Specifications

For

Beach Patrol Headquarters

Borough of Stone Harbor, Cape May County, New Jersey

June 2021

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Set #: _____

WMA #18024S

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SECTION 055100 - METAL STAIRS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Shop fabricated steel stairs with [open grate] [concrete pan] [precast concrete] [checkered plate] treads [and landings].
2. Guard rails and handrails.

1.2 SYSTEM DESCRIPTION

A. Design Requirements:
1. Design stair assembly to support a uniform live load of 100 PSF and a concentrated load of 300 pounds, with maximum deflection of L/240.
2. Design guard rails and handrails to resist following without damage or permanent set:
a. [50] [__] pounds per linear foot applied in any direction at top, transferred via attachments and supports to building structure.
b. Concentrated [200] [__] pound load applied in any direction at any point along top, transferred via attachments and supports to building structure.
c. Maximum deflection under loading: [L/120.] [__.]
3. Concentrated and uniform loads do not need to be applied simultaneously.
4. Perform design under direct supervision of Professional Structural Engineer licensed in State in which project is located, with minimum [2] [__] years [documented] experience in work of this Section.

B. Fabricate stair assembly to NAAMM AMP 510, [Industrial] [Service] [Commercial] [Architectural] Class.

C. Fabricate guard rails and handrails in accordance with ASTM E985.

1.3 SUBMITTALS

A. Submittals for Review:
1. Shop Drawings:
a. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.
b. Indicate welded connections using standard AWS welding symbols. Indicate net weld lengths.

PART 2 PRODUCTS

2.1 MANUFACTURERS

1. Acceptable Manufacturers: American Stair Corp. (www.americanstair.com)

B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS - STEEL

A. Sections: ASTM A36/A36M.

B. Plate: ASTM A283.

C. Pipe: ASTM A501.

D. Tube: ASTM A500.

E. Sheet: ASTM A1008/A1008M.

F. Checkered Plate: ASTM A1011/A111M, diamond pattern.

2.3 ACCESSORIES

A. Bolts, Nuts, and Washers: ASTM A307.

B. Primer Paint: SSPC 15, Type 1, red oxide.

2.4 FABRICATION

A. Fit and shop assemble components in largest practical sections, for delivery to site.

B. Fabricate components with joints tightly fitted and secured.

C. Continuously weld connections. Welding to conform to AWS D1.1.

D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

F. Accurately form components required for anchorage of stairs, landings, and railings to each other and to building structure.

G. Treads and Landings:
1. Shop cast treads and landings from concrete with integral reinforcement, non-slip finish, and radiused nosings. Cast in angles for securing to stringers.
2. Fabricate stairs with closed steel sheet risers.
3. Reinforce underside with steel angles when required to resist design loads.
4. Weld treads and landings to stringers.

H. Guard Rails and Handrails:
1. Fabricate from steel pipe or tube stock.
2. Make bends uniform and free from buckles and other defects.
3. Where length exceeds that suitable for shipping and handling, fabricate in sections with concealed internal sleeves forming slip joints. Extend sleeves minimum 2 inches on both sides of joint; field weld and grind smooth.

2.5 FINISHES

A. Steel: Galvanized to minimum 2.0 ounces per square foot in accordance with ASTM A123/A123M.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install components plumb and level, accurately fitted, free from distortion and defects.

B. Provide anchors, angles, hangers, and struts required for connecting stairs to structure.

C. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

D. Field weld components indicated on Shop Drawings. Perform field welding in accordance with AWS D1.1.

E. Field bolt and weld to match shop bolting and welding. Conceal bolts and screws whenever possible.

F. Mechanically fasten joints butted tight, flush, and hairline. Grind welds smooth and flush.

G. Fill treads and landings with concrete. Consolidate concrete, strike off flush with perimeter frame, and apply light broom finish with striations parallel to long dimension of tread.

H. Installation Tolerances:
   1. Maximum variation from plumb: ¼ inch per story, noncumulative.
   2. Maximum offset from true alignment: 1/4 inch.

3.2 ADJUSTING

A. Clean and touch up primer paint at welded and abraded surfaces with same product as applied in shop.

B. Clean and touch up galvanized coatings at welded and abraded surfaces in accordance with ASTM A780, Annex A1

END OF SECTION 055100

SECTION 055200 - METAL RAILINGS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Structural Performance: Provide railings capable of withstanding structural loads required by ASCE 7 & minimum windspeed of 150 mph sustained straight-line winds.

1. For glass-supported railings, support each section of top rail by a minimum of three glass panels or by other means so top rail will remain in place if any one panel fails.

B. Submittals: Product Data, Shop Drawings, structural analysis data signed and sealed by a qualified professional engineer registered in the state where Project is located, indicating the failure point uniform loading in pounds & productive windspeed.

PART 2 - PRODUCTS

2.1 METALS

A. Aluminum, Extruded Bars and Tubing: ASTM B 221, Alloy 6063-T5/T52.

B. Aluminum Castings: ASTM B 26/B 26M, Alloy A356.0-T6.

C. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

D. Steel Pipe: ASTM A 53, Schedule 40.

E. Steel Tubing: ASTM A 500 (cold formed) or ASTM A 513, Type 5 (mandrel drawn).

F. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

2.2 OTHER MATERIALS

A. Glass: Laminated Tempered glass complying with ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated), Type 1 (transparent glass, flat), Quality q3 (glazing select), Class .

1. Thickness for Glass Infill Panels: As required by structural loads but not less than 9/16".

B. Nonshrink, Nonmetallic Grout: SikaGrout 212.

2.3 FABRICATION

A. Assemble railing systems in shop to the greatest extent possible. Use connections that maintain structural value of joined pieces.

B. Form changes in direction of railing members by use of prefabricated fittings.

C. Fabricate railing systems and handrails for connecting members with concealed mechanical fasteners and fittings.

D. Provide manufacturer's standard wall brackets, flanges, miscellaneous fittings, and anchors to connect handrail and railing members to other construction.

E. Provide wall returns at ends of wall-mounted handrails.

2.4 FINISHES

A. Aluminum Railings: Electrostatic powder coated finish per ASTM D3451

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fit exposed connections accurately together to form tight, hairline joints.

B. Set railings accurately in location, alignment, and elevation and free of rack.

C. Coat concealed surfaces of aluminum that will be in contact with cementitious materials or dissimilar metals, with a heavy coat of bituminous paint.

D. Anchor posts in concrete by forming or core-drilling holes 8 inches deep and 3/4 inch greater than OD of post. Fill annular space between post and concrete with nonshrink, nonmetallic Sika Grout 212 grout.

E. Attach handrails to wall with wall brackets.

END OF SECTION 055200

SECTION 057113 FABRICATED SPIRAL STAIRS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Metal Spiral Stairs.

1.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 05 50 00 - Metal Fabrications.

C. Section 05 51 00 - Metal Stairs.

D. Section 09 90 00 - Painting and Coating: Field finishing of wood components.

1.3 REFERENCES

A. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2001a.

B. ASTM A 780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings; 2001.

C. ASTM C 1028 - Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method; 1996.

D. AWS D 1.1 - Structural Welding Code - Steel; 2002.

E. NAAMM AMP 510 - Metal Stairs Manual; 1992, Fifth Edition.

F. SSPC Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 1982 (Ed. 2000).

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

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. Installation methods.

C. Shop Drawings: Submit shop drawings for stairs and railings.
1. Include plans, elevations, and details.
2. Indicate floor opening details, including floor opening and stair height tolerances.

3. Show connection and accessory items and locations for anchor and bolt installation.
4. Include design loads, structural calculations and material properties.
5. Shop drawings shall be signed and sealed by a structural engineer licensed in the state in which Project is located.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firm that has produced types of stair and railing systems required for not less then ten years, with not less than five similar projects that have been successful use for not less than five years.

B. Installer Qualifications: Minimum five years experience in successful installation of stair and railing systems of type specified.

1.6 DELIVERY, STORAGE, AND HANDLING

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

B. Store in a weathertight location and protect from corrosion, distortion and other damage during delivery storage and handling.

1.7 PROJECT 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

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Stairways, Inc., which is located at: 4166 Pinemont; Houston, TX 77018; Toll Free Tel: 800-231-0793; Tel: 713-680-3110; Fax: 866-423-3347; Email:markanderson@stairwaysinc.com; Web:https://www.stairwaysinc.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2 SPIRAL STAIRS

A. Spiral Stairs: Designed by stair manufacturer for applicable code requirements for live and dead loads, dimensions, and other requirements.
1. Type Metal structure, preassembled; designed in accordance with NAAMM Metal Stairs Manual.
2. Type Metal structure, knocked-down; designed in accordance with NAAMM Metal Stairs Manual.
3. Spiral Direction: Counterclockwise rotation.
4. Stair Well: Round.
5. Provide platforms with integral nosings matching tread nosings.
6. Provide well rail matching stair balusters and handrails around entire well opening.

B. Treads and Landings: Rubber covered metal.
   1. Material: Stainless steel.
   2. Material: Steel.
   3. Material: Aluminum.
   4. Thickness: 12 gage.
   5. Thickness: 3/16 inch (5 mm).

C. Handrails: Round.
   1. Material: Steel.
   2. Diameter: 1-1/2 inches (38 mm).

D. Balusters: Metal.
   1. Material: Steel.
   2. Cross-Section: 1 inch (25.4 mm) square.
   3. Space balusters at 4 inches (102 mm) on center.

E. Center Column: Round metal pipe or tube.
   1. Material: Steel.
   2. Diameter: 6 inches (152 mm) outside.
   3. Base Plate: 10 inches (254 mm) square, 1/4 inch (6 mm) thick.
   4. Column Cap: Match material and finish of column.
   5. Column Cap: Brass; stair system manufacturer's standard profile.

F. Stringers and Landing Framing:
   1. Material: Same as tread materials.
   2. Size and Shape: As required for compliance with performance requirements.
   3. Size and Shape: As indicated on drawings.
   4. Provide connections and other components necessary for support and installation of stairs.

G. Finishes:
   1. Steel:
      a. Manufacturer's standard prime paint finish.
      b. Stair manufacturer's standard zinc chromated reddish brown rust inhibitor.
      c. Hot-dipped galvanized to minimum 1.25 oz./sq ft (0.38 kg/sq m) zinc coating in accordance with ASTM A 123/A 123M.

2.3 MATERIALS

A. Fasteners and Anchorage Devices: Type as recommended by stair and railing system manufacturer.

B. Welding Materials: Type required for materials being welded.

C. Galvanizing Repair Paint: High-zinc-dust content paint for regalvanizing welds in steel, complying with SSPC Paint 20.

D. Grout: Non-metallic, non-shrink grout, premixed, non-corrosive, non-staining product containing selected silica sands, portland cement, shrinkage compensating agents, plasticizing and water reducing agents.

2.4 FABRICATION

A. Fabricate to shapes and configurations indicated in Contract Documents.

B. Preassembled Stairs: Fabricate in largest practical sizes for handling through building openings; ship fully assembled except where access to installation area is restricted.

C. Knocked-Down Stairs (Kits): Fabricate, disassemble and pack for shipping.

D. Mark units for reassembly and coordinated installation.

E. Mill balusters to fit angle of handrail. Glue and bolt balusters to handrails and treads.

F. Form elbow bends and wall returns to uniform radius, free from buckles and twists, and with smooth finished surfaces free from blemishes. Form exposed ends to match or provide matching prefabricated end fittings.

G. Join components with concealed fastener. Countersink fasteners that cannot be concealed.

H. Welded Connections: Cope and weld or use welded-in fittings. Weld connections continuously. Remove sharp or rough edges on exposed surfaces.

I. Welded Connections for Pipe Railings: Connect handrail and railing members with sleeve and socket fittings with concealed internal welds.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are acceptable to suit stair assembly tolerances.

B. Verify supports and anchors are correctly and securely positioned.

C. Start of installation constitutes installer's acceptance of substrate and conditions.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions and approved shop drawings.

B. Install stair assembly in accordance with manufacturer's instructions and approved shop drawings and in accordance with specified performance requirements.

C. Anchor components rigidly and securely to building structure, plumb and level, accurately fitted, and free from distortion or defects.

D. Fit exposed connections to form tight hairline joints.

E. Weld connections that cannot be shop welded because of size limitations.
   1. Perform field welding of steel in accordance with AWS D 1.1. Field bolt and weld to match shop bolting and welding.
   2. Clean field welds, bolted connections and abraded areas.
   3. Touch up shop primer.

4. Repair galvanizing with galvanizing repair paint to comply with ASTM A 780.

3.3 ERECTION TOLERANCES

A. Maximum Variation from Plumb: 1/4 inch (6 mm) for full height of stair.

B. Maximum Variation from Level: 1/8 inch (3 mm).

C. Maximum Angular Variation of the Tread from True Position: 3 degrees.

3.4 PROTECTION

A. Do not permit traffic on the stair after installation.

B. Protect installed products until completion of project.

C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 057113

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for wood-preservative treated wood fire-retardant treated wood and metal framing anchors.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

B. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

2.2 TREATED MATERIALS

A. Preservative-Treated Materials: AWPA C2, except that lumber not in ground contact and not exposed to the weather may be treated according to AWPA C31 with inorganic boron (SBX).

1. Use treatment containing no arsenic or chromium.
2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

B. Provide preservative-treated materials for all rough carpentry unless otherwise indicated, items indicated on Drawings, and the following:

1. Wood members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches above the ground.
4. Wood floor plates that are installed over concrete slabs-on-grade.

C. Fire-Retardant-Treated Materials: Comply with performance requirements in AWPA C20.

1. Use Exterior type for exterior locations and where indicated.
2. Use Interior Type A, High Temperature (HT) for enclosed roof framing, framing in attic spaces, and where indicated.
3. Use Interior Type A unless otherwise indicated.
4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.

D. Provide fire-retardant treated materials for all rough carpentry.

2.3 LUMBER

A. Dimension Lumber:

1. Maximum Moisture Content: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness.
2. Framing Other Than Non-Load-Bearing Interior Partitions: No. 2: Hem-fir (north): NLGA; Douglas fir-larch: WCLIB, or WWPA;.
3. Exposed Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

    a. Species: As specified for framing other than non-load-bearing interior partitions.
    b. Grade: Select Structural No. 1.

B. Exposed Boards: Eastern white, ponderosa, or sugar pine, Premium or 2 Common (Sterling): NeLMA, NLGA, WCLIB, or WWPA; with 15 percent maximum moisture content.

C. Concealed Boards: Eastern softwoods, No. 3 Common: NELMA; with 15 percent maximum moisture content.

D. Miscellaneous Lumber: Construction, or No. 2 grade with 15 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

2.4 PLYWOOD BACKING PANELS

A. Telephone and Electrical Equipment Backing Panels: Plywood, Exterior, C-C Plugged, fire-retardant treated, not less than 3/4-inch nominal thickness.

2.5 MISCELLANEOUS PRODUCTS

A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

1. Power-Driven Fasteners: CABO NER-272.
2. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

B. Metal Framing Anchors: Structural capacity, type, and size indicated.

1. Use anchors made from hot-dip galvanized steel complying with ASTM A 653/A 653M, G60 coating designation for interior locations where stainless steel is not indicated.
2. Use anchors made from stainless steel complying with ASTM A 666, Type 304 for exterior locations and where indicated.

C. Sill Sealer: Glass-fiber insulation, 1 inch thick, compressible to 1/32 inch.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Securely attach rough carpentry to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. Published requirements of metal framing anchor manufacturer.
3. Table 2304.9.1, "Fastening Schedule," in the IBC.

END OF SECTION 06 1000

SECTION 062000

FINISH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Samples for hardwood veneer plywood paneling.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

B. Softwood Plywood: DOC PS 1.

C. Hardwood Plywood: HPVA HP-1.

D. MDF: ANSI A208.2, Grade 130, made with binder containing no urea-formaldehyde resin.

E. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea-formaldehyde resin.

F. Melamine-Faced Particleboard: Particleboard complying with ANSI A208.1, Grade M-2, finished on both faces with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.

2.2 INTERIOR STANDING AND RUNNING TRIM

A. Interior Softwood Lumber Trim: Select eastern white or sugar pine.

1. Maximum Moisture Content: **15** percent.

B. Interior Hardwood Lumber Trim: Clear, kiln-dried, white maple.

C. Wood Moldings: WMMPA WM 4 made to patterns in WMMPA WM 12 from kiln-dried stock.

1. Softwood Moldings for Transparent Finish: **Southern pine**
2. Moldings for Painted Finish: P-Grade **closed-grain hardwood**.
3. Base: Hardwood base, profile as shown on plans.

4. Shoe Mold: WM 126, (1/2-by-3/4-inch quarter-round shoe.
5. Casing: hardwood casing as shown on plans.
6. Stop: WM **946, ogee** stop.
7. Chair Rail: Hardwood as shown on plans.

2.3 FIRE-RATED INTERIOR DOOR FRAMES

A. Frames, complete with casings, fabricated from fire-retardant particleboard or fire-retardant MDF with veneered exposed surfaces, or from solid fire-retardant-treated wood. Frames shall be labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, based on testing per NFPA 252.

1. **Available** Products:

2. Species: **White maple**.
3. Fire Rating: **As indicated**.

2.4 PANELING

A. Hardwood Veneer Plywood Paneling: Manufacturer's stock panels complying with HPVA HP-1.

1. Available Products:

2. Face Veneer Species: Rotary-cut white birch.
3. Veneer Matching: Selected for similar color and grain.
4. Thickness: 1/4 inch.
5. Face Pattern: Manufacturer's standard V pattern.

B. Hardboard Paneling: Factory finished, 1/4 inch thick, complying with AHA 135.5, Class I finish.

1. Available Products:

2. Surface-Burning Characteristics: Flame-spread index of 25 or less and smoke-developed index of 450 or less, per ASTM E 84.

2.5 SHELVING AND CLOTHES RODS

A. Shelving: Melamine-faced particleboard with radiused and filled front edge.

B. Clothes Rods: 1-1/2-inch- lear, kiln-dried hardwood

C. Shelf Brackets with Rod Support: BHMA A156.16, B04051; prime-painted formed steel.

2.6 MISCELLANEOUS MATERIALS

A. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer.

1. Use waterproof resorcinol glue for exterior applications.

B. Adhesive for Cellular PVC Trim: Product recommended by trim manufacturer.

C. Installation Adhesive for Foam Plastic Moldings: Product recommended for indicated use by foam plastic molding manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Condition finish carpentry in installation areas for 24 hours before installing.

B. Prime and backprime lumber for painted finish exposed on the exterior.

C. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Scribe and cut to fit adjoining work. Refinish and seal cuts.

D. Install standing and running trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Stagger joints in adjacent and related trim. Cope at returns and miter at corners.

E. Nail siding at each stud. Do not allow nails to penetrate more than one thickness of siding, unless otherwise recommended by siding manufacturer. Seal joints at inside and outside corners and at trim locations.

F. Select and arrange paneling for best match of adjacent units. Install with uniform tight joints.

END OF SECTION 062000

SECTION 064023 INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data for solid-surfacing materials, Shop Drawings and Samples showing the full range of colors, textures, and patterns available for each type of finish.

B. Quality Standard: Architectural Woodwork Institute's "Architectural Woodwork Quality Standards". Verify availability of certification in first paragraph below with local woodworkers before retaining.

C. Forest Certification: Provide woodwork produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

D. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is completed, and HVAC system is operating.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Hardboard: AHA A135.4.

B. Medium-Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde.

C. Particleboard: ANSI A208.1, Grade M-2.

D. Softwood Plywood: DOC PS 1.

E. Hardwood Plywood and Face Veneers: HPVA HP-1, made with adhesive containing no urea formaldehyde.

F. Thermoset Decorative Panels: Comply with LMA SAT - 1.

G. High-Pressure Decorative Laminate: NEMA LD 3.

1. Available Products:

H. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.

1. Products: Meganite of approved equal

2.2 CABINET HARDWARE AND ACCESSORY MATERIALS

A. Butt Hinges: 2-3/4-inch, 5-knuckle steel hinges made from 0.095-inch- thick metal, and as follows:

1. Semiconcealed Hinges for Flush Doors: BHMA A156.9, B01361.
2. Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521.

B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 135 degrees of opening.

C. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter

D. Catches: Magnetic catches, BHMA A156.9, B03141

E. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081

F. Drawer Slides: BHMA A156.9, B05091.

1. Box Drawer Slides: Grade 1HD-100.
2. File Drawer Slides: Grade 1HD-200.
3. Pencil Drawer Slides: Grade 1.
4. Keyboard Slides: Grade 1HD-100.
5. Trash Bin Slides: Grade 1HD-200.

G. Drawer Locks: BHMA A156.11, E07041.

H. Grommets for Cable Passage through Countertops: 2-inch OD, molded-plastic grommets and matching plastic caps with slot for wire passage.

I. Exposed Hardware Finishes: Comply with BHMA A156.18 for BHMA code number indicated.

1. Finish: Satin Stainless Steel: BHMA 630.

J. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated lumber, kiln dried to 15 percent moisture content.

2.3 INTERIOR WOODWORK

A. Complete fabrication to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

B. Backout or groove backs of flat trim members and kerf backs of other wide, flat members, except for members with ends exposed in finished work.

C. Interior Standing and Running Trim for Transparent Finish: Premium grade, made from White Maple.

D. Interior Standing and Running Trim for Opaque Finish: Premium grade, made from any closed-grain hardwood

E. Flush Wood Paneling for Transparent Finish: Premium grade.

1. Wood Species: White ash, plain sliced.
2. Matching of Adjacent Veneer Leaves: Book match.
3. Veneer Matching within Panel Face: Center-balance match.
4. Panel Matching: Match panels within each area by using sequence-matched, uniform size-sets.

F. Interior Ornamental Work for Transparent Finish: Premium grade, made from White Maple.

G. Interior Ornamental Work for Opaque Finish: Premium grade, made from any closed-grain hardwood.

H. Wood Cabinets for Transparent Finish: Premium grade.

1. AWI Type of Cabinet Construction: Reveal overlay on face frame.
2. WI Construction Style: Style B, Face Frame.
3. WI Door and Drawer Front Style: Reveal overlay.
4. Wood Species and Cut for Exposed Surfaces: White Maple plain sawn.
5. Grain Direction: As indicated.
6. Matching of Veneer Leaves: Book match.
7. Veneer Matching within Panel Face: Center-balance match.
8. Semiexposed Surfaces Other Than Drawer Bodies: [Same species and cut indicated for exposed surfaces.
9. Drawer Sides and Backs: Solid-hardwood lumber, same species indicated for exposed surfaces.
10. Drawer Bottoms: Hardwood plywood.

I. Plastic-Laminate Cabinets: Premium grade.

1. AWI Type of Cabinet Construction: Reveal overlay on face frame.
2. WIC Construction Style: Style B, Face Frame.
3. WIC Door and Drawer Front StyleReveal overlay
4. Laminate Cladding: Horizontal surfaces other than tops, HGS; postformed surfaces, HGP; vertical surfaces, HGS; Edges, HGS; semiexposed surfaces, VGS.
5. Drawer Sides and Backs: Solid hardwood.
6. Drawer Bottoms: Hardwood plywood.

J. Plastic-Laminate Countertops: Premium grade.

1. Laminate Grade: HGS for flat countertops, HGP for post-formed countertops.
2. Grain Direction: Parallel to cabinet fronts.
3. Edge Treatment: Same as laminate cladding on horizontal surfaces.

K. Solid-Surfacing Material Countertops: Premium grade.

1. Solid-Surfacing Material Thickness: 3/4 inch
2. Fabricate tops in one piece with shop-applied backsplashes and edges.
3. Install integral sink bowls in countertops in shop.

2.4 SHOP FINISHING OF INTERIOR ARCHITECTURAL WOODWORK

A. Finishes: Same grades as items to be finished.

B. Finish architectural woodwork at the fabrication shop; defer only final touch up until after installation.

1. Apply one coat of sealer or primer to concealed surfaces of woodwork. Apply two coats to back of paneling and to end-grain surfaces.
2. Apply a vinyl wash coat to woodwork made from closed-grain wood before staining and finishing.
3. After staining, if any, apply paste wood filler to open-grain woods and wipe off excess. Tint filler to match stained wood.

