

**SECTION 000110
TABLE OF CONTENTS**

PROCUREMENT AND CONTRACTING REQUIREMENTS

1.01 DIVISION 00 -- PROCUREMENT AND CONTRACTING REQUIREMENTS

- A. 000101 - Project Title Page
- B. 000107 - Seals Page
- C. 000110 - Table of Contents
- D. 00010 - Solicitation and Notice for Bidders
- E. 00020 - Insurance Requirements
- F. 00100 - Instruction to Bidders
- G. 00110 - Special Conditions of the Contract
- H. 00120 - Supplemental Conditions to the Contract
- I. 00130 - Form of Proposal
- J. 00140 - Bid Bond Form
- K. 00150 - Non-Collusion Affidavit
- L. 00160 - Business Relationships Affidavit
- M. 00170 - Non-Discrimination Form
- N. 00180 - Felony and Drug Free Affidavit Form
- O. 00190 - Asbestos Compliance Form
- P. 00191 - Contractors Qualifications Statement
- Q. 00260 - No Kick-Back Statement
- R. 00270 - Vendor Registration Form
- S. 01300 - Administrative Requirements
- T. 01600 - Product Requirements

SPECIFICATIONS

2.01 DIVISION 01 -- GENERAL REQUIREMENTS

- A. 010000- KKT General Requirements
- B. 012300 - Alternates

2.02 DIVISION 02 -- EXISTING CONDITIONS

- A. 024100 - Demolition

2.03 DIVISION 03 -- CONCRETE

- A. 033000 - Cast-in-Place Concrete

2.04 DIVISION 04 -- MASONRY

- A. 040511 - Mortar and Masonry Grout
- B. 042000 - Unit Masonry

2.05 DIVISION 05 -- METALS

- A. 051200 - Structural Steel Framing
- B. 055213 - Pipe and Tube Railings

2.06 DIVISION 06 -- WOOD, PLASTICS, AND COMPOSITES

- A. 061053 - Miscellaneous Rough Carpentry
- B. 064100 - Architectural Wood Casework
- C. 068316 - Fiberglass Reinforced Paneling

2.07 DIVISION 07 -- THERMAL AND MOISTURE PROTECTION

- A. 070553 - Fire and Smoke Assembly Identification
- B. 078400 - Firestopping
- C. 079200 - Joint Sealants

2.08 DIVISION 08 -- OPENINGS

- A. 081213 - Hollow Metal Frames
- B. 081416 - Flush Wood Doors
- C. 081613 - Fiberglass Doors
- D. 083100 - Access Doors and Panels
- E. 084313 - Aluminum-Framed Storefronts
- F. 087100 – Door Hardware
- G. 087100.10 – Door Hardware Sets
- H. 088000 - Glazing

2.09 DIVISION 09 -- FINISHES

- A. 092116 - Gypsum Board Assemblies
- B. 093000 - Tiling
- C. 095100 - Acoustical Ceilings
- D. 096500 - Resilient Flooring
- E. 096700 - Fluid-Applied Flooring
- F. 097200 - Wall Coverings
- G. 099113 – Exterior Painting
- H. 099123 - Interior Painting

2.10 DIVISION 10 -- SPECIALTIES

- A. 101400 - Signage
- B. 102600 - Wall and Door Protection
- C. 104400 - Fire Protection Specialties

2.11 DIVISION 11 – EQUIPMENT

- A. 114000 – Foodservice Equipment

2.12 DIVISION 12 -- FURNISHINGS

- A. 123600 – Countertops

DIVISION 22 -- PLUMBING

- B. 220400 - PLUMBING

2.13 DIVISION 23 -- HVAC

- A. 230600 – HEATING, VENTILATION AND AIR CONDITIONING

2.14 DIVISION 26 -- ELECTRICAL

- A. 260100 – ELECTRICAL DEMOLITION
- B. 260400 – ELECTRICAL SYSTEMS

2.15 DIVISION 27 -- COMMUNICATIONS

- A. 270528 – PATHWAYS FOR COMMUNICATION SYSTEMS
- B. 271500 – COMMUNICATIONS HORIZONTAL COPPER CABLING

END OF SECTION 000110

SECTION 012300

ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Alternates.

