



ADDENDUM NO. 2

DATE: 5-29-2024

TO: ALL BIDDERS
FROM: JKF ARCHITECTURE
RE: Lenoir Community College New Aviation Center for Excellence
Project No. 2022-18

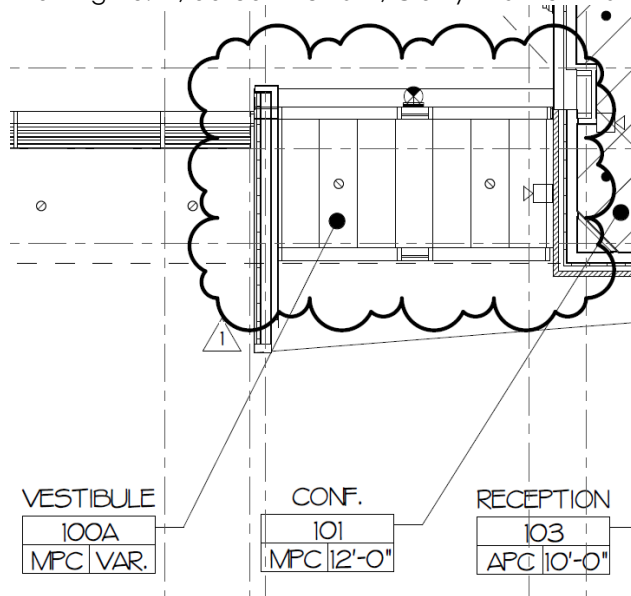
The following corrections, clarifications, or supplemental information is to be incorporated into the Contractor(s) bid to perform the Work:

CLARIFICATIONS:

1. Add attached Addendum #2 prepared by Atlantec Engineers dated 5-29-2024 (2 Pages)

CHANGES TO DRAWINGS:

1. All KEYNOTE References to 057300 shall be changed to 057313 on all drawings.
2. Drawing A5.11, dated 2-28-2024; Clarify VESTIBULE 101A as follows:

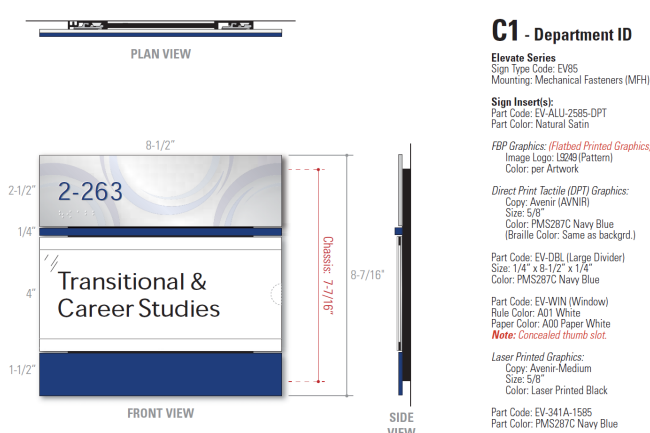


CHANGES TO SPECIFICATIONS

1. Add Terracon Geotechnical Report Addendum #1 dated 5-29-2024 (1 Page).
2. Delete Specification SECTION 012300-ALTERNATES, Page 012300-2, dated 2-28-2024. Add Specification SECTION 012300-ALTERNATES, Page 012300-2, Revised 5-29-2024 (1 Page).
3. Specification SECTION 055813-COLUMN COVERS; dated 2-28-2024; Paragraph 2.1.B.12; add "Provide manufacturers standard 4" high recessed base reveal and 1" high recessed head reveal.
4. Delete Specification SECTION 057300-DECORATIVE METAL RAILINGS, dated 2-28-2024, in its entirety.