C. Transparent Finish: AWI finish system synthetic penetrating oil

PART 3 - EXECUTION

3.1 INSTALLATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.

B. Install woodwork to comply with referenced quality standard for grade specified.

C. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches

D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Fasten with countersunk concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed nailing, countersunk and filled flush with woodwork.

F. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches long, except where shorter single-length pieces are necessary. Scarf running joints and stagger in adjacent and related members.

G. Anchor paneling to supports with concealed panel-hanger clips and by blind nailing on back-up strips, splined-connection strips, and similar associated trim and framing.

H. Cabinets: Install so doors and drawers are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.

1. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c. with toggle bolts through metal backing or metal framing behind wall finish.

I. Anchor countertops securely to base units. Seal space between backsplash and wall.

END OF SECTION 06 4023

SECTION 066000 CELLULAR PVC FABRICATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Solid Cellular PVC fabrications.

1.2 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

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. Installation methods.

C. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.

B. Comply with manufacturer's recommendations. Handle materials to avoid damage.

1.4 PROJECT 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 recommended limits.

1.5 WARRANTY

A. Provide manufacturer's standard limited warranty for products, stating that components will be free from defects in material that occur as a direct result of the manufacturing process, occur under normal use and service, occur during the warranty period and result in blistering, peeling, flaking, cracking, splitting, cupping, rotting or structural defects from termites or fungal decay.
1. Azek Trim Warranty Period: 25 years.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Acceptable Manufacturer: Azek Building Products, Inc., which is located at: 894 Prairie Ave.; Wilmington, OH 45177; Toll Free Tel: 877-ASK-AZEK; Tel: 570-346-8797; Fax: 570-346-5080; Email: request info (raymond.bielawski@cpgbp.com); Web: www.azek.com | timbertech.com

B. Substitutions: Under provisions of Division 01.

2.2 EXTERIOR PRODUCTS

A. Fire Performance Characteristics: Provide products complying with the following:
1. Flame Spread Index: Less than 25, ASTM E 84.

B. Azek Material: Solid Cellular PVC.
1. Trim Size: 5/8 Thickness.
2. Sheet Size: 3/8 Thickness.
3. Batten Size: 5/4 x 4.
4. Notched Fascia Size: 4/4 x 8.
5. Soffit Board size: 1/2 Thickness.

C. Substitutions in accordance with this manual.

2.3 ACCESSORIES

A. Fasteners: Stainless steel or hot-dip galvanized, with thin shank, blunt point, full round head as recommended by the manufacturer.

B. Adhesives: Azek Adhesive, a non-toxic, odorless, UV stable, water-based PVC cement.

C. Sealants: Urethane, polyurethane or acrylic based sealants without silicone.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions that may be detrimental to proper or timely completion.

B. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install products in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
1. Use manufacturer's recommended fasteners, not more than 2 inches from ends.
2. Glue joints to eliminate joint separation.
3. Allow for expansion and contraction at ends of the runs.

3.3 CLEANING AND PROTECTION

A. Protect from damage during construction operations. Promptly repair any damaged surfaces. Remove and replace work which cannot be satisfactorily repaired.

B. Clean products, prior to Substantial Completion, using materials recommended by the manufacturer to remove stains, dirt and debris prior to final acceptance.

END OF SECTION 06 6000

SECTION 071113 - BITUMINOUS DAMPPROOFING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 BITUMINOUS DAMPPROOFING

A. Cold-Applied, Emulsified-Asphalt Dampproofing:

1. **Available** Manufacturers:

2. Trowel Coats: ASTM D 1227, Type II, Class 1.
3. Fibered Brush and Spray Coats: ASTM D 1227, Type II, Class 1.
4. Brush and Spray Coats: ASTM D 1227, Type III, Class 1.

B. Cut-Back Asphalt Primer: ASTM D 41.

C. Emulsified-Asphalt Primer: ASTM D 1227, Type III, Class 1, except diluted with water as recommended by manufacturer.

D. Asphalt-Coated Glass Fabric: ASTM D 1668, Type I.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Clean substrates of projections and substances detrimental to work; fill voids, seal joints, and apply bond breakers if any, as recommended by prime material manufacturer.

B. Comply with manufacturer's written recommendations unless more stringent requirements are indicated or required by Project conditions to ensure satisfactory performance of dampproofing.

C. Apply dampproofing to footings and foundation walls where opposite side of wall faces **building interior**.

1. Apply from finished-grade line to top of footing, extend over top of footing, and down a minimum of 6 inches over outside face of footing.
2. Install flashings and corner protection stripping at internal and external corners, changes in plane, construction joints, cracks, and where shown as "reinforced," by embedding an 8-inch- wide strip of asphalt-coated glass fabric in a heavy coat of dampproofing. Dampproofing coat for embedding fabric is in addition to other coats required.

D. Apply dampproofing to provide continuous plane of protection on exterior face of inner wythe of exterior masonry cavity walls.

1. Lap dampproofing at least 1/4 inch onto flashing and items that penetrate inner wythe.
2. Extend dampproofing over outer face of structural members and concrete slabs.

E. Apply dampproofing to provide continuous plane of protection on interior face of above-grade, exterior **concrete and masonry single-wythe masonry** walls unless walls are indicated to receive direct application of paint.

F. Cold-Applied Emulsified-Asphalt Dampproofing:

1. On concrete **and parged masonry** foundation walls, apply two brush or spray coats, one fibered brush or spray coat, or one trowel coat.
2. On unparged masonry foundation walls, apply primer and two brush or spray coats, primer and one fibered brush or spray coat, or primer and one trowel coat.
3. On Unexposed Face of Concrete Retaining Walls: Apply one brush or spray coat.
4. On Concrete Backup for **Stone Veneer Assemblies**: Apply one brush or spray coat.
5. On Masonry Backup for **Stone Veneer Assemblies**: Apply primer and one brush or spray coat.
6. On Exterior Face of Inner Wythe of Cavity Walls: Apply primer and one brush or spray coat.
7. On Interior Face of Exterior Concrete Walls: Where above grade and indicated to be furred and finished, apply one brush or spray coat.
8. On Interior Face of **Single-Wythe** Exterior Masonry Walls: Where above grade and indicated to be furred and finished, apply primer and one brush or spray coat.

END OF SECTION 071113

SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: **Product Data**.

B. Installer Qualifications: Authorized, approved, or licensed by waterproofing manufacturer.

PART 2 - PRODUCTS

2.1 WATERPROOFING MATERIALS

A. Rubberized-Asphalt Sheet: 60-mil- thick, self-adhering sheet consisting of 56 mils of rubberized asphalt laminated to a 4-mil- thick, polyethylene film with release liner on adhesive side **and formulated for application with primer or surface conditioner that complies with VOC limits of authorities having jurisdiction**.

1. Products:

a. Ice & Water Shield by WR Grace.

b. Substitutions in accordance with the requirements of this Project Manual.

B. Auxiliary Materials: Primer, surface conditioner, liquid membrane, substrate patching membrane, sheet strips, mastic, adhesives, tape, and metal termination bars recommended by waterproofing manufacturer.

1. Primer: Liquid **waterborne** primer recommended for substrate.
2. Surface Conditioner: Liquid, waterborne surface conditioner recommended for substrate.

C. Protection Course: **Semirigid sheet with reinforced asphaltic core, 1/8 inch**.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Clean, prepare, and treat substrates. Provide clean, dust-free, and dry substrates for waterproofing application.

B. Remove oil, form-release agents, curing compounds, and other contaminants or coatings.

C. Remove projections and fill honeycomb, aggregate pockets, holes, and other voids.

D. Prepare, fill, prime, and treat joints and cracks in substrates. Remove dust and dirt from joints and cracks.

E. Apply primer to substrates at required rate and allow it to dry.

F. Install self-adhering sheet waterproofing according to manufacturer's written instructions and recommendations in ASTM D 6135.

G. Apply and firmly adhere sheets. Accurately align sheets and maintain uniform 2-1/2-inch- minimum lap widths and end laps. Overlap and seal seams and stagger end laps.

H. Prepare, prime, and treat inside and outside corners according to ASTM D 6135.

I. Prepare, treat, and seal surfaces at terminations, penetrations, drains, and protrusions according to ASTM D 6135.

J. Repair tears, voids, and lapped seams not complying with requirements. Slit and flatten fishmouths and blisters. Patch with sheets extending 6 inches (150 mm) beyond repaired areas in all directions.

K. Install **protection course** over waterproofing membrane immediately. Use adhesive or tape applied according to manufacturer's written instructions. Do not penetrate waterproofing.

1. Lap edges and ends of geotextile to maintain continuity.

END OF SECTION 07 1326

SECTION 072100 - THERMAL INSULATION

PART 1 - **GENERAL**

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 INSULATION PRODUCTS

A. Surface-Burning Characteristics: ASTM E 84, and as follows:

1. Flame-Spread Index: 25 or less where exposed; otherwise, as indicated in Part 2 "Insulation Products" Article.
2. Smoked-Developed Index: 450 or less.

B. Extruded-Polystyrene Board Insulation: ASTM C 578, Type V, with flame-spread index of 75 or less.

C. Molded-Polystyrene Board Insulation: ASTM C 578, Type II, with flame-spread index of 75 or less.

D. Flexible Glass-Fiber-Board Insulation: ASTM C 612, Type IA or ASTM C 553, Types I, II, and III; foil faced; nominal density of 1.5 lb/cu. ft., with flame-spread index of 25 or less.

E. Glass-Fiber-Board Insulation: ASTM C 612, Type IA or Types IA and IB; foil faced; nominal density of 3 lb/cu. ft., with flame-spread index of 25 or less.

F. Slag-Wool-Fiber/Rock-Wool-Fiber Board Insulation: ASTM C 612, foil faced on 1 side; nominal density of 6 lb/cu. ft., with flame-spread index of 25 or less.

G. Mineral-Fiber-Blanket Insulation: ASTM C 665, Type I, unfaced with fibers manufactured from glass, slag wool, or rock wool, with flame-spread index of 25 or less.

H. Cellulosic-Fiber Loose-Fill Insulation: ASTM C 739; chemically treated for flame-resistance, processing, and handling characteristics.

2.2 ACCESSORIES

A. Sheet Radiant Barrier: ASTM C 1313, foil on one side, flame-spread index of 25 or less, and water-vapor transmission of 5 perms or greater.

B. Vapor Retarder: Polyethylene Fire-retardant, reinforced polyethylene, 6 mils thick.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install insulation in areas and in thicknesses indicated or required to produce R-values indicated. Cut and fit tightly around obstructions and fill voids with insulation.

B. Except for loose-fill insulation and insulation that is friction fitted in stud cavities, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

C. Place loose-fill insulation to comply with ASTM C 1015.

1. Comply with the CIMA's Special Report #3, "Standard Practice for Installing Cellulose Insulation."

D. Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage. Locate seams at framing members, overlap, and seal with tape.

END OF SECTION 07 2100

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data **and Samples**.

B. Identify each bundle of shingles with appropriate markings of UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

1. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, **Class A**.
2. Wind-Resistance-Test Characteristics: ASTM D 3161 or UL 997, passed.

C. Warranties: Provide standard manufacturer's written warranty, signed by manufacturer agreeing to promptly repair or replace asphalt shingles that fail in materials **or workmanship** within **30** years from date of Substantial Completion, prorated, with first **3** years nonprorated.

PART 2 - PRODUCTS

2.1 ASPHALT SHINGLES

A. Organic-Felt Shingles: ASTM D 225, passing ASTM D 3161 for wind resistance, and as follows:

1. Laminated-Strip Asphalt Shingles: Laminated, multi-ply overlay construction, mineral-granule surfaced, and self-sealing. **Straight** cut butt edge.
2. Multitab-Strip Asphalt Shingles: Mineral-granule surfaced and self-sealing. **Three tabs, regularly spaced**.
3. No-Cutout-Strip Asphalt Shingles: Mineral-granule surfaced, self-sealing, square, and single tab. **Straight** butt edge.

B. Products:

1. Timberline Ultra HD by GAF.

2. Approved Substitutes as permitted by the Project Manual.

2.2 ACCESSORIES

A. Felts: **ASTM D 226**, **Type I**, asphalt-saturated organic felts.

B. Self-Adhering Sheet Underlayment: ASTM D 1970, SBS-modified asphalt; mineral-granule or slip-resisting-polyethylene surfaced; with release paper backing; cold applied.

C. Ridge Vent: Rigid UV-stabilized plastic ridge vent **with nonwoven geotextile filter strips**; for use under ridge shingles.

D. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

E. Roofing Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel shingle nails, minimum 0.120-inch diameter, of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through OSB or plywood sheathing.

F. Sheet Metal Flashing and Trim: Comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."

1. Sheet Metal: **Aluminum**.
2. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual."
3. Drip Edge: Formed sheet metal with at least a 2-inch roof deck flange and a 1-1/2-inch fascia flange with a 3/8-inch drip at lower edge.
4. Open-Valley Flashing: Fabricate with 1-inch- high inverted-V profile at center of valley and equal flange widths of **10 inches** .

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with recommendations in ARMA's "Residential Asphalt Roofing Manual" and with asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

B. Apply self-adhering sheet underlayment at eaves and rakes from edges of roof to at least **24 inches** inside exterior wall line.

C. Apply self-adhering sheet underlayment at valleys extending 18 inches on each side.

D. Install valleys complying with ARMA and NRCA instructions. Construct **sheet metal open** valleys.

E. Install metal flashings and other sheet metal to comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim," recommendations in ARMA's "Residential Asphalt Roofing Manual," and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

F. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

END OF SECTION 07 3113

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Shop Drawings, and color Samples.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Copper Sheet: ASTM B 370, Temper H00 or H01, cold rolled, mill finished.

B. Aluminum Sheet: ASTM B 209 , alloy and temper as recommended by manufacturer for use intended and finish indicated.

C. Aluminum Extrusions: ASTM B 221 , alloy and temper as recommended by manufacturer for use intended and finish indicated.

D. Aluminum Finish: **Class II, clear anodic finish; AAM22C22A31; complying with AAMA 611**.

E. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, No. **B (bright, reflective** finish.

F. Prepainted, Zinc-Coated Steel Sheet: ASTM A 653/A 653M, G90 coating designation, structural quality, and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

1. Finish: High-performance organic; **three-coat** fluoropolymer system with finish coats containing at least 70 percent polyvinylidene fluoride resin by weight.

2.2 ROOF SPECIALTIES

A. General: Provide materials and types of fasteners, protective coatings, separators, sealants, and other miscellaneous items required by manufacturer for a complete installation.

B. Copings: Manufactured coping system consisting of formed-metal coping cap, concealed anchorage, concealed splice plates, mitered corner units, and end-cap units. Fabricate from exposed metal indicated below.

1. **Available** Products:
2. Aluminum: **0.040 inch** thick.

C. Gravel Stops: Manufactured, one-piece, formed-metal gravel stop, with a horizontal flange and vertical leg fascia terminating in a drip edge, continuous hold-down cleat, and concealed splice plates. Provide mitered and welded or soldered corner units. Fabricate from exposed metal indicated below.

1. **Available** Products:
2. Aluminum: **0.040 inch** thick.

D. Gutters and Downspouts:

1. **Available** Products:

2. Gutters: Manufactured formed gutter, with mitered and welded or soldered corner units, end caps, outlet tubes, and other accessories. Elevate back edge at least 1 inch above front gutter rim. Furnish with flat-stock gutter straps and gutter support brackets and expansion joints and expansion-joint covers fabricated from same metal as gutters. Fabricate from exposed metal indicated below.

a. Gutter Style: **Half round**.
b. Aluminum: **0.040 inch** thick.

3. Downspouts: **Rectangular closed-face** with mitered elbows, manufactured from the following exposed metal. Furnish wall brackets of same material and finish as downspouts, with anchors.

a. Formed Aluminum: **0.040 inch** thick.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Coordinate with installation of roof decks and other substrates to produce a watertight assembly capable of withstanding inward and outward loading pressures, and thermal and lateral loads.

B. Coat back side of **aluminum** roof specialties with bituminous coating where they will contact wood, ferrous metal, or cementitious construction.

C. Expansion Provisions: Install running lengths not exceeding **12 feet**, to allow controlled expansion for movement of metal components, and to prevent water leakage, deformation, or damage.

END OF SECTION 077100

SECTION 078413 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and product certificates signed by manufacturer certifying that products furnished comply with requirements.

B. Provide firestopping systems with fire-resistance ratings indicated by reference to UL designations as listed in its "Fire Resistance Directory," or to designations of another testing agency acceptable to authorities having jurisdiction.

C. Provide through-penetration firestopping systems with F-ratings indicated, as determined according to ASTM E 814, but not less than fire-resistance rating of construction penetrated.

1. Provide through-penetration firestopping systems with T-ratings as well as F-ratings, as determined according to ASTM E 814, where indicated.

D. For exposed firestopping, provide products with flame-spread indexes of less than 25 and smoke-developed indexes of less than 450, as determined according to ASTM E 84.

PART 2 - PRODUCTS

2.1 FIRESTOP SYSTEMS

A. Any through-penetration firestop system that is **classified by UL** for the application and with F-rating **and T-rating** indicated may be used.

B. **UL-classified** system designations are indicated on Drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install firestopping systems to comply with requirements listed in testing agency's directory for indicated fire-resistance rating.

B. Identification: Identify through-penetration firestop systems with permanent labels attached to surfaces adjacent to firestop systems so that labels will be visible to anyone seeking to remove penetrating items or firestop systems. Include the following information on labels:

1. The words "Warning - Through-Penetration Firestop System - Do Not Disturb."
2. Classification/listing designation of applicable testing and inspecting agency.
3. Through-penetration firestop system manufacturer's name and product name.

END OF SECTION 078413

SECTION 079200

JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and color Samples.

B. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.

B. Sealant for Use in Building Expansion Joints:

1. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 100/50; for Use NT.

C. Sealant for Use in Interior Joints in Ceramic Tile and Other Hard Surfaces in Kitchens and Toilet Rooms and Around Plumbing Fixtures:

1. Single-component, mildew-resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT; formulated with fungicide.

D. Sealant for Interior Use at Perimeters of Door and Window Frames:

1. Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

E. Acoustical Sealant:

1. Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission as demonstrated by testing according to ASTM E 90.

2.2 MISCELLANEOUS MATERIALS

A. Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

D. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with ASTM C 1193.

B. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal perimeters, control joints, openings, and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions. Comply with ASTM C 919.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Shop Drawings.

B. Comply with ANSI/SDI A250.8.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cold-Rolled Steel Sheets: ASTM A 1008/A 1008M, suitable for exposed applications.

B. Hot-Rolled Steel Sheets: ASTM A 1011/A 1011M, free of scale, pitting, or surface defects.

C. Frame Anchors: ASTM A 591/A 591M, 4OZ coating designation; mill phosphatized.

1. For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

2.2 HOLLOW METAL DOORS AND FRAMES

A. **Available** Products:

B. Doors: Complying with ANSI 250.8 for level and model and ANSI A250.4 for physical-endurance level indicated, 1-3/4 inches thick unless otherwise indicated.

1. Interior Doors: **Level 1 and Physical Performance Level C Standard Duty.**
2. Exterior Doors: **Level 2 and Physical Performance Level B Heavy Duty**, metallic-coated steel sheet faces.

a. Thermal-Rated (Insulated) Doors: Where indicated, provide doors with thermal-resistance value (R-value) of not less than **4.0 deg F x h x sq. ft./Btu** when tested according to ASTM C 1363.

3. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as door face sheets.

C. Frames: ANSI A250.8; conceal fastenings unless otherwise indicated.

1. Steel Sheet Thickness for Interior Doors: **0.042 inch**.
2. Steel Sheet Thickness for Exterior Doors: **0.053 inch**].
3. Fabricate interior frames with mitered or coped **and continuously welded corners.**
4. Fabricate exterior frames from metallic-coated steel sheet, with mitered or coped and continuously welded corners.
5. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.
6. Frame Anchors: Not less than 0.042 inch thick.

D. Glazing Stops: Nonremovable stops on outside of exterior doors and on secure side of interior doors; screw-applied, removable, glazing stops on inside, fabricated from same material as door face sheet in which they are installed.

E. Door Silencers: Three on strike jambs of single-door frames and two on heads of double-door frames.

F. Grout Guards: Provide where mortar might obstruct hardware operation.

G. Prepare doors and frames to receive mortised and concealed hardware according to ANSI A250.6 and ANSI A115 Series standards.

H. Reinforce doors and frames to receive surface-applied hardware.

I. Prime Finish: Manufacturer's standard, factory-applied coat of lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install hollow metal frames to comply with ANSI/SDI A250.11.

1. Fire-Rated Frames: Install according to NFPA 80.

B. Install doors to provide clearances between doors and frames as indicated in ANSI/SDI A250.11.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying rust-inhibitive primer. **Use galvanizing repair paint for metallic coated surfaces.**

END OF SECTION 08 1113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Solid-core doors with Veneer
2. Factory fitting flush wood doors to frames and factory machining for hardware.
3. Factory installed glazing

B. Related Requirements:

1. Section 081100 Hollow Metal Doors & Frames
2. Section 087100 Door Hardware
3. Section 088000 Factory Glazing for glass view panels in flush wood doors.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of door. Include details of core and edge construction, vision kits for openings and factory finishing.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:

1. Use same unit designations used in Contract Documents.
2. Hardware and [wiring chase] preparation.
3. Glazed openings
4. Blocking dimensions and locations
5. Fire-protection ratings for fire-rated doors.

C. Samples for Initial Selection: Available standard stain colors and gloss options.

D. Samples for Verification:

1. Factory finish applied to actual door face material, approximately 8 x 10 inches, for each material and finish.

2. Corner sections of doors, approximately 8 by 10 inches, with door faces and edges representing actual materials to be used.

3. Frames for light openings, 6 inches long, for each material, type, and finish when required.

1.4 QUALITY ASSURANCE

A. Quality Standard: WDMA I.S.1-A, latest edition, "Industry Standard for Architectural Wood Flush Doors".

B. Security Standard: Filti Testing and Development (FTD), "Shooter Attack Test Method (SA)"

1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of referenced standard and manufacturer's written instructions.

B. Package doors individually in plastic bags and wrap bundles of doors in plastic sheeting.

C. Mark each door on top rail with opening number used on Shop Drawings.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during remainder of construction period.

1.7 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.

2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.

3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

A. Masonite Architectural, Aspiro Series
1. Website: masonite.com/architectural/products/aspiro-series
2. Phone: (877) 332-4484

B. Source Limitations: Obtain flush wood doors from single manufacturer.

2.2 FLUSH WOOD DOORS, GENERAL

A. Quality Standard: Provide WDMA I.S.1-A
1. Performance Grade: Extra Heavy Duty.
2. Aesthetic Grade: **Premium (AA grade faces).**

B. Security Standard: FTD-SA
1. Performance Class:
a. Non-rated-Class 6
b. 20-Minute rated – Class 3
c. 45- Minute rated –Class 6

C. Fire-Rated Wood Doors: Conforming to NFPA 80; listed and labeled for required ratings based on testing at pressure NFPA 252 OR UL 10C by UL or other testing agency acceptable to authorities having jurisdiction.

1. Ratings; **[Category A positive pressure] [Category B positive pressure]**
2. Cores:
a. 20-minute rated: **Extra heavy-duty particle board**
b. 45-minute fire rated: Fire-resistant wood-based particleboard
3. Vertical Edges:
a. Category A Positive Pressure: Integral intumescent seals concealed by outer stile where required.
b. Category B Positive Pressure: Intumescent seals applied to door frame per requirements of section 08 71 00 where required.
4. Blocking: Provide blocking with improved screw holding capability approved for use in doors of fire protection ratings indicated as follows:
a. 5-inch in doors indicated to have closers and overhead stops
b. Blocking is not required in structural composite lumber core doors

D. Smoke and Draft Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784 for I occupancy projects.

2.3 VENEER-FACED DOORS FOR TRANSPARENT FINISH

A. Interior Solid-Core Doors:

1. Aesthetic Grade: **Premium, with Grade AA faces**
2. Species**: Veneer**
3. Assembly of Veneer Leaves on Door Faces: **Book & Running** match.
4. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
5. Core**: Extra Heavy-Duty Particle Board**
6. Construction: Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.