1.02 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.03 SCHEDULE OF ALTERNATES

- A. Alternate No. 1:
 - 1. Base Bid Item: Section 096700 Fluid-applied Flooring and Drawing Numbers A120 – Finish Schedule, A121A – Partial Finish Plan, and A121B – Partial Finish Plan, Flooring in Rooms 106, 108, 109, 110, 111, 114, and 117 to be EP 1.
 - 2. Alternate Item: Section 096500 Resilient Flooring and Drawing Numbers A120 – Finish Schedule, A121A – Partial Finish Plan, and A121B – Partial Finish Plan, Flooring in Rooms 106, 108, 109, 110, 111, 114, and 117 to be SV2.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 012300

SECTION 040511
MORTAR AND MASONRY GROUT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Mortar for masonry.
- B. Grout for masonry.

1.02 REFERENCE STANDARDS

- A. ASTM C5 - Standard Specification for Quicklime for Structural Purposes 2018.
- B. ASTM C91/C91M - Standard Specification for Masonry Cement 2018.
- C. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2021b.
- D. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.
- E. ASTM C150/C150M - Standard Specification for Portland Cement 2021.
- F. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes 2018.
- G. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a.
- H. ASTM C387/C387M - Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar 2017.
- I. ASTM C404 - Standard Specification for Aggregates for Masonry Grout 2018.
- J. ASTM C476 - Standard Specification for Grout for Masonry 2020.
- K. ASTM C1148 - Standard Test Method for Measuring the Drying Shrinkage of Masonry Mortar 1992a (Reapproved 2014).
- L. ASTM E514/E514M - Standard Test Method for Water Penetration and Leakage Through Masonry 2014a.
- M. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2016.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C270 is to be used. Also include required environmental conditions and admixture limitations.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
 - 1. Maintain one copy of each document on project site.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.06 FIELD CONDITIONS

- A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 MORTAR AND GROUT APPLICATIONS

- A. At Contractor's option, mortar and grout may be field-mixed from packaged dry materials, made from factory premixed dry materials with addition of water only, or ready-mixed.
- B. Mortar Color: Natural gray unless otherwise indicated.
- C. Mortar Mix Designs: ASTM C270, Property Specification.

2.02 MATERIALS

- A. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C387/C387M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
 - 1. Color: Standard gray.
- B. Portland Cement: ASTM C150/C150M.
 - 1. Type: Type I - Normal; ASTM C150/C150M.
 - 2. Color: Standard gray.
- C. Masonry Cement: ASTM C91/C91M.
 - 1. Type: Type N; ASTM C91/C91M.
- D. Hydrated Lime: ASTM C207, Type S.
- E. Quicklime: ASTM C5, non-hydraulic type.
- F. Mortar Aggregate: ASTM C144.
- G. Water: Clean and potable.

END OF SECTION 040511

SECTION 042000
UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete block.
- B. Clay facing brick.
- C. Mortar and grout.
- D. Reinforcement and anchorage.
- E. Flashings.
- F. Installation of Lintels.
- G. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 051200 – Structural Steel Framing
- B. Section 079200 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

- A. ACI 318 - Building Code Requirements for Structural Concrete 2019, with Errata (2021).
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- D. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications 2020a.
- E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.
- F. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- G. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement 2016, with Editorial Revision (2018).
- H. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units 2016a.
- I. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units 2017.
- J. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.
- K. ASTM C150/C150M - Standard Specification for Portland Cement 2021.
- L. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes 2018.
- M. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale) 2021.
- N. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a.
- O. ASTM C404 - Standard Specification for Aggregates for Masonry Grout 2018.
- P. ASTM C476 - Standard Specification for Grout for Masonry 2020.
- Q. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry 2020.
- R. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing 2017.
- S. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls 2005.
- T. BIA Technical Notes No. 46 - Maintenance of Brick Masonry 2017.