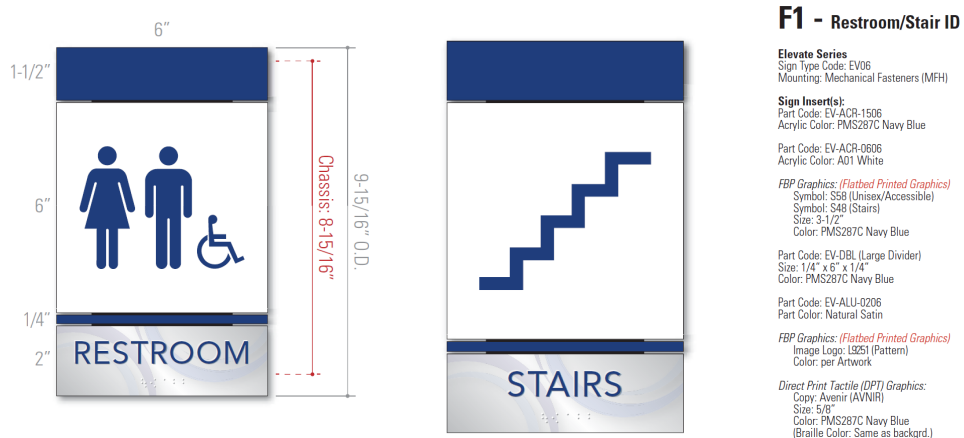
5. Add Specification SECTION 057313- GLAZED DECORATIVE METAL RAILINGS, dated 2-28-2024 (10 Pages).
6. Specification SECTION 083400- CUSTOM SINGLE PANEL HYDRAULIC DOORS, dated 2-28-2024; Paragraph 2.3.B.2; Change to "Exterior Field Finish: Exterior Finish Panels are to be Translucent Wall Panels as specified in Section 084523- FIBERGLASS-SANDWICH-PANEL ASSEMBLIES, 2-3/4" thick by full height of door, mounted on exterior side of door framing, and back-fastened to door framing. Provide horizontal Soji pattern."
 - a. Delete Paragraphs 2.3.B.3 in its entirety.
7. Specification Section 084523-FIBERGLASS SANDWICH PANEL ASSEMBLIES, dated 2-28-2024;
 - a. Add Paragraph "1.1.A.2. Exterior Wall Panels of CUSTOM SINGLE PANEL HYDRAULIC DOORS indicated in other Section."
 - b. Add Paragraph 2.7 "FABRICATION OF CUSTOM-SINGLE HYDRAULIC DOORS" and the following Subparagraph 2.7.A: "Frame System Fabrication will be by Custom-Single Hydraulic Door Manufacturer. Wall panels shall be constructed and designed by Fiberglass-Sandwich Panel Manufacturer to be applied to exterior face of door framing and be back fastened to the frame system in coordination with door manufacturer. Wall panels shall extend from bottom of door opening to top of door opening, fastening back of panels to door framing, and have horizontal Soji pattern. Weight of panels to be less than 2 PSF."
8. Specification SECTION 099123- INTERIOR PAINTING, dated 2-28-2024; Change Paragraph 2.5.A to read "Solvent-Based Concrete Floor Sealer: Clear, water-based, acrylic, solvent-based sealer formulated for oil, gasoline, alkali, and water resistance and for use on concrete traffic surfaces."
 - a. Change Paragraph 3.5.A.1 to "Solvent-Based Concrete Floor Sealer (EC)."
 - b. Change Paragraph 3.5.A.1.a to First and Top Coat to be Solvent-Based Concrete Floor Sealer."
 - c. Delete Paragraphs 3.5.a.1.b and 3.5.A.1.c.
9. Add SPECIFICATION SECTION 101100- VISUAL DISPLAY UNITS, Dated 2-28-2024. (4 Pages).
10. Specification SECTION 101423-PANEL SIGNAGE; dated 2-28-2024; Paragraph 2.2.A.3.; add "(Basis of Design, Elevate Series)".
 - a. Delete Paragraph 2.2.D in its entirety; Use the following Panel Signage Schedule that Architect will verify on shop drawings when submitted:

- i. PS #1: Room Identification Sign with Braille.
 - a. Sign Size: 8 1/2"x8 7/16"x1/4"
 - b. Text/Message: Room Number with Interchangeable Printed Sign.
 - c. Location: As directed in the field by Architect per Drawing A8.1.
 - d. Quantity: Provide one per occupied room except two if there are two doors, provide 2 per room. Provide blank back when sign is mounted on glass as shown on drawings.

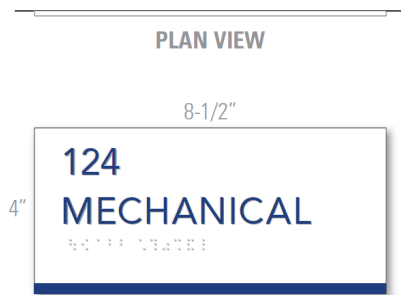


- ii. PS #2: Room Identification Sign with Braille.