2.4 LIGHT FRAMES

A. Metal Vision Frames for Light Openings:
1. 18 gauge cold-rolled steel
2. Through-bolted through the door
3. Bite: Minimum 3/8" overlap
4. Finish: **Veneer wrapped, factory finish to match door faces** finish; and approved for use in doors of fire-protection rating indicated.

B. MVF Manufacturer's: Subject to compliance, meeting Filti Testing and Development (FTD), "Shooter Attack Test Method (SA)".
1. Activar-VLFIG
2. Anemostat-FGS-IS
3. All Metal Stamping-118D or 118

2.5 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

1. Comply with NFPA 80 requirements for fire-rated doors.

B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.

1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

C. Openings:

1. Light Openings: Factory cut and install with vision kits indicated above.
1. Glass: Factory install glass in doors per manufacturer's instructions.
   a. Non-rated glass to be Armoured One AOTSG516

b. 20-minute glass to be Armoured One AOSTG1016FR-45
c. 45-minute glass to be Armoured One AOSTG1016FR-45

2.6 FACTORY FINISHING

A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

B. Transparent Finish:

1. Grade: Premium
2. Finish: WDMA TR-8 UV Cured Acrylated Polyester/Urethane.
3. Staining: **As selected by Architect from manufacturer's full range**.
4. Sheen: Satin

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and installed door frames, with Installer present, before hanging doors.

1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
2. Reject doors with defects.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Hardware: For installation, see Section 087100 Door Hardware.

B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

1. Install fire-rated doors according to NFPA 80.
2. Install smoke- and draft-control doors according to NFPA 105.

C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide1/4 inch from bottom of door to top of threshold unless otherwise indicated.

    a. Comply with NFPA 80 for fire-rated doors.
    b. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.

2. Bevel fire-rated doors 1/8 inch in 2 inches at lock edge; trim stiles and rails only to extent permitted by labeling agency.

D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

E. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 ADJUSTING

A. Operation: Rehang or replace doors that do not swing or operate freely.

B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 081423 - CLAD WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product data for each type of door. Include details of core and edge construction, vision kits for openings and factory finishing.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:

1. Use same unit designations used in Contract Documents.
2. Hardware and [wiring chase] preparation.
3. Glazed openings
4. Blocking dimensions and locations
5. Fire-protection ratings for fire-rated doors.

C. Samples for Initial Selection: Available standard stain colors and gloss options.

D. Warranty: Manufacturer's lifetime product warranty to be free of defects in material and workmanship.

E. Fire-Rated Wood Doors: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing per **NFPA 252 at atmospheric pressure**

PART 2 - PRODUCTS

2.1 MOLDED-HARDBOARD-FACED DOORS

A. Faces: 1/8-inch- thick tempered hardboard, molded to panel configuration indicated, with **wood-grain patterned** finish.

1. Panel Configuration: **Two-panel**

B. Interior Solid-Core Doors with Hardboard Faces: Three-ply; particleboard cores.

1. Particleboard: ANSI A208.1, Grade **LD-1**. Rout cores to provide clearance for recessed areas of faces and provide full contact at remainder of faces.
2. Stiles and Rails: Softwood, 1-1/4-inch- wide stiles and 2-1/2-inch- wide rails. Provide 5-inch- wide rails at doors indicated to receive closers. **Bond stiles and rails to cores.**

C. Fire-Rated Solid-Core Doors: Core construction to provide fire rating indicated, faces to match non-fire-rated doors.

1. Mineral Cores: Non-combustible mineral composition material. Rout cores to provide clearance for recessed areas of faces and provide full contact at remainder of faces.
2. Stiles and Rails: 1-inch- wide laminated stiles with 3/16-inch- thick wood edges for doors with mineral cores. 2-inch- wide wood rails. Provide 5-inch- wide rails at doors indicated to receive closers. **Bond stiles and rails to cores.**

D. Hollow-Core Doors with Hardboard Faces: Three-ply, hollow cores with lock blocks both sides.

1. Core: Honeycomb or grid core blocks at raised panels.
2. Stiles and Rails: Softwood, 1-1/4-inch- wide stiles and 2-1/2-inch- wide rails.

E. Construction: Assemble with **Cross-linked PVA** adhesive.

F. Factory finish doors with manufacturer's standard primer and opaque finish.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with WDMA's "How to Store, Handle, Finish, Install, and Maintain Wood Doors."

1. Install fire-rated doors to comply with NFPA 80.

B. Align **and fit** doors in frames with uniform clearances and bevels. **Machine doors for hardware. Seal cut surfaces after fitting and machining.**

END OF SECTION 081423

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Fire-Rated Access Doors and Frames: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing per the following:

1. Vertical Access Doors: NFPA 252 Or UL 10B.
2. Horizontal Access Doors and Frames: ASTM E 119.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel Sheets: ASTM A 1008/A 1008M or ASTM A 591/A 591M.

B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, with A60 or G60 coating.

C. Stainless-Steel Sheets: ASTM A 666, Type 304, with No. 4 directional satin finish.

2.2 ACCESS DOORS AND PANELS

A. Available Products

B. Flush Access Doors and Frames with Exposed Trim: Prime-painted steel units.

C. Flush Access Doors and Trimless Frames: Prime-painted steel units with drywall bead flange.

D. Fire-Rated, Insulated, Flush Access Doors and Frames with Exposed Trim: Prime-painted steel, self-latching units with automatic closer.

E. Fire-Rated, Insulated, Flush Access Doors and Trimless Frames: Prime-painted steel, self-latching units with automatic closer.

F. Fire-Rated, Uninsulated, Flush Access Doors and Frames with Exposed Trim: Prime-painted steel, self-latching units with automatic closer.

G. Locks: Flush to finished surface, screwdriver operated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install access doors and panels accurately in position. Adjust hardware and door and panels for proper operation.

B. Install fire-rated access doors and panels according to NFPA 80.

END OF SECTION 08 3113

SECTION 083613 - SECTIONAL DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Structural Performance: Design and reinforce sectional overhead doors to withstand a [**40-lbf/sq. ft.**] wind-loading pressure.

B. Submittals: Product Data **and Shop Drawings**.

PART 2 - PRODUCTS

2.1 SECTIONAL OVERHEAD DOORS

A. **Available** Products:

B. Panels: Aluminum-framed **aluminum , translucent fiberglass** panels.

1. Provide extruded framing, not less than 0.065 inch thick, joined by welding or through bolting with concealed aluminum or stainless-steel bolts.
2. Finish: **Powder-coat finish**.

C. Glazed Panel Inserts: **6-mm** clear float glass.

D. Operation: **Electrical**.

E. Tracks, Supports, and Hardware: Manufacturer's standard.

F. Locks: **Spring-loaded dead bolt operable from inside by handle and outside by key in cylinder**.

G. Radio Control: Opens, closes, and stops door; one per operator.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install door, track, and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports.

B. Fasten vertical track assembly to framing at not less than 24 inches o.c. Hang horizontal track from structural overhead framing with angle or channel hangers. Provide bracing and reinforcement as required for rigid installation of track and door.

C. Lubricate bearings and sliding parts; adjust doors to operate easily, free of warp, twist, or distortion and fitting weathertight for entire perimeter.

D. Test and adjust controls and safeties.

END OF SECTION 083613

SECTION 085200 - WOOD WINDOWS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data**, Shop Drawings, and color Samples**.

B. Quality Standard: Comply with AAMA/NWWDA 101/I.S.2/NAFS.

1. Provide AAMA- or WDMA-certified wood windows with an attached label.

PART 2 - PRODUCTS

2.1 WOOD WINDOWS

A. Products:

1. Anderson 400 Series Stormwatch

2. Substitutions in accordance with the Project Manual.

B. Provide **aluminum-clad** wood windows.

C. Window Types: **As indicated on Drawings**

D. Performance Class: **R**.

E. Performance Grade: **50**

F. Thermal Transmittance: Whole-window U-factor not more than **0.40 Btu/sq. ft. x h x deg F** at 15-mph wind velocity and winter temperatures per **AMA 1503**.

G. Solar Heat-Gain Coefficient: Whole-window SHGC not more than **0.40**, per NFRC 200.

H. Trim: Provide indicated trim, matching material and finish of frame members. Provide jamb extensions as required, depending on wall depth.

I. Provide **gear-type rotary operators with folding handles** for **awning and casement** windows.

J. Equip units with **vinyl-coated, glass-fiber** mesh insect screens on operable sashes.

K. Equip units with removable grilles as indicated, attach to inside face of each lite.

L. Exterior Color: To be selected by Architect from the Manufacturer's full range of colors.

M. Glaze units with **low-e coated, argon-filled,** sealed insulating glass, complying with Division 08 Section "Glazing."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set units level, plumb, and true to line, without warp or rack of frames and panels. Provide proper support and anchor securely in place.

B. Set sill members in bed of sealant or with gaskets, as indicated, to provide weathertight construction.

C. Adjust operating panels, screens, and hardware to provide a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

D. Clean glass **and aluminum** surfaces immediately after installing windows. Remove nonpermanent labels from glass surfaces.

END OF SECTION 085200

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Hardware schedule.

B. Deliver keys to Owner.

C. Fire-Resistance-Rated Assemblies: Provide products that comply with NFPA 80 and are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for applications indicated. On exit devices provide label indicating "Fire Exit Hardware."

PART 2 - PRODUCTS

2.1 HARDWARE

A. Manufacturers:

1. Schlage
2. Stanley
3. Ives/Ingersoll Rand
4. Assa/Abbloy
5. Equal substitutions permitted with Design Team approval

B. Hinges:

1. Stainless Steel hinges with stainless-steel pins for exterior.
2. Nonremovable hinge pins for exterior and public interior exposure.
3. Ball-bearing hinges for doors with closers and entry doors.
4. 3 hinges for 1-3/4-inch- thick doors 90 inches or less in height; 4 hinges for doors more than 90 inches in height.

C. Locksets and Latchsets:

1. BHMA A156.2, Series 4000, Grade 1for bored locks and latches.
2. BHMA A156.3, Grade 1 for exit devices.
3. BHMA A156.5, Grade 1 for auxiliary locks.

4. BHMA A156.12, Series 5000, Grade 1 for interconnected locks and latches.
5. BHMA A156.13, Series 1000, Grade 1 for mortise locks and latches.
6. Lever handles on locksets and latchsets, ADA compliant
7. Provide trim on exit devices matching locksets.

D. Key locks to Owner's existing master-key system.

1. Cylinders with six-pin tumblers and removable cores.
2. Provide cylinders for locking doors that do not require other hardware.
3. Provide construction keying.
4. Provide key control system, including cabinet.

E. Closers:

1. Mount closers on interior side (room side) of door opening. Provide regular-arm, parallel-arm, or top-jamb-mounted closers as necessary. Coordinate closer mounting with hardware schedule notes on plans.
2. Adjustable delayed opening (accessible to people with disabilities) feature on closers.

F. Provide wall stops or floor stops for all doors.

G. Provide hardware finishes as follows:

1. Hinges: Matching finish of lockset/latchset
2. Locksets, Latchsets, and Exit Devices: US26D
3. Closers: Aluminum enamel
4. Other Hardware: Matching finish of lockset/latchset.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount hardware in locations recommended by the Door and Hardware Institute unless otherwise indicated.

3.2 HARDWARE SCHEDULE

A. Refer to construction documents for hardware schedule information.

END OF SECTION 087100

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and 12-inch-square samples.

B. Fire-Resistance-Rated Assemblies: Provide products that comply with NFPA 80 and are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for applications indicated.

C. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.

D. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated.

1. GANA Publications: GANA Laminated Division's "Laminated Glass Design Guide" and GANA's "Glazing Manual."
2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing"; and AAMA TIR-A7, "Sloped Glazing Guidelines."
3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Sloped Glazing Guidelines."
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "Glazing Guidelines for Sealed Insulating Glass Units."

E. Insulating-Glass Certification Program: Permanently marked with certification label of Insulating Glass Certification Council and Associated Laboratories, Inc.

PART 2 - PRODUCTS

2.1 GLASS

A. Float Glass : ASTM C 1036, Type I Class 2 (tinted, heat absorbing, and light reducing, and Quality Q3.

B. Heat-Treated Float Glass: ASTM C 1048, Condition C (coated), Type I, Class 2 (tinted) , Quality Q3, Kind FT (fully tempered).

C. Wired Glass: ASTM C 1036, Type II, Class 1, Quality Q8; Form 1 (polished) with m1 (diamond) mesh, 6.4 mm thick.

2.2 FABRICATED GLASS PRODUCTS

A. Laminated Glass : Two sheets of 6.0-mm- thick , with polyvinyl butyryl sheet urethane interlayer. Comply with ASTM C 1172.

B. Sealed Insulating-Glass Units : Factory-assembled units complying with ASTM E 774 for Class CBA units, with two 6.0-mm thick sheets of glass separated by a 1/2-inch dehydrated space filled with argon.
1. Low-Emissivity Coating: Third surface.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are contained in GANA's "Glazing Manual."

B. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

C. Remove nonpermanent labels, and clean surfaces immediately after installation.

END OF SECTION 088000

SECTION 089000 - LOUVERS AND VENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Provide louvers complying with performance requirements indicated as demonstrated by testing according to AMCA 500-L.

B. Submittals: Product Data**, Shop Drawings and Samples**.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6063-T5 or T-52 for extrusions; ASTM B 209 (ASTM B 209M), Alloy 3003 or 5005 for sheet.

B. Galvanized Steel Sheet: ASTM A 653/A 653M, G90 (Z275) zinc coating.

C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.

D. Fasteners: Of same basic metal and alloy as fastened metal or 300 Series stainless steel.

2.2 LOUVERS

A. Basis of Design: The design for each louver is based on the product named. Comparable products, as determined by Architect, by one of the following manufacturers may be provided:

B. **Horizontal Vertical**, Extruded-Aluminum, Storm-Resistant Louvers:

1. **Available** Products:

2. Aluminum Thickness: 0.060 inch (1.5 mm) for blades and 0.080 inch (2.0 mm) for frames.
3. Free Area: Not less than [**5.0 sq. ft. (0.46 sq. m)**] [**6.0 sq. ft. (0.56 sq. m)**] [**7.0 sq. ft. (0.65 sq. m)**] <**Insert free area**> for 48-inch- (1.2-m-) wide by 48-inch- (1.2-m-) high louver.

4. Air Performance: Not more than 0.10-inch wg (25-Pa) static pressure drop at [**600-fpm (3.0-m/s)**] [**700-fpm (3.6-m/s)**] [**800-fpm (4.1-m/s)**] <**Insert velocity**> free-area velocity.
5. Wind-Driven Rain Performance: Not less than [**99**] [**95**] [**80**] <**Insert rating**> percent effectiveness when subjected to a rain fall rate of [**3 inches (75 mm) per hour and a wind speed of 29 mph (13 m/s)**] [**8 inches (200 mm) per hour and a wind speed of 50 mph (22.4 m/s)**] <**Insert rainfall rate and wind speed**> at a core area intake velocity of [**300 fpm (1.5 m/s)**] [**400 fpm (2.0 m/s)**] [**500 fpm (2.5 m/s)**] <**Insert velocity**>.

C. Horizontal, Extruded-Aluminum, Drainable-Blade Louvers:

1. [**Available**]Products:

   a. <**Insert manufacturer's name; product name or designation.**>

2. Aluminum Thickness: 0.060 inch (1.5 mm) for blades and 0.080 inch (2.0 mm) for frames.
3. Free Area: Not less than [**7.0 sq. ft. (0.65 sq. m)**] [**8.0 sq. ft. (0.74 sq. m)**] <**Insert free area**> for 48-inch- (1.2-m-) wide by 48-inch- (1.2-m-) high louver.
4. Point of Beginning Water Penetration: Not less than [**900 fpm (4.6 m/s)**] [**1000 fpm (5.1 m/s)**] [**1050 fpm (5.3 m/s)**] <**Insert velocity**>.
5. Air Performance: Not more than [**0.10-inch wg (25-Pa)**] <**Insert pressure**> static pressure drop at [**700-fpm (3.6-m/s)**] [**800-fpm (4.1-m/s)**] <**Insert velocity**> free-area velocity.

D. Horizontal, Extruded-Aluminum, Nondrainable-Blade Louvers:

1. [**Available**]Products:

   a. <**Insert manufacturer's name; product name or designation.**>

2. Aluminum Thickness: 0.080 inch (2.0 mm) for blades and frames.
3. Free Area: Not less than [**7.5 sq. ft. (0.70 sq. m)**] [**8.0 sq. ft. (0.74 sq. m)**] <**Insert free area**> for 48-inch- (1.2-m-) wide by 48-inch- (1.2-m-) high louver.
4. Point of Beginning Water Penetration: Not less than [**700 fpm (3.6 m/s)**] [**800 fpm (4.1 m/s)**] [**850 fpm (4.3 m/s)**] <**Insert velocity**>.
5. Air Performance: Not more than [**0.10-inch wg (25-Pa)**] <**Insert pressure**> static pressure drop at [**650-fpm (3.3-m/s)**] [**700-fpm (3.6-m/s)**] <**Insert velocity**> free-area velocity.

E. Horizontal, Formed-Metal, Drainable-Blade Louvers:

1. [**Available**]Products:

   a. <**Insert manufacturer's name; product name or designation.**>

2. Metal and Thickness: [**Galvanized steel sheet, 0.052 inch (1.3 mm)**] [**Stainless-steel sheet, 0.050 inch (1.3 mm)**].
3. Free Area: Not less than [**7.0 sq. ft. (0.65 sq. m)**] [**8.0 sq. ft. (0.74 sq. m)**] <**Insert free area**> for 48-inch- (1.2-m-) wide by 48-inch- (1.2-m-) high louver.
4. Point of Beginning Water Penetration: Not less than [**800 fpm (4.1 m/s)**] [**900 fpm (4.6 m/s)**] [**950 fpm (4.8 m/s)**] <**Insert velocity**>.
5. Air Performance: Not more than [**0.10-inch wg (25-Pa)**] <**Insert pressure**> static pressure drop at [**700-fpm (3.6-m/s)**] [**800-fpm (4.1-m/s)**] <**Insert velocity**> free-area velocity.

F. Horizontal, Formed-Metal, Nondrainable-Blade Louvers:

1. [**Available**]Products:

   a. <**Insert manufacturer's name; product name or designation.**>

2. Metal and Thickness: [**Galvanized steel sheet, 0.052 inch (1.3 mm)**] [**Stainless-steel sheet, 0.050 inch (1.3 mm)**].
3. Free Area: Not less than [**6.5 sq. ft. (0.60 sq. m)**] [**7.5 sq. ft. (0.70 sq. m)**] <**Insert free area**> for 48-inch- (1.2-m-) wide by 48-inch- (1.2-m-) high louver.
4. Point of Beginning Water Penetration: Not less than [**550 fpm (2.8 m/s)**] [**650 fpm (3.3 m/s)**] <**Insert velocity**>.
5. Air Performance: Not more than [**0.10-inch wg (25-Pa)**] <**Insert pressure**> static pressure drop at [**550-fpm (2.8-m/s)**] [**650-fpm (3.3-m/s)**] <**Insert velocity**> free-area velocity.

2.3 LOUVER SCREENS

A. Provide screen at interior face of each exterior louver. Fabricate screen frames from same kind and form of metal as indicated for louver to which screens are attached.

1. Screening: [**Aluminum**] [**Galvanized steel**] [**Stainless steel**], 1/2-inch- (12.7-mm-) square mesh.

2.4 WALL VENTS (BRICK VENTS)

A. Extruded-aluminum wall vents 0.125 inch (3.18 mm) thick with aluminum insect screening on inside face of load-bearing construction.

B. Cast-aluminum wall vents with aluminum insect screening on inside face of load-bearing construction.

2.5 FINISHES

A. Aluminum Louvers: Conversion-coated and factory-primed finish, AA-C12C42R1x.

B. Aluminum Louvers: Class I, clear anodic finish; AA-M12C22A41; complying with AAMA 611.

C. Aluminum Louvers: Class I, color anodic finish; AA-M12C22A42/A44; complying with AAMA 611.

D. Aluminum Louvers: Baked-enamel finish, AA-C12C42R1x. Use thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603.

E. Aluminum Louvers: High-performance organic coating finish, AA-C12C42R1x. Use manufacturer's standard [**2**] [**3**]-coat fluoropolymer system complying with AAMA 2605, with finish coats containing at least 70 percent polyvinylidene fluoride resin by weight.

F. Galvanized Steel Louvers: Factory-primed finish for field painting. Clean and apply conversion coating followed by air-dried primer.

G. Galvanized Steel Louvers: Baked-enamel finish. Use thermosetting, modified-acrylic enamel primer/topcoat system applied over cleaned and conversion-coated metal.

H. Stainless Steel Louvers: No. [**4**] [**6**] finish.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install louvers level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible.

C. Protect metal surfaces from corrosion or galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.

END OF SECTION 089000

SECTION 092900

GYPSUM BOARD

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.

2.2 PANEL PRODUCTS

A. Provide in maximum lengths available to minimize end-to-end butt joints.

B. Interior Gypsum Board: ASTM C 36/C 36M or ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Regular type unless otherwise indicated, Type X where indicated.

C. Interior Abuse-Resistant Gypsum Board: ASTM C 36/C 36M or ASTM C 1396/C 1396M, fiber mesh reinforced paperless gypsum wall board panels in thickness indicated, with manufacturer's standard edges. Type X at face layer, inside face of Record Storage partitions & furring.

D. Water-Resistant Gypsum Backing Board: ASTM C 630/C 630M or ASTM C 1396/C 1396M, in thickness indicated. Regular type unless otherwise indicated, Type X where required for fire-resistance-rated assemblies and where indicated.

E. Glass-Mat, Water-Resistant Gypsum Backing Board: ASTM C 1178/C 1178M, of thickness indicated. Regular type unless otherwise indicated, Type X where required for fire-resistance-rated assemblies and where indicated.

1. Product: G-P Gypsum; Dens-Shield Tile Guard.

2. Equal substitutions permitted with Design Team approval.

F. Cementitious Backer Units: ANSI A118.9.

2.3 ACCESSORIES

A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hot-dip galvanized-steel sheet, plastic, or rolled zinc.

1. Provide cornerbead at outside corners unless otherwise indicated.
2. Provide LC-bead (J-bead) at exposed panel edges.
3. Provide control joints where indicated.

B. Aluminum Accessories: Extruded-aluminum accessories indicated with manufacturer's standard corrosion-resistant primer baked-enamel finish, AA-C12C42R1x.

C. Joint-Treatment Materials: ASTM C 475/C 475M.

1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
2. Joint Compounds: Setting-type compounds. Use setting-type compounds at exterior soffits.
3. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.
4. Cementitious Backer Unit Joint-Treatment Materials: Products recommended by cementitious backer unit manufacturer.

D. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834.

E. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install gypsum board to comply with ASTM C 840.

1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
3. Multilayer Fastening Methods: Fasten base layers and face layer separately to supports with screws.

B. Install cementitious backer units to comply with ANSI A108.11.

C. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.

D. Finishing Gypsum Board: ASTM C 840.

1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.
2. At substrates for tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges.
3. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.
4. Where indicated, provide Level 5 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges. Apply skim coat to entire surface.

E. Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions.

F. Cementitious Backer Units: Finish according to manufacturer's written instructions.

G. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.

END OF SECTION 092900

SECTION 093000

TILING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data for each type of product indicated and Samples for tile and grout.

