HUGHES ASSOCIATES
ARCHITECTS & ENGINEERS

ADDENDUM 001

DATE: July 17, 2025
COMM NO: 24058.001
PROJECT: VINTON War Memorial Renovation

TO: All Bidders
FROM: Shawn Emmons
RE: Addendum No. 1
Bid Questions

The following clarifications, additions and/or changes shall be incorporated into the bidding documents, consisting of bidding requirements, conditions of the contract, drawings and specifications, dated June 20, 2025. Insert this addendum number on the bid form for this project, under addenda received.

CONTACT INFORMATION
Hughes Associates Architects & Engineers
A Professional Organization
3800 Electric Road, Suite 300
Roanoke, VA 24018
Tel.: 540.342.4002
Shawn Emmons, NCARB, AIA
Email: semmons@hughesae.com

BIDDING QUESTIONS & ANSWERS

1. Q:
   Please confirm if liquidated damages will apply to this project.
   A:
   There are no liquidated damages in the construction contract for this project.
   AIA A101, the Contract for Construction, will not include liquidated damages in Section 4.5 & will not include other provisions that would affect the Contract Sum in Section 4.6.

2. Q:
Clarify scope of work for the access control and camera systems. What is GC or owner provided?
A:
For ACCESS CONTROL, wall-mounted access control devices indicated on floor plans on Sheets A1-0, A1-1, & A1-2 shall be Owner-Furnished, Owner-Installed. GC shall provide infrastructure for devices. See SECTION 27 0533.13 for conduit information.
For CAMERA SYSTEM, cameras indicated on Sheet A7-0, A7-1, & A7-2 shall be Owner-Furnished, Owner-Installed. GC shall provide infrastructure for camera locations as notes indicate on those sheets. See SECTION 27 0533.13 for conduit information. For painted plywood equipment backboards shown on Sheet A1-0 and for associated power shown on Sheets A1-0 & E1-3, GC shall provide this work. Equipment associated with the camera system that will be mounted to the backboards shall be Owner-Furnished, Owner-Installed.

3. Q:
Civil drawing C100 includes notes beside each site lighting pole indicating that the pole base should be replaced, referencing page EO-3 of the electrical drawings.
However, Notes 4 on EO-3 specify that the electrical contractor is to replace only the pole light heads and the pole base covers, while all other infrastructure—including the pole, conduit, and wiring—is to remain.

To avoid any confusion, I would appreciate it if the design team could clarify whether the intent is solely to replace the pole base covers and the site lighting heads.
A:
CONFIRMED.
Replace site lighting fixture heads as indicated on Sheet E0-3 for all existing pole locations.
Replace all pole base covers with prefinished metal covers as indicated by PLAN NOTE 1 on Sheet A1-1 for all existing pole locations shown on Sheet C-100.

4. Q:
Room 106 is calling for RF-1 which is protect-all with flash cove integral base, the room tag is calling for rubber base. Should this be RF-2 same as the corridor?
A:
Wall base shall be RF-1. Flooring shall be RF-1.
See "CHANGES TO DRAWINGS" in this addendum. See revised Sheet I1.1.

5. Q:
RF-3 remarks on the finish legend say this product is to be installed in the Elevator Floor, Second Floor Waiting Area, Bridal Suite, and Breakroom. The finish plan indicates that WD-1 is to be installed in the waiting area and bridal suite.
A:
REMARKS for RF-3 shall include: "Elevator Floor & Second Floor Breakroom & Second Floor Mechanical Room."
REMARKS for WDF-1 shall include: "General Throughout: Lobby, Library, Second Floor Waiting Area, Bridal Suite, Meeting Room."
See "CHANGES TO DRAWINGS" in this addendum. See revised Sheet I0.1.

6. Q:
There is no roofing spec.
A:
See "CHANGES TO SPECIFICATIONS" in this addendum for the addition of roofing specifications.
See SPECIFICATION SECTION 07 3113 ASPHALT SHINGLES.
See SPECIFICATION SECTION 07 4113 METAL ROOF PANELS.

7. Q:
They call for 8" gutters and 6" downspouts. That would be way to big for this project. Should be 6" gutters and 4" downspouts.
A:
Gutter and downspout sizes can be reduced as suggested contingent upon GC confirmation that the gutter and downspout system provided complies with sizing for rainfall intensity determined by a storm occurrence of 1 in 10 years as required by SECTION 07 7123 MANUFACTURED GUTTERS AND DOWNSPOUTS, 1.04, A.
See "CHANGES TO SPECIFICATIONS" in this addendum for the addition of the gutter and downspout specification.
See SPECIFICATION SECTION 07 7123 MANUFACTURED GUTTERS AND DOWNSPOUTS.

8. Q:
Will the specs be updated for all the items that do not have specs for? (door hardware, roofing, etc….)
A:
See "CHANGES TO SPECIFICATIONS" in this addendum for the addition of multiple specification sections.

9. Q:
At today's meeting it was stated there are no LD's section § 3.10.4-§ 3.10.5 does mention that there are liquidated damages for the contractor but doesn't mention the amount. It also state's that additional fee's for Architect's admin services beyond the completion time.
A:
There are no liquidated damages in the construction contract for this project.
AIA A101, the Contract for Construction, will not include liquidated damages in Section 4.5 & will not include other provisions that would affect the Contract Sum in Section 4.6.

10. Q:
Prevailing wages is mentioned on CO-7 part M Payment of Prevailing Wages Pursuant to Virginia Code 2.2-4321.3 Certified pay roll is mentioned in subsection 38a on page 63, can you clarify that payroll records are not required and that this project does not have prevailing wage/Davis bacon requirements.
A:
General Conditions for this project are the Town of Vinton's General Conditions located in APPENDIX B. CO-7 is not a document referenced in this contract & project documents. General Conditions for this project do not reference the Davis-Bacon Act, prevailing wage requirements, or require payroll certification.

11. Q:
My door vendor stated the follow "there is no Section 087100 for the hardware nor any hardware schedule on the plans; the door schedule lines refer to hardware sets, but I could not locate anything"
A:
See "CHANGES TO SPECIFICATIONS" in this addendum for the addition of door hardware specifications.
See SPECIFICATION SECTION 08 0671 DOOR HARDWARE SCHEDULE.
See SPECIFICATION SECTION 08 7100 DOOR HARDWARE.

12. Q:
It was also mentioned today that salvage and turnover to owner hardwood flooring in from only the ballroom the plans also show note 8 in rooms lobby 100, table & chairs 101, meeting room 102, hall 105 and coats 107. Salvageable demo of the hardwood will increase time during the demo phase it will likely cause additional damage of the slat subfloor in the original portion of the building. Additionally self-leveling will pour through the gaps of this floor, should we include underlayment be included if the plank subfloor is to remain.
A:
DEMOLITION NOTE 8 on Sheet AD-1 reads:
REMOVE WOOD FLOOR & WALL BASE, COMPLETE.
IN BALLROOM, REMOVE & SALVAGE WOOD FLOOR. TURN FLOOR OVER TO OWNER.
Removal of the wood floor and wall base applies to all rooms indicated on the demolition plans and all rooms scheduled to receive new wood flooring. Salvaging of the wood floor to be removed applies only to NORTH BALLROOM 112 & SOUTH BALLROOM 109.
See "CHANGES TO SPECIFICATIONS" in this addendum for the addition of a wood plank floor specification.
See SPECIFICATION SECTION 09 6429 WOOD STRIP AND PLANK FLOORING for use of sleepers and shims for providing a level floor installation.

13. Q:
Are the allowances and alternates outside of the 2 million budget for base bid or included within the 2 million budget?
A:
Allowances specified in SECTION 01 2100 ALLOWANCES shall be included in the Bid Sum (Base Bid.)
See 00 4100 BID FORM, 1.05, E.
Alternates specified in SECTION 01 2300 shall NOT be included the Bid Sum (Base Bid.) List these ADDITIVE ALTERNATES on the ALTERNATES FORM (SECTION 004323.) Provide the complete Alternates Form with the Bid Form per SECTION 00 4100, 1.10.

CHANGES TO SPECIFICATIONS

14. SECTION 00 4100 BID FORM:

    Revise 00 4100, 1.07 CONTRACT TIME, B, to read:
    "Complete the Work by the **2nd day of June**, 2026."

15. SECTION 01 2100 ALLOWANCES:

    Revise 01 2100, 1.05 ALLOWANCES SCHEDULE, A, to read:
    "Contingency Allowance: Include the stipulated sum/price of **$200,000** for use upon Owner's Instructions."

16. SECTION 00 0110 TABLE OF CONTENTS:

    DELETE specification in its entirety.
    REPLACE with attached revised specification SECTION 00 0110 TABLE OF CONTENTS.

17. SECTION 06 2000 FINISH CARPENTRY:

    ADD this specification section in its entirety.

18. SECTION 06 4100 ARCHITECTURAL WOOD CASEWORK:

    ADD this specification section in its entirety.

19. SECTION 07 3113 ASPHALT SHINGLES:

    ADD this specification section in its entirety.

20. SECTION 07 4113 METAL ROOF PANELS:

    ADD this specification section in its entirety.

21. SECTION 07 5323 EPDM THERMOSET SINGLE-PLY ROOFING- CARLISLE:

    ADD this specification section in its entirety.

22. SECTION 07 6200 SHEET METAL FLASHING AND TRIM:

    ADD this specification section in its entirety.

23. SECTION 07 7123 MANUFACTURED GUTTERS AND DOWNSPOUTS:

    ADD this specification section in its entirety.

24. SECTION 07 7200 ROOF ACCESSORIES:

    ADD this specification section in its entirety.

25. SECTION 07 9200 JOINT SEALANTS:

    ADD this specification section in its entirety.

26. SECTION 08 0671 DOOR HARDWARE SCHEDULE:

    ADD this specification section in its entirety.

27. SECTION 08 7100 DOOR HARDWARE:

    ADD this specification section in its entirety.

28. SECTION 08 8000 GLAZING:

    ADD this specification section in its entirety.

29. SECTION 09 2116 GYPSUM BOARD ASSEMBLIES:

    ADD this specification section in its entirety.

30. SECTION 09 3000 TILING:

    ADD this specification section in its entirety.

31. SECTION 09 5100 ACOUSTICAL CEILINGS:

    ADD this specification section in its entirety.

32. SECTION 09 6429 WOOD STRIP AND PLANK FLOORING:

    ADD this specification section in its entirety.

33. SECTION 09 6500 RESILIENT FLOORING:

    ADD this specification section in its entirety.

34. SECTION 09 7200 WALL COVERINGS:

    ADD this specification section in its entirety.

35. SECTION 09 9113 EXTERIOR PAINTING:

    ADD this specification section in its entirety.

36. SECTION 09 9123 INTERIOR PAINTING:

    ADD this specification section in its entirety.

37. SECTION 10 2113.16 PLASTIC-LAMINATE-CLAD TOILET COMPARTMENTS:

    ADD this specification section in its entirety.

38. SECTION 10 2239 FOLDING PANEL PARTITIONS:

    ADD this specification section in its entirety.

39. SECTION 12 3600 COUNTERTOPS:

    ADD this specification section in its entirety.

CHANGES TO DRAWINGS

40. SHEET A7-1 FIRST FLOOR REFLECTED CEILING PLAN:

    At the covered porch at the east end of the building,
    REVISE Plan Note “E” to be Plan Note “41”.

41. SHEET I0.1 FINISH LEGEND:

    REVISE the REMARKS column for WDF-1 to read:
    “General Throughout: Lobby, Library, Second Floor Waiting Area, Bridal Suite, Meeting Room”

42. SHEET I0.1 FINISH LEGEND:

    REVISE the DETAILS column for WDF-1 to read:
    “7” Wide Plank, 5/8” Thick”

43. SHEET I0.1 FINISH LEGEND:

    REVISE the REMARKS column for RF-3 to read:
    "Elevator Floor & Second Floor Breakroom & Second Floor Mechanical Room"

44. SHEET I0.1 FINISH LEGEND:

    REVISE the description for RS-1 to read:
    "Motorized Single Roller Shade with only Blackout Flocke Blanc 600 - Blackout"

45. SHEET I0.1 FINISH LEGEND:

    REVISE the description for RS-2 to read:
    "Manual Roller Shade E Screen 7505 – White/White E0202 – 5% Openness"

46. SHEET I1.1 FIRST AND SECOND FLOOR FINISH PLANS - A:

    REVISE SECOND FLOOR FINISH PLAN to include Roller Shade RS-2 at all second-floor windows.

47. SHEET I1.1 FIRST AND SECOND FLOOR FINISH PLANS - A:

    REVISE SECOND FLOOR FINISH PLAN to include finishes for mechanical room, MECH.

48. SHEET I1.1 FIRST AND SECOND FLOOR FINISH PLANS - A:

    REVISE SECOND FLOOR FINISH PLAN to include a WDF-1 finish tag to second-floor CORRIDOR.

49. SHEET I1.1 FIRST AND SECOND FLOOR FINISH PLANS - A:

    REVISE FIRST FLOOR FINISH PLAN – A, JANITOR 106, wall base from RB-1 to RF-1.

END OF ADDENDUM NO. 001.

SECTION 000110
TABLE OF CONTENTS

END OF SECTION

SECTION 062000
FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wood casings and moldings.

1.02 RELATED REQUIREMENTS

A. Section 099113 - Exterior Painting: Painting of finish carpentry items.

B. Section 099123 - Interior Painting: Painting of finish carpentry items.

1.03 REFERENCE STANDARDS

A. NHLA G-101 - Rules for the Measurement and Inspection of Hardwood and Cypress; 2023.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data:
   1. Provide manufacturer's product data, storage and handling instructions.

C. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver factory-fabricated units to project site in original packages, containers or bundles bearing brand name and identification.

B. Store finish carpentry items under cover, elevated above grade, and in a dry, well-ventilated area not exposed to heat or sunlight.

C. Protect from moisture damage.

D. Handle materials and products to prevent damage to edges, ends, or surfaces.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Exterior Woodwork Items:
   1. Window Casings and Moldings: Hardwood or Softwood; prepare for paint finish.

B. Interior Woodwork Items:
   1. Moldings, Bases, Casings, and Miscellaneous Trim: Poplar or Clear white pine; prepare for paint finish.

2.02 LUMBER MATERIALS

A. Softwood Lumber: Pine species, smooth sawn, maximum moisture content of 6 percent; with vertical grain, of quality suitable for opaque finish.
   1. Grading: In accordance with rules certified by ALSC; www.alsc.org.

B. Hardwood Lumber: Poplar species, smooth sawn, maximum moisture content of 6 percent ; with vertical grain of quality suitable for opaque finish.
   1. Grading: In accordance with NHLA G-101 Grading Rules; www.nhla.com.

2.03 FASTENINGS

A. Fasteners for Exterior Applications: Stainless steel; length required to penetrate wood substrate 1-1/2 inch (38 mm) minimum.

2.04 SITE FINISHING MATERIALS

A. Field Finishing: See Section 099123.

2.05 FABRICATION

A. Shop assemble work for delivery to site, permitting passage through building openings.

B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

PART 3 EXECUTION

3.01 INSTALLATION

A. Set and secure materials and components in place, plumb and level.

B. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch (0.79 mm). Do not use additional overlay trim to conceal larger gaps.

3.02 PREPARATION FOR SITE FINISHING

A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.

B. Site Finishing: See Section 099113 and 099123.

C. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

3.03 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch (1.6 mm).

B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch (0.79 mm).

END OF SECTION

SECTION 064100
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Specially fabricated cabinet units.

B. Countertops.

C. Hardware.

1.02 RELATED REQUIREMENTS

A. Section 123600 - Countertops.

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2022.

B. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications; 2022.

C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).

D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.

E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.

C. Product Data: Provide data for hardware accessories.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
   1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.
   2. Single Source Responsibility: Provide and install this work from single fabricator.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.07 FIELD CONDITIONS

A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Plastic Laminate Faced Cabinets: Custom grade.

C. Cabinets:
   1. Finish - Exposed Exterior Surfaces: Decorative laminate.
   2. Finish - Exposed Interior Surfaces: Solid phenolic.
   3. Finish - Semi-Exposed Surfaces: Solid phenolic
   4. Finish - Concealed Surfaces: Manufacturer's option.
   5. Door and Drawer Front Edge Profiles: Square edge with thin applied band.
   6. Cabinet Style: Flush overlay.

7. Cabinet Doors and Drawer Fronts: Flush style.
8. Drawer Side Construction: Manufacturer's option.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

2.03 PANEL CORE MATERIALS

A. Particleboard: Composite panel composed of cellulosic particles, additives, and bonding system; comply with ANSI A208.1.
   1. Grade: M-2; moisture resistance: MR10.
   2. Panel Thickness: 3/4 inch (19.1 mm).

B. Medium Density Fiberboard (MDF): Composite panel composed of cellulosic fibers, additives, and bonding system; cured under heat and pressure; comply with ANSI A208.2.
   1. Grade: 115; moisture resistance: MR10.
   2. Panel Thickness: 3/4 inch (19.1 mm).

2.04 LAMINATE MATERIALS

A. Manufacturers:
   1. Formica Corporation: www.formica.com/#sle.

B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.

C. Provide specific types as indicated in FINISH LEGEND

2.05 COUNTERTOPS

A. Countertops: See Section 123600.

2.06 ACCESSORIES

A. Adhesive: Type recommended by fabricator to suit application.

B. Fasteners: Size and type to suit application.

C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

2.07 HARDWARE

A. Adjustable Shelf Supports: Standard side-mounted system using multiple holes for pin supports and coordinated self rests, polished chrome finish, for nominal 1 inch (25 mm) spacing adjustments.

B. Vanity Brackets: Fixed, ADA-compliant, face-of-stud mounting.
   1. Material and Shape: Steel; formed compound shapes.
      a. Finish: Manufacturer's standard, factory-applied, textured powder coat.
      b. Color: Black.
   2. Height: 18 inches (460 mm).
   3. Support Length: 21-1/2 inches (546 mm).
   4. Products:
      a. Rakks/Rangine Corporation; ADA Compliant EHV Vanity Supports: www.rakks.com/#sle.

C. Drawer and Door Pulls: See FINISH LEGEND.

D. Drawer Slides:
   1. Type: Full extension.
   2. Static Load Capacity: Commercial grade.
   3. Mounting: Side mounted.
   4. Stops: Integral type.
   5. Features: Provide self closing/stay closed type.

E. Hinges: European style concealed self-closing type, steel with nickel-plated finish.

2.08 FABRICATION

A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

C. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners.
   1. Cap exposed plastic laminate finish edges with material of same finish and pattern.

D. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Seal cut edges.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

B. Use fixture attachments in concealed locations for wall mounted components.

C. Use concealed joint fasteners to align and secure adjoining cabinet units.

D. Secure cabinets to floor using appropriate angles and anchorages.

3.03 ADJUSTING

A. Adjust installed work.

B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 073113
ASPHALT SHINGLES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Asphalt shingle roofing.

B. Flexible sheet membranes for eave protection, underlayment, and valley protection.

C. Flashing.

1.02 RELATED REQUIREMENTS

A. Section 076200 - Sheet Metal Flashing and Trim: Edge and cap flashings.

B. Section 077123 - Manufactured Gutters and Downspouts.

1.03 REFERENCE STANDARDS

A. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2017 (Reapproved 2023).

B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.

C. ASTM D3161/D3161M - Standard Test Method for Wind Resistance of Steep Slope Roofing Products (Fan-Induced Method); 2020 (Reapproved 2025).

D. ASTM D3462/D3462M - Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules; 2023.

E. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2018).

F. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.

G. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings; 2020a.

H. ASTM F1667/F1667M - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples; 2021a.

I. ICC-ES AC188 - Acceptance Criteria for Roof Underlayments; 2023.

J. NRCA (RM) - The NRCA Roofing Manual; 2025.

K. UL (DIR) - Online Certifications Directory; Current Edition.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data indicating material characteristics, performance criteria, and limitations.