- a. Sign Size: 6"x9 15/16"x1/4"
- b. Text/Message: Room Name, Male or Female Symbol, or Unisex, or Stair.
- c. Location: As directed in the field by Architect per Drawing A8.1.
- d. Quantity: Provide one per toilet room, gender as indicated by room name. Provide one STAIRS sign at each stairwell entrance except none at Main Lobby Stair.



- iii. PS #3: Room Identification Sign with Braille.
- Sign Size: 8½"x4"x¼"
 - Text/Message: Room Number and Room Name as approved by Architect.
 - Location: As directed in the field by Architect per Drawing A8.1.
 - Quantity: Provide one at each exterior or interior mechanical, janitor's closet, electrical or data room exterior doors.



L1X - Misc. Staff ID-Exterior Use

Acrylic Plaque
Mounting: Vinyl Tape (VT)

Plaque:
Part Code: 341A-A (ADA)
Size: 4" x 8-1/2"
Part Color: A01 White

Printed Graphics:
Rule Line Size: 1/4" x 8.5"
Rule Color: PMS287C Navy Blue

Direct Print Tactile (DPT) Graphics:
Copy: Avenir (AVNIR)
Size: 5/8"
Color: PMS287C Navy Blue
(Braille Color: Same as backgrd.)

11. Specification SECTION 330000-CIVIL SPECIFICATIONS; dated 2-28-2024; Section 1700.; Change "GeoConcrete Column Foundation Systems" to "Rigid Inclusions Column Foundation System" which is the non-prproprietary description throughout the entire document. Any Rigid Inclusion System can be provided that meets this specification section. The intent is to provide a concrete based system that meets this specification. The Geotechnical Report is only a recommendation. The Civil Engineer's specifications take priority over the Geotech's recommendation. The proposed engineered system must provide 3,000 PSF bearing capacity.

END OF ADDENDUM NO. 2 (TOTAL NUMBER OF PAGES = 22)

Attachments:

- As Noted

xc:

- All Bidders
- Debra Sutton
- Matthew Briley, PE
- Jim Delpapa, PE
- Kevin Roomsburg, PE
- Marty Wynn, PE
- Plan Rooms

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ADDENDUM NO. 2

DATE: 5/29/2024

To: ALL BIDDERS

From: ATLANTEC ENGINEERS

RE: LENOIR COMMUNITY COLLEGE NEW AVIATION CENTER FOR EXCELLENCE

JKF Project No. 2022-18

Atlantec Project No. 22183



The following corrections, clarifications, or supplemental information is to be incorporated into the Contractor(s) bid to perform the work:

CHANGES TO DRAWINGS:

1. Sheets M2.12; M2.22; M4.1 - Mechanical Contractor to provide ball valves on the 2" heating hot water return and supply piping within mechanical rooms serving the first and second floor VAV terminals. Balance valves as shown on piping schematic of sheet M4.1 for these legs is not required. Balance valve is required at each coil connection and pump.
2. Sheet M5.1 Detail 13 - Mechanical detail shows valves for return and bypass only. Contractor must provide a total of (3) isolation ball/butterfly valves including return, bypass, and supply at each coil connection.

CLARIFICATIONS:

1. The plumbing condensate drain lines (part of the plumbing contract) above and below grade are to be Schedule 40 PVC. Plumbing contractor to insulate traps and horizontal lines that could condense on equipment, floors, ceilings below. The condensate drain lines from the mechanical equipment (part of the mechanical contract) to the plumbing condensate drain line shall be copper per Mechanical Specification Section 231000.
2. Section 220500 Part A.6.c shall be removed from this specification. See General Conditions for additional guarantee requirements.
3. Section 230500 Part A.6.d shall be removed from this specification. See General Conditions for additional guarantee requirements.
4. Section 231000 Part B.1 shall allow the use of type k copper for coil connections to VAV and AHU's. Joints must be silver solder. The use of mechanical joints is not allowed. Chilled water steel piping must be painted prior to insulation.
5. Section 236400 Part C.3. Parts and labor warranty shall encompass the entire chiller, control panel, fans, etc. not just the compressor.

6. Plumbing and mechanical contractors shall provide seismic restraint for all natural gas piping greater than 2" and gas-fired equipment within the building. Restraint shall include flexible connections to boilers, water heater, make-up air unit and tube heaters.