B. Obtain tile of each type and color or finish from same production run for each contiguous area

C. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use

PART 2 - PRODUCTS

2.1 CERAMIC TILE

A. Ceramic tile that complies with Standard grade requirements in ANSI A137.1, "Specifications for Ceramic Tile."

B. Tile Type: Factory-mounted porcelain cushion-edged ceramic mosaic tile.

1. Products:

a. Daltile or Approved Equal

2. Module Size: refer to plans
3. Color and Pattern: As noted on plans.
4. Grout Color: As selected from manufacturer's full range of colors.
5. Trim Units: Coordinated with sizes and coursing of adjoining flat tile

a. Base: Coved.
b. Base Cap for Portland Cement Mortar Installations: Bead (bullnose).
c. Base Cap for Thin-Set Mortar Installations: Surface bullnose.
d. Wainscot Cap for Portland Cement Mortar Installations: Bead (bullnose).
e. Wainscot Cap for Thin-Set Mortar Installations: Surface bullnose.
f. External Corners for Portland Cement Mortar Installations: Bead (bullnose).
g. External Corners for Thin-Set Mortar Installations: Surface bullnose.
h. Internal Corners: Cove.
i. Internal Corners: Field-butted square corners. For coved base and cap, use angle pieces designed to fit with stretcher shapes.

C. Marble thresholds complying with ASTM C 503 to be not more than 1/4 inch above adjoining finished floor surfaces, with transition edges beveled on a slope of no greater than 1:2.

1. Color: As selected
2. Description: Daltile or Approved Equal.
3. Finish: Honed.

2.2 INSTALLATION MATERIALS

A. Cementitious Backer Units: ANSI A118.9 or ASTM C 1325, 1/2 inch thick.

B. Fiber-Cement Underlayment: ASTM C 1288, 1/2 inch thick.

C. VOC Limit for Adhesives and Fluid-Applied Waterproofing Membranes: 65 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

D. Waterproofing Membranes for Thin-Set Installations: ANSI A118.10, fabric-reinforced modified bituminous product

1. Available Products

E. Setting and Grouting Materials: Comply with material standards in ANSI's "Specifications for the Installation of Ceramic Tile" that apply to materials and methods indicated.

1. Thin-Set Mortar Type: Latex-portland cement.

1) Available Products, coordinated with the Tile Manufacturer's Requirements.

2. Grout Type: Water-cleanable epoxy unless otherwise indicated.

a. Available Products:

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.

1. For installations indicated below, follow procedures in ANSI's "Specifications for the Installation of Ceramic Tile" for providing 95 percent mortar coverage.

a. Exterior tile floors.

b. Tile floors in wet areas.
c. Tile floors in laundries.
d. Tile floors composed of tiles 8 by 8 inches or larger.
e. Tile floors composed of rib-backed tiles.

B. Coordinate height of adjacent floor surfaces to maintain ICC/ANSI 117.1-2003 tolerances for accessible routes.

C. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

D. Lay tile in grid pattern unless otherwise indicated. Align joints where adjoining tiles on floor, base, walls, and trim are the same size.

E. Install fiber-cement underlayment and treat joints according to ANSI A108.11.

F. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot (1:50) toward drains.

G. Install waterproofing to comply with ANSI A108.13.

H. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

I. Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in latex-portland cement mortar (thin set).

J. Interior Floor Tile Installation Method(s):

1. Over Concrete Subfloors: TCA F114 (cement mortar bed with cleavage membrane, epoxy grout).

K. Interior Wall Tile Installation Method(s):

1. Over Concrete and Masonry: TCA W223 (organic adhesive).
2. Over Metal Studs or Furring: TCA W245 with organic adhesive (organic adhesive on glass-mat, water-resistant backer board).

END OF SECTION 093000

SECTION 095123

ACOUSTICAL TILE CEILINGS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and material Samples.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. Seismic Standard: Provide acoustical tile ceilings designed and installed to withstand the effects of earthquake motions according to the following:

1. CISCA's Recommendations for Acoustical Ceilings: Comply with CISCA's "Recommendations for Direct-Hung Acoustical Tile and Lay-in Panel Ceilings - Seismic Zones 0-2."
2. CISCA's Guidelines for Systems Requiring Seismic Restraint: Comply with CISCA's "Guidelines for Seismic Restraint of Direct-Hung Suspended Ceiling Assemblies - Seismic Zones 3 & 4."
3. UBC Standard 25-2, "Metal Suspension Systems for Acoustical Tile and for Lay-in Panel Ceilings."

2.2 ACOUSTICAL TILE (ACT)

A. Available Products:

1. Armstrong Ceiling Systems

B. Classification: As follows, per ASTM E 1264:

1. Type and Form: Type III, Form 1.
2. Pattern: as indicated in Plans.
3. Color: White.
4. Light Reflectance (LR) Coefficient: Not less than 0.70
5. Noise Reduction Coefficient (NRC): Not less than 0.55

6. Ceiling Attenuation Class (CAC): Not less than 30

C. Surface-Burning Characteristics: ASTM E 1264, Class A materials, tested per ASTM E 84.

D. Edge Detail: Beveled, kerfed and rabbeted, or tongue and grooved, or butt.

E. Thickness: 3/4 inch.

F. Modular Size: As noted on the Contract Documents.

2.3 SUSPENSION SYSTEM

A. Ceiling Suspension System: Direct hung; ASTM C 635, heavy-duty structural classification.

1. Products:

a. Refer to Contract Documents for Manufacturers and Product information.

B. Attachment Devices: Size for 5 times the design load indicated in ASTM C 635, Table 1, Direct Hung, unless otherwise indicated. Comply with seismic design requirements.

C. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

1. Size: Provide yield strength at least 3 times the hanger design load (ASTM C 635, Table 1, Direct Hung), but not less than 0.135-inch- diameter wire.

D. Access: Identify upward access tile with manufacturer's standard unobtrusive markers for each access unit.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Ceiling Suspension System Installation: Comply with ASTM C 636 and CISCA's "Ceiling Systems Handbook."

1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.

B. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material.

1. Fit adjoining tile to form flush, tight joints. Scribe and cut tile for accurate fit at borders and around penetrations through tile.

C. Arrange directionally patterned acoustical panels as indicated on Drawings.

END OF SECTION 095123

SECTION 096513

RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Samples.

B. Extra Materials: Deliver to Owner at least 10% of each type and color of resilient wall base installed.

PART 2 - PRODUCTS

2.1 RESILIENT BASE

A. Available Products:

B. Color and Pattern: As noted on plans.

C. ASTM F 1861, Type TV (vinyl.

D. Group (Manufacturing Method): I (solid

E. Style: Cove (base with toe), and profile extruded as noted on plans.

F. Minimum Thickness: 0.125 inch.

G. Height: 4 inches .

H. Lengths: coils in manufacturer's standard lengths.

I. Outside Corners: preformed.

J. Inside Corners: preformed.

K. Finish: Low luster.

2.2 RESILIENT STAIR ACCESSORIES

A. Available Products:

B. Color and Pattern: as noted on plans.

1. Surface Design:

2.3 RESILIENT MOLDING ACCESSORY

A. Available Products:

B. Color: As selected from manufacturer's full range.

C. Description: Carpet edge for glue-down applications, Nosing for resilient floor covering Material: Vinyl.

D. Profile and Dimensions: As indicated.

2.4 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement- or blended hydraulic cement-based formulation provided or approved by flooring manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit products and substrate conditions.

C. Stair-Tread-Nose Filler: Two-part epoxy compound recommended by resilient tread manufacturer to fill nosing substrates that do not conform to tread contours.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

B. Adhesively install resilient wall base and accessories.

C. Install wall base in maximum lengths possible. Apply to walls, columns, pilasters, casework, and other permanent fixtures in rooms or areas where base is required.

D. Install stair-tread-nose filler to nosing substrates that do not conform to tread contours.

E. Install reducer strips at edges of floor coverings that would otherwise be exposed.

F. Floor Polish: Remove soil, visible adhesive, and surface blemishes from resilient stair treads before applying liquid floor polish.

1. Apply two coat(s).

END OF SECTION 096513

SECTION 096519 RESILIENT TILE FLOORING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Luxury Vinyl Tile Plank Flooring.
2. Reducers.
3. Grounding tape.

B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

A. ASTM International (ASTM):
1. D2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.
2. D4258 - Standard Practice for Surface Cleaning Concrete for Coating.
3. E648 - Standard Test Method for Flooring Radiant Panel Test.
4. F1066 - Standard Specification for Vinyl Composition Tile.
5. F1344 - Standard Specification for Rubber Floor Tile.
6. F1700 - Standard Specification for Solid Vinyl Floor Tile.
7. F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

B. Resilient Floor Covering Institute (RFCI) - FloorScore Certification Program.

1.3 SUBMITTALS

A. Submittals for Review:
1. Product Data: Provide data on specified products, describing physical and performance characteristics.
2. Samples:
a. Tile: 6 x 6 inch samples showing available colors.
b. Reducers: 4 inch long samples showing available colors.

B. Quality Control Submittals:
1. Certificates of Compliance: Certification from an independent testing laboratory that flooring meets fire hazard classification requirements.

1.2 QUALITY ASSURANCE

A. Installer Qualifications: Minimum 5 years experience in work of this Section.

B. Fire Hazard Classification: Class I rated, tested to ASTM E648.

C. Static Coefficient of Friction: Minimum 0.5 tested to ASTM D2047.

1.3 PROJECT CONDITIONS

A. Maintain temperature in spaces to receive flooring between 70 and 90 degrees F for 24 hours before, during, and for minimum 48 hours after installation.

B. Maintain minimum temperature of 55 degrees F after flooring is installed, except as otherwise specified.

1.4 MAINTENANCE

A. Extra Materials:10% of each color and pattern.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers - Vinyl Composition Tile:
1. See plans for manufacturer and model.

B. Acceptable Manufacturers- Luxury Vinyl Tile Plank Flooring:
1. See plans for manufacturer and model.

2.2 MATERIALS

A. Vinyl Composition Tile:
1. ASTM F1066, Class 2 - Through Pattern.
2. See plans.
3. Size: 12 x 12 inches x 1/8 inch thick.

B. Luxury Vinyl Tile Plank Flooring:
1. ASTM F1700, Class III - Printed Film, Type B - Embossed Surface.
2. See plans.
3. Size: 7.08 x 47.24 inches x 1/5" inch (5mm) thick.

2.3 ACCESSORIES

Reducer Strips: Solid vinyl or rubber composition, 1 inch wide by tile thickness, tapered, color to be selected from manufacturer's full color range.

A. Leveling Compound: White, premixed, latex based.

B. Adhesive:

1. Water based, waterproof, recommended by flooring manufacturer.

C. Grounding Tape: 1/2 inch wide copper tape.

PART 3 EXECUTION

3.1 PREPARATION

A. Clean substrate; remove loose and foreign matter that could impede adhesion or performance of flooring.

B. Fill cracks, voids, and depressions in substrate with leveling compound.

C. Grind off high spots and projections in substrate; leave smooth and level to 1/4 inch in 10 feet.

D. Test substrate for moisture content to ASTM F1869; do not install flooring until moisture emission level is acceptable to flooring manufacturer.

3.2 INSTALLATION OF TILE

A. Install as shown on the Drawings in accordance with manufacturer's instructions.

B. Mix tile from container to ensure shade variations are consistent when tile is placed.

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Lay flooring with joints parallel to building lines to produce symmetrical tile pattern.

E. Install tile to pattern indicated Allow minimum half-size tiles at room or area perimeter.

F. Set flooring in place; press with heavy roller to attain full adhesion.

G. Scribe flooring to walls, columns, cabinets, and other appurtenances to produce tight joints. Ensure that base, trim, plates, or escutcheons will completely cover cut edges.

H. Extend tile into recesses and under equipment.

I. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar.

J. Install grounding tape at static-dissipating flooring in accordance with manufacturer's instructions. Ground to building ground system.

3.3 INSTALLATION OF REDUCER STRIPS

A. Install where tile stops with edge exposed; set in adhesive.

B. Center strips under doors where flooring terminates at door openings.

C. Install in longest practical lengths; butt ends tight.

D. Scribe to abutting surfaces.

3.4 ADJUSTING

A. Correct tiles that are not seated; replace damaged tiles.

3.5 CLEANING

A. Clean tile and machine buff in accordance with manufacturer's instructions.

3.6 PROTECTION

A. Do not allow traffic on flooring until adhesive has set.

B. Cover areas subject to traffic with protective covering.

END OF SECTION 09 6519

SECTION 09 6723

RESINOUS FLOORING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Liquid applied epoxy and aggregate floor finish.
2. Divider strips.

1.2 REFERENCES

A. ASTM International (ASTM):
1. C307 - Standard Test Method for Tensile Strength of Chemical-Resistant Mortars, Grouts, and Monolithic Surfaces.
2. C413 - Standard Test Method for Absorption of Chemical-Resistant Mortars, Grouts, and Monolithic Surfaces.
3. C579 - Standard Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, and Monolithic Surfaces.
4. C580 - Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, and Monolithic Surfaces.
5. D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position.
6. D1044 - Standard Test Method for Resistance of Transparent Plastic Materials to Abrasion.
7. D2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
8. D2240 - Standard Test Method for Rubber Property - Durometer Hardness (Apparatus: Shore Type D Durometer).
9. D4258 - Standard Practice for Surface Cleaning Concrete for Coating.
10. D4259 - Standard Practice for Abrading Concrete.
11. F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

1.3 SUBMITTALS

A. Submittals for Review:
1. Shop Drawings: Indicate room or space dimensions and location of dividers.
2. Product Data: Provide data on specified products, describing physical and performance characteristics.
3. Samples:
   a. 6 x 6 inch flooring samples showing available colors.
   b. 6 inch long divider strip samples.

B. Quality Control Submittals:
1. Certificates of Compliance: Certification from an independent testing laboratory that flooring meets fire hazard classification requirements.

C. Sustainable Design Submittals:
1. Regional Materials.

D. Closeout Submittals:
   1. Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.

1.4 QUALITY ASSURANCE

A. Installer Qualifications:
   1. Approved by flooring manufacturer.

B. Fire Hazard Classification: Self extinguishing, tested to ASTM D635 with maximum 0.25 inch extent of burning.

1.5 DELIVERY, STORAGE AND HANDLING

A. Maintain minimum temperature of 55 degrees F in storage area unless otherwise instructed by manufacturer.

B. Store materials in installation area for 3 days prior to installation to achieve temperature stability.

1.6 PROJECT CONDITIONS

A. Maintain ambient temperature required by manufacturer 3 days prior to, during, and for 24 hours after installation of materials.

1.7 WARRANTIES
A. Furnish manufacturer's warranty providing coverage against flooring delamination from substrate and degradation of surface finish.

PART 2 PRODUCTS

2.1 MANUFACTURERS
A. Acceptable Manufacturers:
   1. Dura-Flex, Inc. (www.dur-a-flex.com)
   2. RBC Industries, Inc. (www.rbcepoxy.com)
   3. Stonhard, Inc. (www.stonhard.com)

B. Substitutions: Not permitted.

2.2 MATERIALS

A. Resinous Flooring:
   1. Binder: Epoxy, two component, thermosetting, colored with mineral filler, color to be selected from manufacturer's full color range.
   2. Aggregate: Small quartz chips, granular, ceramic coated, color to be selected from manufacturer's full color range.
   3. Top coat: Epoxy, two component, thermosetting, clear.
   4. Flooring system: Conform to the following:

PROPERTY	TEST METHOD	RESULT
Tensile Strength	ASTM C307	Minimum 2000 PSI
Compressive Strength	ASTM C579	Minimum 10,000PSI
Flexural Strength	ASTM C580	Minimum 4300 PSI
Water Absorption	ASTM C413	Maximum 0.1 percent
Hardness	ASTM D2240	85 to 90 durometer

PROPERTY	TEST METHOD	RESULT
Abrasion Resistance	ASTM D1044	Maximum Weight loss of 0.1g/1000 cycles
Impact Resistance	Gardner Impact Tester	Minimum 160 in/lb; no cracking, chipping or delamination
Coefficient of Friction	ASTM D2047	0.7

2.3 ACCESSORIES

A. Divider Strips: Height to match flooring thickness, minimum 18 gage white alloy of zinc or brass, with anchoring features.

B. Cove Strips: Type recommended by flooring manufacturer.

C. Subfloor Filler: White, premixed, latex based, type recommended by flooring material manufacturer.

D. Primers, Adhesives, and Sealers: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that concrete floors have cured a minimum 28 days and do not exhibit negative alkalinity, carbonization, or dusting.

3.2 PREPARATION

A. Remove subfloor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with filler.

B. Prepare concrete substrates to receive flooring system by vacuum & air blast cleaning method to requirements of ASTM D 4258.

C. Test substrate for moisture content to ASTM F1869; do not install flooring until moisture emission level is acceptable to flooring manufacturer.

D. Apply primer to substrate surfaces.

3.3 INSTALLATION

A. Install divider strips at locations indicated. Locate additional joints to align with joints in substrate.

B. Set strips straight and level; attach securely to substrate.

C. Install cove strip at floor to wall junction.

D. Apply flooring in accordance with manufacturer's instructions to minimum thickness of 1/8 inch.

E. Apply first coat of binder resin and allow to dry.

F. While binder is still wet, uniformly broadcast aggregate over wet binder.

G. After first coat has cured, apply second coat using same techniques as first coat.

H. Finish to smooth level surface.

I. After second coat has cured, apply top coat.

J. Cove flooring at vertical surfaces to a height of 4 inches.

3.4 PROTECTION

A. Prohibit traffic on floor finish for 48 hours after installation.

B. Barricade area to protect flooring until cured.

END OF SECTION

SECTION 097733 SANITARY WALL PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Prefinished sanitary wall panels.
2. Trim.

B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.
2. Section 07 9200 - Joint Sealers.

1.2 REFERENCES

A. ASTM International (ASTM) E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

A. Submittals for Review:
1. Samples:
a. 6 x 6 inch panel samples showing available colors.

B. Quality Control Submittals:
1. Certificates of Compliance: Certification from an independent testing laboratory that panels meet fire hazard classification requirements.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Minimum 5 years experience in work of this Section.

1.5 PROJECT CONDITIONS

A. Do not install products if temperature, humidity, and ventilation requirements are outside limits recommended by manufacturer.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:
1. Crane Composites. (www.cranecomposites.com)
2. Nudo Products, Inc. (www.nudo.com)
3. Marlite. (www.marlite.com)

4. Panolam Industries International, Inc. (www.panolam.com)

B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS

A. Sanitary Wall Panels:
1. Type: Glass fiber reinforced plastic, USDA approved for incidental food contact.
2. Size: 3/32 inch thick x 48 inches wide x maximum practical length.
3. Color: To be selected from manufacturer's full color range.
4. Surface texture: pebbled

2.3 ACCESSORIES

A. Trim:
1. One piece extruded PVC, manufacturer's standard profile.
2. Inside and outside corners, division bar, and J-molding.

B. Adhesive:
1. Compatible with panels and substrate; recommended by panel manufacturer.

C. Joint Sealer: Specified in Section 07 9200.

D. Patching Compound: White latex type.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrate to receive panels:
1. Remove high spots.
2. Fill low spots with patching compound; sand smooth.
3. Remove loose and foreign matter that could impair adhesion.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install trim:
1. Panel-to-panel joints: Division bar.
2. Internal and external corners.
3. Exposed edges: J molding.
4. Secure to substrate.

C. Cut panels to fit at perimeter and around penetrations. Ensure that trim will completely cover cut edges.

D. Maintain 1/8 inch expansion space at perimeter and around penetrations.

E. Adhere panels to substrate with continuous beads of adhesive.

F. Install continuous bead of joint sealer between panels and trim and between trim and adjacent construction.

END OF SECTION 09 7733

SECTION 099100 - PAINTING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Surface preparation and field application of paints.

1.2 SUBMITTALS

A. Submittals for Review:
1. Product Data: Manufacturer's data on materials proposed for use. Include:
a. Product designation and grade.
b. Surface preparation materials and procedures.
c. Product analysis and performance characteristics.
2. Samples:
a. 6 x 6 inch samples of each coating system on representative substrate. Step back successive coats so that all coats remain exposed. Indicate type of material used for each coat.
3. Paint Schedule: Detailed schedule indicating type and location of surface, coating materials, and number of coats to be applied.

1.3 QUALITY ASSURANCE

A. Applicator Qualifications: Minimum 5 years experience in work of this Section.

B. Mockup:
1. Construct mockup panels for interior wall finishes, 4 feet wide x 8 feet high.
2. Show: Each color and texture.
3. Locate where directed.
4. Approved mockup may [not] remain as part of the Work.

1.4 DELIVERY, STORAGE AND HANDLING

A. 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.

B. Paint Materials: Store at ambient temperature in ventilated area as required by manufacturer's instructions.

1.5 PROJECT CONDITIONS

A. Do not apply materials when surface and ambient temperatures or relative humidity are outside ranges required by manufacturer.

B. Provide lighting level of 80 footcandles measured mid-height at substrate surface.

1.6 MAINTENANCE

A. Extra Materials: 1 gallon of each color and sheen.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:
1. Benjamin Moore and Co. (www.benjaminmoore.com)

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 MATERIALS

A. Paints: As scheduled at end of Section, or approved substitute.

2.3 ACCESSORIES

A. Patching Materials: Latex filler.

B. Fastener Head Cover Materials: Latex filler.

2.4 MIXES

A. Uniformly mix to thoroughly disperse pigments.

B. Do not thin in excess of manufacturer's recommendations.

PART 3 EXECUTION

3.1 EXAMINATION

A. Test shop applied primer for compatibility with subsequent coatings.

B. Measure moisture content of surfaces using electronic moisture meter. Do not apply coatings unless moisture content of surfaces are below following maximums:
1. Gypsum board: 12 percent.
2. Masonry and concrete: 12 percent.
3. Wood: 15 percent, measured to ASTM D4442.
4. Concrete floors: 8 percent.

3.2 PREPARATION

A. General:
1. Protect adjacent and underlying surfaces.
2. Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
3. Correct defects and clean surfaces capable of affecting work of this section.
4. Seal marks that may bleed through surface finishes with shellac.

B. Impervious Surfaces: Remove mildew by scrubbing with solution of trisodium phosphate and bleach. Rinse with clean water and allow to dry.

C. Gypsum Board:
1. Fill minor defects with filler compound. Spot prime defects after repair.

D. Galvanized Steel: SSPC Method SP1 - Solvent Cleaning.

E. Aluminum: SSPC Method SP1 - Solvent Cleaning.

F. Interior Wood:
1. Wipe off dust and grit.
2. Seal knots, pitch streaks, and sappy sections with sealer.
3. Fill nail holes and cracks after primer has dried; sand between coats.

G. Existing Surfaces:
1. Remove loose, flaking, powdery, and peeling paints.
2. Lightly sand glossy painted surfaces.
3. Fill holes, cracks, depressions and other imperfections with patching compound; sand flush with surface.
4. Remove oil, grease, and wax by scraping; solvent wash and thoroughly rinse.
5. Remove rust by wire brushing to expose base metal.

3.3 APPLICATION

A. Apply primer or first coat immediately after surface preparation is complete to prevent recontamination.

B. Do not apply finishes to surfaces that are not dry.

C. Apply coatings to minimum dry film thickness recommended by manufacturer.

D. Apply each coat of paint slightly darker than preceding coat unless specified otherwise.

E. Apply coatings to uniform appearance without laps, sags, curtains, holidays, and brush marks.

F. Allow applied coats to dry before next coat is applied.

G. Sand between coats on interior [wood] [and] [metal] surfaces.

H. Match final coat to approved color samples.

I. Where clear finishes are specified, tint fillers to match wood. Work fillers into grain before set. Wipe excess from surface.

J. Prime concealed surfaces of [exterior wood] [and] [interior wood in contact with masonry or cementitious materials] with one coat primer paint.

K. Mechanical and Electrical Components:
1. Paint factory primed equipment.
2. Remove unfinished and primed louvers, grilles, covers, and access panels; paint separately.
3. Paint exposed and insulated pipes, conduit, boxes, ducts, hangers, brackets, collars, and supports unless factory finished.
4. Do not paint name tags or identifying markings.
5. Paint exposed conduit and electrical equipment in finished areas.

L. Do not Paint:
1. Surfaces indicated on Drawings or specified to be unpainted or unfinished.
2. Surfaces with factory applied finish coat or integral finish.
3. Architectural metals, including brass, bronze, stainless steel, and chrome plating.