- U. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2016.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting as indicated in Division 01, before starting work of this section; require attendance by all relevant installers.

1.05 SUBMITTALS

- A. See Section 010000 - General Requirements, for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Shop Drawings: Indicate pertinent dimensions, materials, anchorage, size and type of fasteners, and accessories for brickwork support system.
 - 1. Include calculations or selections from the manufacturer's prescriptive design tables that indicate compliance with the applicable building code and project conditions.
 - 2. Include the design engineer's stamp or seal on each sheet of shop drawings.
- D. Samples: Submit four (4) samples of each color decorative block and facing brick units to illustrate color, texture, and extremes of color range. Provide mortar color selection samples.
- E. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.
- F. Designer's Qualification Statement.
- G. Manufacturer's Qualification Statement.
- H. Installer's Qualification Statement.
- I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Masonry Units: 50 of each type, size, and color combination.

1.06 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
- B. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.
- C. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum five (5) years of documented experience.
- D. Installer Qualifications: Company specializing in performing work of the type specified and with at least three (3) years of documented experience.

1.07 MOCK-UPS

- A. Construct a masonry wall, for each type; include mortar, accessories, structural backup, and flashings (with lap joint, corner, and end dam) in mock-up. Size to be coordinated with architect.
- B. Locate where directed.
- C. Mock-up may remain as part of the Work, if approved by Architect.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.
- B. Store mortar materials where contamination can be avoided.
- C. Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
 - 2. Special Shapes: Provide non-standard blocks configured for corners and control joint edges.
 - 3. Nonloadbearing Units: ASTM C129.
 - a. Hollow block.
 - b. Lightweight.
 - c. Pattern: Provide where indicated.
 - 1) Standard, where indicated to receive paint.

2.02 BRICK UNITS

- A. Manufacturers: Provide brick, as required to match existing, or an approved equivalent.
 - 1. ACME Brick Co.: www.brick.com.
 - 2. Interstate Brick: www.interstatebrick.com.
 - 3. Midwest Block & Brick: www.midwestblock.com.
 - 4. Substitutions: Not permitted.
- B. Facing Brick: ASTM C216, Type FBS, Grade SW; solid and cored units.
 - 1. Color and texture to match existing.
 - 2. Nominal size: As indicated on drawings.
 - 3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.

2.03 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Mortar Aggregate: ASTM C144.
- D. Grout Aggregate: ASTM C404.
- E. Water: Clean and potable.

2.04 REINFORCEMENT AND ANCHORAGE

- A. Manufacturers: Provide one of the following, or an approved equivalent.
 - 1. Hohmann & Barnard, Inc.; 2-Seal Tie: www.h-b.com.
 - 2. WIRE-BOND; Sure Tie: www.wirebond.com.
- B. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.
- C. Reinforcing Steel: ASTM A615/A615M, Grade 40 (40,000 psi), deformed billet bars; galvanized.
- D. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.
- E. Single Wythe Joint Reinforcement: ASTM A951/A951M.
 - 1. Type: Ladder.
 - 2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M Class 3.
 - 3. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.
- F. Adjustable Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
 - 1. Type: Ladder, with adjustable ties or tabs spaced at 16 in on center.

2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M Class B.
 3. Size: 0.1875 inch side rods with 0.1875 inch cross rods and adjustable components of 0.1875 inch wire, width of components as required to provide not less than 5/8 inch of mortar coverage from each masonry face.
 4. Vertical adjustment: Not more than 1 1/4 inches.
- G. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.
1. Steel frame: Crimped wire anchors for welding to frame, 0.25 inch thick, with trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
- H. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners.
 2. Wire ties: Triangular shape, 0.1875 inch thick.
 3. Vertical adjustment: Not less than 3-1/2 inches.
 4. Manufacturers:
 - a. Hohmann & Barnard, Inc: www.h-b.com.
 - b. WIRE-BOND: www.wirebond.com.
 - c. Blok-Lok Limited: www.blok-lok.com.
 - d. Substitutions: Not permitted.
- I. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.