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North Carolina Registered, F-0896
Terracon.com

May 29, 2024

Lenoir Community College
PO Box 188
Kinston, NC 28502

Attn: Ms. Deborah Sutton

Re: **Geotechnical Engineering Report – Addendum 1**
Lenoir Community College – Aviation Center
2780 Jetport Road
Kinston, NC
Terracon Project No.: 72235024

Dear Ms. Sutton:

Terracon Consultants, Inc performed a Geotechnical Engineering Report for the Lenoir Community College Aviation Center, dated June 20, 2023, Terracon Project Number 72235024.

In our report, we recommended that the building be supported on ground improvement which could be either surcharging, aggregate piers or additional methods as proposed by a specialty contractor. These additional methods can include rigid inclusions. The specialty contractor should provide a system that meets the 3000 psf requirements outlined in the geotechnical report.

Sincerely,



Carl F Bonner, PE
Principal / Office Manager 5/29/2024

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. **Alternate Bid No. 1** – Preferred Alternate; Corbin-Russwin Door Hardware.
 - 1. Description: Add to Base Bid the cost for providing Corbin-Russwin door hardware where indicated as Basis of Design.
 - 2. Time Impact: If accepted, 0 days added to Base Bid.

- B. **Alternate Bid No. 2**– Preferred Alternate; Fire Alarm- Simplex-Grinnell.
 - 1. Description: Add to Base Bid the cost for providing Schneider Electric for Fire Alarm System.
 - 2. Time Impact: If accepted, 0 days added to Base Bid.

- C. **Alternate Bid No. 3**– Preferred Alternate; Building Controls- Tridium-Niagra.
 - 1. Description: Add to Base Bid the cost for providing Tridium-Niagra Building Control Systems.
 - 2. Time Impact: If accepted, 0 days added to Base Bid.

- D. **Alternate Bid No. 4**– Preferred Alternate; APCO Signs.
 - 1. Description: Add to Base Bid the cost for providing APCO Signage.
 - 2. Time Impact: If accepted, 0 days added to Base Bid.

END OF SECTION 012300

SECTION 057313 - GLAZED DECORATIVE METAL RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Glazed decorative metal railings.

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for wood blocking for anchoring railings.

1.2 DEFINITIONS

- A. Railings: Guards, handrails, and similar devices used for protection of occupants at open-sided floor and exterior deck areas and for pedestrian guidance and support, visual separation, or wall protection.

1.3 COORDINATION AND SCHEDULING

- A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver items to Project site in time for installation.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

A. Product Data:

1. Metal railings assembled from standard components.
2. Glass products.
3. Glazing cement and accessories for structural glass railings.
4. Sealant and accessories for structural glass railings.
5. Fasteners.
6. Wood rails.
7. Lacquer for copper alloys.
8. Shop primer.
9. Bituminous paint.
10. Nonshrink, nonmetallic grout.

- 11. Anchoring cement.
- B. Shop Drawings: Include plans, elevations, sections, and attachment details.
- C. Samples for Initial Selection: For products involving selection of color, texture, or design, including mechanical finishes.
- D. Samples for Verification: For each type of exposed finish required.
 - 1. Sections of each distinctly different linear railing member, including handrails, top rails, posts, and balusters.
 - 2. Base channel.
 - 3. Each type of glass and glass edge required.
 - 4. Fittings and brackets.
 - 5. Assembled Samples of railing systems, made from full-size components, including top rail, post, handrail, structural glass balusters, and glass-infill panels. Show method of finishing members at intersections. Samples need not be full height.
- E. Delegated Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For professional engineer.
- B. Mill Certificates: Signed by manufacturers of stainless steel products, certifying that products furnished comply with requirements.
- C. Product Test Reports: For tests performed by a qualified testing agency, in accordance with ASTM E894, ASTM E935, ASTM E2353, and ASTM E2358.
- D. Evaluation Reports: From ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.
 - 1. For glazed decorative metal railings.
 - 2. For post-installed anchors.
- E. Preconstruction test reports.

1.7 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
 - 1. Build mockups as indicated on Drawings.
 - 2. Build mockups for each form and finish of glass-infill panel railing consisting of two posts, top rail, handrail, glass-infill panel, and anchorage system components that are full height and are not less than 24 inches in length.