3.4 ADJUSTING

A. Touch up or refinish disfigured surfaces.

3.5 CLEANING

A. Remove paint from adjacent surfaces.

3.6 PAINT SCHEDULE

A. Types of paint listed herein are set forth as standard of quality and type of coating required for each type of surface. Refer to the finish schedule in the Drawings.

END OF SECTION 09 9100

SECTION 101400

SIGNAGE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Shop Drawings, and Samples.

1. Submit full-size rubbings for metal plaques.

B. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), Type UVA (UV absorbing).

B. Applied Vinyl: Die-cut characters from vinyl film of nominal thickness of 3 mils with pressure-sensitive adhesive backing, suitable for exterior applications.

2.2 SIGNS

A. Interior Panel Signs: Engraved plastic laminate with square-cut edges and rounded corners.

1. Finishes and Colors: As selected by architect from man. Full range of colors.
2. Tactile Characters: Characters and Grade 2 Braille raised 1/32 inch above surface with contrasting colors.
3. Provide signs for all rooms mounted on the wall beside the room door.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Locate signs where indicated or directed by Architect. Install signs level, plumb, and at heights indicated, with sign surfaces free from distortion and other defects in appearance.

B. Wall-Mounted Signs:

1. Two-Face Tape: Mount signs to smooth, nonporous surfaces, other than vinyl.
2. Hook-and-Loop Tapes: Mount signs to smooth, nonporous surfaces.
3. Magnetic Tape: Mount signs to smooth, nonporous surfaces.
4. Silicone-Adhesive Mounting: Attach signs to irregular, porous, or vinyl-covered surfaces.

C. Dimensional Characters: Mount characters with backs in contact with wall surface.

END OF SECTION 101400

SECTION 102113

TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Shop Drawings, and Samples.

B. Regulatory Requirements: Comply with ICC/ANSI A117.1 for toilet compartments designated as accessible.

PART 2 - PRODUCTS

2.1 TOILET COMPARTMENTS AND SCREENS

A. Products:
1. Santana
2. Approved Equals with Design Team Approval.

2.2 MATERIALS

A. Solid-Plastic, Polymer Resin: High-density polyethylene with homogenous color, not less than 1 inch thick, with seamless construction and eased edges.

1. Flame-Spread Index: 75 or less per ASTM E 84.
2. Color: Selected from manufacturer's full range.

B. Pilaster Shoes and Sleeves (Caps): Stainless steel not less than 4 inches high.

C. Brackets: Continuous.

1. Material: Stainless steel

2.3 FABRICATION

A. Toilet Compartments: Overhead braced and floor anchored

B. Urinal Screens: Floor and ceiling anchored

C. Metal Units: Internally reinforce metal panels for hardware, accessories, and grab bars.

D. Solid-Plastic, Polymer-Resin Units: Provide aluminum heat-sink strips at exposed bottom edges of panels and doors.

E. Doors: Unless otherwise indicated, 24-inch wide in-swinging doors for standard toilet compartments and 36-inch wide out-swinging doors with a minimum 32-inch wide clear opening for compartments indicated to be accessible to people with disabilities.

F. Door Hardware: Stainless steel :Provide units that comply with accessibility requirements of authorities having jurisdiction at compartments indicated to be accessible to people with disabilities.

1. Hinges: Self-closing type, adjustable to hold door open at any angle up to 90 degrees.
2. Latches and Keepers: Recessed unit designed for emergency access and with combination rubber-faced door strike and keeper.
3. Coat Hook: Combination hook and rubber-tipped bumper, sized to prevent door from hitting compartment-mounted accessories.
4. Door Bumper: Rubber-tipped bumpers at out-swinging doors or entrance screen doors.
5. Door Pull: Provide at out-swinging doors. Provide units on both sides of doors at compartments indicated to be accessible to people with disabilities.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units rigid, straight, level, and plumb, with not more than 1/2 inch between pilasters and panels and not more than 1 inch between panels and walls. Provide brackets, pilaster shoes, bracing, and other components required for a complete installation. Use theft-resistant exposed fasteners finished to match hardware. Use sleeve nuts for through-bolt applications.

1. Stirrup Brackets: Align brackets at pilasters with brackets at walls
2. Set hinges on in-swinging doors to hold open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors and swing doors in entrance screens to return to fully closed position.

END OF SECTION 102113

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

A. Products supplied by Owner and Installed by Contractor:
1. Toilet Room Accessories as scheduled in this Section and as indicated in the Drawings.

B. Products supplied and Installed by Contractor:
1. Toilet Room Accessories as scheduled in this Section and as indicated in the Drawings.
2. Janitor Closet Accessories.

C. Related Sections:
1. Section 06 1000: Rough Carpentry, coordination with blocking.
2. Section 09 2000: Plaster and Gypsum Board, coordination with blocking.
3. Section 09 3000: Tiling, coordination with layout and installation.

1.2 SUBMITTALS

A. Submittals for Review:
1. Product Data: Manufacturer's data sheets showing sizes, details of function, finishes, installation instructions and attachment methods.
2. Schedule: Submit a toilet accessory schedule, including the type and quantity to be installed in each toilet room. Use room numbers as indicated on the Drawings.

1.3 QUALITY ASSURANCE

A. Comply with requirements applicable in the jurisdiction of the project, including but not limited to ADA and ICC/ANSI A117.1 requirements as applicable for locating accessories.

1.4 WARRANTIES

A. Manufacturer's Warranty for Washroom Accessories: Manufacturer's standard 1 year warranty for materials and workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:
1. Bobrick Washroom Equipment, Inc. (www.bobrick.com)

B. Requests for substitutions will be considered in accordance with provisions of Section 01 6000 – Product Requirements.

2.2 ACCESSORY SCHEDULE

A. Toilet Room Accessories:
1. Towel Dispenser and Waste Receptacle
2. Toilet Tissue Dispenser
3. Soap Dispenser
4. Feminine Tampon/Napkin Disposal
5. Coat Hook
6. Grab bars
7. Framed mirrors

B. Janitor Closet Accessories:
1. Self-Locking Broom/Mop Holder
2. Wire coated Shelves

PART 3 EXECUTION

3.1 INSTALLATION

A. Install products in strict compliance with manufacturer's written instructions and recommendations, including the following:

1. Verify blocking has been installed properly.

2. Verify location does not interfere with door swings or use of fixtures.

3. Comply with manufacturer's recommendations for backing and proper support.

4. Use fasteners and anchors suitable for substrate and project conditions

5. Install units rigid, straight, plumb, and level, in accordance with manufacturer's installation instructions and approved shop drawings.

6. Conceal evidence of drilling, cutting, and fitting to room finish.

7. Test for proper operation.

3.2 CLEANING AND PROTECTION

A. Clean exposed surfaces of compartments, hardware, and fittings using methods acceptable to the manufacturer.

B. Touch-up, repair or replace damaged products until Substantial Completion.

END OF SECTION 10 2800

SECTION 104413 FIRE EXTINGUISHERS AND CABINETS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
1. Fire Extinguisher Cabinets for the following:
a. Portable fire extinguishers.

1.2 COORDINATION

A. Coordinate size of fire-protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

B. Size Variations: Obtain Architect's acceptance and approval of manufacturer's standard size units that may vary slightly from sizes indicated on Drawings.

C. Coordinate sizes and locations of fire-protection cabinets with wall depths.

1.3 ACTION SUBMITTALS

A. Comply with Division 01 requirements.

B. Shop Drawings: For fire-protection cabinets. Include plans, elevations, sections, details, and attachments to other work

C. Product Data: Manufacturer's technical data for each type of product. Show door hardware, cabinet type, trim style, and panel style. Include roughing-in dimensions and details showing recessed, semirecessed, or surface mounting method and relationships of box and trim to surrounding construction

D. Product Schedule: For fire-protection cabinets. Indicate whether recessed, semirecessed, or surface mounted. Coordinate final fire-protection cabinet schedule with fire-extinguisher schedule to ensure proper fit and function.

1.4 QUALITY ASSURANCE

A. NFPA 10 requirements for portable fire extinguishers.

B. 2010 ADA Standards for maximum cabinet projection of 4 inches and mounting heights.

C. ASTM E814 for fire resistive cabinets in rated wall assemblies.

1.5 DELIVERY, STORAGE AND HANDLING

A. Comply with Division 01 requirements.

B. Packing and Shipping: Deliver products in original unopened packaging with legible manufacturer's identification.

C. Store per manufacturer's instructions.

1. Store in dry area out of direct sunlight.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For fire-protection cabinets to include in maintenance manuals.

1.7 WARRANTY

A. Provide manufacturer's written warranty.

B. Warrant materials and workmanship against defects after completion and final acceptance of Work.
1. Repair defects, or replace with new materials, faulty materials or fabrication developed during the warranty period at no expense to Owner.
2. Fire Extinguisher Cabinet: 5 years from date of Substantial Completion of Project.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Acceptable Manufacturer: Babcock-Davis, 9300 73rd Avenue N, Brooklyn Park, MN 55428 Phone: (888) 412-3726, Fax: (888) 312-3726, www.BabcockDavis.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 FIRE EXTINGUISHER CABINET

A. Basis-of-Design Product: Subject to compliance with requirements, provide Babcock-Davis; Crown™ Fire Extinguisher Cabinet Model BFC-7357.
1. Description: Steel unit construction, continuous piano hinge with 180 degree opening, architectural convex, clear "bubble" window.
2. Cabinet Mounting: Recessed
3. Components:
a. Door and Frame:
1) 0.0652 inch stainless steel.
a) Color and Finish: Type 304 Stainless Steel with #4 finish
b. Tub: 0.036 inch cold rolled steel.
1) Color and Finish: White factory applied powder coat paint finish.
c. Door Type: Convex Clear Full bubble with catch
1) Optional bubble color: Bronze tinted
4. Cabinet Dimensions: Size to match extinguisher type.

B. Basis-of-Design Product: Subject to compliance with requirements, provide Babcock-Davis; Select™ Fire Extinguisher Cabinet Model BFC-7025.
1. Description: Steel unit construction, continuous piano hinge with 180 degree opening, acrylic glazing.
2. Cabinet Mounting: Trimless
3. Components:

a. Door and Frame:
1) 0.0652 inch stainless steel.
a) Color and Finish: Type 304 Stainless Steel with #4 finish
b. Tub: 0.036 inch cold rolled steel.
1) Color and Finish: White factory applied powder coat paint finish.
c. Door Type: Solid Flush Panel
4. Cabinet Dimensions: Size to match extinguisher type.

2.3 PORTABLE HAND-CARRIED FIRE EXTINGUISHERS

A. Types
1. ABC Dry Chemical Portable Fire Extinguisher Model BEX-3005
a. Multi-purpose Dry Chemical Type in Steel Container 2A:10B:C, 5 lb. nominal capacity, with ammonium phosphate based dry chemical in enameled steel container.
2. Kitchen Class K Portable Fire Extinguisher Model BEX-3260
a. Wet Chemical Type: UL Rated 2-A:K, 1.6 gal. nominal capacity, with potassium acetate based chemical in stainless steel container; with pressure indicating gage.

2.4 ACCESSORIES

A. Lettering and warning labels.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that rough openings for cabinet are correctly sized and located.

B. Verify blocking is in place for brackets.

3.2 PREPARATION

A. Coordinate work relating to fire extinguisher cabinet installation including rough opening dimensions and locations of supports.

3.3 INSTALLATION

A. Prepare recesses in walls for fire extinguisher cabinets as required by type and size of cabinet and style of trim and to comply with manufacturer's instructions.

B. Securely fasten mounting brackets and fire extinguisher cabinets to structure, square and plumb, to comply with manufacturer's instructions.

END OF SECTION 10 4413

SECTION 105100 LOCKERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. 12-inch Wide Triple-Tier Vented Metal Lockers.

1.2 REFERENCES

A. ADAAG - Americans with Disabilities Act, Accessibility Guidelines.

B. IBC - International Building Code.

1.3 SUBMITTALS

A. Submit under provisions of Section 013300.

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. Installation methods.

C. Shop Drawings: Prepared specifically for this project; show dimensions of lockers and interface with other products.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.4 WARRANTY

A. Manufacturer's standard warranty to repair or replace components of locker products that fail in materials or workmanship within 3 years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Salsbury Industries, 18300 Central Avenue, Carson, CA 90746-4008; Toll Free Telephone: 1-800-LOCKERS (1-800-562-5377); Fax: 1-800-562-5399; Email: salsbury@lockers.com; Website: www.lockers.com.

B. Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 LOCKERS

Single-tier, double-tier and triple-tier 12-inch wide vented metal lockers: Constructed of 16 gauge steel; durable powder coated finish; includes a lift up handle and re-

cessed hasp for added security; can accommodate built-in combination locks, built-in key locks, combination padlocks, key padlocks or factory installed resettable combination locks.

A. 12-inch Wide Vented Metal Locker Series:
1. 73000 series: Triple-tier.

B. Unit Width: 12 inches (305 mm).

C. Unit Height:
1. 6 feet Lockers:
a. 78 inches (1,981 mm) with legs.

D. Unit Depth:
1. 18 inches (457 mm).

E. Unit Assembly:
1. Assembled units.

F. Unit Color:
1. Color: Gray - standard.
2. Color: Tan - standard.
3. Color: Blue - standard.

2.3 INTERIOR EQUIPMENT

A. ADA-Compliant Lockers (Recessed Handles with Multi-Point Latch):
1. Single-tier and double-tier lockers: Additional shelf at maximum 48 inches (1,219 mm) above the floor for unobstructed forward and side reach.
2. Locker Compartment Bottom: Minimum of 15 inches (381 mm) above the floor or an extra shelf placed 15 inches (381 mm) above the floor for unobstructed forward and side reach.
3. Handicapped symbol attached to door.
4. Hooks and rods as specified.

B. Standard Hardware Features:
1. Padlock hasp.
2. One top-mounted, two-pronged stainless steel coat hook.
3. Three wall-mounted, single-prong stainless steel coat hooks.
4. Horizontal venting.
5. Five knuckle door hinges.
6. Adjustable hat shelf (71000 series only).
7. Coat rod (models 71168 and 71368 only).

2.4 OPTIONAL EQUIPMENT

A. Sloping hoods.

B. Base panels – 6 inches (152 mm) high:

1. Front base.
2. End base.

C. Fillers:
1. Flat top fillers:
   a. Flat top in-line top fillers.
   b. Flat top corner fillers.
2. Sloping hood fillers:
   a. Sloping in-line top fillers.
   b. Sloping corner fillers.
3. Front fillers:
   a. 9 inches (229 mm) wide filler panels.
   b. 15 inches (381 mm) wide filler panels.

D. Finished end panels:
1. Single end panel for end of unit rows.
2. Double end panel for back-to-back unit installations.

E. Built-In Locks:
1. Built-in combination locks.
2. Built-in keyed locks.
3. Factory installed resettable combination locks.

F. Padlocks:
1. Combination padlocks.
2. Keyed padlocks.

G. Master keys:
1. Master control key for built-in combination locks.
2. Master control key for built-in keyed locks.
3. Master control key for factory installed resettable combination locks.
4. Master control key for combination padlocks.

H. Additional compartment shelf.

I. Engraved name/number plates.

J. Locker unit legs shall be supplied, unless otherwise specified, at 6 inches (152 mm) high in same color as locker unit. Locker bases shall be fabricated from 0.0625 inch (1.59 mm) thick steel sheet.

2.5 CONSTRUCTION

A. Locker Doors: Steel specially formed for added strength and rigidity and to ensure tight joints at fastening points.
1. Door:
   a. 16 gauge - .060 inch (1.52 mm) thick steel.
   b. Holes provided for attaching number plates.
2. Ventilation: 1-1/2 inch (38 mm) wide by 3/4 inch (19 mm) high diamond-

shaped perforations.

3. Multi-Point Latch: Full channel formation of adequate depth to fully conceal lock bar on lock side, channel formation on hinge side, right angle formations across top and bottom.

B. Locker Body: Solid steel specially formed for added strength and rigidity and to ensure tight joints at fastening points.

C. Hinges: Hinge: 0.074 inch (1.88 mm) thick sheet steel, double spun, full loop, tight pin, projection welded to door frame and securely fastened to the door.
1. Single-tier lockers: Three 2 inch (51 mm) high five-knuckle hinges.
2. Double-tier lockers: Two 2 inch (51 mm) high five-knuckle hinges.

D. Optional factory assembly of locker bodies using heavy duty steel rivets.

PART 3 EXECUTION

3.1 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.

3.2 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.

3.3 INSTALLATION

A. Install in accordance with Salsbury Industries' installation instructions.

B. Anchor the units to the wall studs through the locker back and to the floor.

C. Lockers can be either floor-mounted or installed on concrete or wood bases as scheduled or indicated. Floor or base shall be level for proper installation.

3.4 PROTECTION

A. Protect installed products until completion of project.

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

END OF SECTION 105100

SECTION 105723 - CLOSET AND UTILITY SHELVING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data **and Shop Drawings**.

B. Structural Performance: Wire closet shelving system shall be capable of supporting the following weight per unit length:

1. With shelf supported by walls at both ends:

a. Shelves 36 inches or less in length: 60 lb/ft. .
b. Shelves 37 to 48 inches in length: 55 lb/ft. .
c. Shelves 49 to 60 inches in length: 50 lb/ft. .
d. Shelves 61 inches or more in length: 40 lb/ft. .

2. With shelf supported by a wall at one end only:

a. Shelves 36 inches or less in length: 50 lb/ft. .
b. Shelves 37 to 48 inches in length: 45 lb/ft. .
c. Shelves 49 to 60 inches in length: 40 lb/ft. .
d. Shelves 61 inches or more in length: 35 lb/ft. .

3. With shelf not supported by a wall at either end:

a. Shelves 36 inches or less in length: 45 lb/ft. .
b. Shelves 37 to 48 inches in length: 40 lb/ft. .
c. Shelves 49 to 60 inches in length: 35 lb/ft. .
d. Shelves 61 inches or more in length: 30 lb/ft. .

C. Verify dimensions by field measurements before ordering **and indicate on Shop Drawings**.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel Wire: ASTM A 853.

2.2 WIRE CLOSET SHELVING

A. **Available** Products:

B. Wire closet shelving, made from steel wire spaced not more than **1 inch** o.c. and welded to longitudinal steel wire rods. Provide longitudinal wire rods at shelf edges and corners of lips, with not less than 4 longitudinal wire rods per shelf. Provide **12-inch- wide shelves unless otherwise indicated**. Provides units complete with brackets, fasteners, end caps, and accessories indicated.

1. Provide units mounted on adjustable tracks**, where indicated,** that allow shelf configurations to be modified. Provide units in quantities and sizes indicated.
2. Provide fixed (nonadjustable) units**, unless otherwise indicated,** of configurations and in quantities and sizes indicated.
3. Provide units with rod for clothes hangers **unless otherwise indicated**.
4. Provide units with longitudinal wire rods on tops of shelves to allow objects to slide easily along length of shelf.

2.3 FINISHES

A. Wire Shelving Finish: White **epoxy** applied over cleaned and conversion-coated metal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units in configurations indicated, complete with accessories indicated, and ready for use.

B. Install units level, plumb, and true to line, without warp or rack and anchor securely in place.

C. Repair, refinish, or replace wire closet shelving damaged during installation, as directed by Architect.

END OF SECTION 105723

SECTION 107500 FLAGPOLES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Aluminum flagpole, wall mounted.

B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.
2. Section 07 9200 - Joint Sealers.

1.2 REFERENCES

A. American Architectural Manufacturers Association (AAMA) 611 - Voluntary Specification for Anodized Architectural Aluminum.

B. ASTM International (ASTM):
1. A312 - Standard Specification for Seamless and Austenitic Stainless Steel Pipe.
2. B241 - Standard Specification for Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube.
3. E527 - Standard Practice for Numbering Metals and Alloys.

C. National Association of Architectural Metal Manufacturers (NAAMM) AMP 503 - Finishes for Stainless Steel.

D. American National Standards Institute/National Association of Architectural Metal Manufacturers (ANSI/NAAMM) FP 100197 - Guide Specifications for Design of Metal Flagpoles Manual.

1.3 SYSTEM DESCRIPTION

A. Design Requirements:
1. Design flagpole and anchorage devices in accordance with ANSI/NAAMM FP 100197.
2. Minimum design wind speed: 120 MPH with 5 x 8 foot flag.

B. Pole Description:
1. Type: Wall mounted, vertical.
2. Pole: Cone tapered.
3. Dimensions:
a. Overall height: 20 feet.
b. Top diameter: 3 inches.
c. Butt diameter: 4 inches.
d. Wall thickness: 0.125 inch.
e. Ball diameter: 5 inches.

1.4 SUBMITTALS

A. Submittals for Review:
   1. Shop Drawings: Include pole and base dimensions, materials, finishes, and accessories.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Minimum 5 years documented experience in work of this Section.

1.6 DELIVERY, STORAGE AND HANDLING

A. Wrap poles in heavy paper to prevent damage during shipping and handling.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:
   1. Concord American Flagpole (www.concordamericanflagpole.com)

B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS

A. Aluminum:
   1. ASTM B241, seamless 6063-T6 aluminum alloy.

2.3 COMPONENTS

A. Pole: Seamless aluminum pipe.

B. Fittings:
   1. Ball: Spun aluminum.
   2. Truck: Fixed non fouling, cast aluminum.
   3. Halyard: [External type, [3/8] inch diameter braided nylon rope with two stainless steel Internal type, stainless steel aircraft cable with two stainless steel swivel snap hooks.
   4. Winch: Internally mounted, with removable crank handle and automatic brake allowing flag to be set at any position.

2.4 ACCESSORIES

A. Grout: Cement based, non shrink.

B. Joint Sealer: Specified in Section 07 9200.

2.5 FINISHES

A. Aluminum: AAMA 611, Architectural Class I anodized to 0.0007 inch minimum thickness, clear.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install flagpoles and accessories in accordance with manufacturer's instructions and approved Shop Drawings.

B. Space wall brackets minimum 10 percent of flagpole length apart.

C. Secure mounting brackets to wall assembly.

D. Apply joint sealer around mounting brackets.

E. Connect to power supply as specified.

F. Electrically ground flagpole installation.

END OF SECTION 107500

SECTION 12 20 00 - WINDOW TREATMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Interior Window Coverings:
1.
2. Cellular shades. (SWFcontract CrystalPleat 3/8 inch Double Cell)

1.2 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 09 21 16.23 - Gypsum Board Shaft Wall Assemblies.

C. Section 09 51 23 - Acoustical Tile Ceilings.

D. Section 09 90 00 - Painting and Coating.

E. Division 16 - Electrical.

1.3 REFERENCES

A. ASTM International (ASTM):
1. ASTM E 21 - Standard Test Method for Elevated Temperature Tension Tests of Metallic Materials.
2. ASTM E 22 - Recommended Practice for Conducting Long Time High Temperature Tension Test of Metallic Materials.
3. ASTM G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
4. ASTM G 22 - Standard Practice for Determining Resistance of Plastics to Bacteria.

B. National Fire Protection Association (NFPA):
1. NFPA 70 - National Electrical Code.
2. NFPA 701 - Fire Tests for Flame-Resistant Textiles and Films.

C. Underwriters Laboratories Inc. (UL).

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Submit manufacturer's product data sheets, including installation details, styles, material descriptions, profiles, features, finishes and operating instructions.
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.

3. Mounting details and Installation methods.
4. Typical wiring diagrams if applicable.

C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, product details and finishes, installation details, operational clearances, wiring diagrams if applicable, and relationship to adjacent work.

D. Window Treatment Schedule: Submit a schedule with same room designations indicated on the Drawings; including but not limited to opening sizes and key to typical mounting details.

E. Maintenance Data: Submit instructions and precautions for cleaning and maintenance, operating hardware and controls as applicable.

F. Selection Samples:
1. Frame and Component Finishes: Submit 2 sets of samples, representing manufacturer's standard range of finishes specified for aluminum.
2. Fabric: Submit 2 sets of samples, representing manufacturer's standard range of options for shade cloth.
3. Aluminum Slats: Submit 2 sets of samples, 6 inches long, representing manufacturer's standard range of finishes specified for aluminum slats.