2.05 THRU-WALL FLASHINGS

- A. Metal Drip Flashing Materials:
1. Stainless Steel Flashing: ASTM A666, Type 304, soft temper; 26 gauge, 0.0187 inch thick; finish 2B to 2D.
- B. Stainless Steel/Polymer Fabric Flashing: ASTM A240/A240M; 2 mil type 304 stainless steel sheet bonded on one side to one sheet of polymer fabric.
1. Manufacturers:
 - a. Hohmann & Barnard, Inc; Mighty-Flash Stainless Flashing: www.h-b.com.
 - b. WIRE-BOND; Bond-N-Flash: www.wirebond.com.
 - c. York Manufacturing, Inc; Multi-Flash SS: www.yorkmfg.com.
 2. Widths: Provide varying widths as applicable to wall cavity depths.
- C. Substitutions: Not permitted.
- D. Flashing Sealant/Adhesives: Silicone, polyurethane, or silyl-terminated polyether/polyurethane or other type required or recommended by flashing manufacturer; type capable of adhering to type of flashing used.
- E. Termination Bars: Stainless steel; compatible with membrane and adhesives.
- F. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with flashings and adhesives.

2.06 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
1. Manufacturers:
 - a. Blok-Lok Limited; RS Series: www.blok-lok.com.
 - b. Hohmann & Barnard, Inc; RS Series: www.h-b.com.
 - c. WIRE-BOND; Rubber Control Joint: www.wirebond.com.
 - d. Substitutions: Not permitted.

- B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.
- C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
 - 1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
 - a. Drainage Material Thickness: 2 inches.
 - b. Manufacturers:
 - 1) Advanced Building Products, Inc; Mortar Break DT : www.advancedbuildingproducts.com.
 - 2) Advanced Building Products Inc; Mortar Break: www.advancedflashing.com.
 - 3) CavClear/Archovations, Inc; CavClear Masonry Mat: www.cavclear.com.
 - 4) Mortar Net Solutions; WallDefender: www.mortarnet.com.
 - 5) York Manufacturing, Inc; Weep-Armor: www.yorkmfg.com.
 - 6) York Manufacturing, Inc.; Weep-Net: www.yorkmfg.com.
 - 7) Substitutions: Not permitted.
- D. Weeps/Cavity Vents:
 - 1. Type: Polyester mesh or molded PVC grilles.
 - 2. Color(s): As selected by Architect from manufacturer's full range.
 - 3. Manufacturers:
 - a. Advanced Building Products, Inc; Mortar Break Weep Mesh : www.advancedbuildingproducts.com.
 - b. Blok-Lok Limited; HB-343: www.blok-lok.com.
 - c. CavClear/Archovations, Inc: www.cavclear.com.
 - d. Hohmann & Barnard, Inc; 343 Weep Hole: www.h-b.com.
 - e. Mortar Net Solutions; WeepVent: www.mortarnet.com.
 - f. WIRE-BOND; Cell Vent: www.wirebond.com.
 - g. Substitutions: Not permitted.
- E. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.07 MORTAR AND GROUT MIXING

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
 - 1. Masonry below grade and in contact with earth: Type S.
 - 2. Exterior, loadbearing masonry: Type N.
 - 3. Exterior, non-loadbearing masonry: Type N.
 - 4. Interior, loadbearing masonry: Type N.
- B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
- C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.
- D. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.
- D. Do not begin installation until unacceptable conditions have been corrected.

3.02 PREPARATION

- A. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.
- B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

3.04 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Concave.
- D. Brick Units:
 - 1. Bond: Running.
 - 2. Coursing: Three units and three mortar joints to equal 8 inches.
 - 3. Mortar Joints: Concave.