3. Build mockups for each form and finish of structural glass railing consisting of top rail, structural glass, base channel, and anchorage system components that are full height and are not less than 24 inches in length.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.9 WARRANTY

- A. Manufacturer's Special Warranty for Laminated Glass: Glazed decorative metal railing manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.
 1. Warranty Period: 10 years from date of Project Acceptance.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design glazed decorative metal railings, including attachment to building construction.
- B. General: In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:
 1. Stainless Steel: 60 percent of minimum yield strength.
 2. Steel: 72 percent of minimum yield strength.
 3. Glass: 25 percent of mean modulus of rupture (50 percent probability of breakage), as listed in "Mechanical Properties" in AAMA CW-12, "Structural Properties of Glass."
- C. Structural Performance: Railings, including attachment to building construction, are to withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 1. Handrails and Top Rails of Guards:
 - a. Uniform load of 50 lbf/ft. applied in any direction.
 - b. Concentrated load of 200 lbf applied in any direction.

- c. Uniform and concentrated loads need not be assumed to act concurrently.
- 2. Structural Glass Railings and Glass-Infill Panels:
 - a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft..
 - b. Infill load and other loads need not be assumed to act concurrently.
- 3. For structural glass railings, support each section of top rail and handrail by a minimum of three glass panels or by other means so railings will remain in place if any one glass panel fails.
 - a. Support top rail and handrail ends such that railings remains in place if end glass panel fails.

2.2 MANUFACTURERS

A. Stainless-Steel Decorative Railings:

- 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Architectural Railings & Grilles, Inc.
 - b. Blum, Julius & Co., Inc.
 - c. P & P Artec.
 - d. Wagner, R & B, Inc.
 - e. Wylie Systems.

B. Source Limitations for Laminated Glass: Obtain from single source from single manufacturer.

C. Source Limitations for Decorative Metal Railing Components: Obtain from single source from single manufacturer for each component and installation method.

D. Product Options: Information on Drawings and in the Specifications establishes requirements for railing system's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.

- 1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

2.3 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Same metal and finish as supported rails unless otherwise indicated.

2.4 STAINLESS STEEL

- A. Tubing: ASTM A554, Grade MT 304.
- B. Pipe: ASTM A312/A312M, Grade TP 304.
- C. Castings: ASTM A743/A743M, Grade CF 8 or Grade CF 20.
- D. Sheet, Strip, Plate, and Flat Bar: ASTM A666 or ASTM A240/A240M, Type 304.
- E. Bars and Shapes: ASTM A276, Type 304.

2.5 GLASS AND GLAZING PRODUCTS, GENERAL

- A. Glazing Publications: Comply with written instructions of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
 - 1. NGA/GANA Publications: "GANA Laminated Glazing Reference Manual" and "GANA Glazing Manual."
- B. Safety Glazing: Glazing is to comply with 16 CFR 1201, Category II.
- C. Safety Glazing Labeling: Permanently mark glass with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or manufacturer. Label is to indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- D. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear), Class 1 and low-iron clear, or Class 2 (tinted) as indicated, Quality-Q3.
- E. Glazing Cement and Accessories for Structural Glass Railings: Glazing cement, setting blocks, shims, and related accessories as recommended or supplied by railing manufacturer for installing structural glazing in metal base channels.
- F. Glazing Gaskets for Glass-Infill Panels: Glazing gaskets and related accessories as recommended or supplied by railing manufacturer for installing glass-infill panels in post-supported railings.

2.6 GLASS HANDRAILS AND GUARDS

- A. Tempered Glass Handrails and Guards: Provide products that have been tested for surface and edge compression in accordance with ASTM C1048 and for impact strength in accordance with 16 CFR 1201 for Category II materials.
 - 1. Glass Color: Clear.
 - 2. Thickness: Not less than ½-inch minimum as determined by structural loads.

2.7 FASTENERS

- A. Fastener Materials: Unless otherwise indicated, provide the following:
 - 1. Stainless Steel Components: Type 304 stainless steel fasteners.
- B. Fasteners for Anchoring to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.
- C. Provide concealed fasteners for interconnecting railing components and for attaching railings to other work unless otherwise indicated.
 - 1. Provide tamper-resistant flat-head machine screws for exposed fasteners unless otherwise indicated.
- D. Post-Installed Anchors: Fastener systems with working capacity greater than or equal to design load, in accordance with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193 or ICC-ES AC308.
 - 1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B633 or ASTM F1941/ASTM F1941M, Class Fe/Zn 5, unless otherwise indicated.