C. Shop Drawings: For metal flashings, indicate specially configured metal flashings, jointing methods and locations, fastening methods and locations, and installation details.

D. Samples: Submit two samples of each shingle color indicating color range and finish texture/pattern ; for color selection.

E. Manufacturer's Installation Instructions: Indicate installation criteria and procedures.

F. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

G. Manufacturer's qualification statement.

H. Installer's qualification statement.

I. Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

J. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements for additional provisions.
2. Extra Shingles: 200 sq ft (18.5 sq m) of each type and color.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacture of roofing systems similar to those required for this project, with not less than 5 years of documented experience.

B. Installer Qualifications: Company specializing in installing asphalt shingles, with at least 3 years of documented experience.

C. **Manufacturer's Required Inspection: A representative of the roof system manufacturer must be present (3) days per week during the roof system installation and provide weekly reports to the A/E and Owner. The manufacturer must provide a signed and notarized letter from an officer of the company stating that these inspections will be provided at no extra cost to the owner.**

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store materials with labels intact in manufacturer's unopened packaging until ready for installation.

B. Store materials under dry and waterproof cover, well ventilated, and elevated above grade on a flat surface.

C. Protect materials from harmful environmental elements, construction dust, direct sunlight, and other potentially detrimental conditions.

D. When storing roofing materials on roofing system ensure no damage occurs to supporting members and other materials.

1.07 FIELD CONDITIONS

A. Do not install shingles, eave protection membrane or underlayment when surface, ambient air, or wind chill temperatures are below 45 degrees F (7 degrees C).

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Provide lifetime manufacturer's warranty for coverage against black streaks caused by algae.

C. Provide 5-year manufacturer's warranty for wind damage.

D. Extended Correction Period: Correct defective work within 2-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Algae Resistant Asphalt Shingles:
1. CertainTeed; Presidential Shake TL AR: www.certainteed.com/#sle.
2. GAF; Timberline Ultra HD Shingles with StainGuard Plus: www.gaf.com/#sle.
3. Owens Corning Corporation; StreakGuard Algae Protection: www.owenscorning.com/en-us/#sle.

2.02 ASPHALT SHINGLES

A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462/D3462M.
1. Fire Resistance: Class A, complying with ASTM E108.
2. Wind Resistance: Class F, when tested in accordance with ASTM D3161/D3161M.
3. Fire or Wind Resistance Criteria: Provide UL (DIR) listed and labeled products.
4. Warranted Wind Speed: Not greater than 110 mph (177 km/h).
5. Algae resistant.
6. Solar reflective.
7. Style: Laminated overlay.

8. Color: As selected by Architect.

2.03 SHEET MATERIALS

A. Eave Protection Membrane:
   1. Eave Protection Membrane: Self-adhering polymer-modified asphalt sheet complying with ASTM D1970/D1970M; 40 mil (1 mm) total thickness; with strippable treated release paper and polyethylene sheet top surface.

B. Eave Edge Starter Shingles: Glass felt base, with ceramic coated mineral granules tightly embedded in refined, water-resistant asphalt, complying with ASTM D3462/D3462M.
   1. Wind Resistance: Class F, when tested in accordance with ASTM D3161/D3161M.
   2. Fire Resistance: Class A, complying with ASTM E108.
   3. Shingle Size: 8-3/16 by 38-1/4 inches (208 by 972 mm), nominal.

C. Underlayment: Synthetic non-asphaltic sheet, intended by manufacturer for mechanically fastened roofing underlayment without sealed seams.
   1. Type: Woven polypropylene with anti-slip polyolefin coating on both sides.
   2. Minimum Requirements: Comply with requirements of ICC-ES AC188 for non-self-adhesive sheet.
   3. Self Sealability: Passing nail sealability test specified in ASTM D1970/D1970M.
   4. Flammability: Minimum of Class A, when tested in accordance with ASTM E108.
   5. Ultraviolet (UV) Resistance and Weatherability: Approved in writing by manufacturer for exposure to weather for minimum of six months.
   6. Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.
   7. Water Vapor Permeance: Vapor retarder; maximum of 1 perm (57 ng/(Pa s sq m)), when tested in accordance with ASTM E96/E96M Procedure A, desiccant method.
   8. Performance: Meet or exceed requirements for ASTM D226/D226M, Type II asphalt-saturated organic felt.
   9. Fasteners: As recommended by manufacturer or building code qualification report or approval.

2.04 FLASHING

A. Metal Flashing: Galvanized steel; see Section 076200.

B. Metal Flashings: Provide sheet metal eave edge, gable edge, ridge, ridge vents, open valley flashing, chimney flashing, dormer flashing, and other flashing as indicated.
   1. Form flashings to protect roofing materials from physical damage and shed water.
   2. Form sections square and accurate to profile, in maximum possible lengths, free from distortion or defects detrimental to appearance or performance.
   3. Hem exposed edges of flashings minimum 1/4 inch (6 mm) on underside.

C. Flexible Flashing: Self-adhering polymer-modified asphalt sheet complying with ASTM D1970/D1970M; 40-mil, 0.040-inch (1 mm) total thickness; with strippable treated release paper and polyethylene sheet top surface.

2.05 ACCESSORIES

A. Roofing Nails: Standard round wire shingle type, galvanized steel, stainless steel, or copper roofing nails, minimum 3/8-inch (9.5 mm) head diameter, 12-gauge, 0.109-inch (2.77 mm) nail shank diameter, 1-1/2 inches (38 mm) long and complying with ASTM F1667/F1667M.

B. Asphalt Roof Cement: ASTM D4586/D4586M, asbestos-free.

C. Lap Cement: Fibrated cutback asphalt type, recommended for use in application of underlayment, free of toxic solvents.

D. Plastic Ridge Vents: Extruded plastic with vent openings do not permit direct water or weather entry; flanged to receive shingles.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions prior to starting this work.

B. Verify roof deck is of sufficient thickness to accept fasteners.

C. Verify roof penetrations and plumbing stacks are in place and flashed to deck surface.

D. Verify deck surfaces are dry, free of ridges, warps, or voids.

3.02 PREPARATION

A. Seal roof deck joints wider than 1/16 inch (1.5 mm) as recommended by shingle manufacturer.

B. At areas where eave protection membrane is to be adhered to substrate, fill knot holes and surface cracks with latex filler.

C. Broom clean deck surfaces before installing underlayment or eave protection.

D. Protect surrounding areas and adjacent surfaces from damage during execution of this work.

3.03 INSTALLATION

A. Eave Protection Membrane:
   1. Install eave protection membrane from eave edge to minimum 24 inches (610 mm) up-slope beyond interior face of exterior wall.
   2. Install eave protection membrane in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

B. Underlayment:
   1. Roof Slopes Up to 4:12: Install two layers of underlayment over area not protected by eave protection, with ends and edges weather lapped minimum 4 inches (100 mm); stagger end laps of each consecutive layer and nail in place.
   2. Roof Slopes Greater Than 4:12: Install underlayment perpendicular to slope of roof, with ends and edges weather lapped minimum 4 inches (100 mm); stagger end laps of each consecutive layer, nail in place, and weather lap minimum 4 inches (100 mm) over eave protection.
   3. Weather lap and seal watertight with plastic cement any items projecting through or mounted on roof.

C. Valley Protection:
   1. Install one ply of flexible flashing, minimum 18 inches (450 mm) wide, centered over valleys.
   2. Install flexible flashing in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
   3. Weather lap joints minimum 2 inches (50 mm).
   4. Nail in place minimum 18 inches (450 mm) on center, 1 inch (25 mm) from edges.

D. Metal Flashing:
   1. Weather lap joints minimum 2 inches (50 mm) and seal weather tight with plastic cement.
   2. Secure in place with nails at 6 inches (152 mm) on center, and conceal fastenings.
   3. Items Projecting Through or Mounted on Roofing: Flash and seal weather tight with plastic cement.

E. Shingles:
   1. Install shingles in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
      a. Fasten individual shingles using two nails per shingle, or as required by manufacturer and local building code, whichever is greater.
      b. Fasten strip shingles using four nails per strip, or as required by manufacturer and local building code, whichever is greater.

2. Place shingles in straight coursing pattern with 5-inch (125 mm) weather exposure to produce double thickness over full roof area, and provide double course of shingles at eaves.
3. Project first course of shingles 3/4 inch (19 mm) beyond fascia boards.
4. Extend shingles 1/2 inch (13 mm) beyond face of gable edge fascia boards.
5. Extend shingles on one slope across valley and fasten; trim shingles from other slope 2 inches (50 mm) from valley center line to achieve closed cut valley, concealing valley protection.
6. Cap ridges with individual shingles, maintaining 5-inch (127 mm) weather exposure, and place to avoid exposed nails.
7. After installation, place one daub of plastic cement 1-inch (25.4 mm) diameter under each individual shingle tab exposed to weather to prevent lifting.
8. Coordinate installation of roof mounted components or work projecting through roof with weathertight placement of counterflashings.
9. Complete installation to provide weathertight service.

3.04 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Clean exposed work upon completion of installation; remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to finish.

3.05 PROTECTION

A. Do not permit traffic over finished roof surface; protect roofing until completion of project.

B. Touch-up, repair, or replace damaged asphalt shingles or accessories before Date of Substantial Completion.

END OF SECTION

SECTION 074113
METAL ROOF PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Standing seam metal roofing system.

B. Standing seam metal roofing accessories.

C. Metal roofing accessories.

1.02 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

B. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

D. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

F. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2005 (Reapproved 2017).

G. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995 (Reapproved 2024).

H. ASTM E1680 - Standard Test Method for Rate of Air Leakage through Exterior Metal Roof Panel Systems; 2016 (Reapproved 2022).

I. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.

1.03 REFERENCE STANDARDS

A. ASTM A 240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

B. ASTM A 875 - Standard Specification for Steel Sheet, Zinc-5 % Aluminum Alloy-Coated by the Hot-Dip Process

C. ASTM D 1056 - Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.

D. ASTM D 3575 - Standard Test Methods for Flexible Cellular Materials made from Olefin Polymers.

E. ASTM E 2140 - Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head.

F. FM 4470 Approval Standard for Class 1 Panel Roofs.

G. FM 4471 - Class 1 Panel Roof; Factory Mutual Research Corporation.

H. UL 263 - Fire Tests of Building Constructions and Materials.

I. UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.

J. UL 1897 - Uplift Test for Roof Covering Systems.

K. ICC-ES AC166 - Test Procedure for Wind Driven Rain Resistance of Metal Roof Coverings.

L. SMACNA - Architectural Sheet Metal Manual.

M. National Coil Coating Association (NCCA)

N. NRCA - The NRCA Roofing and Waterproofing Manual.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Storage and handling requirements and recommendations.
   2. Installation methods.
   3. Specimen warranty.

C. Design Loads: Submit manufacturer's minimum design load calculations according to ASCE 7, Method 2 for Components and Cladding. In no case shall the design loads be taken to be less than those specified herein.

D. Dead Load Evaluation: Provide documentation from a licensed structural engineer of a structural evaluation of the roof structure and it's suitability for the new imposed roofing loads.

E. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
   1. Show work to be field-fabricated or field-assembled.

F. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.

G. Verification Samples: For each roofing system specified, submit samples of minimum size 12 inches (305 mm) square, representing actual roofing metal, thickness, profile, color, and texture.
   1. Include typical panel joint in sample.
   2. Include typical fastening detail.

H. Manufacturer's qualification statement.

I. Installer's qualification statement.

J. Test Reports: Indicate compliance of metal roofing system to specified requirements.

K. Provide manufacturer's maintenance instructions that include recommendations for periodic checking and maintenance of installed roof system.

L. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section and with at least three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience and approved by manufacturer.

C. **Manufacturer's Required Inspection: A representative of the roof system manufacturer must be present (3) days per week during the roof system installation and provide weekly reports to the A/E and Owner. The manufacturer must provide a signed and notarized letter from an officer of the company stating that these inspections will be provided at no extra cost to the owner.**

1.06 MOCK-UPS

A. Provide mock-up of 15 sq ft (1.4 sq m), including underlayment, shingles, eave protection membrane, and associated flashings.

B. Locate as directed by Architect.

C. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.

D. Refinish mock-up area as required to produce acceptable work.

1.07 PRE-INSTALLATION CONFERENCE

A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.

B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.

C. Objectives include:
   1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
   2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
   3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
   4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
   5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
   6. Review required inspection, testing, certifying procedures.
   7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
   8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

B. Provide strippable plastic protection on prefinished roofing panels for removal after installation.

C. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
   1. Store materials above ground, on skids.
   2. Protect material with waterproof covering and allow sufficient ventilation to prevent condensation buildup or moisture entrapment on the materials.

1.09 FIELD CONDITIONS

A. Do not install metal roof panels, eave protection membrane or underlayment when surface, ambient air, or wind chill temperatures are below 45 degrees F (7 degrees C).

B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.10 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Finish Warranty: Provide 5-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

C. Special Warranty: Provide 30 year warranty for weathertightness of roofing system, including agreement to repair or replace metal roof panels that fail to keep out water commencing on the Date of Substantial Completion. Complete forms in Owner's name and register with warrantor.

D. Installer Warranty: Provide installer's 3 year warranty covering roof system installation and watertightness.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Architectural Metal Roof Panel Manufacturers:
   1. Basis-of-Design: The Garland Company, Inc., 434-953-0531.

2.02 PERFORMANCE REQUIREMENTS

A. Standing Seam Roofing System: R-Mer Loc
   1. Thermal Expansion and Contraction:
      a. Completed metal roofing and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.
      b. Design temperature differential shall be not less than 200 degrees F.
      c. Interface between panel and clip shall provide for unlimited thermal movement in each direction along the longitudinal direction.
      d. Location of metal roofing rigid connector shall be at roof ridge unless otherwise approved by the Architect. Metal ridge connector may require design as per job conditions by specified manufacturer.
   2. Uniform wind load capacity:
      a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
         1) Design Code: ASCE 7, Method 2 for Components and Cladding.
         2) Safety Factor: 1.67 after any load reduction or material stress increase.
         3) Category III Building with an Importance Factor of 1.
         4) Wind Speed: 120 mph.
         5) Ultimate Pullout Value: 467 pounds per each of the two fasteners holding the panel anchor to the roof decking or framing system.
         6) Exposure Category: C.
         7) Design Roof Height: 50 ft feet.
         8) Minimum Building Width: [contact Garland sales rep.] feet.
         9) Roof Pitch: 6 inches per foot.
         10) Roof Area Design Uplift Pressure:
            (a) Zone 1 - Field of roof 44 psf.
            (b) Zone 2 - Eaves, ridges, hips, and rakes 64 psf.
            (c) Zone 3 - Corners 76 psf.
      b. ASTM E 1592: Capacity shall be determined using pleated airbag method in accordance with ASTM E 1592, testing of sheet metal roof panels. Allowable safe working loads shall be determined by dividing the ultimate test load by the safety factor specified above.
      c. Underwriters' Laboratories, Inc., (UL), wind uplift resistance classification: Roof assembly shall be classified as Class 1-90, as defined by UL 580
   3. Uniform Positive Load Capacity.
      a. Installed roof system shall be capable of resisting the following positive uniform roof loads: Roof Live Load of 20 psf; Roof Snow Load of 22.9 psf.
      b. Dead Load: Loading of the roof structure, due to tear off of existing, and/or installation of new roofing materials shall not exceed the present loading due to weight of the existing roofing system.
      c. Installed roof system shall carry positive uniform design loads with a maximum system deflection of L/180 as measured at the rib (web) of the panel.
   4. Underwriters' Laboratories, Inc., (UL):
      a. Underwriters' Laboratories, Inc., (UL) fire resistance P ratings for roof assemblies: If applicable, panel system shall be approved for use in an appropriate Construction Assembly, as defined by UL 263.

b. Underwriters' Laboratories, Inc., (UL) Class A fire rating per UL 790.

5. ASTM E 1680: Static pressure air infiltration (roof panels):
   a. Pressure Leakage Rate
      1) 1.57 PSF 0.0054 cfm/sq.ft.
      2) 6.24 PSF 0.0054 cfm/sq.ft.
      3) 20.0 PSF 0.0027 cfm/sq.ft.
6. ASTM E 1646: Static pressure water infiltration (roof panels):
   a. Pressure Result:
      1) 5 Gal/Hr per S.F. and Static No Leakage
      2) Pressure of 20.0 Psf. for 15 minutes
7. Capacities for gauge, span or loading other than those tested may be determined by interpolation of test results within the range of test data. Extrapolation for conditions outside test range is not acceptable.
8. Submit third party validation of environmental claims, prepared UL Environment, for all metal roof panels containing recycled content and/or bio based content.

2.03 STANDING SEAM METAL ROOFING

A. R-Mer Loc: Panel with 1-3/4 inch high standing seam with 3/8-inch high clearance between panel and substrate.
   1. Width of Panel:
      a. 18 inches.
   2. Seam Height: 1-3/4 inch.
   3. Panel Clips: Minimum 18 gauge, galvanized steel or stainless steel. Two-piece clips are unacceptable.
   4. Passes:
      a. ASTM E 1592
      b. ASTM E 1680
      c. ASTM E 1646
      d. Class A Fire Rating, UL-790.
      e. UL (Class 90) 580.
   5. Panel material:
      a. Galvanized steel 24 gauge, G90, smooth as per ASTM A 653.
   6. Flashing and flat stock material: Fabricate in profiles indicated on Drawings of same material, thickness, and finish as roof system, unless indicated otherwise.
   7. Coated Finish:
      a. Exposed surfaces for coated panels:
         1) Two coat coil applied, baked-on full-strength (70% resin) fluorocarbon coating system (polyvinylidene fluoride, PVF2), applied by manufacturer's approved applicator.
         2) Coating system shall provide nominal 1.0 mil dry film thickness, consisting of primer and color coat.
      b. Unexposed surfaces for coated panels shall be baked-on polyester coating with .20 to .30 dry film thickness (TDF).
   8. Accessory Components:
      a. Gable anchor clips shall be minimum 18 gauge, galvanized steel or stainless steel.
      b. Fasteners:
         1) Concealed fasteners: Corrosion resistant steel fasteners (zinc plated or equal) designed to meet structural loading requirements. Provide #14 as minimum fastener size.
         2) Exposed fasteners: Series 410 stainless steel fasteners or one-eighth (1/8) inch diameter stainless steel waterproof rivets. All exposed fasteners shall be factory painted to match the color of the standing seam panels.
      c. Closures: Factory precut closed cell foam meeting ASTM D 1056 or ASTM D 3575, with metal trim matching panels when used at hip, ridge, jamb, and rake.

d. Provide all miscellaneous accessories for complete installation.

2.04 STANDING SEAM METAL ROOFING ACCESSORLES

A. Underlayment:
   1. 40 mil minimum high temp self adhesive membrane, installed in accordance with manufacturer's recommendations.

B. Sealant:
   1. Concealed Applications: Non-Curing Butyl Sealant - Schnee-Morehead, Inc. SM5430 Acryl-R, or equal.
   2. Exposed Applications: UV Resistant Tripolymer Sealant - Geocel Corporation, 2300 Tripolymer Sealant, or equal.

2.05 METAL ROOFING ACCESSORIES

A. Sheet Flat Stock: High gloss, factory painted aluminum
   1. Material and Thickness:
      a. 24 gauge steel
   2. Color. TBD by Owner.

2.06 ATTACHMENT SYSTEM

A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.07 FINISHES

A. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch (0.023 mm); color and gloss as selected by Architect from manufacturer’s standard line.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine surfaces to receive metal roofing. Notify the Architect in writing of any defective conditions encountered. Starting of work shall constitute acceptance of such conditions.

B. Structural Deck Substrate:
   1. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, and properly sloped.
   2. Verify deck is dry and joints are solidly supported and fastened.
   3. Verify wood nailers are installed and correctly located. Do not use pressure-treated wood containing salt-based preservatives or materials corrosive to steel.