3.05 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- D. Remove excess mortar and mortar smears as work progresses.
- E. Interlock intersections and external corners.
- F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- H. Isolate top joint of masonry veneer from horizontal structural framing members or support angles with compressible joint filler.
- I. Setting Cast Stone Units:
 - 1. Drench cast stone components with clear, running water immediately before installation.
 - 2. Mechanically anchor each cast stone unit.
 - 3. Set units in a full bed of mortar unless otherwise indicated.
 - 4. Fill vertical joints with mortar.
 - 5. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.
 - 6. Joints: Make all joints 3/8 inch, except as otherwise detailed.
 - a. Rake mortar joints 3/4 inch for pointing.
 - b. Remove excess mortar from face of stone before pointing joints.
 - c. Point joints with mortar in layers 3/8 inch thick and tool to a slight concave profile.
 - d. Leave the following joints open for sealant:
 - 1) Head joints in top courses, including copings, parapets, cornices, sills, and steps.
 - 2) Joints labeled "expansion joint".
 - 7. Installation Tolerances:
 - a. Variation from Plumb: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet or more.
 - b. Variation from Level: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet, or 3/8 inch maximum.

- c. Variation in Joint Width: Not more than 1/8 inch in 36 inches or 1/4 of nominal joint width, whichever is less.
- d. Variation in Plane Between Adjacent Surfaces (Lipping): Not more than 1/16 inch difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.

3.06 WEEPS/CAVITY VENTS

- A. Install weeps in cavity walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.
- B. Install cavity vents in cavity walls at 32 inches on center horizontally below shelf angles and lintels and near top of walls.

3.07 CAVITY MORTAR CONTROL

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.
- C. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.
 - 1. Hold cavity mortar control panel tight to face wythe.
 - 2. Fit to perimeter construction and penetrations without voids.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first joint below top of walls.
- D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.
- E. Lap joint reinforcement ends minimum 6 inches.
- F. Reinforce joint corners and intersections with strap anchors 16 inches on center.
- G. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.
- H. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches with at least 5/8 inch mortar cover to the outside face of the anchor.

3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Masonry Back-Up: Embed anchors in masonry back-up to bond veneer at maximum 1.77 sq ft of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.
- B. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.10 REINFORCEMENT AND ANCHORAGES - MULTIPLE WYTHER UNIT MASONRY

- A. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

3.11 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.

1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up flashing ends at least 1 inch, minimum, to form watertight pan at nonmasonry construction.
2. Seal lapped ends and penetrations of flashing before covering with mortar.
- B. Terminate flashing up 8 inches minimum on vertical surface of backing:
 1. Install vertical leg of flashing over fluid-applied air barriers over backing or per manufacturer's directions.
 2. Anchor vertical leg of flashing into backing with a termination bar and sealant.
- C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.
- D. Support flexible flashings across gaps and openings.
- E. Extend laminated flashings to within 1/2 inch of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.
- F. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

3.12 LINTELS

- A. Install loose steel lintels over openings.
- B. Maintain minimum 8 inch bearing for brick-size units and 24 inches for block-size units, on each side of opening.

3.13 GROUTED COMPONENTS

- A. Lap splices minimum 24 bar diameters.
- B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- C. Place and consolidate grout fill without displacing reinforcing.

3.14 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control or expansion joints.
- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- C. Size control joints as indicated on drawings; if not indicated, 3/8 inch wide and deep.
- D. Form expansion joint as detailed on drawings.

3.15 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames, glazed frames, and anchor bolts and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

3.16 TOLERANCES

- A. Install masonry within the site tolerances found in TMS 402/602.
- B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.17 CUTTING AND FITTING

- A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.18 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified.
- B. Mortar Tests: Test each type of mortar in accordance with ASTM C780, testing with same frequency as masonry samples.

3.19 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.
- D. Use non-metallic tools in cleaning operations.

3.20 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.
- B. Clean, repair, or restore damaged or mortar-splashed work to condition of new work.

END OF SECTION 042000

SECTION 055213
PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall-mounted handrails.
- B. Free-standing railings at stairs and ramps.

1.02 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete: Placement of anchors in concrete.
- B. Section 099113 – Exterior Painting: Paint finish.