2.8 MISCELLANEOUS MATERIALS

- A. Handrail Brackets: Cast stainless steel, center of rail 2-1/2 inches from face of structural glass balusters.
- B. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.
- C. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- D. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.
 - 1. Water-Resistant Anchoring Cement: provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.

2.9 FABRICATION OF METAL RAILINGS

- A. Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

- B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate. Locate weep holes in inconspicuous locations.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
 - 1. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.
- H. Form changes in direction as follows:
 - 1. As detailed.
 - 2. By bending or by inserting prefabricated elbow fittings.
- I. Bend members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- J. Close exposed ends of hollow railing members with prefabricated end fittings.
- K. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, handrail brackets, miscellaneous fittings, and anchors to interconnect railing members to other work where indicated.
 - 1. At brackets and fittings fastened to plaster or gypsum board partitions, provide crush-resistant fillers, or other means to transfer loads through wall finishes to structural supports and to prevent bracket or fitting rotation and crushing of substrate.
- L. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.
- M. For railing posts set in concrete, provide stainless steel sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with metal plate forming bottom closure.

2.10 FABRICATION OF GLASS PANELS AND BALUSTERS

- A. Fabricate glass to sizes and shapes required; provide for proper edge clearance and bite on glazing panels.
- B. Glass-Infill Panels: Provide tempered glass-infill panels.
 - 1. Edge Finish: Clean-cut or flat-grind edges to produce smooth, square edges with slight chamfers at junctions of edges and faces.

2.11 METAL FINISH REQUIREMENTS, GENERAL

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipment.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

2.12 STAINLESS STEEL FINISHES

- A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
- B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
 - 1. Run grain of directional finishes with long dimension of each piece.
 - 2. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
- C. Stainless Steel Tubing Finishes:
 - 1. 180-Grit Polished Finish: Uniform, directionally textured finish.
 - 2. 320-Grit Polished Finish: Oil-ground, uniform, fine, directionally textured finish.
 - 3. Polished and Buffed Finish: 320-grit finish followed by buffing to a high luster finish.
- D. Stainless Steel Sheet, Strip, Plate, and Bar Finishes:
 - 1. High Luster Finish: ASTM A480/A480M, No. 7.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Comply with Drawings and manufacturer's written instructions for installing glazed decorative metal railings, accessories, and other components.
- B. Perform cutting, drilling, and fitting required for installing metal railings.
 - 1. Fit exposed connections together to form tight, hairline joints.
 - 2. Install railings level, plumb, square, true to line; without distortion, warp, or rack.
 - 3. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
 - 4. Do not weld, cut, or abrade surfaces of metal railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
 - 5. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 - 6. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- C. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.2 METAL RAILING CONNECTIONS

- A. Nonwelded Connections:
 - 1. Use mechanical or adhesive joints for permanently connecting railing components.
 - 2. Use wood blocks and padding to prevent damage to railing members and fittings.
 - 3. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.
- B. Expansion Joints: Install expansion joints at locations indicated, but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side, fasten internal sleeve securely to one side, and locate joint within 6 inches of post.

3.3 METAL ANCHORING POSTS

- A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted in sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.

- B. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
- C. Cover anchorage joint with flange of same metal as post, attached to post with setscrews.
- D. Anchor posts to metal surfaces with flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:
 - 1. For stainless steel railings, weld flanges to posts and bolt to metal-supporting surfaces.
- E. Install removable railing sections, where indicated, in slip-fit metal sockets cast in concrete.

3.4 INSTALLATION OF GLASS BALUSTERS

- A. Post-Supported Railings with Glass-Infill Panels:
 - 1. Install assembly to comply with railing manufacturer's written instructions and with requirements in other Part 3 articles.
 - 2. Erect posts and other metal railing components, and set factory-cut glass-infill panels.
 - 3. Do not cut, drill, or alter glass-infill panels in field. Protect edges from damage.

3.5 CLEANING

- A. Clean aluminum and stainless steel by washing thoroughly with water and soap, rinsing with clean water, and wiping dry.
- B. Clean and polish glass as recommended in writing by manufacturer. Wash both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Project Acceptance.