C. Structural Framing Substrate:
   1. Verify primary and secondary framing members are installed and fastened, properly aligned and sloped.
   2. Verify damaged shop coatings are repaired with touch up paint.

D. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets are in place, and nailing strips located.

E. Correct defective conditions before beginning work.

3.02 PREPARATION

A. Broom clean wood sheathing prior to installation of roofing system.

B. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.

C. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.

D. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.

E. Protect surrounding areas and adjacent surfaces from damage during execution of this work.

F. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

A. Install in conformance with the NRCA Roofing and Waterproofing Manual and Manufacturers installation requirements.

B. Overall: Install roofing system in accordance with approved shop drawings and metal roof panel manufacturer's instructions and recommendations, as applicable to specific project conditions; securely anchor components of roofing system in place allowing for thermal and structural movement.
   1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
   2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.

C. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.

D. Install roofing felt and building paper slip sheet on roof sheathing before installing preformed metal roof panels; secure by methods acceptable to roof panel manufacturer, minimizing use of metal fasteners; apply from eaves to ridge in shingle fashion, overlapping horizontal joints at least 2 inches (50 mm) and side and end laps at least 3 inches (75 mm); offset seams in building paper and seams in roofing felt.

E. Roof Panels: Install metal roof panels in accordance with manufacturer's installation instructions, minimizing transverse joints except at junction with penetrations.
   1. Form weathertight standing seams incorporating concealed clips, using an automatic mechanical seaming device approved by panel manufacturer.
   2. Install sealant or sealant tape at end laps and side joints as recommended by metal roof panel manufacturer.
   3. Install all panels continuous from ridge to eave. Transverse seams are not permitted.
   4. Panel lengths that exceed maximum shipping lengths shall be field rolled on equipment owned by the panel manufacturer. Seam sealant must be factory applied.
   5. Install sealants where indicated to clean dry surfaces only without skips or voids..
   6. Install metal edge treatment in accordance with the manufacturer's instructions and the approved shop drawings.
   7. Install metal roofing accessories in accordance with the manufacturer's instructions and the approved shop drawings.

F. Clip Spacing:
   1. Zone 1 (field) : 4’ O.C.
   2. Zone 2 (eave, ridge, hip) : 3’ 9” O.C.
   3. Zone 3 (corners) : 3’ 9” O.C.

G. Exposed fasteners, screws and/or roof mastic are unacceptable and will be rejected. System configuration only allows for exposed fasteners at panel overlap, if required, and at trim details in accordance with the Manufacturer's requirements.

H. Where not otherwise indicated conform to SMACNA details including flashings and trim.

3.04 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.05 PROTECTION

A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.

B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION

SECTION 075323
EPDM THERMOSET SINGLE-PLY ROOFING - CARLISLE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Adhered roof system with ethylene propylene diene monomer (EPDM) roofing membrane.

B. Insulation, flat and tapered.

C. Vapor retarder.

D. Deck sheathing.

E. Roofing cant strips, stack boots, and walkway pads.

1.02 RELATED REQUIREMENTS

A. Section 076200 - Sheet Metal Flashing and Trim: Counterflashing and reglets.

1.03 REFERENCE STANDARDS

A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

B. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2017.

C. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.

D. ASTM D41/D41M - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing; 2011 (Reapproved 2023).

E. ASTM D312/D312M - Standard Specification for Asphalt Used in Roofing; 2016a (Reapproved 2023).

F. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015, with Editorial Revision (2022).

G. FM DS 1-29 - Roof Deck Securement and Above-Deck Roof Components; 2016, with Editorial Revision (2022).

H. UL 790 - Standard for Standard Test Methods for Fire Tests of Roof Coverings; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.
   1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturer's written information listed below.
   1. Product data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, and fasteners.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements.

C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, and setting plan for tapered insulation.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and other supplementary instructions.

F. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.

G. Specimen Warranty: For approval.

H. Warranty:
   1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
   2. Submit installer's certification that installation complies with all warranty conditions for the waterproof membrane.

I. Manufacturer's Qualification Statement.

J. Installer's Qualification Statement.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum twenty (20) years of documented experience.

B. Installer Qualifications: Company specializing in performing work of this section:
   1. Approved by membrane manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.

B. Protect products in weather protected environment, clear of ground and moisture.

C. Protect foam insulation from direct exposure to sunlight.

D. Keep Safety Data Sheets (SDS) at the project site at all times during transportation, storage, and installation of materials.

E. Comply with requirements from Owner to prevent overloading or disturbance of the structure when loading materials onto the roof.

1.08 FIELD CONDITIONS

A. Do not apply roofing membrane during unsuitable weather. Refer to manufacturer's written instructions.

B. Do not apply roofing membrane when ambient temperature is below 40 degrees F (5 degrees C) or above 90 degrees F (32 degrees C).

C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

E. Proceed with work so new roofing materials are not subject to construction traffic as work progresses.

F. Do not allow grease, oil, fats, or other contaminants to come into direct contact with membrane.

1.09 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Material Warranty: Provide membrane manufacturer's warranty agreeing to replace material that shows manufacturing defects within 10 years after installation.

C. System Warranty: Provide manufacturer's system warranty agreeing to repair or replace roofing that leaks or is damaged due to wind or other natural causes.
   1. Warranty Term: 20 years.
   2. For repair and replacement include costs of both material and labor in warranty.
   3. Include damage caused by 1 inch (25 mm) maximum diameter hail.
   4. Exceptions NOT Permitted:

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Carlisle SynTec Systems: www.carlisle-syntec.com/#sle.

B. Substitutions: Not permitted.

2.02 ROOFING APPLICATIONS

A. EPDM Membrane Roofing: One ply membrane, fully adhered, over insulation.

B. Roofing Assembly Performance Requirements and Design Criteria:
   1. Roof Covering External Fire Resistance Classification: Class A when tested per UL 790.
   2. Wind Uplift:
      a. Designed to withstand wind uplift forces calculated with ASCE 7.
      b. Design Wind Speed: In accordance with local building code and authorities having jurisdiction (AHJ).
   3. Insulation Thermal Resistance (R-Value): Provide R-30, minimum, over entire roof deck.
   4. Drainage: No standing water within 48 hours after precipitation.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

A. Single Source Responsibility: Provide and install products from single source.

B. Base Sheet: Manufacturer's standard, non-asphaltic, resin-bound, fiberglass-reinforced mat with mineral-filled, fire-resistant coating on one side.
   1. Product: Carlisle FR Base Sheet 1S.

C. Membrane:
   1. Material: Ethylene propylene diene monomer (EPDM); ASTM D4637/D4637M, Type I (non-reinforced).
   2. Thickness: 60 mil, 0.060 inch (1.5 mm), minimum.
   3. Sheet Width: Factory fabricated into largest sheets possible.
   4. Products:
      a. Carlisle SynTec Systems; Sure-Seal.

D. Seaming Materials: As recommended by membrane manufacturer.

E. Membrane Fasteners: As recommended and approved by membrane manufacturer.

F. Vapor Retarder: Material approved by roof manufacturer; compatible with roofing and insulation materials.

G. Flexible Flashing Material: Same material as membrane.

H. Base Flashing: Provide waterproof, fully adhered base flashing system at all penetrations, plane transitions, and terminations.

2.04 DECK SHEATHING AND COVER BOARDS

A. Deck Sheathing and Cover Board: Glass mat faced gypsum panels, ASTM C1177/C1177M, fire resistant type, 1/2 inch (13 mm) thick.
   1. Product:
      a. GP Dens-Deck Prime, distributed by Carlisle SynTec Systems.

2.05 INSULATION

A. Polyisocyanurate (ISO) Board Insulation: ASTM C1289, Type II, Class 1 - Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of the core foam; Grade 1.
   1. Compressive Strength: 16 psi (110 kPa).

2.06 ACCESSORIES

A. Prefabricated Flashing Accessories:
   1. Corners and Seams: Same material as membrane, in manufacturer's standard thicknesses.

2. Penetrations: Same material as membrane, with manufacturer's standard cut-outs, rigid inserts, clamping rings, and flanges.
    a. Carlisle SynTec Systems; Sure-Seal Pressure-Sensitive Pipe Seals; with factory-applied tape on deck flange.
3. Sealant Pockets: Same material as membrane, with manufacturer's standard accessories, in manufacturer's standard configuration.
    a. Carlisle SynTec Systems; Sure-Seal Pourable Sealant Pocket: 2 inches (51 mm) wide plastic support strip with factory-applied, adhesive-backed uncured EPDM flashing.
4. Carlisle SynTec Systems; Sure-Seal Pressure-Sensitive Reinforced Universal Securement Strip (RUSS):
    a. 9 inches (229 mm) wide, 45 mil, 0.045 inch (1.1 mm) thick, reinforced EPDM membrane with 3 inches (76 mm) wide, 30 mil, 0.030 inch (0.76 mm) thick cured synthetic rubber with pressure-sensitive adhesive laminated to both edges.

B. Asphalt Primer: ASTM D41/D41M primer for concrete decks, existing smooth built-up roofing, mineral surfaced cap sheet, or modified bitumen membranes.

C. Hot Asphalt: ASTM D312/D312M.

D. Insulation Adhesive: Two component polyurethane, expanding foam.

E. Insulation Joint Tape: Glass fiber reinforced type as recommended by insulation manufacturer, compatible with roofing materials; 6 inches (152 mm) wide; self-adhering.

F. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.

G. Membrane Adhesive: As recommended by membrane manufacturer.

H. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.

I. Strip Reglet Devices: Galvanized steel, maximum possible lengths per location, with attachment flanges.

J. Sealants: As recommended by membrane manufacturer.

K. Cleaner: Manufacturer's standard, clear, solvent-based cleaner.

L. Edgings and Terminations: Manufacturer's standard edge and termination accessories.
1. Products: Coping.
    a. Carlisle SynTec Systems; SecurEdge 300 Coping.
2. Termination Bar.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secure.

C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

D. Verify deck surfaces are dry and free of snow or ice.

E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 PREPARATION, GENERAL

A. Clean substrate thoroughly prior to roof application.

B. Do not begin work until other work that requires foot or equipment traffic on roof is complete.

C. Apply manufacturer's recommended vapor retarder or temporary roof before roof installation.

3.03 WOOD DECK PREPARATION

A. Verify flatness and tightness of joints of wood decking. Verify that all wood decking edges are fully supported. Fill knot holes with latex filler or completely cover with securely nailed sheet metal.

B. Confirm dry deck by moisture meter with 12 percent moisture maximum.

3.04 INSTALLATION - GENERAL

A. Perform work in accordance with manufacturer's instructions.

B. Do not apply roofing membrane during unsuitable weather.

C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.

D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

F. Coordinate the work with installation of associated counterflashings installed by other sections as the work of this section proceeds.

G. When substrate preparation is responsibility of another installer, notify Architect of unsatisfactory conditions before proceeding.

3.05 VAPOR RETARDER INSTALLATION

A. Apply vapor retarder to deck surface with adhesive in accordance with manufacturer's instructions.
   1. Extend vapor retarder under cant strips and blocking to deck edge.
   2. Install flexible flashing from vapor retarder to air seal material of wall construction, lap and seal to provide continuity of the air barrier plane.

B. Ensure vapor retarder is clean and dry, continuous, and ready for application of insulation.

3.06 INSULATION APPLICATION

A. Attachment of Insulation:
   1. Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions and Factory Mutual FM DS 1-29 requirements.

B. Lay subsequent layers of insulation with joints staggered minimum 6 inches (152 mm) from joints of preceding layer.

C. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.

D. Lay boards with edges in moderate contact without forcing, and gap between boards no greater than 1/4 inch (6.4 mm). Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

E. Tape joints of insulation in accordance with roofing and insulation manufacturers instructions.

F. At roof drains, use factory-tapered boards to slope down to roof drains over 18 inches (457 mm).

G. Do not apply more insulation than can be completely waterproofed in the same day.

3.07 MEMBRANE APPLICATION

A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.

B. Shingle joints on sloped substrate in direction of drainage.

C. Fully Adhered Application: Apply adhesive at manufacturer's recommended rate. Fully embed membrane in adhesive except in areas directly over or within 3 inches (76 mm) of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.

D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches (76 mm). Seal permanently waterproof.

E. At intersections with vertical surfaces:
   1. Extend membrane over cant strips and up a minimum of 4 inches (102 mm) onto vertical surfaces.
   2. Fully adhere flexible flashing over membrane and up to nailing strips.
   3. Secure flashing to nailing strips at 4 inches (102 mm) on center.
   4. Insert flashing into reglets and secure.

F. Coordinate installation of roof drains and sumps and related flashings, locate field splices away from low areas and roof drains, and lap upslope sheet over downslope sheet.

G. Install walkway pads at areas of concentrated traffic as indicated on drawings, and space pad joints to permit drainage.

H. Daily Seal: Install daily seal per manufacturer's instructions at the end of each workday. Prevent infiltration of water at incomplete flashings, terminations, and at unfinished membrane edges.

3.08 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for general requirements for field quality control and inspection.

B. Require site attendance of roofing and insulation material manufacturers daily during installation of this work.

3.09 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Remove wrappings, empty containers, paper, and other debris from the roof daily. Dispose of debris in compliance with local, State, and Federal regulations.

C. Remove bituminous markings from finished surfaces.

D. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.

E. Repair or replace defaced or damaged finishes caused by work of this section.

3.10 PROTECTION

A. Protect installed roofing and flashings from construction operations.

B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

SECTION 076200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings, counterflashings, and other items indicated in Schedule.

B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

A. Section 077123 - Manufactured Gutters and Downspouts.

1.03 REFERENCE STANDARDS

A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

C. ASTM A755/A755M - Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products; 2018.

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).

E. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2018).

F. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Sheet Metal Flashing and Trim:
   1. Hickman Edge Systems: www.hickmanedgesystems.com/#sle.
   2. Fry Reglet Corporation: www.fryreglet.com.

2.02 SHEET MATERIALS

A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch (0.61 mm) thick base metal.

2.03 PREPAINTED, METALLIC-COATED STEEL SHEETS

A. Comply with ASTM A755/A755M.

B. Metallic-Coated Steel Sheet Substrates:

1. Zinc-Coated, Galvanized, Steel Sheets: Commercial steel sheets, galvanized by hot-dip process; comply with ASTM A653/A653M; coating designation G90 (Z275).

C. Substrate Preparation for Prefinishing: Clean and prepare substrate surfaces in accordance with coating manufacturer's recommendations for substrate type and application.

D. Washcoats or Backercoats: Provide washcoats or backercoats in accordance with organic coating manufacturer's recommendations.

E. Primer Coats: Provide basecoat primers in accordance with coating manufacturer's recommendations for substrate type, topcoat, and application.

F. High-Performance Organic Coating System: Provide thermally cured, 50-percent PVDF or silicone-modified polyester systems in accordance with AAMA 2604; tested for weathering for 5 years with 5 delta units maximum of color change.

2.04 GUTTERS AND DOWNSPOUTS

A. See Section 077123 for manufactured gutters and downspouts.

B. Seal metal joints.

2.05 ACCESSORIES

A. Fasteners: Galvanized steel, with soft neoprene washers.

B. Primer Type: Zinc chromate.

C. Concealed Sealants: Non-curing butyl sealant.

D. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.

E. Asphalt Roof Cement: ASTM D4586/D4586M, Type I, asbestos-free.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch (0.38 mm).

3.03 INSTALLATION

A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted.

B. Apply plastic cement compound between metal flashings and felt flashings.

C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for field inspection requirements.

B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

3.05 SCHEDULE

A. Gutters and Downspouts:

B. Scuppers:

C. Coping, Cap, Parapet, Sill and Ledge Flashings:

D. Flashings Associated with Shingle Roofing, including Valley, Hip, Ridge, Eave, Gutter Edge, Gable Edge, Chimney:

E. Sheet Metal Roof Expansion Joint Covers, and Roof-to-Wall Joint Covers:

F. Counterflashings at Roofing Terminations (over roofing base flashings):

G. Counterflashings at Curb-Mounted Roof Items, including skylights and roof hatches:

H. Roofing Penetration Flashings, for Pipes, Structural Steel, and Equipment Supports:

END OF SECTION

SECTION 077123
MANUFACTURED GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pre-finished aluminum gutters and downspouts.

1.02 RELATED REQUIREMENTS

A. Section 076200 - Sheet Metal Flashing and Trim.

1.03 REFERENCE STANDARDS

A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

B. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Comply with SMACNA (ASMM) for sizing components for rainfall intensity determined by a storm occurrence of 1 in 10 years.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on prefabricated components.

C. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations, and installation details.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope to drain.

B. Prevent contact with materials that could cause discoloration, staining, or damage.

PART 2 PRODUCTS

2.01 MATERIALS

A. Pre-Finished Aluminum Sheet: ASTM B209/B209M; 0.032 inch (0.8 mm) thick.
   1. Finish: Plain, shop pre-coated with polyvinylidene fluoride (PVDF) coating.
   2. Color: White.

2.02 COMPONENTS

A. Gutters: CDA semi-circular style profile.

B. Downspouts: CDA round profile.

C. Anchors and Supports: Profiled to suit gutters and downspouts.
   1. Anchoring Devices: In accordance with CDA requirements.
   2. Gutter Supports: Brackets.
   3. Downspout Supports: Brackets.

D. Fasteners: Galvanized steel, with soft neoprene washers.

2.03 FABRICATION

A. Form gutters and downspouts of profiles and size indicated.

B. Fabricate with required connection pieces.

C. Form sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.

D. Hem exposed edges of metal.

E. Fabricate gutter and downspout accessories; seal watertight.

2.04 FINISHES

A. Fluoropolymer Coating: High Performance Organic Finish, AAMA 2604, multiple coat, thermally cured fluoropolymer finish system; color as indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that surfaces are ready to receive work.

3.02 INSTALLATION

A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.

B. Sheet Metal: Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories.

C. Slope gutters 1/4" per 10 feet.

D. Connect downspouts to existing storm sewer system. Seal connection watertight. Where existing downspouts empty onto grade rather than into a system, maintain existing condition.

END OF SECTION

SECTION 077200
ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roof curbs.

B. Equipment rails.

C. Roof penetrations mounting curbs.

D. Ridge vents.

E. Non-penetrating pedestals.

1.02 RELATED REQUIREMENTS

A. Section 077100 - Roof Specialties: Other manufactured roof specialty items.

1.03 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.

C. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2018, with Amendment (2019).

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance requirements.

C. Shop Drawings: Submit detailed layout developed for this project and provide dimensioned location and number for each type of roof accessory.

D. Warranty Documentation:
   1. Submit manufacturer warranty.
   2. Ensure that forms have been completed in Owner's name and registered with manufacturer.
   3. Submit documentation that roof accessories are acceptable to roofing manufacturer, and do not limit the roofing warranty.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store products under cover and elevated above grade.

1.06 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 2-year manufacturer warranty for roof accessories. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 ROOF CURBS

A. Roof Curbs Mounting Assemblies: Factory fabricated hollow sheet metal construction, internally reinforced, and capable of supporting superimposed live and dead loads and

designated equipment load with fully mitered and sealed corner joints welded or mechanically fastened, and integral counterflashing with top and edges formed to shed water.

1. Roof Curb Mounting Substrate: Curb substrate consists of corrugated metal roof deck with insulation.
2. Sheet Metal Material:
   a. Aluminum: 0.080 inch (2.03 mm) minimum thickness, with 3003 alloy, and H14 temper.
      1) Finish: Mill finish.
      2) Color: As selected by Architect from manufacturer's standard line of colors.

B. Curbs Adjacent to Roof Openings: Provide curb on each side of opening, with top of curb horizontal for equipment mounting.
   1. Provide preservative treated wood nailers along top of curb.
   2. Insulate inside curbs with 1-1/2 inch (38 mm) thick fiberglass insulation.
   3. Height Above Finished Roof Surface: 8 inches (203 mm), minimum.