G. Verification Samples:
1. Frame and Component Finishes: Submit 2 samples, representing actual finishes specified for aluminum.
2. Fabric: Submit 2 samples, representing actual products specified for shade cloth.
3. Aluminum Slats: Submit 2 sets of samples, 6 inches long, representing actual finishes specified for aluminum slats.

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Engaged in manufacturing of products of similar type to that specified, with a minimum of 10 years successful experience.

B. Installer Qualifications: Minimum 2 years successful experience installing similar products.

C. Single Source Requirements: To the greatest extent possible, provide products specified in this section from a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site protected from damage.

B. Storage: Store materials in clean, dry area indoors in manufacturer's unopened packaging until ready for installation and in accordance with manufacturer's instructions. Store in a clean, dry area, laid flat to prevent sagging and twisting of packaging.

C. Handling: Protect materials and finish from damage during handling and installation.

1.7 PROJECT CONDITIONS, COORDINATION AND SEQUENCING

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 recommended limits.
   1. Building shall be enclosed; windows, frames and sills shall be installed and glazed.
   2. Wet work shall be complete and dry.
   3. Ceilings, window pockets, electrical and mechanical work above window covering shall be complete.

B. Conference: Convene a pre-installation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

1.8 TYPE OF WARRANTY

A. Manufacturer's Warranty:
   1. Provide Limited lifetime warranty on all Bali®, Graber® and SWFcontract™ products sold by SWF or by an authorized dealer, other than the products listed below, which have the limited warranty periods as indicated:
   2. 2" vinyl and acrylic slats: Three years
   3. Drapery hardware: Three years
   4. FashionPleat pleated shade fabrics: Three years
   5. Vertical louvers (vanes): Three years
   6. Motorization components & accessories (batteries not included): Five years

1.9 EXTRA MATERIALS

A. Attic Stock: Provide two extra blinds of primary size used for Owner's replacement stock.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: SWFcontract, which is located at: 7549 Graber Rd.; Middleton, WI 53562-1096 ; Toll Free Tel: 800-327-9798; Email: request info (architectsolutions@swfcontract.com); Web: https://www.swfcontract.com

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 SHADING SYSTEMS - GENERAL

A. Shade Configuration: As scheduled and indicated on Drawings.

B. Shade Configuration: Single shades as scheduled and indicated on Drawings.

C. Shade Configuration: Dual shades as scheduled and indicated on Drawings.

D. Shade Configuration: Coupled shades as scheduled and indicated on Drawings.

2.3 MANUAL SHADE SYSTEM

A. Shading Systems: Pro Series Manual Solar Shades as manufactured by SWFcontract.

B. Fabric: Flame retardant, fade and stain resistant, anti-microbial.
1. Style: _____.
2. Color Name: _____.
3. Color Number: _____.
4. Fabric Style, Color Name, Color Number: As scheduled and indicated on Drawings.
5. Fabric Style, Color Name, Color Number: As selected by Architect from manufacturer's standard fabric range.

C. Components: Fabricate such that shade hangs flat without buckling or distortion.
1. Features:
a. Smooth, quiet and consistent operation.
b. Built for commercial applications.
c. Works with large and coupled shades without motorization.
d. Overrunning-clutch-drive system.
2. Components:
a. Pro Series Clutch System: High performance Acetal plastic components mounted on a heavy duty 1/8 inch (3 mm) thick steel stamping.
1) Universal Clutch Mechanism:
a) Shared between the drive end brackets of system comprises an internal heavy duty wrap spring and an actuator for a smooth pulling force that locks shade in any position when operating control loop.
b) Bidirectional and does not require adjustment or lubrication.
b. Idle End Bracket: High-performance Acetal plastic components mounted on a heavy duty 1/8 inch (3 mm) thick steel stamping.
1) Intermediate Brackets: High-performance Acetal plastic components mounted on a heavy duty 1/8 inch (3 mm) thick steel stamping providing support to coupled bands connected with an intermediate bracket mechanism.
a) The intermediate bracket mechanism for certain tube sizes shall have adjustability for shade bands alignment.
c. Roller Tube: Extruded tempered aluminum alloy. Removable/replaceable "snap-on, snap-off" spline mounting.
1) Diameter and Wall Thickness: Determined by manufacturer, based on fabric selection and shade size providing minimal deflection and optimal performance.
d. Drive Chain: Special stainless steel bead chain. Bead stops attached to chain to protect shade from over-rotation.

e. Lift Assist System: Heavy-duty torsion spring located inside roller tube. Mechanism reduces pull force, allowing easy lifting of larger shades.
f. Removable Spline System: Co-extruded PVC spline, heat-sealed to shade fabric and inserted into an engineered "snap-on, snap-off" spline mounting.
1) Allows for adjustability on-site and ease in changing fabric bands in field.
g. Hem Bar: Extruded aluminum. Sufficient weight for proper shade operation.
1) Exposed: Finish: As determined by Architect from manufacturer's range.
2) Enclosed: In heat sealed pocket of fabric band material.

3. Options:
a. Dual Shades: Hold two shades in one bracket assembly.
b. Coupled shades.
c. Bracket end covers to match appropriate fascia In size and color.
d. Side channels.
e. Sill channels.
f. Center channels.
g. Pockets: 4-3/4 inch (121 mm).
h. Pockets: 7-1/2 inch (191 mm).
i. Closure plate: 2 inch (51 mm).
j. Closure plate: 3 inch (76 mm).
k. Closure plate: 5 inch (127m).
l. Fascia: Square.
m. Fascia: Square extended.
n. Fascia: Square dual.
o. Fascia: Back.
p. Fascia: Reverse roll.

D. Accessories:
1. Fascia Panels: None.
2. Fascia Panels: Standard 4.25 inches (108 mm).
3. Fascia Panels: Standard 7.5 inches (190.5 mm).
4. Fascia Panels: Back.
5. Fascia Panels: Dual shade snap-on design.
a. Materials: 1/16 inches (1.6 mm) thick extruded 6063 T-5 aluminum alloy with powder coated finish.
b. Finish: White.
c. Finish: Vanilla.
d. Finish: Clear Anodized.
e. Finish: Bronze.
f. Finish: Black.
g. Size: 3 inches (76 mm).
h. Size: 4 inches (102 mm).
i. Size: 7-5/8 inches (194 mm).
6. Shade Pockets: Manufacturer shall provide appropriate dimensional pocket as necessary to enclose roller tube and fabric.

a. Type: 4-3/4 inches (121 mm) x 5 inch (127 mm) extruded aluminum 6065 alloy.
b. Finish: White.
c. Finish: Clear Anodized.
d. Finish: Bronze Anodized.
e. Type: 7-1/2 inches (191 mm) x 8 inches (203 mm) white powder coated steel.

7. Closure Plates: Exposed, flush mounted, powder-coated extruded 6065-aluminum alloy designed to provide access to shades when recessed in ceiling.
   a. Closure Mounts: With a lip.
   b. Closure Mounts: Without a lip.
   c. Plate Size: 2 inches (51 mm).
   d. Plate Size: 3 inches (76 mm).
   e. Plate Size: 5 inches (127 mm).
   f. Finish: White.
   g. Finish: Clear Anodized.
   h. Finish: Bronze.
8. Side, Sill, Center Channels: 2-piece design.
   a. Materials: Extruded 6065-aluminum.
   b. Size: 2 inch (51 mm) x 1 inch (25 mm), and 4 inch (102 mm) x 1 inch (25 mm) center channel is provided for coupled shades.
   c. Finish: To Match Fascia Finish
9. Blackout Shades: Provide synthetic pile inserts to eliminate light leakage.

2.4 HORIZONTAL BLINDS

A. Window Coverings: Bali S3000 1 inch Aluminum Horizontal Mini Blinds as manufactured by SWFcontract.
   1. Slats:
      a. Materials: 5000 series cold-rolled aluminum.
      b. Nominal Width: 1 inch (25 mm).
      c. Finish: Polyester baked enamel, with Advanced Finishing Technology (AFT) which delivers anti-static performance to repel dust.
      d. UL Greenguard Gold certified.
      e. Type: Solid .006 inch (0.15 mm) thick (standard).
      f. Type: Inverted
      g. Type: Privacy, (No Cord Route Holes).
   2. Braided Ladders: 100 percent polyester yarn incorporating two extra strength rungs per ladder for slat support.
      a. Ladder Spacing: 18 mm (11.86 slats per foot).
   3. Components:
      a. Headrail:
         1) Size: 1 inches (25 mm) high x 1-1/2 inches (38 mm) wide x .025 inch (0.64 mm) thick.
         2) Description: Steel valance-free design with curved front profile, rolled edges at the top and a light blocking lip at the lower back side.
         3) Finish: Includes phosphate treatment, a chrome-free sealer, a low

HAP urethane primer and a topcoat with low HAP polyester baked enamel.

b. Tilters: Injection-molded thermoplastics, incorporates clutch mechanism to prevent damage due to over tilting.
c. Tilt Limiter: Limits slat operation between a select range of operation.
   1) Degrees Up: ___.
   2) Degrees Down: ___.
d. Tilt Rods: Electro-zinc coated solid steel measuring 1/4 inch (13 mm) square.
e. Tilt Wands: Clear polycarbonate with hexagonal cross section measuring approximately 1/4 inch diameter, attached to tilter shaft by means of spring clip.
f. Cord Locks: Metal, snap-in design with floating, shaft-type locking pin and crash proof safety feature that locks blind automatically upon release of cord.
   1) Operation: Standard.
   2) Operation: Top lock cord lock provides for only two blind positions; fully down or fully raised.
   3) Operation: Ring Pull, provide plated steel ring in lieu of tassels, nominal 4 inch cord.
g. Drum and Cradles: Low-friction thermoplastic, provided for each ladder.
h. Brackets: Concealed, top loading, zinc plated steel with snap-in design.
i. Brackets: Box brackets.
j. Brackets: Extension brackets.
k. Brackets: Hold down brackets.
l. Bottomrails: Enclosed tubular shape.
   1) Materials: Phosphate-treated steel, finished with a chrome-free sealer.
   2) Finish: Low HAP urethane primer and a topcoat of low HAP polyester baked enamel, .025 inch (0.64 mm) thick.

B. Window Coverings: Bali Classics 1 inch Aluminum Horizontal Mini Blinds as manufactured by SWFcontract.
1. Slats:
   a. Materials: 5000 series cold-rolled aluminum.
   b. Nominal Width: 1 inch (25 mm).
   c. Finish: Polyester baked enamel, with Advanced Finishing Technology (AFT) which delivers anti-static performance to repel dust.
   d. UL Greenguard Gold certified
   e. Type: Solid .006 inch (0.15 mm) thick (standard).
   f. Type: Solid .008 inch (0.20 mm) thick.
   g. Type: Perforated, 8 percent openness.
   h. Type: Inverted.
   i. Slat Color Name: _____.
   j. Slat Color Number: _____.
2. Braided Ladders: 100 percent polyester yarn incorporating two extra strength rungs per ladder for slat support.
   a. Ladder Spacing: 21.5 mm (14.17 slats per foot), standard.

b. Ladder Spacing: 20 mm (15.24 slats per foot).
c. Ladder Spacing: 22.5 mm (13.54 slats per foot).

3. Components:
   a. Headrail:
      1) Size: 1 inches (25 mm) high x 1-1/2 inches (38 mm) wide x .025 inch (0.64 mm) thick.
      2) Description: U-shaped steel.
      3) Finish: Includes phosphate treatment, a chrome-free sealer, a low HAP urethane primer and a topcoat with low HAP polyester baked enamel.
   b. Tilters: Injection-molded thermoplastics, incorporates clutch mechanism to prevent damage due to over tilting.
   c. Tilt Limiter: Limits slat operation between a select range of operation.
      1) Degrees Up: ___.
      2) Degrees Down: ___.
   d. Tilt Rods: Electro-zinc coated solid steel measuring 1/4 inch (13 mm) square.
   e. Tilt Wands: Clear polycarbonate with hexagonal cross section measuring approximately 1/4 inch diameter, attached to tilter shaft by means of spring clip.
   f. Cord Locks: Metal, snap-in design with floating, shaft-type locking pin and crash proof safety feature that locks blind automatically upon release of cord.
      1) Operation: Standard.
      2) Operation: Top lock cord lock provides for only two blind positions; fully down or fully raised.
      3) Operation: Ring Pull, provide plated steel ring in lieu of tassels, nominal 4 inch cord.
   g. Drum and Cradles: Low-friction thermoplastic, provided for each ladder.
   h. Brackets: Standard, box style.
   i. Brackets: Extension brackets.
   j. Brackets: Hold down brackets.
   k. Brackets: 2 piece pocket bracket.
   l. Valance: Standard.
   m. Valance: Deluxe 2-Slat.
   n. Bottomrails: Enclosed tubular shape.
      1) Materials: Phosphate-treated steel, finished with a chrome-free sealer.
      2) Finish: Low HAP urethane primer and a topcoat of low HAP polyester baked enamel, .025 inch (0.64 mm) thick.
      3) Turn Clips: For extruded pocket.
   o. Accent Channels: Provide side channels.

C. Window Coverings: Bali CustoMiser 1 inch Aluminum Horizontal Mini Blinds as manufactured by SWFcontract.
   1. Slats:
      a. Materials: 5000 series cold-rolled aluminum.
      b. Nominal Width: 1 inch (25 mm).

c. Finish: Polyester baked enamel, with Advanced Finishing Technology (AFT) which delivers anti-static performance to repel dust.
d. UL Greenguard Gold certified
e. Type: Solid .006 inch (0.15 mm) thick (standard).
f. Type: Solid .008 inch (0.20 mm) thick.
g. Type: Perforated, 8 percent openness.
h. Type: Inverted.
i. Slat Color Name: _____.
j. Slat Color Number: _____.

2. Braided Ladders: 100 percent polyester yarn incorporating two extra strength rungs per ladder for slat support.
   a. Ladder Spacing: 21.5 mm (14.17 slats per foot), standard.
   b. Ladder Spacing: 20 mm (15.24 slats per foot).
   c. Ladder Spacing: 22.5 mm (13.54 slats per foot).
3. Components:
   a. Headrail:
      1) Size: 1 inches (25 mm) high x 1 inches (25 mm) wide x .025 inch (0.64 mm) thick.
      2) Description: U-shaped steel.
      3) Finish: Includes phosphate treatment, a chrome-free sealer, a low HAP urethane primer and a topcoat with low HAP polyester baked enamel.
   b. Tilters: Injection-molded thermoplastics, incorporates clutch mechanism to prevent damage due to over tilting.
   c. Tilt Limiter: Limits slat operation between a select range of operation.
      1) Degrees Up: ___.
      2) Degrees Down: ___.
   d. Tilt Rods: Electro-zinc coated solid steel measuring 1/4 inch (13 mm) square.
   e. Tilt Wands: Clear polycarbonate with hexagonal cross section measuring approximately 1/4 inch diameter, attached to tilter shaft by means of spring clip.
   f. Cord Locks: Metal, snap-in design with floating, shaft-type locking pin and crash proof safety feature that locks blind automatically upon release of cord.
      1) Operation: Standard.
      2) Operation: Top lock cord lock provides for only two blind positions; fully down or fully raised.
      3) Operation: Ring Pull, provide plated steel ring in lieu of tassels, nominal 4 inch cord.
   g. Drum and Cradles: Low-friction thermoplastic, provided for each ladder.
   h. Brackets: Standard, box type.
   i. Brackets: Extension brackets.
   j. Brackets: Hold down brackets.
   k. Valance: Standard.
   l. Valance: Deluxe 2-Slat.
   m. Bottomrails: Enclosed tubular shape.
      1) Materials: Phosphate-treated steel, finished with a chrome-free

sealer.
2) Finish: Low HAP urethane primer and a topcoat of low HAP polyester baked enamel, .025 inch (0.64 mm) thick.

D. Window Coverings: Bali Apartment Aluminum Horizontal Mini Blinds as manufactured by SWFcontract.
1. Slats:
a. Materials: 5000 series cold-rolled aluminum.
b. Nominal Width: 1 inch (25 mm).
c. UL Greenguard Gold certified.
d. Finish: White satin polyester baked enamel, with Advanced Finishing Technology (AFT) which delivers anti-static performance to repel dust.
e. Finish: Alabaster polyester baked enamel, with Advanced Finishing Technology (AFT) which delivers anti-static performance to repel dust.
f. Type: Solid .006 inch (0.15 mm) thick (standard).
g. Slat Color Name: _____.
h. Slat Color Number: _____.
2. Braided Ladders: 100 percent polyester yarn incorporating two extra strength rungs per ladder for slat support.
a. Ladder Spacing: 21.5 mm (14.17 slats per foot), standard.
b. Ladder Spacing: 20 mm (15.24 slats per foot).
c. Ladder Spacing: 22.5 mm (13.54 slats per foot).
3. Components:
a. Headrail:
1) Size: 1 inches (25 mm) high x 1 inches (25 mm) wide x .025 inch (0.64 mm) thick.
2) Description: U-shaped steel.
3) Finish: Includes phosphate treatment, a chrome-free sealer, a low HAP urethane primer and a topcoat with low HAP polyester baked enamel.
b. Tilters: Injection-molded thermoplastics, incorporates clutch mechanism to prevent damage due to over tilting.
c. Tilt Rods: Electro-zinc coated solid steel measuring 1/4 inch (13 mm) square.
d. Tilt Wands: Clear polycarbonate with hexagonal cross section measuring approximately 1/4 inch diameter, attached to tilter shaft by means of spring clip.
e. Cord Locks: Metal, snap-in design with floating, shaft-type locking pin and crash proof safety feature that locks blind automatically upon release of cord.
f. Drum and Cradles: Low-friction thermoplastic, provided for each ladder.
g. Brackets: Extension brackets.
h. Brackets: Hold down brackets.
i. Valance: Standard.
j. Valance: Deluxe 2-Slat.
k. Bottomrails: Enclosed tubular shape.
1) Materials: Phosphate-treated steel, finished with a chrome-free sealer.

2) Finish: Low HAP urethane primer and a topcoat of low HAP polyester baked enamel, .025 inch (0.64 mm) thick.

E. Window Coverings: SWFcontract 2 inch Designer Vinyl Blinds.
1. Slats: Straight cut edges.
a. Materials: Rigid UV stabilized crowned PVC.
b. Nominal Width: 2 inches.
c. Thickness: .045 inch (1.1 mm) thick.
d. Compliance: NFPA 701.
e. Slat Color Name: _____.
f. Slat Color Number: _____.
2. Components:
a. Headrails: SureClose Headrail.
1) Size: 1-5/8 inch (41 mm) high x 2-1/4 inch (57 mm) wide x .022 inch (0.56 mm) thick.
2) Description: U-shaped steel with 1/8 inch (3.2 mm) light blocking lip on the bottom centerline.
3) Finishing: Phosphate treatment, chrome-free sealer, low HAP urethane primer and topcoat with low HAP polyester baked enamel.
b. Tilters: Cord tilter, snap-in, low-friction thermoplastic worm and pulley design, nylon gear housing; secured to pulley and treated with wood tassels at tilt end.
c. Tilters: Wand tilter.
d. Tilters: Ring tilter.
e. Cord Locks: Metal, snap-in design incorporating a floating, shaft-type locking pin. Cord lock shall incorporate a crash proof safety feature that will lock blind automatically upon release of cord. End of lift cords will be treated with tassels.
f. Ladders: Braided ladder, 100 percent polyester incorporating two extra strength rungs per ladder to support slats.
g. Ladders: Fabric tape, nominal 1 inch (25 mm).
h. Ladders: Fabric tape, nominal 1-1/2 inches (38 mm).
i. Ladder Spacing: 44 mm.
j. Valance: Standard.
k. Valance: Deluxe.
l. Bottomrails: Extruded foam PVC 3/4 inch (19 mm) high x 2 inches (51 mm) wide and shall coordinate with slats.

2.5 ALUMINUM HORIZONTAL MICRO BLINDS

A. Window Coverings: Bali S4000 Aluminum Horizontal Micro blinds as manufactured by SWFcontract.
1. Slats:
a. Materials: 5000 series cold-rolled aluminum.
b. Nominal Width: 1/2 inch.
c. Finish: Polyester baked enamel, with Advanced Finishing Technology (AFT) which delivers anti-static performance to repel dust.
d. UL Greenguard Gold certified

e. Type: Solid .006 inch (0.15 mm) thick (standard).
f. Slat Color Name: _____.
g. Slat Color Number: _____.

2. Components:
   a. Headrail:
      1) Size: 1 inches (25 mm) high x 1-1/2 inches (38 mm) wide x .025 inch (0.64 mm) thick.
      2) Description: Steel valance-free design with curved front profile, rolled edges at the top and a light blocking lip at the lower back side.
      3) Finish: Includes phosphate treatment, a chrome-free sealer, a low HAP urethane primer and a topcoat with low HAP polyester baked enamel.
   b. Tilters: Injection-molded thermoplastics, incorporates clutch mechanism to prevent damage due to over tilting.
   c. Tilt Limiter: Limits slat operation between a select range of operation.
      1) Degrees Up: ___.
      2) Degrees Down: ___.
   d. Tilt Rods: Electro-zinc coated solid steel measuring 1/4 inch (13 mm) square.
   e. Tilt Wands: Clear polycarbonate with hexagonal cross section measuring approximately 1/4 inch diameter, attached to tilter shaft by means of spring clip.
   f. Cord Locks: Metal, snap-in design with floating, shaft-type locking pin and crash proof safety feature that locks blind automatically upon release of cord.
      1) Operation: Standard.
      2) Operation: Top lock cord lock provides for only two blind positions; fully down or fully raised.
      3) Operation: Ring Pull, provide plated steel ring in lieu of tassels, nominal 4 inch cord.
   g. Drum and Cradles: Low-friction thermoplastic, provided for each ladder.
   h. Brackets: Box brackets.
   i. Braided Ladders: 100 percent polyester yarn incorporating two extra strength rungs per ladder for slat support. Standard ladder spacing shall be 12.5 mm.
   j. Bottomrails: Enclosed tubular shape.
      1) Materials: Phosphate-treated steel, finished with a chrome-free sealer.
      2) Finish: Low HAP urethane primer and a topcoat of low HAP polyester baked enamel, .025 inch (0.64 mm) thick.

B. Window Coverings: Bali Aluminum Horizontal Micro blinds as manufactured by SWFcontract.
   1. Slats:
      a. Materials: 5000 series cold-rolled aluminum.
      b. Nominal Width: 1/2 inch.
      c. Finish: Polyester baked enamel, with Advanced Finishing Technology

(AFT) which delivers anti-static performance to repel dust.
d. UL Greenguard Gold certified
e. Type: Solid .006 inch (0.15 mm) thick (standard).
f. Slat Color Name: _____.
g. Slat Color Number: _____.

2. Components:
a. Headrail:
1) Size: 1 inches (25 mm) high x 1 inches (25 mm) wide x .025 inch (0.64 mm) thick.
2) Description: U-shaped steel.
3) Finish: Includes phosphate treatment, a chrome-free sealer, a low HAP urethane primer and a topcoat with low HAP polyester baked enamel.
b. Tilters: Injection-molded thermoplastics, incorporates clutch mechanism to prevent damage due to over tilting.
c. Tilt Limiter: Limits slat operation between a select range of operation.
1) Degrees Up: ___.
2) Degrees Down: ___.
d. Tilt Rods: Electro-zinc coated solid steel measuring 1/4 inch (13 mm) square.
e. Tilt Wands: Clear polycarbonate with hexagonal cross section measuring approximately 1/4 inch diameter, attached to tilter shaft by means of spring clip.
f. Cord Locks: Metal, snap-in design with floating, shaft-type locking pin and crash proof safety feature that locks blind automatically upon release of cord.
1) Operation: Standard.
2) Operation: Top lock cord lock provides for only two blind positions; fully down or fully raised.
3) Operation: Ring Pull, provide plated steel ring in lieu of tassels, nominal 4 inch cord.
g. Drum and Cradles: Low-friction thermoplastic, provided for each ladder.
h. Brackets: Box brackets.
i. Valance: Standard.
j. Valance: Deluxe 2-Slat.
k. Braided Ladders: 100 percent polyester yarn incorporating two extra strength rungs per ladder for slat support. Standard ladder spacing shall be 12.5 mm.
l. Bottomrails: Enclosed tubular shape.
1) Materials: Phosphate-treated steel, finished with a chrome-free sealer.
2) Finish: Low HAP urethane primer and a topcoat of low HAP polyester baked enamel, .025 inch (0.64 mm) thick.