3.6 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.
- B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 057313

SECTION 101100 - VISUAL DISPLAY UNITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Glass markerboards.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, finishes, and accessories for visual display units.
- B. Shop Drawings: For visual display units.
 - 1. Include plans, elevations, sections, details, and attachment to other work.
 - 2. Show locations of panel joints.
 - 3. Include sections of typical trim members.
- C. Samples for Initial Selection: For each type of visual display unit indicated, for units with factory-applied color finishes, and as follows:
 - 1. Samples of facings for each visual display panel type, indicating color and texture.
 - 2. Fabric swatches of fabric facings for tackboards.
 - 3. Actual factory-finish color samples, applied to aluminum substrate.
 - 4. Include accessory Samples to verify color selected.
- D. Samples for Verification: For each type of visual display unit indicated.
 - 1. Visual Display Panel: Not less than 8-1/2 by 11 inches, with facing, core, and backing indicated for final Work. Include one panel for each type, color, and texture required.
 - 2. Trim: 6-inch-long sections of each trim profile.
 - 3. Display Rail: 6-inch-long section of each type.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For visual display units to include in maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver factory-fabricated visual display units completely assembled in one piece. If dimensions exceed maximum manufactured unit size, or if unit size is impracticable to ship in one piece, provide two or more pieces with joints in locations indicated on approved Shop Drawings.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install visual display units 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.
- B. Field Measurements: Verify actual dimensions of construction contiguous with visual display units by field measurements before fabrication.
 - 1. Allow for trimming and fitting where taking field measurements before fabrication might delay the Work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of visual display unit from single source from single manufacturer.

2.2 GLASS MARKERBOARDS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. A-1 Visual Systems.
 - 2. Claridge Products and Equipment, Inc.
 - 3. Clarus Glassboards, LLC.
- B. Glass Markerboards: 6-mm tempered glass markerboard, with smooth polished edge and eased corners; color coated on back surface with steel backing for use with magnets.
- C. Mounting: Round, stainless-steel standoffs, holding glass approximately 1 inch from wall surface; mounted in notches in standoffs at top and bottom edges of markerboard.
- D. Color and Surface: Glossy in colors selected by the Architect from full-range of manufacturer's colors.
- E. Marker Tray: Magnetic.

2.3 MATERIALS

- A. Clear Tempered Glass: ASTM C 1048, Kind FT, Condition A, Type I, Class 1, Quality Q3, with exposed edges seamed before tempering.
- B. Extruded Aluminum: ASTM B 221, Alloy 6063.
- C. Adhesives for Field Application: Mildew-resistant, nonstaining adhesive for use with specific type of panels, sheets, or assemblies; and for substrate application; as recommended in writing by visual display unit manufacturer.
 - 1. Adhesives shall have a VOC content of 50 g/L or less.

2.4 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are 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.

2.5 ALUMINUM FINISHES

- A. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances, surface conditions of wall, and other conditions affecting performance of the Work.
- B. Examine roughing-in for electrical power systems to verify actual locations of connections before installation of motorized, sliding visual display units.
- C. Examine walls and partitions for proper preparation and backing for visual display units.
- D. Examine walls and partitions for suitable framing depth where sliding visual display units will be installed.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation.

- B. Clean substrates of substances, such as dirt, mold, and mildew, that could impair the performance of and affect the smooth, finished surfaces of visual display boards.
- C. Prepare surfaces to achieve a smooth, dry, clean surface free of flaking, unsound coatings, cracks, defects, projections, depressions, and substances that will impair bond between visual display units and wall surfaces.

3.3 INSTALLATION

- A. General: Install visual display surfaces 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.
- B. Field-Assembled Visual Display Board Assemblies: Coordinate field-assembled units with grounds, trim, and accessories indicated. Join parts with a neat, precision fit.
 - 1. Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints.
 - 2. Where size of visual display board assemblies 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.
- C. Sliding Visual Display Units: Install units at mounting heights indicated. Attach to wall framing with fasteners at not more than 16 inches o.c.
 - 1. Adjust panels to operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.

3.4 CLEANING AND PROTECTION

- A. Clean visual display units according to manufacturer's written instructions. Attach one removable cleaning instructions label to visual display unit in each room.
- B. Touch up factory-applied finishes to restore damaged or soiled areas.
- C. Cover and protect visual display units after installation and cleaning.

END OF SECTION 101100