C. Equipment Rail Curbs: Straight curbs on each side of equipment, with top of curbs horizontal and level with each other for equipment mounting.
   1. Height Above Finished Roof Surface: 8 inches (203 mm), minimum.

D. Equipment Support: Straight curbs on each side of equipment, with top of curbs parallel with metal roofing system and each other for equipment mounting.
   1. Height Above Metal Roofing System: 8 inches (203 mm), minimum.

E. Pipe, Duct, or Conduit Mounting Curbs: Vertical posts, minimum 8 inches (400 mm) square unless otherwise indicated.
   1. Height Above Finished Roof Surface: 8 inches (203 mm), minimum.

2.02 ROOF HATCHES AND VENTS

A. Ridge Vents: Factory fabricated, formed panels with integral attachment flanges and snap-on cover.
   1. Vent Material: 22-gauge, 0.0299-inch (0.76 mm) steel.
   2. Perforated Screen: 0.050-inch (1.27 mm) thick aluminum.
   3. Brackets: Manufacturer's standard 20 gauge, 0.0359 inch (0.91 mm).
   4. Finish: Manufacturer's standard polyvinylidene fluoride (PVDF) coating.
   5. Finish Color: To be selected by Architect from manufacturer's standard range.

2.03 NON-PENETRATING ROOFTOP SUPPORTS/ASSEMBLIES

A. Non-Penetrating Rooftop Support/Assemblies: Manufacturer-engineered and factory-fabricated, with pedestal bases that rest on top of roofing membrane, and not requiring any attachment to roof structure and not penetrating roofing assembly.
   1. Design Loadings and Configurations: As required by applicable codes.
   2. Height: Provide minimum clearance of 6 inches (152 mm) under supported items to top of roofing.
   3. Support Spacing and Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
   4. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
   5. Hardware, Bolts, Nuts, and Washers: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A153/A153M.

B. Pipe Supports: Provide attachment fixtures complying with MSS SP-58 and as indicated.

C. Duct Supports: Provide extruded aluminum supports and sized in accordance with diameter of supported ducts, and with base that is non-penetrating of roofing membrane.

D. Non-Penetrating Pedestals: Steel pedestals with square, round, or rectangular bases.
   1. Bases: High density polypropylene.

2. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
3. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. See Section 077100 for information on roof specialties.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using methods recommended by manufacturer for achieving acceptable results for applicable substrate under project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.

3.04 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Clean installed work to like-new condition.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.

B. Self-leveling pourable joint sealants.

C. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

A. Section 093000 - Tiling: Sealant between tile and plumbing fixtures and at junctions with other materials and changes in plane.

1.03 REFERENCE STANDARDS

A. ASTM C834 - Standard Specification for Latex Sealants; 2017 (Reapproved 2023).

B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2024.

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).

D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2025.

E. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2022.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:

1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
2. List of backing materials approved for use with the specific product.
3. Backing material recommended by sealant manufacturer.
4. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
5. Substrates the product should not be used on.
6. Substrates for which use of primer is required.
7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
8. Sample product warranty.

C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

E. Manufacturer's qualification statement.

F. Installer's qualification statement.

G. Executed warranty.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.

1.06 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

C. Extended Correction Period: Correct defective work within 2-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Nonsag Sealants:
   1. Franklin International, Inc: www.titebond.com/#sle.
   2. Pecora Corporation: www.pecora.com/#sle.
   3. Sika Corporation: usa.sika.com/#sle.
   4. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

B. Self-Leveling Sealants:
   1. Pecora Corporation: www.pecora.com/#sle.
   2. Sika Corporation: usa.sika.com/#sle.
   3. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:
   1. Exterior Joints:
      a. Seal the following joints:
         1) Joints between doors, windows, and other frames or adjacent construction.
         2) Joints between different exposed materials.
         3) Locations indicated on the drawings.
   2. Interior Joints:
      a. Seal the following joints:
         1) Joints between door frames and window frames and adjacent construction.
         2) In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, and piping penetrations.
         3) In sound-rated wall and ceiling assemblies, seal joints between wall assemblies and ceiling assemblies; between wall assemblies and other construction; between ceiling assemblies and other construction.
   3. Do Not Seal:
      a. Intentional weep holes in masonry.
      b. Joints where sealant installation is specified in other sections.
      c. Joints between suspended ceilings and walls.

B. Exterior Joints: Use nonsag nonstaining silicone sealant, unless otherwise indicated.
   1. Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane traffic-grade sealant.

C. Interior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
   1. Wall and Ceiling Joints in Wet Areas: Nonsag polyurethane sealant for continuous liquid immersion.
   2. Floor Joints in Wet Areas: Nonsag polyurethane non-traffic-grade sealant suitable for continuous liquid immersion.
   3. Joints between Tile in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white.
   4. In Sound-Rated Assemblies: Acrylic emulsion latex sealant.

D. Interior Wet Areas: restrooms, kitchens, food service areas, and food processing areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, and other similar items.

E. Sound-Rated Assemblies: Walls and ceilings identified as STC-rated, sound-rated, or acoustical.

2.03 JOINT SEALANTS - GENERAL

A. Colors: As indicated on drawings.

2.04 NONSAG JOINT SEALANTS

A. Nonstaining Silicone Sealant: ASTM C920, Grade NS, Uses M, A, G, and O; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus and minus 50 percent, minimum.
   2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
   3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
   4. Color: Match adjacent finished surfaces.
   5. Products:
      a. Pecora Corporation; Pecora 890 NST (Non-Staining Technology): www.pecora.com/#sle.
      b. Sika Corporation; Sikasil WS-290: usa.sika.com/#sle.
      c. Tremco Commercial Sealants & Waterproofing; Tremsil 200: www.tremcosealants.com/#sle.

B. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
   1. Color: White.
   2. Products:
      a. Pecora Corporation; Pecora 898 NST (Non-Staining Technology): www.pecora.com/#sle.
      b. Sika Corporation; Sikasil GP: usa.sika.com/#sle.

C. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus and minus 25 percent, minimum.
   2. Color: Match adjacent finished surfaces.
   3. Products:
      a. Pecora Corporation; DynaFlex: www.pecora.com/#sle.
      b. Sika Corporation; Sikaflex-1A: usa.sika.com/#sle.
      c. Tremco Commercial Sealants & Waterproofing; Dymonic 100: www.tremcosealants.com/#sle.

D. Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multicomponent; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface.
   1. Movement Capability: Plus and minus 35 percent, minimum.
   2. Color: Match adjacent finished surfaces.
   3. Products:
      a. Sika Corporation; Sikaflex-1A: usa.sika.com/#sle.

E. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, nonstaining, nonbleeding, nonsagging; not intended for exterior use.
   1. Color: Standard colors matching finished surfaces.
   2. Products:
      a. Pecora Corporation; AC-20 +Silicone: www.pecora.com/#sle.
      b. Tremco Commercial Sealants & Waterproofing; Tremflex 834: www.tremcosealants.com/#sle.

2.05 SELF-LEVELING JOINT SEALANTS

A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion .
   1. Movement Capability: Plus and minus 25 percent, minimum.
   2. Color: To be selected by Architect from manufacturer's standard range.
   3. Products:
      a. Sika Corporation; Sikaflex SL 1: usa.sika.com/#sle.

2.06 ACCESSORIES

A. Sealant Backing Materials, General: Materials placed in joint before applying sealants; assists sealant performance and service life by developing optimum sealant profile and preventing three-sided adhesion; type and size recommended by sealant manufacturer for compatibility with sealant, substrate, and application.

B. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Provide joint sealant installations complying with ASTM C1193.

C. Install acoustical sealant application work in accordance with ASTM C919.

D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

E. Install bond breaker backing tape where backer rod cannot be used.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 FIELD QUALITY CONTROL

A. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

3.05 POST-OCCUPANCY

A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width, i.e., at low temperature in thermal cycle. Report failures immediately and repair them.

END OF SECTION

SECTION 080671
DOOR HARDWARE SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preliminary schedule of door hardware sets for swinging and folding as indicated on drawings.

1.02 RELATED REQUIREMENTS

A. Section 087100 - Door Hardware: Requirements to comply with in coordination with this section.

1.03 REFERENCE STANDARDS

A. BHMA A156.3 - Exit Devices; 2025.

B. BHMA A156.5 - Cylinders and Input Devices for Locks; 2020.

C. BHMA A156.18 - Standard for Materials and Finishes; 2020.

D. DHI (H&S) - Sequence and Format for the Hardware Schedule; 2019.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Comply with submittal requirements as indicated in Section 087100.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Only manufacturers listed in Door Hardware Schedule or Section 087100 are considered acceptable, unless noted otherwise.

B. Obtain each type of door hardware as indicated from a single manufacturer and single supplier.

C. Manufacturer's Abbreviations: Coordinate with manufacturers listed in Section 087100.
   1. BAS - Best Access Systems.
   2. COM - Command Access Technologies
   3. GJ - Glynn Johnson.
   4. HES - HES.
   5. IVE - Ives.
   6. JOH - Johnson Hardware.
   7. LCN - LCN.
   8. NGP - National Guard Products.
   9. PEM - Pemko.
   10. SCH - Schlage.
   11. VD - Von Duprin.
   12. ZRO - Zero Industries, Inc.

2.02 DESCRIPTION

A. Door hardware sets provided represent the design intent, they are only a guideline and should not be considered a detailed or complete hardware schedule.
   1. Provide door hardware item(s) as required for similar purposes, even when item is not listed for a door in Door Hardware Schedule.
   2. Necessary items that are not included in a Hardware Set should be added and have the appropriate additional hardware as required for proper application and functionality.
   3. Door hardware supplier is responsible for providing proper size and hand of door for products required in accordance with Door Hardware Schedule and as indicated on drawings.
   4. Quantities listed are for each Pair (PR) of doors, or for each Single (SGL) door, as indicated in hardware sets.

2.03 LOCK FUNCTION CODES

A. Function Codes for Cylindrical Locks: Complying with BHMA A156.5.
   1. Code F82; Entry Lock: Push button locking. Button on inside locks outside knob/lever until unlocked by key or by rotating the inside knob/lever. Inside knob/lever always free. Deadlocking latch bolt.
   2. Code F84; Classroom Lock: Outside knob/lever locked/unlocked by key in outside knob/lever. Inside knob/lever always free. Deadlocking latchbolt.
   3. Code F86; Storeroom Lock: Outside knob/lever always locked/rigid. Latchbolt retracted by key in outside knob/lever or by rotating inside knob/lever. Inside knob/lever always free. Deadlocking latchbolt.

B. Function Codes for Exit Devices: Complying with BHMA A156.3.
   1. Code 08; Exit Device: Entrance by knob/lever. Key (pullside) locks/unlocks knob/lever.
   2. Code 09; Exit Device: Entrance by knob/lever with key (pullside) only. Unit is locked when the key is removed.

2.04 FINISHES

A. Finishes: Complying with BHMA A156.18.
   1. Code 643e: Aged Bronze, Satin Bronze Plated, Blackened, Satin Relieved, Clear Coated (former US equivalent US11).

PART 3 EXECUTION

3.01 DOOR HARDWARE SCHEDULE

A. Organize listing of door hardware components within each hardware set in compliance with 10-Part scheduling sequence indicated in DHI (H&S), unless otherwise indicated.

3.02 HARDWARE SET # 01: "CORRIDOR TO ROOM"

A. For use on Door Number(s): 102,102B, 104, 105, 116A, 200, 202, 204, 205A, 207, 212, 213, 213A, & 214.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
3 Each		HINGE	5BB1 4.5 X 4.5	643e	IVE
1 Each	F84	CLASSROOM LOCK	ND70-L-ATH	643e	SCH
1 Each		PERMANENT CORE		613	BAS
1 Each		WALL STOP	WS407CVX	643e	IVE
3 Each		SILENCER	SR64	GRY	IVE

C. Door may be locked or unlocked with a key, free egress at all times..

D. Doors 116A & 202: Provide floor stop instead of wall stop.

E. Door 205A: No wall stop. No floor stop.

3.03 HARDWARE SET # 02: "STORAGE ROOM"

A. For use on Door Number(s): 101,106, 110, 115, 201.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
3 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
1 Each	F86	STOREROOM LOCK	ND80-L-ATH	643e	SCH
1 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
1 Each		SURFACE CLOSER	4040XP	643e	LCN
1 Each		KICK PLATE	8400 10 Inch X 2 Inch LDW	643e	IVE
1 Each		OH STOP	410S	643e	GJ
3 Each		SILENCER	SR64	GRY	IVE

C. Door locked at all times, free egress at all times, self closing.

3.04 HARDWARE SET # 03: "STORAGE ROOM W/ ACCESS CONTROL"

A. For use on Door Number(s): B110 & 113.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
3 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
1 Each	F86	STOREROOM LOCK	ND80-L-ATH	643e	SCH
1 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
1 Each		SURFACE CLOSER	4040 XP	643e	LCN
1 Each		KICK PLATE	8400 10 X 2 Inch LDW	643e	IVE
1 Each		OH STOP	410S	643e	GJ
3 Each		SILENCER	SR64	GRY	IVE
1 Each		ELECTRIC STRIKE	5200-C	613E	HES
1 Each		CARD READER	OWNER SUPPLIED		

C. Door locked at all times, free egress at all times, self closing, access control device, fail-secure.

D. Door B10: Provide electric strike & card reader only. Otherwise existing door, frame & hardware to remain.

3.05 HARDWARE SET # 04: "STORAGE ROOM PAIR"

A. For use on Door Number(s): 113A, 117, & 211.

B. Provide for each Pair (PR) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
6 Each		HINGE	5BB1 4.5 X 4.5	643e	IVE
1 Each	F86	STOREROOM LOCK	ND80-L-ATH	643e	SCH
1 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
2 Each		FLUSH BOLTS	FB358 (INACTIVE LEAF)	643e	IVE
2 Each		DUSTPROOF STRIKE	DP2	643e	IVE
2 Each		OH STOP	410S	643e	GJ
2 Each		SURFACE CLOSER	4040 XP	643e	LCN

C. Door locked at all times, free egress at all times, self closing.

3.06 HARDWARE SET # 05: "FIRST FLOOR TOILET ROOM"

A. For use on Door Number(s): 103 & 108.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
3 Each		HINGE	5BB1 4.5 X 4.5	643e	IVE
1 Each		PUSH PLATE	8200 4 X 16 INCH	643e	IVE
1 Each		PULL PLATE	8303-8 3.5 X 15 INCH	643e	IVE
1 Each		SURFACE CLOSER	4040 XP	643e	LCN
1 Each		KICK PLATE	8400 10 X 2 Inch LDW	643e	IVE
1 Each		WALL STOP	WS407CVX	643e	IVE
3 Each		SILENCER	SR64	GRY	IVE

C. Door unlocked at all times, free egress at all times, self closing.

3.07 HARDWARE SET # 06: "BREAKROOM"

A. For use on Door Number(s): 203A.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
3 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
1 Each		PUSH PLATE	8200 4 X 16 INCH	643e	IVE
1 Each		PULL PLATE	8303-8 3.5 X 15 INCH	643e	IVE
1 Each		SURFACE CLOSER	4040XP-3049	643e	LCN
1 Each		KICK PLATE	8400 10 X 2 Inch LDW	643e	IVE
1 Each		WALL STOP	WS407CVX	643e	IVE
3 Each		SILENCER	SR64	GRY	IVE

C. Passage set, free entry & egress at all times, self closing with hold-open arm.

3.08 HARDWARE SET # 07: "SECOND FLOOR TOILET ROOM"

A. For use on Door Number(s): 208 & 209.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
3 Each		HINGE	5BB1 4.5 X 4.5	643e	IVE
1 Each	F82	ENTRANCE LOCK	ND91-L-ATH 10D	643e	SCH
1 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
1 Each		WALL STOP	WS407CVX	643e	IVE
1 Each		SURFACE CLOSER	4040 XP	643e	LCN
1 Each		KICK PLATE	8400 10' X 2' LDW	643e	IVE
1 Each		SILENCER	SR64	GRY	IVE

C. Free egress at all times, locked status indication trim on corridor side .

3.09 HARDWARE SET # 08: "BALLROOM SERVICE"

A. Double acting; no lock.

B. For use on Door Number(s): 114A, 114B, & 116.

C. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
1 Each		PIVOT SET	7255 SET	643e	IVE
2 Each		PUSH PLATE	8200 4 X 16 INCH	643e	IVE
1 Each		CONCEALED CLOSER	6033-3077T	622	LCN
2 Each		KICK PLATE	8400 10' X 2' LDW	643e	IVE

D. Passage set, free entry and egress, self closing.

3.10 HARDWARE SET # 09: "BALLROOM SERVICE PAIR"

A. Double acting; no lock.

B. For use on Door Number(s): 114 & 114C.

C. Provide for each Pair (PR) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
2 Each		PIVOT SET	7255 SET	643e	IVE
4 Each		PUSH PLATE	8200 4 X 16 INCH	643e	IVE
2 Each		CONCEALED CLOSER	6033-3077T	622	LCN
4 Each		KICK PLATE	8400 10' X 2' LDW	643e	IVE

D. Passage set, free entry and egress, self closing.

3.11 HARDWARE SET # 10: "BIFOLD"

A. For use on Door Number(s): 102A & 107.

B. Provide for each Pair (PR) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
2 Each		2 PANEL HW SET	170W363H	WHITE	JOH

C. No locking.

3.12 HARDWARE SET # 11: "INTERIOR UNEQUAL PAIR"

A. For use on Door Number(s): 109 & 109A.

B. Provide for each Pair (PR) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
6 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
1 Each	08	CONCEALED ROD EXIT DEVICE	9847WDC-L-996-07	643e	VD
1 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
2 Each		SURFACE CLOSER	4040XP-3077	643e	LCN
2 Each		KICK PLATE	8400 10' X 2' LDW	643e	IVE
2 Each		FLUSH BOLTS	FB358 (INACTIVE LEAF)	643e	IVE
2 Each		DUSTPROOF STRIKE	DP2	643e	IVE
2 Each		OH STOP	410S	643e	GJ
4 Each		SILENCER	SR64	GRY	IVE

C. Free egress at all times, self closing with hold-open arm.

D. Provide trim/ cover for finished instalation for back of exit device where visble through full glass door.

3.13 HARDWARE SET # 12: "EXTERIOR EXIT W/ ACCESS CONTROL"

A. For use on Door Number(s): B07 & 116B.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
3 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
1 Each	09	RIM EXIT DEVICE	QEL-98-L-996-07	643e	VD
1 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
1 Each		MOTORIZED LATCH RETRACTION KIT	MLRK1-VD	-	COM
1 Each		SURFACE CLOSER	4040 XP	643e	LCN
1 Each		KICK PLATE	8400 10' X 2' LDW	643e	IVE
1 Each		WEATHERSTRIPPING	188 PSA 17	GY	ZRO
1 Each		DOOR SWEEP	8192	D	ZRO
1 Each		THRESHOLD	545	B-ORB	ZRO
1 Each		ELECTRIC POWER TRANSFER	EPT-2	643e	VD
1 Each		CARD READER	OWNER SUPPLIED		

C. Door locked at all times, free egress at all times, self closing, access control device, fail-secure.

3.14 HARDWARE SET # 13: "EXTERIOR BASEMENT PAIR W/ ACCESS CONTROL"

A. For use on Door Number(s): B01.

B. Provide for each Pair (PR) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
6 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
1 Each	09	CONCEALED ROD EXIT DEVICE	QEL-9847-L-996-07	643e	VD
1 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
1 Each		MOTORIZED LATCH RETRACTION KIT	MLRK1-VD	-	COM
2 Each		SURFACE CLOSER	4040 XP	643e	LCN
2 Each		KICK PLATE	8400 10' X 2' LDW	643e	IVE
2 Each		FLISH BOLTS	FB358 (INACTIVE LEAF)	643e	IVE
2 Each		DUSTPROOF STRIKE	DP2	643e	IVE
1 Each		WEATHERSTRIPPING	188 PSA 25	GY	ZRO
2 Each		DOOR SWEEP	8192	D	ZRO
1 Each		THRESHOLD	545	B-ORB	ZRO
1 Each		ELECTRIC POWER TRANSFER	EPT-2	643e	VD
1 Each		CARD READER	OWNER SUPPLIED		