2.6 ALUMINUM HORIZONTAL BLINDS

A. Window Coverings: Bali Heritage 2 inch Aluminum Horizontal Blinds as manufactured by SWFcontract.
1. Slats:

a. Materials: 5000 series cold-rolled aluminum.
b. Nominal Width: 2 inches.
c. Finish: Polyester baked enamel, with Advanced Finishing Technology (AFT) which delivers anti-static performance to repel dust.
d. UL Greenguard Gold certified
e. Type: Solid .008 inch (0.20 mm) thick (standard).
f. Type: Inverted.
g. Slat Color Name: _____.
h. Slat Color Number: _____.

2. Components:
   a. Headrail: SureClose Headrail.
      1) Size: 1-5/8 inch (41 mm) high x 2-1/4 inch (57 mm) wide x .022 inch (0.56 mm) thick.
      2) Description: U-shaped steel with 1/8 inch (3.2 mm) light blocking lip on the bottom centerline.
      3) Finish: Includes phosphate treatment, a chrome-free sealer, a low HAP urethane primer and a topcoat with low HAP polyester baked enamel.
   b. Motors: Tilt wirefree motor. Provides tilt control of 2" horizontal blinds.
      1) Description: Capable of precision tilting of blind slats
      2) Motor type: Low voltage wired.
      3) Motors: concealed inside headrail.
      4) Motor size: To be determined by blind manufacturer to insure proper operation based on window size up to 7,200 square feet.
      5) Speed: 5 rpms.
      6) Power Supply Type: Low voltage battery 12 VDC
      7) Power Supply Type: Low voltage wall plug, 110V-120V VAC.
      8) Power Supply Type: Solar Recharge Kit
      9) Power Supply Type: 5-10 motor Transformer Kit
   c. Tilters: Cord tilter, snap-in component incorporating a worm and pulley of low-friction thermoplastic and a nylon gear; standard 1.8 mm in diameter.
   d. Tilters: Wand tilter.
   e. Tilters: Ring tilter.
   f. Cord Locks: Metal, snap-in design with floating, shaft-type locking pin and crash proof safety feature that locks blind automatically upon release of cord.
      1) Operation: Standard.
      2) Operation: Ring Pull, provide plated steel ring in lieu of tassels, nominal 4 inch cord.
   g. Ladders:
      1) Type: Braided ladders.
      2) Type: Fabric tape.
   h. Bottomrails: C-shaped, enclosed with a dust cover slat.
      1) Size: 9/16 inch (14 mm) high x 2 inches (51 mm) wide x .040 inch (1 mm) thick.
      2) Materials: Anodized aluminum.
      3) Finish: Polyester baked enamel to match headrail.

i. Valance: Standard
j. Valance: Deluxe.

B. Window Coverings: Bali Heritage 2 inch School Aluminum Horizontal Blinds as manufactured by SWFcontract.
1. Slats:
a. Materials: 5000 series cold-rolled aluminum.
b. Nominal Width: 2 inches.
c. Finish: Polyester baked enamel, with Advanced Finishing Technology (AFT) which delivers anti-static performance to repel dust.
d. UL Greenguard Gold certified
e. Type: Solid .008 inch (0.20 mm) thick (standard).
f. Type: Inverted.
g. Slat Color Name: _____.
h. Slat Color Number: _____.
2. Components:
a. Headrail: SureClose Headrail.
1) Size: 1-5/8 inch (41 mm) high x 2-1/4 inch (57 mm) wide x .022 inch (0.56 mm) thick.
2) Description: U-shaped steel with 1/8 inch (3.2 mm) light blocking lip on the bottom centerline.
3) Finish: Includes phosphate treatment, a chrome-free sealer, a low HAP urethane primer and a topcoat with low HAP polyester baked enamel.
b. Tilters: Cord tilter, snap-in component incorporating a worm and pulley of low-friction thermoplastic and a nylon gear; standard 2.2 mm in diameter.
c. Tilters: Wand tilter.
d. Tilters: Ring tilter.
e. Cord Locks: Metal, snap-in design with floating, shaft-type locking pin and crash proof safety feature that locks blind automatically upon release of cord.
1) Operation: Standard.
2) Operation: Top lock cord lock provides for only two blind positions; fully down or fully raised.
3) Operation: Ring Pull, provide plated steel ring in lieu of tassels, nominal 4 inch cord.
f. Lift Cords: Braided polyester measuring 2.2 mm in diameter.
g. Vinyl Ladder Tape: 1-1/2 inch wide reinforced vinyl.
h. Ladder Spacing: Standard, 42 mm.
i. Bottomrails: C-shaped, enclosed with a dust cover slat.
1) Size: 9/16 inch (14 mm) high x 2 inches (51 mm) wide x .040 inch (1 mm) thick.
2) Materials: Anodized aluminum.
3) Finish: Polyester baked enamel to match headrail.
j. Valance: Standard.
k. Valance: Deluxe.

2.7 WOOD HORIZONTAL BLINDS

A. Window Coverings: SWFcontract Elite Woods 2 inch Wood Horizontal Blinds.
   1. Slats:
      a. Slat Type: Standard.
      b. Slat Type: NoHoles slats.
      c. Nominal Slat Width: 2 inches.
      d. Thickness: .115 inch (2.9 mm) thick.
      e. Materials: Lineal grained and smooth sanded 100 percent North American basswood, kilned dried to 6 - 10 percent moisture content to reduce warping.
      f. Finish: Painted, color _____.
         1) Standard Slat Color Name: _____.
         2) Custom Slat Color Name: Colors by Choice color program, _____.
         3) Slat Color Number: _____.
      g. Finish: Stained and coated with clear satin lacquer, hand-rubbed appearance.
      h. Finish: Stained and coated with high polish satin lacquer.
      i. Beaded Slats: _____.
   2. Components:
      a. Headrails: 1-5/8 inch (41 mm) high x 2-3/8 inch (60 mm) wide x .025 inch (1.4 mm) thick U-shaped steel with 1/8" light-blocking lip
      b. Valance: Lineal grained, smooth sanded 100 percent North American basswood.
      c. Motors: Tilt wirefree motor. Provides tilt control of 2" horizontal blinds.
         1) Description: Capable of precision tilting of blind slats
         2) Motor type: Low voltage wired.
         3) Motors: Concealed inside headrail.
         4) Motor size: To be determined by blind manufacturer to insure proper operation based on window size up to 7,200 square feet.
         5) Speed: 5 rpms.
         6) Power Supply Type: Low voltage battery 12 VDC
         7) Power Supply Type: Low voltage wall plug, 110V-120V VAC.
         8) Power Supply Type: Solar Recharge Kit.
         9) Power Supply Type: 5-10 motor Transformer Kit.
         10) Type: Four bead.
         11) Type: Crown molded.
      d. Tilters: Cord operated, low-friction thermoplastic worm and pulley design, nylon gear housing.
      e. Tilters: Wood wand tilter.
      f. Tilters: Ring tilter.
      g. Tassels: Antique brass.
      h. Tassels: Wood tassels
      i. Cord Locks: Snap-in metal design, incorporating a floating, shaft-type locking pin and a crash proof safety feature that will lock blind automatically upon release of cord.
         1) Operation: Standard.
         2) Operation: Ring Pull, provide plated steel ring in lieu of tassels, nominal 4 inch cord.

3) Operation: Cordless.
j. Ladders: Nominal 2 inch.
k. Ladders: Nominal 2-1/2 inches.
l. Ladders: COM fabric.
m. Ladders: Braided ladder roll, secured around body of ladder with stainless steel wire loop, secured to the tilt rod to ensure tight closure of slats.
1) Materials: Polyester Dacron yarn.
n. Ladder Spacing: Standard, 44 mm.
o. Bottomrails:
1) Materials: Lineal grained and smooth sanded 100 percent North American basswood, kilned dried to 6 - 10 percent moisture content to reduce warping.
2) Description: Contour molded to a shape of 3/8 inch (9.5 mm) x 2 inches (51 mm) with 1/8 inch (3.2 mm) radius rounded edges.
p. Decorative Trims: As scheduled and indicated on Drawings.

B. Window Coverings: SWFcontract Traditions 1 inch Wood Horizontal Blinds.
1. Slats:
a. Nominal Slat Width: 1 inch (25 mm).
b. Materials: Lineal grained and smooth sanded 100 percent North American basswood, kilned dried to 6 - 10 percent moisture content to reduce warping.
c. Finish: Painted, color _____.
1) Standard Slat Color:
a) Color Name: _____.
b) Color Number: _____.
2) Custom Slat Color Name: Colors by Choice color program, _____.
d. Finish: PureGrain finish.
e. Finish: Stained and coated with clear satin lacquer, hand-rubbed appearance.
f. Finish: Stained and coated with high polish satin lacquer.
2. Components:
a. Headrails: 1 inch (25 mm) high x 1-1/2 inch (38 mm) wide x .025 inch (0.64 mm) thick U-shaped steel.
b. Finishing: Phosphate treatment, chrome-free sealer, low HAP urethane primer and topcoat with low HAP polyester baked enamel.
c. Operation: Tilters, injection-molded thermoplastics for smooth low-friction operation and will incorporate a clutch mechanism to prevent damage due to over tilting.
1) Type: Wood wand tilter, standard.
2) Type: Ring tilter.
d. Cord Locks: Snap-in design incorporating a stainless steel wear guard over which cords pass. A floating, shaft-locking pin will lock blind at any position and shall be crash proof.
e. End of Lift Cords: Treated with wooden tassels.
f. End of Lift Cords: Ring pulls, plated steel ring in lieu of tassels with nominal

4 inch cord.
g. Ladders: Braided ladders, 100 percent polyester incorporating two extra strength rungs per ladder to support slats.
h. Bottomrails: 5/8 inch (16 mm) high x 1 inch (25 mm) wide wood and finished to coordinate with slat color.

C. Window Coverings: SWFcontract Traditions 2 inch Wood Horizontal Blinds.
1. Slats:
a. Slat Type: Standard.
b. Slat Type: NoHoles slats.
c. Nominal Slat Width: 2 inches.
d. Nominal Slat Width: 2-1/2 inches Shutter style.
e. Nominal Slat Width: 2-3/8 inches.
f. Thickness: 1/8 inch (3.2 mm).
g. Materials: Lineal grained and smooth sanded 100 percent North American basswood, kilned dried to 6 - 10 percent moisture content to reduce warping.
h. Finish: Painted, color _____.
1) Standard Slat Color:
a) Color Name: _____.
b) Color Number: _____.
i. Finish: PureGrain finish.
j. Finish: Stained and coated with clear satin lacquer, hand-rubbed appearance.
k. Finish: Stained and coated with high polish satin lacquer.
2. Components:
a. Headrails: SureClose Headrail.
1) Size: 1-5/8 inch (41 mm) high x 2-1/4 inch (57 mm) wide x .022 inch (0.56 mm) thick.
2) Description: U-shaped steel with 1/8 inch (3.2 mm) light blocking lip on the bottom centerline.
3) Finishing: Phosphate treatment, chrome-free sealer, low HAP urethane primer and topcoat with low HAP polyester baked enamel.
b. Operation: Cordless.
c. Operation: Tilters, cord tilter, snap-in, low-friction thermoplastic worm and pulley design, nylon gear housing; secured to pulley and treated with wood tassels at tilt end.
d. Operation: Tilters, wood wand tilter.
e. Operation: Tilters, ring tilter.
f. Cord Locks: Snap-in design incorporating a stainless steel wear guard over which cords pass. A floating, shaft-locking pin will lock blind at any position and shall be crash proof.
g. End of Lift Cords: Treated with wooden tassels.
h. End of Lift Cords: Ring pulls, plated steel ring in lieu of tassels with nominal 4 inch cord.
i. Ladders: Braided ladders, 100 percent polyester incorporating two extra strength rungs per ladder to support slats.

j. Ladders: Fabric tapes.
k. Ladder Spacing: 44 mm.
l. Bottomrails: 5/8 inch (16 mm) high x 2 inch (51 mm) wide wood in a trapezoid shape to improve closure and finished to coordinate with slats.

2.8 FAUX WOOD BLINDS

A. Window Coverings:
1. Blinds: SWFcontract Traditions Lake Forest Faux Wood Blinds.
a. Surface Appearance: Printed slats mimic the look of real wood.
2. Slats: Straight cut edges.
a. Slat Width: 2 inches (51 mm).
b. Slat Width: 2.5 inches (63 mm).
c. Slat Type: Standard.
d. Slat Type: NoHoles slats.
e. Materials: Rigid UV stabilized flat PVC
f. Nominal Width: 2 inches wide.
g. Thickness: .10 inches thick.
h. Compliance: FR Rated and NFPA 701.
i. Slat Color Name: _____.
j. Slat Color Number: _____.
3. Components:
a. Headrails: SureClose Headrail.
1) Size: 1-5/8 inch (41 mm) high x 2-1/4 inch (57 mm) wide x .022 inch (0.56 mm) thick.
2) Description: U-shaped steel with 1/8 inch (3.2 mm) light blocking lip on the bottom centerline.
3) Finishing: Phosphate treatment, chrome-free sealer, low HAP urethane primer and topcoat with low HAP polyester baked enamel.
b. Operation: Cordless.
c. Operation: Tilters, cord tilter, snap-in, low-friction thermoplastic worm and pulley design, nylon gear housing; secured to pulley and treated with wood tassels at tilt end.
d. Cord Locks: Metal, snap-in design incorporating a floating, shaft-type locking pin. Cord lock shall incorporate a crash proof safety feature that will lock blind automatically upon release of cord. End of lift cords will be treated with tassels.
e. Ladders: Braided ladder, 100 percent polyester incorporating two extra strength rungs per ladder to support slats.
f. Ladders: Fabric tape.
g. Ladder Spacing: 44 mm.
h. Bottomrails: Extruded foam PVC 9/16 inch (14 mm) high x 2 inches (51 mm) wide, coordinates with slats.

2.9 VERTICAL BLINDS

A. Window Coverings: SWFcontract G-98 Ultra-Vue Vertical Blinds.
1. Louvers: As selected by Architects from the Graber line of PVC offerings.

a. Type: 3-1/2 inch PVC.
b. Type: 2 inch PVC.
c. Type: 3-1/2 inch Fabric.
d. Louver Color Number: _____.
e. Louver Color Name: _____.
f. Channel Panel Insert for Fabric Louvers:
1) Insert Color Name: _____.
2) Insert Color Number: _____.

2. Components:
a. Bottom Chain: Provide optional bottom chain.
b. Headrails:
1) Materials: Anodized aluminum alloy 6063-T5 with a bright dip finish.
2) Size: 1-3/8 inches (35 mm) wide x 1-3/16 inches (30 mm) high.
3) Average Wall Thickness: .050 inch (1.3 mm)
c. Carriers: Carriers shall be centrally located making the headrail reversible and are replaceable without demounting the headrail.
1) Materials: Molded acetyl 5/16 inch (8 mm) wide, non-yellowing.
2) Description: Traverses on self-lubricated wheels, standard stack release mechanism allows stack to be moved away from stack end access.
d. Rotation Control: Gear ratio of 6:1.
1) Control Type: Standard, bead chain, No. 6 nickel-plated steel.
2) Control Type: One Touch wand control, one way draw only, not available with 2 inch louvers.
3) Rack and Pinion Gear System: Provides 180 degrees direct rotation.
4) Pinion Rods: Extruded aluminum 0.235 inch (6 mm) diameter.
e. Traversing Control: Stainless steel spacer system for uniform louver spacing.
f. Traverse Cord: Danskord 1.8 mm diameter and is equipped with a tension pulley and cord clip.
g. Cord Clip: Anchored to the wall or window jamb in accordance with CPSC recommendations.
h. Valances: Provide optional valances.
i. UL Greenguard Gold certified

B. Window Coverings: SWFcontract G-71 Super-Vue Vertical Blinds.
1. Louvers: As selected by Architects from the Graber line of PVC offerings.
a. Type: 3-1/2 inch PVC.
b. Type: 2 inch PVC.
c. Type: 3-1/2 inch Fabric.
d. Louver Color Number: _____.
e. Louver Color Name: _____.
f. Channel Panel Insert for Fabric Louvers:
1) Insert Color Name: _____.
2) Insert Color Number: _____.
2. Components:
a. Headrails:

1) Materials: Anodized aluminum alloy 6063-T5 with a satin dip finish.
2) Size: 1-15/16 inches (49 mm) wide x 1-3/8 inches (35 mm) high.
3) Average Wall Thickness: .050 inch (1.3 mm)

b. Carriers: Carriers shall be centrally located making the headrail reversible; carriers and stems are replaceable without demounting the headrail.
1) Materials: Molded acetyl.
2) Description: Traverses on self-lubricated wheels.
3) Stems: Clear, non-yellowing, UV-stabilized nylon; impact-resistant.

c. Traversing Control: Wand.

d. Traversing Control: Cord.
1) Traverse Cord: No. 3 braided polyester with a fiberglass core, 0.094 inch (2.4 mm) and is equipped with a tension cord weight and cord clip.
2) Cord Clip: Anchored to the wall or window jamb during installation in accordance with CPSC recommendations.

e. Operation Mechanism: As scheduled and indicated on Drawings.

f. Operation Mechanism: Rotation control, bead chain, No. 10 nickel-plated steel.
1) E-Z Open feature automatically rotates louvers open when traverse cord is operated.
2) Dual Rack and Pinion Gear System: Provides 180 degrees direct rotation.
3) Pinion Rods: Extruded aluminum 0.30 inch (7.6 mm) diameter.

g. Operation Mechanism: One Touch wand control, one way draw only, not available with 2 inch louvers.

h. UL Greenguard Gold certified

C. Window Coverings: SWFcontract G-85 Dura-Vue Vertical Blinds.
1. Louvers: As selected by Architects from the Graber line of PVC offerings.
a. Type: 3-1/2 inch PVC.
b. Type: 2 inch PVC.
c. Type: 3-1/2 inch Fabric.
d. Louver Color Number: _____.
e. Louver Color Name: _____.
f. Channel Panel Insert for Fabric Louvers:
1) Insert Color Name: _____.
2) Insert Color Number: _____.

2. Components:
a. Headrails: Roll formed, phosphate-treated recycled steel.
1) Size: 1-1/2 inches (38 mm) wide x 1-1/4 inches (32 mm) high.
2) Thickness: .027 inches (0.7 mm).
3) Finish: With baked enamel finish in Ivory Gloss.

b. Carriers: Carriers shall be centrally located making the headrail reversible; carriers and stems are replaceable without demounting the headrail.
1) Description: Traverses on self-lubricated wheels.
2) Detachable Stems: Clear, non-yellowing, UV-stabilized nylon;

impact-resistant.

c. Rotation Controls: Standard, bead chain, No. 6 nickel-plated steel.
   1) Dual Rack and Pinion Gear System: Provides 180 degrees direct rotation.
   2) Pinion Rods: Extruded aluminum 0.30 inch (7.6 mm) diameter.
   3) Control Type: Standard, bead chain, No. 6 nickel-plated steel.
   4) Control Type: One Touch wand control, one way draw only, not available with 2 inch louvers.
d. Traversing Control: Nylon strap system.
   1) Traverse Cord: No. 3 braided polyester with a fiberglass core, 0.094 inch (2.4 mm) and is equipped with a tension cord weight and cord clip.
   2) Cord Clip: Anchored to the wall or window jamb during installation in accordance with CPSC recommendations.
e. Valances: Provide optional valances.
f. UL Greenguard Gold certified

2.10 CELLULAR SHADES

A. Window Coverings: SWFcontract CrystalPleat 3/8 inch Double Cell Cellular Shades.
   1. Fabric: Fade and stain resistant, anti-static, anti-microbial.
      a. Compliance: ASTM G 21 and ASTM G 22.
      b. Description: 3/8 inch (9.5 mm) double cell construction selected from an assortment of non-woven spun-lace, point bond 100 percent polyester fabrics.
      c. Seams: Shades with railroaded fabric will have heat-welded seams.
      d. Style: _____.
      e. Color Name: _____.
      f. Color Number: _____.
      g. Fabric Style, Color Name, Color Number: As scheduled and indicated on Drawings.
      h. Fabric Style, Color Name, Color Number: As selected by Architect from manufacturer's standard fabric range.
   2. Lift System: Standard.
      a. Cord Locks: Snap-in design, injection-molded thermoplastic, incorporating a metal, free-floating, serrated cord-locking roller.
      b. Lift Cords: 1.2 mm polyester and concealed. A snap tassel and joiner ball connect to a single Danskord for raising and lowering the shade. Cord, tassel and joiner ball are color coordinated with fabric.
      c. Headrails:
         1) Size: 0.665 inch (17 mm) high x 1.540 inch (39 mm) deep.
         2) Materials: Extruded aluminum headrail.
         3) Wall Thickness: 0.045 inch (1.1 mm).
         4) Finish: Painted to coordinate with fabric color.
   3. Lift System:
      a. Continuous Cord Loop Lift System: White cord loop controls lowering and raising shade.
      b. Headrails:
         1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.

2) Materials: Extruded aluminum headrail.
3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.

c. Bottomrails:
1) Size: 0.36 inch (0.9 mm) high x 1.54 inch (39 mm) deep.
2) Materials: Extruded aluminum.
3) Wall Thickness: 0.045 inch (1.14 mm).
4) Finish: Painted to coordinate with fabric color.

4. Lift System:
a. Cordless Lift System: Lift and lowering operation without use of cord controls.
b. Headrails:
1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum headrail.
3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.
c. Bottomrails:
1) Size: 0.36 inch (0.9 mm) high x 1.54 inch (39 mm) deep.
2) Materials: Extruded aluminum.
3) Wall Thickness: 0.045 inch (1.14 mm).
4) Finish: Painted to coordinate with fabric color.

5. Lift System:
a. Motor Lift System: Lift and lowering operation with a wireless controller
b. Headrails:
1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum headrail.
3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.
c. Bottomrails:
1) Size: 0.36 inch (0.9 mm) high x 1.54 inch (39 mm) deep.
2) Materials: Extruded aluminum.
3) Wall Thickness: 0.045 inch (1.14 mm).
4) Finish: Painted to coordinate with fabric color.
d. Motors:
1) Motor type: Low voltage wired.
2) Motors: concealed inside headrail
3) Power Supply Type: Low voltage battery 12 VDC
4) Power Supply Type: Low voltage wall plug, 110V-120V VAC.
5) Power Supply Type: Solar Recharge Kit
6) Power Supply Type: 5-10 motor Transformer Kit

B. Window Coverings: SWFcontract CrystalPleat 3/8 inch Single Cell Cellular Shades.
1. Fabric: Fade and stain resistant, anti-static, anti-microbial.
a. Compliance:
1) Antifungal and Antibacterial: ASTM G 21 and ASTM G 22.
2) FR Rating: NFPA 701 (scroll FR fabric)
b. Description: 3/8 inch (9.5 mm) single cell construction selected from an assortment of non-woven spun-lace, point bond 100 percent polyester

fabrics.
c. Seams: Shades with railroaded fabric will have heat-welded seams.
d. Style: _____.
e. Color Name: _____.
f. Color Number: _____.
g. Fabric Style, Color Name, Color Number: As scheduled and indicated on Drawings.
h. Fabric Style, Color Name, Color Number: As selected by Architect from manufacturer's standard fabric range.

