temperatures over 1,400 degrees F. used in coating porcelain on steel units for Architectural purposes; minimum 24 gage.

3. Facing Surfaces:

a. Board surfaces shall consist of the following:

1) Primer coat, 0.0025 inch minimum thickness.

2) Vitreous-porcelain writing surface coating of 0.0025 inch minimum thickness.

3) The reverse side of the steel base sheet shall receive a ground coat of 0.0005 inch thickness and a spray coat of silicon.

4) The panel edges at butt joints shall be porcelain enamel.

5) Fuse cover and ground coats to the steel at the manufacturer’s standard firing temperature, but at least 1,250 degrees F.

1. The dry markerboard surfaced steel shall be factory laminated to 7/16 inch thick fiberboard core. A moisture blocking backing sheet shall be provided.
   1. Fiberboard Core shall be #45 pound particle board.
   2. Moisture Barrier Backer Sheet shall be minimum .015 aluminum or 28 gauge galvanized steel. Backer sheet shall be factory laminated to the core under pressure.

5. Lamination: The surface facing and the backing shall be bonded to the core material by means of a special flexible adhesive developed for this purpose with no unbonded area. The face and back shall not be removable without rupturing the core material. Panels shall not delaminate under normal use.

6. Joints: Where vertical joints occur, a 14 gage continuous concealed steel spline shall be fitted tightly into grooves in the core material. Factory rabbet to produce a smooth butt joint. Do not furnish exposed trim.

7. Edge Trim:

a) Alloy 6063-T5, extruded, anodized satin finish aluminum.

8. Chalktray: Furnish manufacturer’s standard continuous flat-ribbed or box-type aluminum chalktray with stained front and cast plastic end closures for each chalkboard and markerboad.

a. Extend chalktray to end of both vertical edges of the board.

b. On flat-rib tray, provide 3/4 inch radius on corners and polish at ends.

9. Map Rail: Furnish map rail at the top of each unit, complete with the following accessories:

a. Display rail: Provide continuous cork display rail two inch wide, as indicated, integral with the map rail. Extend display rail to end of both vertical edges.

b. End stops: Provide one end stop at each end of the map rail.

1. Map hooks: Provide 2 map hooks with flexible paper holder clips for each 8 feet of map rail or fraction thereof.
2. Roller Map Bracket: Provide 2 for each 8 feet of map rail or fraction thereof

B. Horizontal Sliding Markerboards (at Media Walls): Greensteel FXT (Top Supported) and FXB (Bottom Supported) Series, as a standard of quality.

1. Frame: Heavy-duty aluminum.
   1. Top Supported Trolley System.

**(Preferred Design / Requires Soffit—DELETE IF NOT USED)**

* + 1. Top Track/Carrier: 642T Track with 2 # 7000-15 adjustable ball bearing carriers per panel. Provide rubber bumpers at ends of track.
    2. Bottom Guide Channel: NACO C4 Channel, or equal.
  1. Bottom Supported Trolley System .

**(Alt. Design when Soffit not provided—DELETE IF NOT USED)**

* + 1. Top Guide Channel: NACO 224T Channel, or equal.
    2. Bottom Carrier: NACO 640T track with Grant #1415N sheave rollers, or equal. Provide rubber bumpers at ends.

2. Markerboard: 24 ga. porcelain enamel steel laminated to 7/8 inch thick honeycomb core with moisture barrier backing sheet of 0.015 aluminum and NACO C-12 Trim at perimeter and nylon guides at guide channel edge.

1. Markerboard facing color: #6100H White, unless otherwise indicated on Drawings.
2. Pulls: Ives No. 230, or equal. Provide 2 recessed pulls per panel at jambs.

3. Map Rail, surface mounted 2" width: NACO MR-3, with insert and end stops, or equal.

1. Combination Maphook/Clip: NACO H-2, or equal. Provide 2 for each 8 feet of map rail or fraction thereof.
2. Roller Map Bracket: NACO RB-2, or equal. Provide 2 for each 8 feet of map rail or fraction thereof.

4. Chalktray: NACO modified CRC-2B Chalktray, or equal.

C. Wall Mounted Horizontal Sliding Markerboards – Double Panel (at Science & Laboratory Classrooms): Greensteel F Series, as a standard of quality.

1. Frame/Track & Chalktray: Heavy-duty aluminum wall frame fabricated with 3”x1 ½” LC-2 Frame channels and interior fitting C-clip wall channels.
   1. Top Roller Supported Trolley System / Top Carrier : NACO “T-1” guide track with 2 #7000-15 adjustable ball bearing carriers per panel.
   2. Bottom Guide: Inner and Outer Boards with NACO C4 Channel + rubber bumpers at ends.
   3. CR-4 Chalktray attached to bottom horizontal frame.
2. Sliding Markerboard: 24 ga. porcelain enamel steel on 7/8 inch thick paper honeycomb with 0.015 aluminum backing and NACO C-8 Trim at perimeter and nylon guides at guide channel edge.
3. Markerboard facing color: #6100H White, unless otherwise indicated on Drawings.
4. Pulls: Ives No. 230, or equal. Provide 2 per panel at jambs.
5. Fixed (Wall Mounted) Markerboard: 24 ga. porcelain enamel steel on either 7/16” fiberboard core or 7/8 inch thick paper honeycomb with 0.015 aluminum backing and NACO C-8 Trim
6. Map Rail, surface mounted 2" width: NACO MR-3, with insert and end stops, or equal.
   1. Combination Maphook/Clip: NACO H-2, or equal. Provide 2 for each 8 feet of map rail or fraction thereof.
   2. Roller Map Bracket: NACO RB-2, or equal. Provide 2 for each 8 feet of map rail or fraction thereof.

D. Tackboards:

1. Tackwall panels shall be by A-1 Visual Systems, or equal.

2. Solvent-based adhesive shall be by W.W. Henry, or equal.

3. Tackwall panels shall consist of single-face layer of cloth-backed vinyl film, factory-bonded to 1/2 inch wood fiberboard backing; weight of vinyl film to be 20 oz. per lineal yard. Panel edges shall be beveled and wrapped; ends shall be square and unwrapped. Color as selected by Architect.

a. Vinyl film shall comply with FS CCC-W-408 A, Type 1; backing shall comply with FS LLL-1-535B, Class A. Finished panel shall have a Fire Hazard Classification of Class II in accordance with ASTM E 84 tunnel test, as administered by California State Fire Marshal approved testing laboratory.

E. Bulletin Boards (Cork Tackable Panel):

1. Cork Tackable surfaces above classroom sink casework, and where indicated on Drawings, shall be self-healing, soil resistant, washable finish composition of pure cork and linseed oil on a burlap back.

2. Color shall be as selected by Architect from manufacturer's standard colors.

3. Adhesive shall be as recommended by corkboard manufacturer.

4. Apply extruded aluminum trim on perimeter of panels.

**PART 3 - EXECUTION**

**3.01 INSTALLATION**

A. Install markerboard, trim, map rail and marker tray in accordance with manufacturer's directions and reviewed Shop Drawings. Fasteners for assembly of trim and frame units shall be truss head aluminum or stainless steel self-tapping screws with double cadmium-plated finish.

B. Install panels after finish painting of wall surfaces has been completed and paint is cured. Install panels level, plumb and neatly assembled. Before Substantial Completion, trim shall be completely cleaned of dirt, finger-marks, or other foreign material.

C. Install panel guides, spacers, and panels at media wall cabinets as indicated.

**3.02 CLEANUP**

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

* 1. **PROTECTION**

A. Protect the Work of this section until Substantial Completion.

**END OF SECTION**