C. Door locked at all times, free egress at all times, self closing, access control device, fail-secure.

3.15 HARDWARE SET # 14: "EXTERIOR EXIT PAIR W/ ACCESS CONTROL"

A. For use on Door Number(s): 111.

B. Provide for each Pair (PR) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
6 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
1 Each	09	CONCEALED ROD EXIT DEVICE	QEL-9847-L-996-07	643e	VD
1 Each	09	CONCEALED ROD EXIT DEVICE	9847-L-996-07	643e	VD
2 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
1 Each		MOTORIZED LATCH RETRACTION KIT	MLRK1-VD	-	COM
2 Each		SURFACE CLOSER	4040 XP	643e	LCN
2 Each		KICK PLATE	8400 10' X 2' LDW	643e	IVE
1 Each		WEATHERSTRIPPING	188 PSA 25	GY	ZRO
2 Each		DOOR SWEEP	8192	D	ZRO
1 Each		THRESHOLD	545	B-ORB	ZRO
1 Each		ELECTRIC POWER TRANSFER	EPT-2	643e	VD
1 Each		CARD READER	OWNER SUPPLIED		

C. Door locked at all times, free egress at all times, self closing, access control device, fail-secure.

D. Provide trim/ cover for finished installation for back of exit device where visible through full glass door.

3.16 HARDWARE SET # 15: "EXTERIOR PAIR"

A. For use on Door Number(s): 112A & 112B.

B. Provide for each Pair (PR) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR

6 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
2 Each	08	CONCEALED ROD EXIT DEVICE	9847-L-996-07	643e	VD
2 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
2 Each		SURFACE CLOSER	4040XP-3077	643E	LCN
2 Each		KICK PLATE	8400 10' X 2' LDW	643E	IVE
1 Each		WEATHERSTRIPPING	199 PSA 25	GY	ZRO
2 Each		DOOR SWEEP	8192	D	ZRO
1 Each		THRESHOLD	545	B-ORB	ZRO

C. Free egress at all time, self closing with hold-open arm.

D. Provide trim/ cover for finished installation for back of exit device where visible through full glass door.

3.17 HARDWARE SET # 16: "INTERIOR EXIT PAIR"

A. For use on Door Number(s): 112.

B. Provide for each Pair (PR) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
6 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
2 Each	08	CONCEALED ROD EXIT DEVICE	9847WDC-L-996-07	643e	VD
2 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
2 Each		SURFACE CLOSER	4040XP-3077	643e	LCN
2 Each		KICK PLATE	8400 10' X 2' LDW	643e	IVE
2 Each		OH STOP	410S	643e	GJ
4 Each		SILENCER	SR64	GRY	IVE

C. Free egress at all times, self closing with hold-open arm.

D. Provide trim/ cover for finished installation for back of exit device where visible through full glass door.

3.18 HARDWARE SET # 17: "EXTERIOR EXIT"

A. For use on Door Number(s): 203.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
3 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
1 Each	09	RIM EXIT DEVICE	98-L-996-07	643e	VD
1 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
1 Each		SURFACE CLOSER	4040 XP	643e	LCN
1Each		KICK PLATE	8400 10' X 2' LDW	643e	IVE
1 Each		WEATHERSTRIPPING	188 PSA 17	GY	ZRO
1 Each		DOOR SWEEP	8192	D	ZRO
1 Each		THRESHOLD	545	B-ORB	ZRO

C. Door locked at all times, free egress at all times, self closing.

3.19 HARDWARE SET # 18: "OFFICE SUITE W/ ACCESS CONTROL"

A. For use on Door Number(s): 206.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR

3 Each		HW HINGE	5BB1HW 4.5 X 4.5	643e	IVE
1 Each	F84	CLASSROOM LOCK	ND70-L-ATH	643e	SCH
1 Each		PERMANENT CORE	OWNER SUPPLIED	613	BAS
1 Each		SURFACE CLOSER	4040 XP	643e	LCN
1 Each		WALL STOP	WS407CVX	643e	IVE
3 Each		SILENCER	SR64	GRY	IVE
1 Each		ELECTRIC STRIKE	5200-C	613E	HES
1 Each		CARD READER	OWNER SUPPLIED		

C. Free egress at all times, self closing, access control device, fail-secure.

END OF SECTION

SECTION 087100
DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for wood and hollow metal doors.

B. Electrically operated and controlled hardware.

C. Thresholds.

D. Weatherstripping and gasketing.

1.02 RELATED REQUIREMENTS

A. Section 080671 - Door Hardware Schedule: Schedule of door hardware sets.

B. Section 081113 - Hollow Metal Doors and Frames.

C. Section 081433 - Stile and Rail Wood Doors.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. BHMA (CPD) - Certified Products Directory; Current Edition.

C. BHMA A156.1 - Standard for Butts and Hinges; 2021.

D. BHMA A156.2 - Bored and Preassembled Locks and Latches; 2022.

E. BHMA A156.3 - Exit Devices; 2025.

F. BHMA A156.4 - Door Closers and Pivots; 2024.

G. BHMA A156.6 - Standard for Architectural Door Trim; 2021.

H. BHMA A156.7 - Template Hinge Dimensions; 2022.

I. BHMA A156.8 - Door Controls - Overhead Stops and Holders; 2021.

J. BHMA A156.14 - Sliding and Folding Door Hardware; 2024.

K. BHMA A156.16 - Standard for Auxiliary Hardware; 2023.

L. BHMA A156.17 - Self Closing Hinges & Pivots; 2025.

M. BHMA A156.18 - Standard for Materials and Finishes; 2020.

N. BHMA A156.21 - Thresholds; 2025.

O. BHMA A156.22 - Standard for Gasketing; 2021.

P. BHMA A156.25 - Electrified Locking Devices; 2023.

Q. BHMA A156.31 - Electric Strikes and Frame Mounted Actuators; 2024.

R. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.

S. BHMA A156.115W - Hardware Preparation in Wood Doors with Wood or Steel Frames; 2006.

T. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; 2004.

U. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors; 1993; also in WDHS-1/WDHS-5 Series, 1996.

V. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

W. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

X. UL (DIR) - Online Certifications Directory; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.

B. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
   1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
   2. Provide complete description for each door listed.
   3. Provide manufacturer name, product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.
   4. Include account of abbreviations and symbols used in schedule.

D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

E. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
   1. Submit manufacturer's parts lists and templates.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

H. Specimen warranty.

I. Project Record Documents: Record actual locations of concealed equipment, services, and conduit.

J. Maintenance Materials and Tools: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Tools: One set of each special wrench or tool applicable for each different or special hardware component, whether supplied by hardware component manufacturer or not.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer's Warranty: Provide warranty against defects in material and workmanship for period indicated. Complete forms in Owner's name and register with manufacturer.
   1. Closers: Five years, minimum.
   2. Exit Devices: Three years, minimum.

3. Locksets and Cylinders: Three years, minimum.
4. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Provide door hardware products that comply with the following requirements:
1. Applicable provisions of federal, state, and local codes.
2. Accessibility: ADA Standards and ICC A117.1.
3. Listed and certified compliant with specified standards by BHMA (CPD).
4. Hardware Preparation for Steel Doors and Steel Frames: BHMA A156.115.
5. Hardware Preparation for Wood Doors with Wood or Steel Frames: BHMA A156.115W.
6. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified.

D. Electrically Operated and/or Controlled Hardware: Provide necessary power supplies, power transfer hinges, relays, and interfaces as required for proper operation; provide wiring between hardware and control components and to building power connection in compliance with NFPA 70.

E. Lock Function: Provide lock and latch function numbers and descriptions of manufacturer's series. See Door Hardware Schedule.

F. Fasteners:
1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
a. Aluminum fasteners are not permitted.
b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
2. Provide stainless steel machine screws and lead expansion shields for concrete and masonry substrates.

2.02 HINGES

A. Manufacturers:
1. Ives, an Allegion brand: www.allegion.com/us/#sle.

B. Hinges: Comply with BHMA A156.1, Grade 1.
1. Self Closing Hinges: Comply with BHMA A156.17.
2. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.
a. Provide hinge width required to clear surrounding trim.
3. Provide hinges on every swinging door.
4. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
5. Provide ball-bearing hinges at each door with closer.
6. Provide non-removable pins on exterior outswinging doors.
7. Provide power transfer hinges where electrified hardware is mounted in door leaf.
8. Provide following quantity of butt hinges for each door:
a. Doors From 60 inches (1.5 m) High up to 90 inches (2.3 m) High: Three hinges.

2.03 PIVOTS

A. Manufacturers:
1. Ives, an Allegion brand: www.allegion.com/us/#sle.

2.04 TRACK AND HANGERS

A. Manufacturers:
1. Johnson Hardware: www.johnsonhardware.com/#sle.

B. Sliding and Bifolding Door Hardware: Comply with BHMA A156.14.
   1. Provide track, hanger fasteners, guides, and pulls; size track and hangers in accordance with manufacturer's recommendations for weight of doors.
   2. Provide one pull for each pair of panels hinged together.

2.05 FLUSH BOLTS

A. Manufacturers:
   1. Ives, an Allegion brand: www.allegion.com/us/#sle.

B. Flush Bolts: Comply with BHMA A156.16, Grade 1.
   1. Flush Bolt Throw: 3/4 inch (19 mm), minimum.
   2. Provides extension bolts in leading edge of door, one bolt into floor, one bolt into top of frame.
      a. Pairs of Swing Doors: At inactive leaves, provide flush bolts of type as required to comply with code.
   3. Provide dustproof floor strike for bolt into floor, except at metal thresholds.
   4. Self-Latching Flush Bolts: Automatically latch upon closing of door; manually retracted; located on inactive leaf of pair of doors.

2.06 EXIT DEVICES

A. Manufacturers:
   1. Von Duprin, an Allegion brand: www.allegion.com/us/#sle.

B. Exit Devices: Comply with BHMA A156.3, Grade 1.
   1. Lever design to match lockset trim.
   2. Provide cylinder with cylinder dogging or locking trim.
   3. Provide exit devices properly sized for door width and height.
   4. Provide strike as recommended by manufacturer for application indicated.
   5. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non-fire-rated doors.

2.07 ELECTRIC STRIKES

A. Manufacturers:
   1. HES; an Assa Abloy Group company: www.assaabloydss.com/#sle.

B. Electric Strikes: Comply with BHMA A156.31, Grade 1.
   1. Provide UL (DIR) listed burglary-resistant electric strike; style to suit locks.
   2. Provide non-handed 24 VDC electric strike suitable for door frame material and scheduled lock configuration.
   3. Provide transformer and rectifier as necessary for complete installation.
   4. Provide with 2 Amp or less motor kit.

2.08 CYLINDRICAL LOCKS

A. Manufacturers:
   1. Schlage, an Allegion brand: www.allegion.com/us/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
   1. Bored Hole: 2-1/8 inch (54 mm) diameter.
   2. Latchbolt Throw: 1/2 inch (12.7 mm), minimum.
   3. Backset: 2-3/4 inch (70 mm) unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.
   5. Trim: Provide lever handle or pull trim on outside of each lock, unless otherwise indicated.

2.09 DOOR PULLS AND PUSH PLATES

A. Manufacturers:

1. Ives, an Allegion brand: www.allegion.com/us/#sle.

B. Door Pulls and Push Plates: Comply with BHMA A156.6.
1. Pull Type: Straight, unless otherwise indicated.
2. Push Plate Type: Flat, with square corners, unless otherwise indicated.
a. Edges: Beveled, unless otherwise indicated.
3. Material: Aluminum, unless otherwise indicated.

2.10 COORDINATORS

A. Coordinators: Provide on doors having closers and self-latching or automatic flush bolts to ensure that inactive door leaf closes before active door leaf.
1. Type: Bar, unless otherwise indicated.
2. Material: Aluminum, unless otherwise indicated.
3. Ensure that coordination of other door hardware affected by placement of coordinators and carry bar is applied properly for completely operable installation.

2.11 CLOSERS

A. Manufacturers; Surface Mounted:
1. LCN, an Allegion brand: www.allegion.com/us/#sle.

B. Manufacturers; Concealed - Overhead:
1. LCN, an Allegion brand: www.allegion.com/us/#sle.

C. Closers: Comply with BHMA A156.4, Grade 1.
1. Type: Surface mounted to door.
2. Provide door closer on each exterior door.
3. At corridor entry doors, mount closer on room side of door.
4. At outswinging exterior doors, mount closer on interior side of door.

2.12 OVERHEAD STOPS AND HOLDERS

A. Manufacturers:
1. Glynn-Johnson, an Allegion brand: www.allegion.com/us/#sle.

B. Overhead Stops and Holders (Door Checks): Comply with BHMA A156.8, Grade 1.
1. Provide stop for every swinging door, unless otherwise indicated.

2.13 KICK PLATES

A. Manufacturers:
1. Ives, an Allegion brand: www.allegion.com/us/#sle.

B. Kick Plates: Provide along bottom edge of push side of every door with closer, except aluminum storefront and glass entry doors, unless otherwise indicated.
1. Size: 10 inch (254 mm) high by 2 inch (51 mm) less door width (LDW) on push side of door.

2.14 WALL STOPS

A. Manufacturers:
1. Ives, an Allegion brand: www.allegion.com/us/#sle.

B. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
1. Provide wall stops to prevent damage to wall surface upon opening door.
2. Type: Bumper, concave, wall stop.
3. Material: Aluminum housing with rubber insert.

2.15 THRESHOLDS

A. Manufacturers:
1. Zero International, Inc: www.zerointernational.com/#sle.

B. Thresholds: Comply with BHMA A156.21.

1. Provide threshold at interior doors for transition between two different floor types, and over building expansion joints, unless otherwise indicated.
2. Provide threshold at each exterior door, unless otherwise indicated.
3. Type: Flat surface.
4. Material: Aluminum.
5. Threshold Surface: Fluted horizontal grooves across full width.
6. Field cut threshold to profile of frame and width of door sill for tight fit.
7. Provide non-corroding fasteners at exterior locations.

2.16 WEATHERSTRIPPING AND GASKETING

A. Manufacturers:
   1. Zero International, Inc: www.zerointernational.com/#sle.

B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
   1. Head and Jamb Type: Self-adhesive.
   2. Door Sweep Type: Encased in retainer.
   3. Material: Aluminum, with brush weatherstripping.
   4. Provide weatherstripping on each exterior door at head, jambs, and meeting stiles of door pairs, unless otherwise indicated.
   5. Provide door bottom sweep on each exterior door, unless otherwise indicated.

2.17 SILENCERS

A. Manufacturers:
   1. Ives, an Allegion brand: www.allegion.com/us/#sle.

B. Silencers: Provide at equal locations on door frame to mute sound of door's impact upon closing.
   1. Single Door: Provide three on strike jamb of frame.
   2. Pair of Doors: Provide two on head of frame, one for each door at latch side.
   3. Material: Rubber, gray color.

2.18 POWER SUPPLY

A. Manufacturers:
   1. Securitron; an Assa Abloy Group company: www.assaabloydss.com/#sle.

B. Power Supply: Hard wired, with multiple zones providing eight (8) breakers for each output panel with individual control switches and LED's; UL (DIR) Class 2 listed.
   1. Power: 24VDC, 2 Amp; with 120 VAC power supply.
   2. Operating Temperature: 32 to 110 degrees F (0 to 43 degrees C).
   3. Provide with emergency release terminals that release devices upon activation of fire alarm system.

2.19 FINISHES

A. Finishes: Identified in Section 08 0671 - Door Hardware Schedule.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

B. Verify that electric power is available to power operated devices and of correct characteristics.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Use templates provided by hardware item manufacturer.

C. Do not install surface mounted items until application of finishes to substrate are fully completed.

D. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
   1. For Steel Doors and Frames: Install in compliance with DHI (LOCS) recommendations.
   2. For Wood Doors: Install in compliance with DHI WDHS.3 recommendations.
   3. Mounting heights in compliance with ADA Standards:
      a. Locksets: 40-5/16 inch (1024 mm).
      b. Push Plates/Pull Bars: 42 inch (1067 mm).
      c. Exit Devices: 40-5/16 inch (1024 mm).

E. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.03 FIELD QUALITY CONTROL

A. Perform field inspection and testing under provisions of Section 014000 - Quality Requirements.

3.04 ADJUSTING

A. Adjust work under provisions of Section 017000 - Execution and Closeout Requirements.

B. Adjust hardware for smooth operation.

C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.05 CLEANING

A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.

B. Clean adjacent surfaces soiled by hardware installation.

C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

3.06 PROTECTION

A. Protect finished Work under provisions of Section 017000 - Execution and Closeout Requirements.

B. Do not permit adjacent work to damage hardware or finish.

END OF SECTION

SECTION 088000
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing units.

C. Glazing compounds.

1.02 RELATED REQUIREMENTS

A. Section 081113 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.

B. Section 081433 - Stile and Rail Wood Doors: Glazed lites in doors.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).

E. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.

F. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2025.

G. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.

H. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2024.

I. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.

J. GANA (SM) - GANA Sealant Manual; 2008.

K. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

L. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.

M. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.

N. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

D. Certificate: Certify that products of this section meet or exceed specified requirements.

E. Manufacturer's qualification statement.

F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Insulating Glass Units: One of each glass size and each glass type.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1.06 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F (4 degrees C).

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Insulating Glass Units: Provide a five (5) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Pilkington North America Inc: www.pilkington.com/na/#sle.
   3. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
   1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
   2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
   3. Glass thicknesses listed are minimum.

B. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
   1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 7 computer program.
   2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 7 computer program.
   3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
   1. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
   2. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
   3. Thicknesses: As indicated; provide greater thickness as required for exterior glazing wind load design.

2.04 INSULATING GLASS UNITS

A. Manufacturers:
   1. Glass: Any of the manufacturers specified for float glass.

B. Fabricator: Certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.

C. Insulating Glass Units: Types as indicated.
   1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
   2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
   3. Spacer Color: White.
   4. Edge Seal:
      a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
      b. Color: Black.
   5. Purge interpane space with dry air, hermetically sealed.

D. Type IG-1 - Insulating Glass Units: Vision glass, double glazed. Safety glazing.
   1. Applications: Exterior glazing unless otherwise indicated.
   2. Space between lites filled with air.
   3. Outboard Lite: Fully tempered safety glass, 1/4 inch (6.4 mm) thick, minimum.
      a. Tint: Clear.
      b. Coating: Low-E (passive type), on #2 surface.
   4. Inboard Lite: Fully tempered safety glass, 1/4 inch (6.4 mm) thick, minimum.
      a. Tint: Clear.
   5. Total Thickness: 1 inch (25.4 mm).
   6. Thermal Transmittance (U-Value), Winter - Center of Glass: 0.29, nominal.
   7. Visible Light Transmittance (VLT): 65 percent, nominal.
   8. Solar Heat Gain Coefficient (SHGC): 0.27, nominal.
   9. Visible Light Reflectance, Outside: 14 percent, nominal.
   10. Glazing Method: Dry glazing method, gasket glazing.

2.05 BASIS OF DESIGN - INSULATING GLASS UNITS

A. Basis of Design - Insulating Glass Units: Vision glazing, with low-e coating.
   1. Applications: Exterior insulating glass glazing unless otherwise indicated.
   2. Space between lites filled with air.
   3. Total Thickness: 1 inch (25.4 mm).
   4. Thermal Transmittance (U-Value), Winter - Center of Glass: 0.29, nominal.
   5. Visible Light Transmittance (VLT): 65 percent, nominal.
   6. Shading Coefficient: 0.32, nominal.
   7. Solar Heat Gain Coefficient (SHGC): 0.27, nominal.
   8. Visible Light Reflectance, Outside: 14 percent, nominal.
   9. Glazing Method: Dry glazing method, gasket glazing.
   10. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
   11. Spacer Color: White.
   12. Edge Seal:
      a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
   13. Color: Black.