2. Lift System: Standard.
   a. Cord Locks: Snap-in design, injection-molded thermoplastic, incorporating a metal, free-floating, serrated cord-locking roller.
   b. Lift Cords: 1.2 mm polyester and concealed. A snap tassel and joiner ball connect to a single Danskord for raising and lowering the shade. Cord, tassel and joiner ball are color coordinated with fabric.
   c. Headrails:
      1) Size: 0.665 inch (17 mm) high x 1.540 inch (39 mm) deep.
      2) Materials: Extruded aluminum headrail.
      3) Wall Thickness: 0.045 inch (1.1 mm).
      4) Finish: Painted to coordinate with fabric color.
   d. Bottomrails:
      1) Size: 0.36 inch (0.9 mm) high x 1.54 inch (39 mm) deep.
      2) Materials: Extruded aluminum.
      3) Wall Thickness: 0.045 inch (1.14 mm).
      4) Finish: Painted to coordinate with fabric color.
3. Lift System:
   a. Continuous Cord Loop Lift System: White cord loop controls lowering and raising shade.
   b. Headrails:
      1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
      2) Materials: Extruded aluminum headrail.
      3) Wall Thickness: 0.045 inch (1.1 mm).
      4) Finish: Painted to coordinate with fabric color.
   c. Bottomrails:
      1) Size: 0.36 inch (0.9 mm) high x 1.54 inch (39 mm) deep.
      2) Materials: Extruded aluminum.
      3) Wall Thickness: 0.045 inch (1.14 mm).
      4) Finish: Painted to coordinate with fabric color.
4. Lift System:
   a. Cordless Lift System: Lift and lowering operation without use of cord controls.
   b. Headrails:
      1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
      2) Materials: Extruded aluminum headrail.
      3) Wall Thickness: 0.045 inch (1.1 mm).
      4) Finish: Painted to coordinate with fabric color.
   c. Bottomrails:
      1) Size: 0.36 inch (0.9 mm) high x 1.54 inch (39 mm) deep.

2) Materials: Extruded aluminum.
3) Wall Thickness: 0.045 inch (1.14 mm).
4) Finish: Painted to coordinate with fabric color.

5. Lift System:
   a. Motor Lift System: Lift and lowering operation with a wireless controller
   b. Headrails:
      1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
      2) Materials: Extruded aluminum headrail.
      3) Wall Thickness: 0.045 inch (1.1 mm).
      4) Finish: Painted to coordinate with fabric color.
   c. Bottomrails:
      1) Size: 0.36 inch (0.9 mm) high x 1.54 inch (39 mm) deep.
      2) Materials: Extruded aluminum.
      3) Wall Thickness: 0.045 inch (1.14 mm).
      4) Finish: Painted to coordinate with fabric color.
   d. Motors:
      1) Motor type: Low voltage wired.
      2) Motors: concealed inside headrail
      3) Power Supply Type: Low voltage battery 12 VDC
      4) Power Supply Type: Low voltage wall plug, 110V-120V VAC.
      5) Power Supply Type: Solar Recharge Kit
      6) Power Supply Type: 5-10 motor Transformer Kit

C. Window Coverings: SWFcontract CrystalPleat 3/4 inch Single Cell Cellular Shades.
   1. Fabric: Fade and stain resistant, anti-static, anti-microbial.
      a. Compliance:
         1) Antifungal and Antibacterial: ASTM G 21 and ASTM G 22.
         2) FR Rating: NFPA 701 (scroll FR fabric)
      b. Description: 3/4 inch (19 mm) single cell construction selected from an assortment of non-woven spun-lace, point bond 100 percent polyester fabrics.
      c. Seams: Shades with railroaded fabric will have heat-welded seams.
      d. Style: _____.
      e. Color Name: _____.
      f. Color Number: _____.
      g. Fabric Style, Color Name, Color Number: As scheduled and indicated on Drawings.
      h. Fabric Style, Color Name, Color Number: As selected by Architect from manufacturer's standard fabric range.
   2. Lift System: Standard.
      a. Cord Locks: Snap-in design, injection-molded thermoplastic, incorporating a metal, free-floating, serrated cord-locking roller.
      b. Lift Cords: 1.2 mm polyester and concealed. A snap tassel and joiner ball connect to a single Danskord for raising and lowering the shade. Cord, tassel and joiner ball are color coordinated with fabric.
      c. Headrails:
         1) Size: 0.812 inch (20.6 mm) high x 2 inches (51 mm) deep.
         2) Materials: Extruded aluminum headrail.

3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.

d. Bottomrails:
1) Size: 0.375 inch (0.95 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum.
3) Wall Thickness: 0.045 inch (1.14 mm).
4) Finish: Painted to coordinate with fabric color.

3. Lift System:
a. Continuous Cord Loop Lift System: White cord loop controls lowering and raising shade.
b. Headrails:
1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum headrail.
3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.
c. Bottomrails:
1) Size: 0.375 inch (0.95 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum.
3) Wall Thickness: 0.045 inch (1.14 mm).
4) Finish: Painted to coordinate with fabric color.

4. Lift System:
a. Cordless Lift System: Lift and lowering operation without use of cord controls.
b. Headrails:
1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum headrail.
3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.
c. Bottomrails:
1) Size: 0.375 inch (0.95 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum.
3) Wall Thickness: 0.045 inch (1.14 mm).
4) Finish: Painted to coordinate with fabric color.

5. Lift System:
a. Motor Lift System: Lift and lowering operation with a wireless controller
b. Headrails:
1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum headrail.
3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.
c. Bottomrails:
1) Size: 0.36 inch (0.9 mm) high x 1.54 inch (39 mm) deep.
2) Materials: Extruded aluminum.
3) Wall Thickness: 0.045 inch (1.14 mm).
4) Finish: Painted to coordinate with fabric color.
d. Motors:
1) Motor type: Low voltage wired.
2) Motors: concealed inside headrail

3) Power Supply Type: Low voltage battery 12 VDC
4) Power Supply Type: Low voltage wall plug, 110V-120V VAC.
5) Power Supply Type: Solar Recharge Kit
6) Power Supply Type: 5-10 motor Transformer Kit

2.11 PLEATED SHADES

A. Window Coverings: SWFcontract EvenPleat Pleated Shades.
1. Fabric: Flame retardant, fade and stain resistant.
a. Compliance:
1) Antifungal and Antibacterial: ASTM G 21 and ASTM G 22.
2) FR Rating: NFPA 701 (scroll FR fabric)
b. Description: Selected from an assortment of fade resistant, 100 percent polyester fabrics. EvenPleat technology ensures pleated material prevents sags or flattens.
c. Seams: Shades with railroaded fabric will have heat-welded seams.
d. Style: _____.
e. Color Name: _____.
f. Color Number: _____.
g. Fabric Style, Color Name, Color Number: As scheduled and indicated on Drawings.
h. Fabric Style, Color Name, Color Number: As selected by Architect from manufacturer's standard fabric range.
2. Lift System: Standard.
a. Cord Locks: Snap-in design, injection-molded thermoplastic, incorporating a metal, free-floating, serrated cord-locking roller.
b. Lift Cords: 0.9 mm polyester. A snap tassel and joiner ball connect to a single Danskord for raising and lowering the shade. Cord, tassel and joiner ball are color coordinated with fabric.
c. Headrails:
1) Size: 0.812 inch (20.6 mm) high x 2 inches (51 mm) deep.
2) Materials: Extruded aluminum headrail.
3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.
d. Bottomrails: Tubular shaped 0.024 inches (0.6 mm) thick phosphate-treated recycled steel and finished with a polyester primer and a topcoat of polyester baked enamel. The bottomrail shall be finished with a 7/8 inch (22 mm) wide crowned PVC slat, which is fitted into the last fabric pleat.
3. Lift System:
a. Continuous Cord Loop Lift System: White cord loop controls lowering and raising shade.
b. Headrails:
1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum headrail.
3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.
c. Bottomrails: Tubular shaped 0.024 inches (0.6 mm) thick phosphate-treated recycled steel and finished with a polyester primer and a

topcoat of polyester baked enamel. The bottomrail shall be finished with a 7/8 inch (22 mm) wide crowned PVC slat, which is fitted into the last fabric pleat.

4. Lift System:
   a. Cordless Lift System: Lift and lowering operation without use of cord controls.
   b. Headrails:
      1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
      2) Materials: Extruded aluminum headrail.
      3) Wall Thickness: 0.045 inch (1.1 mm).
      4) Finish: Painted to coordinate with fabric color.
   c. Bottomrails: Tubular shaped 0.024 inches (0.6 mm) thick phosphate-treated recycled steel and finished with a polyester primer and a topcoat of polyester baked enamel. The bottomrail shall be finished with a 7/8 inch (22 mm) wide crowned PVC slat, which is fitted into the last fabric pleat.
5. Lift System:
   a. Motor Lift System: Lift and lowering operation with a wireless controller
   b. Headrails:
      1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
      2) Materials: Extruded aluminum headrail.
      3) Wall Thickness: 0.045 inch (1.1 mm).
      4) Finish: Painted to coordinate with fabric color.
   c. Bottomrails: Tubular shaped 0.024 inches (0.6 mm) thick phosphate-treated recycled steel and finished with a polyester primer and a topcoat of polyester baked enamel. The bottomrail shall be finished with a 7/8 inch (22 mm) wide crowned PVC slat, which is fitted into the last fabric pleat.
   d. Motors:
      1) Motor type: Low voltage wired.
      2) Motors: concealed inside headrail
      3) Power Supply Type: Low voltage battery 12 VDC
      4) Power Supply Type: Low voltage wall plug, 110V-120V VAC.
      5) Power Supply Type: Solar Recharge Kit
      6) Power Supply Type: 5-10 motor Transformer Kit

B. Window Coverings: SWFcontract FashionPleat Pleated Shades.
   1. Fabric: Flame retardant, fade and stain resistant.
      a. Compliance:
         1) Antifungal and Antibacterial: ASTM G 21 and ASTM G 22.
         2) FR Rating: NFPA 701 (scroll FR fabric)
      b. Description: Selected from an assortment of fade resistant, 100 percent polyester fabrics.
      c. Seams: Shades with railroaded fabric will have heat-welded seams.
      d. Style: _____.
      e. Color Name: _____.
      f. Color Number: _____.
      g. Fabric Style, Color Name, Color Number: As scheduled and indicated

on Drawings.

h. Fabric Style, Color Name, Color Number: As selected by Architect from manufacturer's standard fabric range.

2. Lift System: Standard.
   a. Cord Locks: Snap-in design, injection-molded thermoplastic, incorporating a metal, free-floating, serrated cord-locking roller.
   b. Lift Cords: 0.9 mm polyester. A snap tassel and joiner ball connect to a single Danskord for raising and lowering the shade. Cord, tassel and joiner ball are color coordinated with fabric.
   c. Headrails:
      1) Size: 0.812 inch (20.6 mm) high x 2 inches (51 mm) deep.
      2) Materials: Extruded aluminum headrail.
      3) Wall Thickness: 0.045 inch (1.1 mm).
      4) Finish: Painted to coordinate with fabric color.
   d. Bottomrails: Tubular shaped 0.024 inches (0.6 mm) thick phosphate-treated recycled steel and finished with a polyester primer and a topcoat of polyester baked enamel. The bottomrail shall be finished with a 7/8 inch (22 mm) wide crowned PVC slat, which is fitted into the last fabric pleat.
3. Lift System:
   a. Continuous Cord Loop Lift System: White cord loop controls lowering and raising shade.
   b. Headrails:
      1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
      2) Materials: Extruded aluminum headrail.
      3) Wall Thickness: 0.045 inch (1.1 mm).
      4) Finish: Painted to coordinate with fabric color.
   c. Bottomrails: Tubular shaped 0.024 inches (0.6 mm) thick phosphate-treated recycled steel and finished with a polyester primer and a topcoat of polyester baked enamel. The bottomrail shall be finished with a 7/8 inch (22 mm) wide crowned PVC slat, which is fitted into the last fabric pleat.
4. Lift System:
   a. Cordless Lift System: Lift and lowering operation without use of cord controls.
   b. Headrails:
      1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
      2) Materials: Extruded aluminum headrail.
      3) Wall Thickness: 0.045 inch (1.1 mm).
      4) Finish: Painted to coordinate with fabric color.
   c. Bottomrails: Tubular shaped 0.024 inches (0.6 mm) thick phosphate-treated recycled steel and finished with a polyester primer and a topcoat of polyester baked enamel. The bottomrail shall be finished with a 7/8 inch (22 mm) wide crowned PVC slat, which is fitted into the last fabric pleat.
5. Lift System:
   a. Motor Lift System: Lift and lowering operation with a wireless controller
   b. Headrails:

1) Size: 1-7/16 inches (36.5 mm) high x 2 inch (51 mm) deep.
2) Materials: Extruded aluminum headrail.
3) Wall Thickness: 0.045 inch (1.1 mm).
4) Finish: Painted to coordinate with fabric color.

c. Bottomrails: Tubular shaped 0.024 inches (0.6 mm) thick phosphate-treated recycled steel and finished with a polyester primer and a topcoat of polyester baked enamel. The bottomrail shall be finished with a 7/8 inch (22 mm) wide crowned PVC slat, which is fitted into the last fabric pleat.

d. Motors:
1) Motor type: Low voltage wired.
2) Motors: concealed inside headrail
3) Power Supply Type: Low voltage battery 12 VDC
4) Power Supply Type: Low voltage wall plug, 110V-120V VAC.
5) Power Supply Type: Solar Recharge Kit
6) Power Supply Type: 5-10 motor Transformer Kit

PART 3 EXECUTION

3.1 PREPARATION

A. Inspect mounting surfaces, blocking for shade brackets or pocket assemblies, suspended acoustical or gypsum ceiling for recessed shades and verify field measurements. Prepare substrates using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

3.2 INSTALLATION

A. Install window treatments in accordance with manufacturer's instructions including the following.
1. Install with adequate clearance to permit smooth operation of the shades throughout entire operational range.
2. Adjust and balance window coverings to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
3. Wire motors and controllers according to specifications and wiring diagrams prior to installation of motorized shades.
4. Test electrically operated shades for proper operation.

3.3 CLEANING AND PROTECTION

A. Clean surfaces after installation in accordance with manufacturer's written instructions. Do not use cleaning methods involving heat, bleach, abrasives, or solvents.

B. Protect installed products until completion of project. Repair damaged or improperly installed before Substantial Completion.

END OF SECTION 122000

SECTION 124813

ENTRANCE FLOOR MATS AND FRAMES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Samples.

PART 2 - PRODUCTS

2.1 FLOOR MATS AND FRAMES

A. Basis of Design: The design is based on Pedimat M1 surface mounted aluminum tapered frame & vinyl carrier. Comparable products, as determined by Architect, by OTHER manufacturers may be submitted for review and approval.

B. Roll-Up Mats: Vinyl-rail hinged mats, with fusion-bonded, nylon-pile carpet inserts.
1. Color & Pattern: to be selected from the manufacturer's full range.

C. Mat Frame: Tapered extruded-aluminum frame; size and style to fit floor mat.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Recessed Mats: Coordinate elevation of tops of mat surfaces with bottom of doors that swing across mats to provide adequate clearance.

1. Install necessary shims, spacers, and anchorages for proper location and secure attachment of frames.
2. Install grout and fill around frames and, if required to set mat tops at proper elevations, in recesses under mats.

B. Install surface-type units as indicated. Anchor frame members to floor.

END OF SECTION 124813

SECTION 142600 - LIMITED-USE/LIMITED-APPLICATION ELEVATORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Rated Load: 1,400 LBS

B. Rated Speed: 30 FPM

C. Submittals: Shop Drawings and Samples of exposed finishes.

1. Submit operation and maintenance data to include in emergency, operation, and maintenance manuals.

D. Regulatory Requirements: Comply with ASME A17.1 **and elevator design requirements for earthquake loads in ASCE 7**.

1. Short period acceleration (Sds)= 0.173g
2. 1-second period acceleration (Sd1)= 0.076g
3. Site Class: D
4. Seismic Design Category: B
5. Site Coefficient (Fa): 1.60
6. Site Coefficient (Fv): 2.40
7. Response Modification Factor (R): 6.5
8. Deflection Amplification Factor (Cd): 4.0

E. Accessibility Requirements: Comply with Section **4.10 in the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG).", 407 in ICC A117.1. and Section 1104.4 of the New Jersey Edition of the 2015 International Building Code.**

F. Fire-Rated Hoistway Entrance Assemblies: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing at neutral pressure per **UL 10B**.

G. Maintenance: Beginning at Substantial Completion, provide one year's full maintenance service. Include monthly preventive maintenance, repair, or replacement of worn or defective components, lubrication, cleaning, and adjusting.

PART 2 - PRODUCTS

2.1 MATERIALS AND COMPONENTS

A. Machine Type: Hydraulic, holeless, beside the car; either roped hydraulic or direct-acting hydraulic.

B. Electric pump-tank-control system equipment:

1. Positive-displacement pump, **submersible type**, with a maximum of 10 percent variation between no load and full load.
2. Squirrel cage induction motor with **solid-state starting**.
3. Flexible connectors in piping and hydraulic silencer at pump unit.

C. Furnish required concrete and masonry inserts. Installation is specified in another Specification Section.

2.2 OPERATION SYSTEMS

A. Single automatic operation.

B. Auxiliary Operations: In addition to primary operation control, provide **standby power operation**.

C. Emergency Operation: **Phase I emergency recall operation**. Provide recall to second floor during flood events.

D. Door Reopening Devices: Photoelectric device that projects light beam across car entrance.

2.3 FINISH MATERIALS

A. Steel Sheet: Cold-rolled steel sheet, ASTM A 1008/A 1008M, exposed, matte finish, except that hot-rolled steel sheet, ASTM A 1011/A 1011M may be used for door frames.

B. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.

C. Stainless-Steel Bars: ASTM A 276, Type 304.

D. Stainless-Steel Tubing: ASTM A 554, Grade MT 304.

E. Aluminum Extrusions: ASTM B 221, Alloy 6063.

F. Plastic Laminate: High-pressure type complying with NEMA LD 3.

2.4 CAR ENCLOSURES AND ENTRANCES

A. General: Provide steel-framed car enclosures with wall panels, car roof, access doors, power door operators, and ventilation.

B. Clear Inside Dimensions:

1. Inside Width: **42 inches** from sidewall to sidewall.
2. Inside Depth: **60 inches** from back wall to front wall (return panels).
3. Inside Height: **84 inches** to underside of ceiling.

C. Car Finishes:

1. Floor finish is specified in another Section.
2. Wall Panels: **plastic-laminate** panels.
3. Sills: Extruded aluminum, with grooved surface, 1/4 inch thick.
4. Ceiling: Flush metal panels, enamel or powder-coat finish.
5. Lighting: Two incandescent downlights **with battery backup**.
6. Handrails: Manufacturer's standard **on both sides** of car.

D. Car Doors:

1. Operation: **Automatic**.
2. Type: **Horizontal sliding**.
3. Clear Opening Width: **36 inches**.
4. Door Height: **80 inches**.
5. Door Finish: **Plastic laminate**.

E. Hoistway Entrances:

1. Operation**Automatic**.
2. Type: **Horizontal sliding**.
3. Frames: **Satin stainless steel, No. 4 finish**.
4. Door Finish: **Plastic laminate**.
5. Fire-Protection Rating: **1 hour with 30-minute temperature rise of 450 deg** .

2.5 SIGNAL EQUIPMENT

A. Illuminated hall-call and car-call buttons.

B. Except for buttons and illuminated elements, fabricate car and hall fixtures from **satin stainless steel, No. 4 finish**.

C. Manufacturer's standard car control station. Mount in side panel adjacent to car door.

D. Emergency Communication System: Provide system that complies with ASME A17.1 and **the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines (ADAAG)." and ICC A117.1.** On activation, system dials preprogrammed number of monitoring station and identifies elevator location to monitoring station. System indicates when it has been activated and when monitoring station has responded. System provides for two-way communication, by both voice and visual display, together with push buttons. System is contained in cabinet, with identification, instructions for use, and battery backup power supply.

E. Car position indicator above the car door or above the car control station. Also provide audible signal to indicate that car is either stopping at or passing the floor. Include direction arrows if not provided in car control station.

F. Hall Push-Button Stations: Provide one hall push-button station at each landing.

G. Hall Lanterns: Manufacturer's standard units with illuminated arrows.

H. Hall Annunciator: Provide audible signals indicating car arrival and direction of travel.

I. Emergency Signs: Provide signs matching hall push-button stations, with text and graphics as required by authorities having jurisdiction, indicating that in case of fire the elevators are out of service and exit stairs should be used instead. Provide one sign at each hall push-button station, unless otherwise indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install cylinder plumb and accurately centered for elevator car position and travel. Anchor securely in place, supported at pit floor and braced at intervals as needed to maintain alignment. Anchor cylinder guides at spacing needed to maintain alignment and avoid overstressing guides.

B. Adjust elevators for 1/4-inch leveling tolerance.

C. Set sills flush with finished floor. Fill space under sills solidly with nonshrink, nonmetallic grout.

D. On completion of elevator installation and before permitting use of elevator, perform acceptance tests as required and recommended by ASME A17.1 and by authorities having jurisdiction.

END OF SECTION 142600

SECTION 323913 – DECORATIVE METAL BOLLARDS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Metal bollard covers
2. Decorative metal bollards
3. Accessories

B. Related Requirements
1. Division 03 Sections: Concrete fill for security posts.

1.2 REFERENCE STANDARDS

A. ASTM A36 – Standard Specification for Carbon Structural Steel.

B. ASTM A312 – Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes.

C. ASTM A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

D. ASTM 536 – Standard Specification for Ductile Iron Castings.

E. ASTM B26 – Standard Specification for Aluminum-Alloy Sand Castings.

1.3 SUBMITTALS
1. Product Data: Provide for each type of bollard, component, finish, and accessory specified
2. Color Samples: Submit manufacturer's standard colors for selection.
3. Setting Drawings: Show embedded items and cutouts required for work specified in other Sections.
4. Maintenance Data: Submit manufacturer's field touch-up, cleaning, and maintenance instructions.
5. Warranty Documentation: Submit sample of manufacturer's warranty.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Protect bollards and accessories during delivery, storage, and handling.

1.5 WARRANTY

A. Provide manufacturer's standard warranty against defects in materials and workmanship.
   1. Warranty Period: Five years from date of invoice, except as otherwise indicated.
      a. Coatings: Two years, against peeling, cracking, or significant color change.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Reliance Foundry Co. Ltd. Tel: 1-877-789-3245 Website: https://www.reliance-foundry.com/bollard Email: info@reliance-foundry.com

B. Substitutions: Comply with provisions of Section 01 25 00 for substitution procedures.

2.2 DECORATIVE METAL BOLLARDS

A. Material: Ductile Cast Iron
   1. ASTM A536, Grade 65-45-12; 30 percent recycled-material content.
   2. Country of Origin: China.
   3. Model: Reliance Foundry; R-7539
   4. Height: 35-3/4 in (90.8 cm)
   5. Diameter: 5-7/8 in (14.9 cm)
   6. Weight: 75 lbs (34 kg)
   7. Design: Tapered and fluted, with round finial and ball top.
   8. Color Coating:
      a. Type: Polyester powder coat over epoxy primer.
      b. Color: As selected by Architect from Manufacturer's standard colors.
   9. Installation:
      a. Security post cover, new post, new concrete, anchor.

2.3 ACCESSORIES
   1. Security Post:
      a. Pipe: ASTM 500 B Structural Grade Steel
      b. Manufacturer: Reliance Foundry Co. Ltd.
      c. Country of Origin: United States.
      d. Base Diameter: 4.5 inches.
      e. Finish: Gray primer.
      f. Installation: Footing and fill; Concrete 3,000 psi minimum.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine paving or other substrates for compliance with manufacturer's requirements for placement and location of embedded items, condition of substrate, and other conditions affecting installation of bollards.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Comply with manufacturer's installation instructions and setting drawings.

B. Do not install damaged, cracked, chipped, deformed or marred bollards. Field touch-up minor imperfections in accordance with manufacturer's instructions. Replace bollards that cannot be field repaired.

3.3 CLEANING & PROTECTION

A. Protect bollards against damage.

B. Immediately prior to Substantial Completion, clean bollards in accordance with manufacturer's instructions to remove dust, dirt, adhesives, and other foreign materials.

C. Touch up damaged finishes according to manufacturer's instructions.

3.4 CLOSEOUT ACTIVITIES

A. Provide executed warranty.

END OF SECTION 323913