14. Purge interpane space with dry air, hermetically sealed.
15. Basis of Design - Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
16. Outboard Lite: Fully tempered safety glass, 1/4 inch (6.4 mm) thick, minimum.
    a. Low-E Coating: Vitro Architectural Glass (formerly PPG Glass) Solarban 70 glass on #2 surface.
    b. Glass: Clear.
17. Inboard Lite: Fully tempered safety glass, 1/4 inch (6.4 mm) thick.
    a. Glass: Clear.
18. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of another acceptable manufacturer.

2.06 GLAZING UNITS

A. Type G-1 - Monolithic Exterior Vision Glazing:
   1. Applications: Interior glazing unless noted otherwise.
   2. Glass Type: Fully tempered safety glass.
   3. Tint: Clear.
   4. Thickness: 1/4 inch (6.4 mm), nominal.

2.07 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) by width of glazing rabbet space minus 1/16 inch (1.5 mm) by height to suit glazing method and pane weight and area.

B. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

D. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

E. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove nonpermanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.06 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Metal stud wall framing.

C. Metal channel ceiling framing.

D. Acoustic insulation.

E. Cementitious backing board.

F. Gypsum wallboard.

G. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 079200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members; 2016, with Supplement (2020).

B. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing; 2020.

C. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing; 2015, with Errata (2020).

D. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2023.

E. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2023.

F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

G. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.

H. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.

I. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).

J. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board; 2004 (Reapproved 2020).

K. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing; 2003 (Reapproved 2017).

L. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.

M. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.

N. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2023.

O. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2022.

P. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.

Q. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.

R. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2022, with Editorial Revision (2023).

S. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.

T. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.

U. GA-216 - Application and Finishing of Gypsum Panel Products; 2024.

V. GA-226 - Application of Gypsum Board to Form Curved Surfaces; 2025.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data:
   1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.
   2. Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

C. Installer's Qualification Statement.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.

B. Store metal products to prevent corrosion.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 METAL FRAMING MATERIALS

A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent.
   1. Structural Grade: ST33H.
   2. Corrosion Protection Coating Designation: G40, or equivalent in accordance with AISI S220.

B. Manufacturers - Metal Framing, Connectors, and Accessories:
   1. CEMCO: www.cemcosteel.com/#sle.
   2. ClarkDietrich: www.clarkdietrich.com/#sle.
   3. MarinoWARE: www.marinoware.com/#sle.

C. Nonstructural Framing System Components: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf (L/120 at 240 Pa).
   1. Studs: C-shaped with flat faces.
   2. Runners: U shaped, sized to match studs.
   3. Ceiling Channels: C-shaped.
   4. Flexible Track: Flexible framing consisting of adjustable leg straps and pivoting, hinged track brackets designed to provide curved framing assemblies of varying radii.

a. Dimensions: 8 inches (25.4 mm) deep by 1-3/16 inches (30.2 mm) high in lengths and configurations indicated.
b. Products:
1) ClarkDietrich; 360TRAK: www.clarkdietrich.com/#sle.

D. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection and prevent rotation of studs while maintaining structural performance of partition.
1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100.
2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot-dipped galvanized coating.

E. Non-structural Framing Accessories:
1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
2. Framing Connectors: ASTM A653/A653M G90 galvanized steel clips; secures cold rolled channel to wall studs for lateral bracing.

F. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.

2.03 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
1. CertainTeed Corporation: www.certainteed.com/#sle.
2. USG Corporation: www.usg.com/#sle.
3. National Gypsum Company: www.nationalgypsum.com.

B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
a. Mold resistant board is required toilet rooms & kitchens.
3. Thickness:
a. Vertical Surfaces: 5/8 inch (16 mm).
b. Ceilings: 1/2 inch (13 mm).
c. Curved Surfaces: 1/4 inch (6 mm).

C. Backing Board For Wet Areas: One of the following products:
1. Application: Surfaces behind tile in wet areas, including toilet fixtures.
2. Application: Horizontal surfaces behind tile in wet and non-wet areas including countertops and vanities.
3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
4. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
a. Thickness: 5/8 inch (16 mm).

D. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings, unless otherwise indicated.
2. Thickness: 1/2 inch (13 mm).
3. Edges: Tapered.

2.04 GYPSUM BOARD ACCESSORIES

A. Acoustic Insulation: ASTM C665; preformed mineral-fiber, friction fit type, unfaced; thickness 2 inches (50.8 mm).

B. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5) or galvanized steel sheet ASTM A924/A924M G90, unless noted otherwise.

1. Types: As detailed or required for finished appearance.
2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.

C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
1. Paper Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners _____.
2. Joint Compound: Drying type, vinyl-based, ready-mixed.
3. Joint Compound: Setting type, field-mixed.

D. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches (0.84 mm) in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.

E. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch (0.84 to 2.84 mm) in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

F. Nails for Attachment to Wood Members: ASTM C514.

G. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

H. Adhesive for Attachment to Wood, ASTM C557 and Metal:

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C1007AISI S220 and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members at 16 inches on center (at 400 mm on center).
1. Level ceiling system to a tolerance of 1/600.
2. Laterally brace entire suspension system.

C. Studs: Space studs at 16 inches on center (at 406 mm on center).
1. Extend partition framing to structure where indicated and to ceiling in other locations.
2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
3. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
1. Place one bead continuously on substrate before installation of perimeter framing members.
2. Place continuous bead at perimeter of each layer of gypsum board.
3. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.04 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.

D. Cementitious Backing Board: Install over steel framing members where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

E. Installation on Metal Framing: Use screws for attachment of gypsum board.

F. Installation on Wood Framing: For nonrated assemblies, install as follows:
   1. Single-Layer Applications: Screw attachment.

G. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
   1. Not more than 30 feet (10 meters) apart on walls and ceilings over 50 feet (16 meters) long.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.06 JOINT TREATMENT

A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.

B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
   3. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.

C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).

3.07 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet (3 mm in 3 m) in any direction.

3.08 PROTECTION

A. Protect installed gypsum board assemblies from subsequent construction operations.

END OF SECTION

SECTION 093000
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Cementitious backer board as tile substrate.

D. Ceramic trim.

E. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 079200 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

B. Section 092116 - Gypsum Board Assemblies: Tile backer board.

1.03 REFERENCE STANDARDS

A. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2024.

B. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2023.

C. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2019.

D. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2023.

E. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2023.

F. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2023.

G. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2022.

H. ANSI A326.3 - American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials; 2021.

I. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2025.

J. TCNA (HB-GP) - Handbook for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs Installation; 2023.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.

D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches (457 by 457 mm) in size illustrating pattern, color variations, and grout joint size variations.

E. Installer's qualification statement.

F. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.
2. Extra Tile: 5 percent of each size, color, and surface finish combination.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.

B. Installer Qualifications:
   1. Company specializing in performing tile installation, with minimum of five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature above 50 degrees F (10 degrees C) and below 100 degrees F (38 degrees C) during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Tile:
   1. Architessa: www.architessa.com/#sle.
   2. Dal-Tile Corporation: www.daltile.com/#sle.
   3. As indicated in FINISH LEGEND.
   4. Source Limitations: Furnish products produced by single manufacturer and obtained from single supplier.

B. Setting Materials:
   1. Mapei Corporation: www.mapei.com/#sle.
   2. Source Limitations: Furnish products produced by single manufacturer and obtained from single supplier.

C. Grout:
   1. Mapei Corporation: www.mapei.com/#sle.
   2. Source Limitations: Furnish products produced by single manufacturer and obtained from single supplier.

2.02 PERFORMANCE REQUIREMENTS

A. Floor Tile: Provide tile for flooring applications with minimum wet Dynamic Coefficient of Friction (DCOF) of 0.42 when tested in accordance with ANSI A326.3.

2.03 TILE

A. Glazed Wall Tile: ANSI A137.1 standard grade.
   1. See FINISH LEGEND for specific manufacturer, products, sizes, pattern, color, and other pertinent details.

B. Porcelain Tile: ANSI A137.1 standard grade.
   1. See FINISH LEGEND for specific manufacturer, products, sizes, patterns, colors, and other pertinent details.

2.04 TRIM AND ACCESSORIES

A. Ceramic Trim: Matching bullnose ceramic shapes in sizes coordinated with field tile.
   1. Applications:
      a. Open Edges: Bullnose.
      b. Inside Corners: Jointed.
   2. Manufacturers: Same as for tile.

B. Non-Ceramic Trim: Satin brass anodized extruded aluminum, style and dimensions to suit application, set with tile mortar or adhesive.
   1. Applications:
      a. Open edges of wall and floor tile.
      b. Thresholds at door openings.
   2. Products:
      a. Schluter-Systems; Dilex: www.schluter.com/#sle.
      b. See product indicated in FINISH LEGEND.

2.05 SETTING MATERIALS

A. Provide setting and grout materials from same manufacturer.

B. Improved Latex-Portland Cement Mortar Bond Coat: ANSI A118.15.
   1. Applications: Use where large and heavy tile mortar is indicated on drawings.
   2. Products:
      a. Mapei Corporation; Granirapid System: www.mapei.com/#sle.

C. Hybrid Polymer-Based Adhesive: One-part, non-sag, polymer-based adhesive suitable for setting gauged porcelain tiles, panels, and slabs.
   1. Products:
      a. Mapei Corporation; Ultrabond ECO GPT: www.mapei.com/#sle.

2.06 GROUTS

A. Provide setting and grout materials from same manufacturer.

B. Standard Grout: ANSI A118.6 standard cement grout.
   1. Applications: Use where indicated on drawings. See FINISH LEGEND.
   2. Use sanded grout for joints 1/8 inch (3.2 mm) wide and larger; use unsanded grout for joints less than 1/8 inch (3.2 mm) wide.
   3. Color: As indicated on drawings.
   4. Products:
      a. Mapei Corporation; Keracolor U Unsanded Grout: www.mapei.com/#sle.

2.07 MAINTENANCE MATERIALS

A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.
   1. Applications: Between tile and plumbing fixtures.
   2. Color: As selected by Architect from manufacturer's full line.
   3. Products:
      a. Mapei Corporation; Mapesil T Plus: www.mapei.com/#sle.

2.08 ACCESSORY MATERIALS

A. Waterproofing & Uncoupling Membrane at Floors: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
   1. Bonded Sheet Membrane Type:
      a. Material: High-density polyethylene sheet membrane with nonwoven polypropylene laminated to both sides, 20 mils (0.5 mm) thick.
      b. Products:
         1) Mapei Corporation; Mapeguard UM 35: www.mapei.com/#sle.

B. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 5/8 inch (16 mm) thick; 2-inch (51 mm) wide coated glass fiber tape for joints and corners.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive tile.

B. Verify wall surfaces are smooth and flat within tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Vacuum clean surfaces and damp clean.

B. Seal substrate surface cracks with filler.

C. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to feather edge.

3.03 INSTALLATION - GENERAL

A. Install tile and thresholds and grout in accordance with applicable requirements of ANSI A108/A118/A136, manufacturer's instructions, and TCNA (HB) or TCNA (HB-GP) recommendations, as applicable.

B. Lay tile to pattern indicated on drawings. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles square.

F. Install non-ceramic trim in accordance with manufacturer's instructions.

G. Sound tile after setting. Replace hollow sounding units.

H. Keep control and expansion joints free of mortar, grout, and adhesive.

I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

J. Grout tile joints unless otherwise indicated on drawings. Use standard grout unless otherwise indicated on drawings.

K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.
   1. See Section 079200 for installation of sealant.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over wood substrates, install in accordance with TCNA (HB) Method F142, with standard grout, unless otherwise indicated on drawings.

B. Over wood substrates with backer board underlayment, install in accordance with TCNA (HB) Method F144, for cementitious backer boards, with standard grout.

3.05 INSTALLATION - WALL TILE

A. On exterior walls, install in accordance with TCNA (HB) Method W244E, thin-set over cementitious backer units, with waterproofing membrane.

B. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244C, using membrane at toilet rooms and kitchens.

3.06 CLEANING

A. Clean tile and grout surfaces.

3.07 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

SECTION 095100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.

C. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.

D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate grid layout and related dimensioning.

C. Product Data: Provide data on suspension system components and acoustical units.

D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.05 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F (16 degrees C), and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustic Tiles/Panels:
   1. Armstrong World Industries, Inc: www.armstrongceilings.com/#sle.

B. Suspension Systems:
   1. Same as for acoustical units.
   2. Armstrong World Industries, Inc: www.armstrongceilings.com/#sle.

2.02 ACOUSTICAL UNITS

A. Acoustical Units - General: ASTM E1264, Class A.

B. Acoustical Panels, Type ACT-1: Mineral fiber with membrane-faced overlay, with the following characteristics:
   1. Classification: ASTM E1264 Type A.
      a. Pattern: "G" - smooth.
   2. Size: 24 by 24 inches (610 by 610 mm).
   3. Thickness: 1 inch (25 mm).
   4. Panel Edge: Tegular.
   5. Suspension System Type ACT-1: Exposed grid.

6. Products:
    a. Armstrong World Industries, Inc; Calla: www.armstrongceilings.com/#sle.

C. Acoustical Panels, Type ACT-2: Mineral fiber with scrubbable finish, with the following characteristics:
1. Classification: ASTM E1264 Type A.
    a. Pattern: "G" - smooth.
2. Size: 24 by 24 inches (610 by 610 mm).
3. Thickness: 5/8 inch (16 mm).
4. Panel Edge: Square.
5. Color: White.
6. Suspension System Type ACT-1: Exposed grid.
7. Products:
    a. Armstrong World Industries, Inc; Kitchen Zone.

2.03 SUSPENSION SYSTEM(S)

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
1. Materials:
    a. Steel Grid: ASTM A653/A653M, G30 coating, unless otherwise indicated.
    b. Stainless Steel Grid: ASTM A666, Type 304.

B. Exposed Suspension System, Type ACT-2: Type 304 stainless steel grid with polished stainless steel cap.
1. Profile: Tee; 15/16 inch (24 mm) face width.
2. Finish: Baked enamel.
3. Color: White.
4. Products:
    a. Armstrong World Industries, Inc; Prelude XL: www.armstrongceilings.com/#sle.

C. Exposed Suspension System, Type ACT-1: Hot-dip galvanized steel grid and cap.
1. Profile: Tee; 9/16 inch (14 mm) face width.
2. Finish: Baked enamel.
3. Color: White.
4. Products:
    a. Armstrong World Industries, Inc; 9/16" Suprafine .

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch (2 mm) galvanized steel wire.

C. Hold-Down Clips: Manufacturer's standard clips to suit application.

D. Perimeter Moldings: Same metal and finish as grid.
1. Size: As required for installation conditions.
2. Angle Molding: L-shaped, for mounting at same elevation as face of grid.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.

B. Coordinate the location of hangers with other work.

C. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.

3.03 INSTALLATION - SUSPENSION SYSTEM

A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

B. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

C. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.

D. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

G. Support fixture loads using supplementary hangers located within 6 inches (152 mm) of each corner, or support components independently.

H. Do not eccentrically load system or induce rotation of runners.

3.04 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

F. Where round obstructions occur, provide preformed closures to match perimeter molding.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.06 CLEANING

A. Clean surfaces.

B. Replace damaged or abraded components.

END OF SECTION

SECTION 096429
WOOD STRIP AND PLANK FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wood plank flooring, nailed.

B. Sleepers.

C. Sheet vapor retarder.

1.02 REFERENCE STANDARDS

A. NWFA (IG) - Installation Guidelines; Current Edition.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for flooring.

C. Shop Drawings: Indicate floor joint pattern and termination details.

D. Manufacturer's Instructions: Indicate standard and special installation procedures.

E. Maintenance Data: Include maintenance procedures and recommended maintenance materials.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Flooring Material: 10 square yards (9 sq m) matching installed flooring.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.05 FIELD CONDITIONS

A. Do not install wood flooring until wet construction work is complete and ambient air at installation space has moisture content stabilized at maximum moisture content of 40 percent.

B. Provide heat, light, and ventilation prior to installation.

C. Store materials in area of installation for minimum period of 24 hours prior to installation.

D. Maintain minimum room temperature of 65 degrees F (18 degrees C) for a period of two days prior to delivery of materials to installation space, during installation, and after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hardwood Strip and Plank Flooring:
   1. Olde Savannah Flooring; www.oldesavannahflooring.com.

2.02 MATERIALS

A. Wood Plank Flooring:
   1. Species: French Oak.
   2. Actual Thickness: 5/8 inch (15.875 mm).
   3. Actual Width: 7 inches (177.8 mm).
   4. Edge: Square.
   5. Length: 12 feet lengths.
   6. Factory Finish: Venice Color stain.

B. Flooring Nails: Type recommended by flooring manufacturer.

C. Sleepers and Shims: Softwood lumber, pressure treated for moisture protection, 1" x 4" size, cut and shimmed as necessary for levelness.

D. Vapor Retarder: Black polyethylene sheet, 8 mil (0.2 mm) thick; 2 inch (50 mm) wide tape for joint sealing.

E. Sheathing Paper: Plain building paper.

2.03 ACCESSORIES

A. Wood Base: Same species as flooring; profile as indicated.

B. Transition Strip: Same species and finish as flooring material; profiles indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting this work.

B. Verify wood subfloor is properly secured, smooth and flat to plus or minus 1/4 inch in 10 feet (6 mm in 3 m).

3.02 PREPARATION

A. Sleepers and Shims:
   1. Place vapor retarder over subfloor surface, lapping edges and ends minimum 6 inches (150 mm) and tape seal; staple in place.
   2. Place sleepers over vapor retarder; space sleepers at 12 inches (300 mm) on center.
   3. Shim underside of sleepers to achieve level line of plus or minus 1/4 inch in 10 feet (6 mm in 3 m).
   4. Anchor sleepers to wood substrate with cement-coated nails; place nails at 16 inches (400 mm) on center.

B. Prepare substrate to receive wood flooring in accordance with manufacturer's and NWFA instructions.

C. Broom clean substrate.

3.03 INSTALLATION

A. Sheathing Paper: Place over sleepers; lap edges and ends 2 inches (50 mm), staple in place.

B. Wood Flooring:
   1. Install in accordance with manufacturer's and NWFA instructions; predrill and blind nail to subfloor.
   2. Lay flooring parallel to width of room areas. Verify alignment as work progresses.
   3. Arrange flooring with square ends set flush and tight.
   4. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar; provide divider strips and transition strips in accordance with flooring manufacturer's recommendations and as indicated.
   5. Install edge strips at unprotected or exposed edges, and where flooring terminates.
   6. Secure edge strips before installation of flooring with stainless steel screws.
   7. Install flooring under movable partitions without interrupting floor pattern.
   8. Provide 1/32 inch (0.8 mm) expansion space at fixed walls and other interruptions.

C. Install base at floor perimeter to cover expansion space in accordance with manufacturer's instructions. Miter inside and outside corners.

3.04 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Clean and polish floor surfaces in accordance with floor finish manufacturer's instructions.

3.05 PROTECTION

A. Prohibit traffic on floor finish for 48 hours after installation.

B. Place protective coverings over finished floors; do not remove coverings until Date of Substantial Completion.

END OF SECTION

SECTION 096500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient sheet flooring.

B. Resilient base.

C. Installation accessories.

1.02 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2025.

B. ASTM F970 - Standard Test Method for Measuring Recovery Properties of Floor Coverings after Static Loading; 2022.

C. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021.

D. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2019.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Shop Drawings: Indicate seaming plans and floor patterns.

D. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of subfloor is acceptable.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

G. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Flooring Material: 500 square feet (46.5 square meters) of each type and color.
   3. Extra Wall Base: 50 linear feet (15.25 linear meters) of each type and color.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (72 degrees C).

D. Protect roll materials from damage by storing on end.

E. Do not double stack pallets.

1.06 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.01 SHEET FLOORING

A. Vinyl Sheet Flooring: Homogeneous without backing, with color and pattern throughout full thickness.
   1. Manufacturers:
      a. Mannington Commercial: www.manningtoncommercial.com#sle.
   2. Minimum Requirements: Comply with ASTM F1913.
   3. Thickness: 0.080 inch (2.0 mm) nominal.
   4. Static Load Resistance: 250 psi (1725 kPa) minimum, when tested as specified in ASTM F970.
   5. Seams: Heat welded.
   6. Pattern: See FINISH LEGEND.
   7. Color: See FINISH LEGEND.

B. Vinyl Sheet Flooring: Homogeneous without backing, with color and pattern throughout full thickness.
   1. Manufacturers:
      a. Protect-All Flooring; Oscoda Plastics; https://protect-allflooring.com.
   2. Minimum Requirements: Comply with ASTM F1913.
   3. Thickness: 0.25 inch (6.35 mm) nominal.
   4. Sheet Width: 60 inch (1524 mm) minimum.
   5. Static Load Resistance: 250 psi (1725 kPa) minimum, when tested as specified in ASTM F970.
   6. Seams: Heat welded.
   7. Integral coved base with cove cap.
   8. Pattern: See FINISH LEGEND.
   9. Color: See FINISH LEGEND.

C. Welding Rod: Solid bead in material compatible with flooring, produced by flooring manufacturer for heat welding seams, and in color matching field color.

2.02 RESILIENT BASE

A. Resilient Base - RB-1: ASTM F1861, Type TP, rubber, thermoplastic; style as scheduled.
   1. Manufacturers:
      a. Tarkett Flooring: www.tarkett.com/#sle.
   2. Height: 4 inches (100 mm).
   3. Thickness: 0.125 inch (3.2 mm).
   4. Finish: Satin.
   5. Color: As indicated on drawings.
   6. Accessories: Premolded external corners and internal corners.

2.03 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.

B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

C. Moldings, Transition and Edge Strips: Same material as flooring.

D. Provide 11/32" thick underlayment grade plywood mechanically fastend to existing substrate for the entirety of the area scheduled to receive 1/4" thick resilient vinyl flooring by Protect-All Flooring.

E. Provide Protect-All stainless steel drain rings, corner guards, transition strips, & cove caps as provided by Oscoda Plastics.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.

C. Prohibit traffic until filler is fully cured.

D. Clean substrate.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Adhesive-Applied Installation:
   1. Fit joints and butt seams tightly.
   2. Set flooring in place, press with heavy roller to attain full adhesion.

D. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.

E. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - SHEET FLOORING

A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.

B. Seams are prohibited in bathrooms, kitchens, toilet rooms, and custodial closets.

C. Seal seams by heat welding where indicated.

3.05 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.

B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 097200
WALL COVERINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation and prime painting.

B. Wall covering.

1.02 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on wall covering and adhesive.

C. Shop Drawings: Indicate wall elevations with seaming layout.

D. Manufacturer's Installation Instructions: Indicate special procedures.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Wall Covering Materials: 25 linear feet (8 linear m) of each color and pattern of wall covering; store where directed.
   3. Package and label each roll by manufacturer, color and pattern, and destination room number.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Inspect roll materials at arrival on site, to verify acceptability.

B. Protect packaged adhesive from temperature cycling and cold temperatures.

C. Do not store roll goods on end.

1.06 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the adhesive or wall covering product manufacturer.

B. Maintain these conditions 24 hours before, during, and after installation of adhesive and wall covering.

PART 2 PRODUCTS

2.01 WALL COVERINGS

A. General Requirements:
   1. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84.

B. Wall Covering: Paper-backed vinyl roll stock.
   1. Total Weight: 20 oz.
   2. Roll Width:Varies
   3. Backing: Polyethylene-coated paper.

4. See FINISH LEGEND for products, sizes, patterns, and colors.
5. Manufacturers:
    a. Momentum textiles and Wallcovering.

C. Adhesive: Type recommended by wall covering manufacturer to suit application to substrate.

D. Substrate Filler: As recommended by adhesive and wall covering manufacturers; compatible with substrate.

E. Substrate Primer and Sealer: Alkyd enamel type.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are prime painted and ready to receive work, and comply with requirements of wall covering manufacturer.

B. Measure moisture content of surfaces using an electronic moisture meter. Do not apply wall coverings if moisture content of substrate exceeds level recommended by wall covering manufacturer.

C. Verify flatness tolerance of surfaces does not vary more than 1/8 inch in 10 feet (3 mm in 3 m) nor vary at a rate greater than 1/16 inch/ft (1.5 mm/300 mm).

3.02 PREPARATION

A. Fill cracks in substrate and smooth irregularities with filler; sand smooth.

B. Wash impervious surfaces with tetra-sodium phosphate, rinse and neutralize; wipe dry.

C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

D. Surfaces: Correct defects and clean surfaces that affect work of this section. Remove existing coatings that exhibit loose surface defects.

E. Apply one coat of primer sealer to substrate surfaces. Allow to dry. Lightly sand smooth.

F. Vacuum clean surfaces free of loose particles.

3.03 INSTALLATION

A. Apply adhesive and wall covering in accordance with manufacturer's instructions.

B. Apply adhesive to wall surface immediately prior to application of wall covering.

C. Apply wall covering smooth, without wrinkles, gaps or overlaps. Eliminate air pockets and ensure full bond to substrate surface.

D. Butt edges tightly.

E. Overlap adjacent panels as recommended by manufacturer.

F. Horizontal seams are not acceptable.

G. Do not seam within 2 inches (50 mm) of internal corners or within 6 inches (150 mm) of external corners.

H. Install wall covering before installation of bases and items attached to or spaced slightly from wall surface.

I. Do not install wall covering more than 1/4 inch (6 mm) below top of resilient base.

J. Cover spaces above and below windows, above doors, in pattern sequence from roll.

K. Where wall covering tucks into reveals, or metal wallboard or plaster stops, apply with contact adhesive within 6 inches (150 mm) of wall covering termination. Ensure full contact bond.

L. Remove excess adhesive while wet from seam before proceeding to next wall covering sheet. Wipe clean with dry cloth.

3.04 CLEANING

A. Clean wall coverings of excess adhesive, dust, dirt, and other contaminants.

B. Reinstall wall plates and accessories removed prior to work of this section.

3.05 PROTECTION

A. Do not permit construction activities at or near finished wall covering areas.

END OF SECTION

SECTION 099113
EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
   1. Exposed surfaces of steel lintels and ledge angles.
   2. Mechanical and Electrical:
      a. On the roof and outdoors, paint equipment exposed to weather or to view, including factory-finished materials.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Floors, unless specifically indicated.
   6. Glass.

1.02 RELATED REQUIREMENTS

A. Section 099123 - Interior Painting.

1.03 REFERENCE STANDARDS

A. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating; 2023.

B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.

C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

D. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

E. SSPC-SP 6/NACE No.3 - Commercial Blast Cleaning; 2006.

F. SSPC-SP 13/NACE No.6 - Surface Preparation of Concrete; 2018.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
   4. Manufacturer's installation instructions.
   5. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.

C. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

D. Manufacturer's Instructions: Indicate special surface preparation procedures.

E. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Paint and Finish Materials: 1 gallon (4 L) of each color; from the same product run, store where directed.
   3. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Paints:
   1. Behr Paint Company: www.behr.com/#sle.
   2. Pittsburgh Paints: www.pittsburghpaintsco.com/#sle.
   3. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
   4. Benjamin Moore & Co.: www.benjaminmoore.com.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
   1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

3. Supply each paint material in quantity required to complete entire project's work from a single production run.
4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

B. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

C. Colors: To be selected from manufacturer's full range of available colors.
1. Selection to be made by Architect after award of contract.

2.03 PAINT SYSTEMS - EXTERIOR

A. Paint E-OP - Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including concrete, concrete masonry units, brick, fiber cement siding, primed wood, and primed metal.
1. Two top coats and one coat primer.
2. Top Coat(s): Exterior Latex; MPI #10, 11, 15, 119, or 214.
a. Products:
1) Behr Premium Plus Exterior Semi-Gloss Enamel [No.5050].
2) Pittsburgh Paints Speedhide Exterior Latex, 6-900XI Series, Semi-Gloss. (MPI #11)
3) Sherwin-Williams Pro Industrial Acrylic, Semi-Gloss.

2.04 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

D. Test shop-applied primer for compatibility with subsequent cover materials.

E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Fiber Cement Siding: 12 percent.
2. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
3. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Concrete:

1. Clean surfaces with pressurized water. Use pressure range of 1,500 to 4,000 psi (10,350 to 27,580 kPa) at 6 to 12 inches (150 to 300 mm). Allow to dry.
2. Clean concrete according to ASTM D4258. Allow to dry.
3. Prepare surface as recommended by top coat manufacturer and in accordance with SSPC-SP 13/NACE No.6.

G. Masonry:
1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
2. Prepare surface as recommended by top coat manufacturer.
3. Clean surfaces with pressurized water. Use pressure range of 600 to 1,500 psi (4,140 to 10,350 kPa) at 6 to 12 inches (150 to 300 mm). Allow to dry.

H. Fiber Cement Siding: Remove dirt, dust and other foreign matter with a stiff fiber brush. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

I. Ferrous Metal:
1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning in accordance with SSPC-SP 6/NACE No.3. Protect from corrosion until coated.

J. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied. Back prime concealed surfaces before installation.

K. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.

C. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

E. Apply each coat to uniform appearance.

F. Sand wood and metal surfaces lightly between coats to achieve required finish.

G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for general requirements for field inspection.

B. Owner will provide field inspection.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 099123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
   1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
   2. Prime surfaces to receive wall coverings.
   3. Mechanical and Electrical:
      a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
      b. In finished areas, paint shop-primed items.
      c. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, and lead items.
   6. Marble, granite, slate, and other natural stones.
   7. Floors, unless specifically indicated.
   8. Ceramic and other tiles.
   9. Brick, architectural concrete, cast stone, integrally colored plaster, and stucco.
   10. Glass.
   11. Concrete masonry units in utility, mechanical, and electrical spaces.
   12. Acoustical materials, unless specifically indicated.
   13. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 099113 - Exterior Painting.

1.03 REFERENCE STANDARDS

A. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating; 2023.

B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.

C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

D. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

E. SSPC-SP 6/NACE No.3 - Commercial Blast Cleaning; 2006.

F. SSPC-SP 13/NACE No.6 - Surface Preparation of Concrete; 2018.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
   2. MPI product number (e.g., MPI #47).
   3. Cross-reference to specified paint system products to be used in project; include description of each system.
   4. Manufacturer's installation instructions.
   5. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.

C. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

D. Manufacturer's Instructions: Indicate special surface preparation procedures.

E. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Paint and Finish Materials: 1 gal (4 L) of each color; from the same product run, store where directed.
   3. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F (3 degrees C) above the dew point, or to damp or wet surfaces.

D. Minimum Application Temperatures for Paints: 50 degrees F (10 degrees C) for interiors unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 fc (860 lux) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer to the greatest extent possible.

B. Paints:
   1. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
   2. Benjamin Moore & Co.: www.benjaminmoore.com.

C. Primer Sealers: Same manufacturer as top coats.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
   1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Supply each paint material in quantity required to complete entire project's work from a single production run.
   3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

C. Colors: As indicated on drawings. See FINISH LEGEND.
   1. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling under which they are mounted.

2.03 PAINT SYSTEMS - INTERIOR

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, aluminum, and acoustical ceilings.
   1. Two top coats and one coat primer.
   2. Top Coat(s): Institutional Low Odor/VOC Interior Latex; MPI #143, 144, 145, 146, 147, or 148.
      a. Products:
         1) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Flat.
         2) Benjamin Moore, Scuff-X, Interior Latex, Semi-Gloss, N487.
         3) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Satin.

2.04 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been adequately prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
   1. Gypsum Wallboard: 12 percent.
   2. Plaster and Stucco: 12 percent.
   3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.

4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Concrete:
   1. Clean surfaces with pressurized water. Use pressure range of 1,500 to 4,000 psi (10,350 to 27,580 kPa) at 6 to 12 inches (150 to 300 mm). Allow to dry.
   2. Clean concrete according to ASTM D4258. Allow to dry.
   3. Prepare surface as recommended by top coat manufacturer and in accordance with SSPC-SP 13/NACE No.6.

F. Masonry:
   1. Remove efflorescence and chalk. Do not coat surfaces if moisture content, alkalinity of surfaces, or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
   2. Prepare surface as recommended by top coat manufacturer.
   3. Clean surfaces with pressurized water. Use pressure range of 600 to 1,500 psi (4,140 to 10,350 kPa) at 6 to 12 inches (150 to 300 mm). Allow to dry.

G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

H. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high-alkali surfaces.

I. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

J. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

K. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

L. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
   3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning in accordance with SSPC-SP 6/NACE No.3. Protect from corrosion until coated.

M. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

N. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with tinted primer.

O. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

E. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

F. Sand wood and metal surfaces lightly between coats to achieve required finish.

G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for general requirements for field inspection.

B. Owner will provide field inspection.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 102113.16
PLASTIC-LAMINATE-CLAD TOILET COMPARTMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Plastic laminate toilet compartments.

B. Urinal screens.

1.02 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2022.

B. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the work with placement of support framing and anchors in walls and ceilings.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.

C. Product Data: Provide data on panel construction, hardware, and accessories.

D. Samples: Submit two samples of partition panels, 6 by 6 inches (152 by 152 mm) in size illustrating panel finish, color, and sheen.

E. Manufacturer's Installation Instructions: Indicate special procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Plastic Laminate Toilet Compartments:
   1. Ironwood Mfg: https://ironwood-mfg.com.

2.02 MATERIALS

A. Particleboard for Core: ANSI A208.1 composed of wood chips, sawdust or flakes, made with waterproof resin binder; of grade to suit application; sanded faces.

B. Plastic Laminate: NEMA LD 3, HGS.

2.03 COMPONENTS

A. Toilet Compartments: Plastic laminate finished, floor-mounted headrail-braced.

B. Doors, Panels, and Pilasters: Plastic laminate adhesive and pressure bonded to faces and edges of particleboard core, with beveled corners and edges; edges of cut-outs sealed.
   1. Pastic Laminate & Door Insert Color and Finish: See FINISH LEGEND.

C. Door and Panel Dimensions:
   1. Thickness: 1 inch (25 mm).
   2. Door Width: 24 inches (610 mm).
   3. Door Width for Handicapped Use: 36 inches (915 mm), outswinging.
   4. Height: 58 inches (1473 mm).
   5. Thickness of Pilasters: 1-1/4 inches (32 mm).
   6. Joints: stiles and rails are doweled.
   7. Door Panel: Acrylic or Frosted Glass Lite Insert.

D. Urinal Screens: Wall mounted with two panel brackets, and floor-to-ceiling vertical upright consisting of pilaster anchored to floor and ceiling.

2.04 ACCESSORIES

A. Pilaster Shoes: Formed chromed steel with polished finish, 3 inches (75 mm) high, concealing floor fastenings.
   1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.

B. Head Rails: Hollow chrome plated steel tube, 1 x 1-5/8 inch (25 x 41 mm) size, with anti-grip strips and cast socket wall brackets.

C. Wall and Pilaster Brackets: Satin stainless steel.

D. Attachments, Screws, and Bolts: Stainless steel , tamper proof type.
   1. For attaching panels and pilasters to brackets: Through-bolts and nuts ; tamper proof.

E. Hardware: Satin stainless steel:
   1. Pivot hinges, gravity type, adjustable for door close positioning; two per door.
   2. Thumb turn door latch with exterior emergency access feature.
   3. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
   4. Coat hook with rubber bumper; one per compartment, mounted on door.
   5. Provide door pull for outswinging doors.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated on shop drawings.

B. Verify correct spacing of and between plumbing fixtures.

3.02 INSTALLATION

A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.

B. Maintain 3/8 to 1/2 inch (9 to 13 mm) space between wall and panels and between wall and end pilasters.

C. Attach panel brackets securely to walls using anchor devices.

D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

E. Field touch-up of scratches or damaged finish will not be permitted. Replace damaged or scratched materials with new materials.

3.03 TOLERANCES

A. Maximum Variation From True Position: 1/4 inch (6 mm).

B. Maximum Variation From Plumb: 1/8 inch (3 mm).

3.04 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch (5 mm).

B. Adjust hinges to position doors in partial opening position when unlatched. Return out-swinging doors to closed position.

C. Adjust adjacent components for consistency of line or plane.

END OF SECTION

SECTION 102239
FOLDING PANEL PARTITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Top-supported folding panel partitions, horizontal opening.

1.02 REFERENCE STANDARDS

A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

B. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

C. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.

D. ASTM E413 - Classification for Rating Sound Insulation; 2022.

E. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation Between Spaces Separated by Operable Partitions; 2012 (Reapproved 2020).

F. ASTM F793/F793M - Standard Classification of Wall Coverings by Use Characteristics; 2025.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on partition materials, operation, hardware and accessories, track switching components, and colors and finishes available.

C. Design Data: Design calculations, bearing seal and signature of structural engineer licensed to practice in the State in which the Project is located, showing loads at points of attachment to the building structure.

D. Shop Drawings: Indicate opening sizes, track layout, details of track and required supports, static and dynamic loads, location and details of pass door and frame, adjacent construction and finish trim, and stacking depth.

E. Samples for Review: Submit two samples of surface finish, 12 by 12 inches (300 by 300 mm) size, illustrating quality, colors selected, texture, and weight.

F. Certificates: Certify that partition system meets or exceeds specified acoustic requirements.

G. Manufacturer's Instructions: Indicate special procedures.

H. Manufacturer's qualification statement.

I. Installer's qualification statement.

J. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods. Describe cleaning materials detrimental to finish surfaces and hardware finish.

1.04 QUALITY ASSURANCE

A. Designer Qualifications: Perform design under direct supervision of Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until installation.

1.06 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within five year period after Date of Substantial Completion.

C. Provide two year manufacturer warranty against defects in material and workmanship, excluding abuse.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Folding Panel Partitions - Horizontal Opening:
   1. Modernfold, a DORMA Group Company; AcoustiSeal, Encore - Single Panel: www.modernfold.com/#sle.

2.02 FOLDING PANEL PARTITIONS - HORIZONTAL OPENING

A. Folding Panel Partitions: Side opening; individual panels; side stacking; manually operated.

B. Panel Construction:
   1. Frame: 16 gauge, 0.0598 inch (1.52 mm) thick formed sheet steel frame top, bottom, jambs, and intermediates; welded construction, with acoustical insulation fill.
   2. Substrate: Steel.
   3. Panel Substrate Facing: Steel sheet, manufacturer's standard thickness.
   4. Panel Properties:
      a. Thickness With Finish: 4 inches (100 mm).
      b. Width: Standard width.

C. Panel Finishes:
   1. Facing: Vinyl coated fabric. See FINISH LEGEND.

D. Panel Seals:
   1. Panel to Panel Seals: Grooved and gasketed astragals, with continuous flexible ribbed vinyl seal fitted to panel edge construction; color to match panel finish.
   2. Acoustic Seals: Flexible acoustic seals at jambs, meeting mullions, ceilings, retractable floor and ceiling seals, and above track to structure acoustic seal.

E. Suspension System:
   1. Track: Formed steel; manufacturer's standard size; thickness and profile designed to support loads, steel sub-channel and track connectors, and track switches.
   2. Track System: Modernfold, #17HD BKT (4.5 PRG).
   3. Carriers: Nylon wheels on trolley carrier at top of every second panel, sized to carry imposed loads, with threaded pendant bolt for vertical adjustment.

F. Performance:
   1. Acoustic Performance:
      a. Sound Transmission Class (STC): 53 to 57 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90, on panel size of 100 sq ft (9.3 sq m).
   2. Installed partition system track capable of supporting imposed loads, with maximum deflection of 1/360 of span.

G. Accessories:
   1. Ceiling Closure: acoustical ceiling closure; aluminum jamb and head molding, fittings and attachments, and intermediate meeting posts.
   2. Pocket Enclosures: Door, frame, and trim to match adjacent walls. Provide Modernfold, TYPE 1 POCKET DOOR.
   3. Pass Door: Single door, 36 inch (914.4 mm) wide by 84 inch (2133.6 mm) high opening; same design and construction as panel; fit door with perimeter acoustic gaskets, concealed closer, keyed lock, tool operated floor seal, and handpulls.
   4. Provide recessed exit signs both sides of pass doors.

2.03 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Vinyl Coated Fabric: ASTM F793 Category VI, polyvinyl fluoride (PVC) finish for washability and improved flame retardance; color as selected by Architect from manufacturer's standard range.

C. Acoustic Insulation:
   1. Type: As required for acoustic performance indicated.
   2. Thickness: As required for acoustic performance indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify track supports are laterally braced and will permit track to be level within 1/4 inch (6.4 mm) of required position and parallel to the floor surface.

C. Verify floor flatness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

D. Verify wall plumbness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

3.02 INSTALLATION

A. Install partition in accordance with manufacturer's instructions and ASTM E557.

B. Fit and align partition assembly and pocket doors level and plumb.

C. Install acoustic sealant to achieve required acoustic performance.

3.03 ADJUSTING

A. Adjust partition assembly to provide smooth operation from stacked to full open position. Do not over-compress acoustic seals.

B. Visually inspect partition in full extended position for light leaks to identify a potential acoustical leak.

C. Adjust partition assembly to achieve lightproof seal.

3.04 CLEANING

A. Clean finish surfaces and partition accessories.

3.05 CLOSEOUT ACTIVITIES

A. Demonstrate operation of partition and identify potential operational problems.

END OF SECTION

SECTION 123600
COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Countertops for architectural cabinet work.

1.02 REFERENCE STANDARDS

A. ISFA 2-01 - Classification and Standards for Solid Surfacing Material; 2013.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Specimen warranty.

C. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.

D. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

E. Installer's qualification statement.

F. Installation Instructions: Manufacturer's installation instructions and recommendations.

G. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.06 FIELD CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

A. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
   1. Flat Sheet Thickness: 1/2 inch (12 mm), minimum.
   2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
      a. Manufacturers:
         1) Dupont: www.corian.com/#sle.
      b. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
      c. Color and Pattern: As indicated on drawings.
   3. Other Components Thickness: 1/2 inch (12 mm), minimum.

4. Exposed Edge Treatment: Built up to minimum 1-1/2 inch (38 mm) thick; eased edge; use marine edge at sinks.

2.02 FABRICATION

A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
   1. Join lengths of tops using best method recommended by manufacturer.
   2. Fabricate to overhang fronts and ends of cabinets 1 inch (25 mm) except where top butts against cabinet or wall.
   3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

B. Solid Surfacing: Fabricate tops and wall panels up to 144 inches (3657 mm) long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.

B. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

A. Variation From Horizontal: 1/8 inch in 10 feet (3 mm in 3 m), maximum.

B. Offset From Wall, Countertops: 1/8 inch (3 mm) maximum; 1/16 inch (1.5 mm) minimum.

C. Field Joints: 1/8 inch (3 mm) wide, maximum.

3.05 CLEANING

A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

FINISH LEGEND

Code	Rev. Date	Manufacturer	Pattern	Color	Details	Remarks
General Note: All finishes outlined in the Finish Legend will be the responsibility of the GC. Products should be installed per the manuf. recommendations.						
DIVISION 05: METALS						
057000 Decorative Metal						
DM-1		Renaissance to match Lightwave Laser	Ice Dreams	Cold Rolled Steel	53% Open	Ballroom Ceiling
DIVISION 06: WOODS, PLASTICS, AND COMPOSITES						
062023 Interior Finish Carpentry						
WD-1		Tague Lumber or Equal	TLPCM-803	Painted P-1	11/16" x 7-1/4"	Wood Base
WD-2		Custom	Re: Arch	Painted P-1		Ballroom Accent Wall
CR-1A		Tague Lumber or Equal	TL-653 Combination	Painted P-1	1-1/2" x 5-7/16" Install top of trim at 42"AFF	Chair Rail (Upper)
CR-1B		Tague Lumber or Equal	TL-AB303	Painted P-1	15/16" x 2-1/2" Install bottom or trim at 30-1/4"AFF	Chair Rail (Lower)
QR-1		Tague Lumber or Equal	TL-110	Match WDF-1	1/4" x 1/4"	Quarter Round
QR-2		Tague Lumber or Equal	TL-103	Painted P-1	1-1/16" x 1-1/16"	Ballroom Quarter Round
064116 Plastic-Laminate-Faced Architectural Cabinets (As noted on Interior Elevations as - PLAM ARCH MILLWORK)						
PL-1		Formica	9283-NG	Walnut Riftwood	Breakroom Hardware: Amerock Blackrock BP5528226, Cabinet Pull in Polished Chrome 3.25" or as recommended by cabinet fabricator	Bathroom Aprons, Breakroom Cabinetry
066400 Plastic Paneling						
FRP-1		Marlite	Standard FRP	White	Smooth, include matching accessories including top caps, corner guards, and joint tips.	Kitchen
DIVISION 09: FINISHES						
093013 Ceramic Tiling						
T-1		Daltile	Dignitary	Notable Beige DR09	24" x 24", Matte	Bathroom Floor
T-2		Daltile	Famed	Diamond FM10	12" x 24", Polished	Bathroom Wainscot
T-3		Daltile	Famed	Diamond FM10	3/4" x 3/4", Penny Rounds	Bathroom Mirror Wall
T-4		Daltile	Famed	Diamond FM10	3x24 Bullnose	Wainscot Cap
T-5		Daltile	Famed	Diamond FM10	24" x 24", Polished	Fireplace Hearth
T-6		Architessa	Vesuvio	Palisades Kindred	10.47" x 11.42" Sheet Size	Breakroom Backsplash
TB-1		Daltile	Famed	Diamond FM10	3" x 24" Bullnose	Bathroom
All Tiles: Provide the thinnest grout joints recommended per tile manuf.						
G-1		Mapei	Walnut	5106	Non-sanded	T-1-T-5 Grout
G-2		Mapei	Avalanche	5038	Non-sanded	T-6 Grout
DS-1		Schluter	Dilex	Satin Brass Anodized Aluminum	Size as recommended by the tile installer to ensure flush transitions	Tile wall to tile floor
095113 Acoustical Panel Ceilings						
ACT-1		Armstrong	Calla Square Tegular	White	2'x2'; 9/16" Superfine White Grid	Library , Bridal Suite
ACT-2		Armstrong	Kitchen Zone	White	2'x4' Square Lay-In; 15/16" Prelude Grid White	Kitchen
096400 Wood Flooring						
WDF-1		Olde Savannah Flooring	French Oak	Venice	7" Wide Plank, 5/8" Thick	General Throughout: Lobby, Library, Second Floor Waiting Area, Bridal Suite, Meeting Room
096513 Resilient Base and Accessories						
RB-1		Tarkett	Grey Haze	24	4"H Traditional cove	Rubber Base - Back of House
096516 Resilient Sheet Flooring						
RF-2		Mannington	Assurance III	Ice Cap 16340	6'-6" Roll, Heat Weld	Back of House Corridor
RF-3		Mannington	Realities II	Persian Walnut	6' Roll, Heat Weld	Elevator Floor & Second Floor Breakroom & Second Floor Mechanical Room
096660 Polyvinyl Safety Flooring						
RF-1		Protect-All		Brown	1/4" Sheet; Heat welded seams w/ matching rod color; 6" H integral base where specified as base material. Cove cap REF: I0.0 Reference manufacturer's installation requirements for drain detailing.	Kitchen
096813 Tile Carpeting						
CPT-1		J+J Flooring	Obsidian	Feldspar Marine	24" x 24" Carpet Tile, Quarter Turn Install - Confirm with owner prior to installation	Second Floor Office Carpet
097200 Wall Covering						
WC-1		Momentum	Wallcovering Manor MAG1271	Whitewash	Type II Vinyl / 20 oz / 54"	Ballroom Above Chair Rail
WC-2		Momentum	Renewed	Mineral MAG1315	Type II Vinyl / 20 oz / 54"	Women's Restroom

FINISH LEGEND

WC-3		Momentum	Force of Nature	Sand BX4888N	Type II Vinyl / 20 oz / 27"W	Men's Restroom
099123 Interior Painting						
P-1		Sherwin Williams	SW7006	Extra White	ProMar 200 Semi-Gloss	General Trim
P-2		Sherwin Williams	SW7006	Extra White	ProMar 200 Flat	General Ceiling
P-3		Sherwin Williams	SW9170	Acier	ProMar 200 Satin	First Floor Ballroom Below Chair Rail
P-4		Sherwin Williams	SW9138	Stardew	ProMar 200 Satin	First Floor Lobby and Library Above Chair Rail , Second Floor Waiting Area Corridor & Breakroom
P-5		Sherwin Williams	SW7029	Agreeable Gray	ProMar 200 Satin	Second Floor Bridal Suite, Second Floor Offices
P-6		Sherwin Williams	SW9170	Acier	ProMar 200 Semi-Gloss	Elevator Door
DIVISION 10: SPECIALITIES						
101423 Panel Signage						
		Blueridge Sign & Stamp			Vendor to provide decorative and code related signs Contact: Erika Birch erika@signandstamp.com	Signage - Coordinate with Owner
102113.16 Plastic-Laminate-Clad Toilet Compartments						
CMP-1		Arcat	Ironwood - Toilet Partitions with Frosted Acrylic Door Lites	Formica Walnut Riftwood 9283	Frosted Glass Inset	First Level Men & Womens Toilet
102239 19 Folding Panel Partitions						
PAR-1		Modernfold	Acousti-Seal Encore Automated Wall System	Len-Tex Vinyl in Serenity with SW Smoke Gray Trim & Hinges	Continously Hinged Electric	Ballroom
102600 Wall and Door Protection						
WP-1		Inpro	Palladium Rigid Sheet	Taupe 0113	0.040" Thick; 48" Wide; Install butt seam and 4'AFF with matching j-mold top.	Back of House Corridor
WP-2		Koroguard	Traffic Patterns - Lineage II	Origin 95522-10	Butt Seam, Full Height	Hall 105 Outside the Elevator, Second Floor Corridor
CG-1		InPro	Photopolymer Solid Colors	Taupe 0113	1-1/8", Surface mounted, Adhesive Backed. Install between the top of the wall base up to 4' AFF.	Back of House Corridor
DIVISION 12: FURNISHINGS						
122413 Roller Window Shades						
RS-1		SWF Contract	Motorized Single Roller Shade with with only Blackout	Flocke Blanc 600 - Blackout	Include track at window casing for blackout shade. Metal Valance: 871 White	Ballroom
RS-2		SWF Contract	Manual Roller Shade	E Screen 7505 - White/White E0202 - 5% Openess	Metal Valance: 871 White	General (RE: Finish Plan)
123661.16 Solid Surfacing Countertops						
SS-1		Corian		Calcatta Greige	2cm, Eased Edge	Breakroom
123640 Stone Countertops						
GR-1		Daltile	G278	Sterling	2 cm Thickness with Bullnose Edge	Bathrooms, Bridal & Grooms Suite
DIVISION 14: CONVEYING EQUIPMENT						
142400 Machine Room-Less Hydraulic Elevators						
EVS-1			Floor: RF-3 Wall Panels: Wilsonart / Marmo Bianco 1885K-07 Textured Gloss Ceiling: Stainless with recessed cans Main Door: P-6			

MENU

CADD VERSION

PLOT SCALE

PLOT DATE
7/17/2025
10:14:29 AM

SAVE DATE

COMM. NO.

DRAWING NO.

GENERAL NOTES

PROJECT TITLE

SFCS Architecture Engineering Planning Interiors
SFCS Inc.▪ 305 South Jefferson Street
Roanoke, Virginia 24011.2003
540.344.6664▪ Fax 540.343.6925
www.sfcs.com

PROJECT DESIGNER	: xxx
PROJECT ARCHITECT	: xxx
PROJECT ENGINEER	:
DRAWN BY	: AES
CHECKED BY	: JMS
APPROVED BY	:

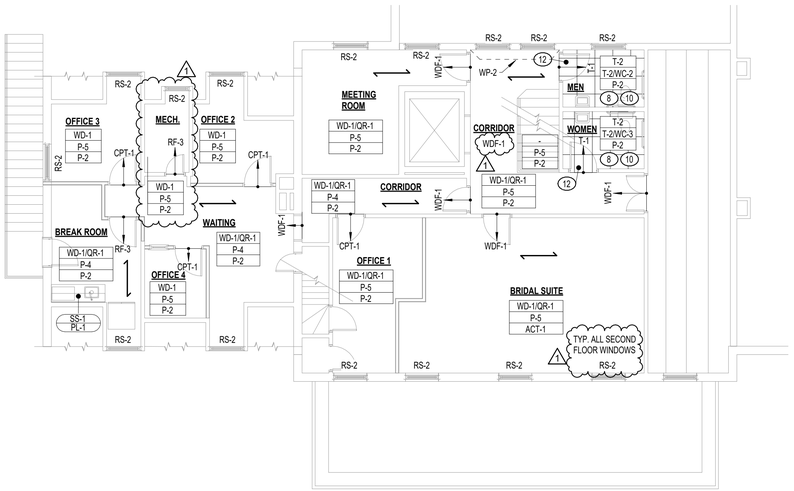
NO.	REVISION DESCRIPTION	DATE
1	Addendum NO. 1	7/17/25

DRAWING TITLE
FINISH LEGEND

DATE JUNE 20, 2025

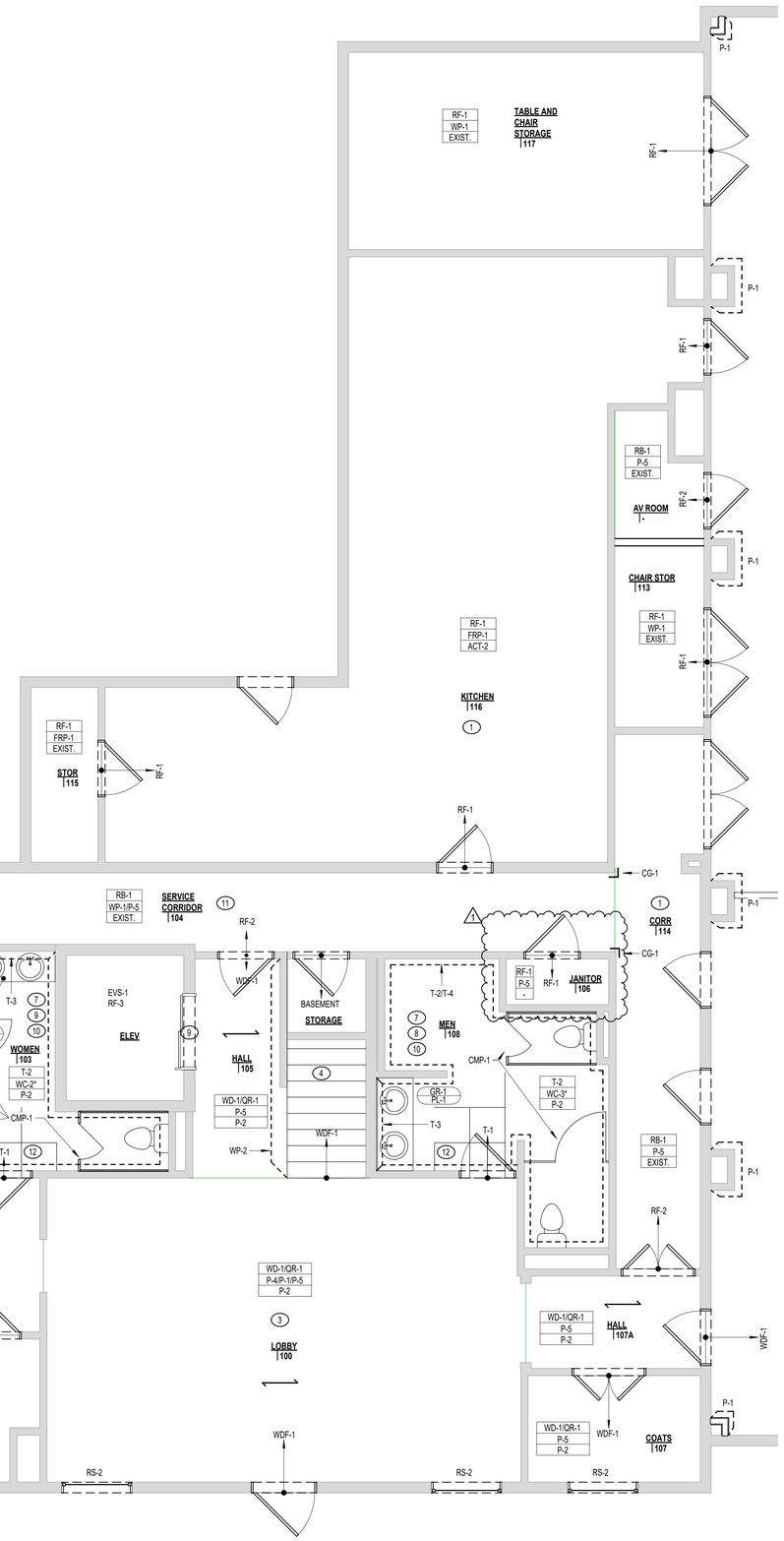
COMM. NO. 23500.00

DRAWING I0.1



2 I1.1 SECOND FLOOR FINISH PLAN

1/8" = 1'-0"



1 I1.1 FIRST FLOOR FINISH PLAN - A

1/4" = 1'-0"

MENU

CADD VERSION

PLOT SCALE

PLOT DATE
7/17/2025
10:14:30 AM

SAVE DATE

COMM NO.

DRAWING NO.

GENERAL NOTES

PLAN NOTES

1. PATCH AND REPAIR EXISTING SUBFLOOR.
2. LEVEL SUBFLOOR.
3. PAINT EXIST. TRIM (CROWN, CHAIR RAIL, CASING) P-1.
4. STAIN HAND RAIL TO MATCH WDF-1, PAINT PICKETS AND STAIR RISER P-1.
5. NEW DOUBLE CHAIR RAIL TO BE INSTALLED (CR-1A & CR-1B).
6. PAINT FIREPLACE SURROUND P-1.
7. INSTALL T-2 BELOW COUNTERTOP.
8. INSTALL TILE WAINSCOT 4'-3" AFF. WITH WALLCOVERING ABOVE U.N.O.
9. PAINT ELEVATOR DOOR P-6.
10. INSTALL NEW PLUMBING FIXTURES AND TOILET ACCESSORIES PER PLUMBING/ARCH.
11. INSTALL WALL PROTECTION TO 4' AFF. WITH COORDINATING J-MOLD CAP AND P-5 ABOVE.
12. MONOLITHIC INSTALL. TILE PATTERN CENTERED AT DOOR.

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PROJECT DESIGNER	xxx
PROJECT ARCHITECT	xxx
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DRAWN BY	AES
CHECKED BY	JMS
APPROVED BY	

NO.	REVISION DESCRIPTION	DATE
1	Addendum NO. 1	7/17/25

DRAWING TITLE

FIRST AND SECOND FLOOR FINISH PLANS - A

DATE JUNE 20, 2025

COMM. NO. 23500.00

DRAWING I1.1