1.03 REFERENCE STANDARDSSUBMITTALS

- A. See Section 010000 - General Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
 - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
- C. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated within the previous 12 months.
- D. Fabricator's Qualification Statement.

1.05 QUALITY ASSURANCE

- A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located, or personnel under direct supervision of such an engineer.
- B. Welder Qualifications: Welding processes and welding operators qualified within previous 12 months.
- C. Fabricator Qualifications:
 - 1. A company specializing in manufacturing products specified in this section, with not less than 5 years of documented experience.

PART 2 PRODUCTS

2.01 RAILINGS - GENERAL REQUIREMENTS

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of applicable local code.
- B. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 50 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935
- C. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935
- D. Allow for expansion and contraction of members and building movement without damage to connections or members.
- E. Dimensions: See drawings for configurations and heights.
- F. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
- G. Welded and Brazed Joints: Make visible joints butt tight, flush, and hairline; use methods that avoid discoloration and damage of finish; grind smooth, polish, and restore to required finish.
 - 1. Ease exposed edges to a small uniform radius.

2. Welded Joints:
 - a. Carbon Steel: Perform welding in accordance with AWS D1.1/D1.1M.

2.02 STEEL RAILING SYSTEM

- A. Steel Tube: ASTM A500/A500M Grade B cold-formed structural tubing.
- B. Steel Pipe: ASTM A53/A53M Grade B Schedule 80, galvanized finish.
- C. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.
- D. Exposed Fasteners: No exposed bolts or screws.
- E. Galvanizing: In accordance with requirements of ASTM A123/A123M.
 1. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type I - Inorganic.

2.03 FABRICATION

- A. Accurately form components to suit specific project conditions and for proper connection to building structure.
- B. Fit and shop assemble components in largest practical sizes for delivery to site.
- C. Fabricate components with joints tightly fitted and secured.
- D. Welded Joints:
 1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
 2. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
 3. 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. Weld connections that cannot be shop welded due to size limitations.
 1. Weld in accordance with AWS D1.1/D1.1M.
 2. Match shop welding and bolting.
 3. Clean welds, bolted connections, and abraded areas.
 4. Touch up shop primer.
 5. Repair galvanizing with galvanizing repair paint per ASTM A780/A780M.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply items required to be cast into concrete with setting templates, for installation as work of other sections.

3.03 INSTALLATION

- A. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- B. Install railings in compliance with ADA Standards for accessible design at applicable locations.
- C. Anchor railings securely to structure.
- D. Field weld anchors as indicated on drawings. Touch-up welds with primer. Grind welds smooth.
- E. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 055213

**SECTION 096500
RESILIENT FLOORING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.
- C. Installation accessories.

1.02 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied resilient flooring.

1.03 SUBMITTALS

- A. See Section 010000 - General Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Shop Drawings: Indicate floor patterns.
- D. Verification Samples: Submit two samples, 12 by 12 inch in size illustrating color and pattern for each resilient flooring product specified.
- E. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- F. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of subfloor is acceptable.
- G. Installer's Qualification Statement.
- H. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Flooring Material: 5% of each type and color installed.
 - 2. Extra Wall Base: 100 linear feet of each type and color.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.
- E. Do not double stack pallets.

1.06 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 SHEET FLOORING

- A. Homogeneous Vinyl Sheet (SV1): Solid vinyl with color and pattern throughout thickness.
 - 1. Manufacturers:
 - a. Tarkett: commercial.tarkett.com., or approved equivalent.
 - 2. Minimum Requirements: Comply with ASTM F410, of Class corresponding to type specified.
 - 3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648.
 - 4. Square Tile Size: 24 by 24 inch.
 - 5. Total Thickness: 0.080 inch.
 - 6. Color: As indicated on drawings.
- B. Homogeneous Vinyl Sheet (SV2): Solid vinyl with short staple fiber reinforcement with color and pattern throughout thickness.
 - 1. Manufacturers:
 - a. Eco-Grip: www.eco-gripfloor.com or approved equivalent.
 - 2. Minimum Requirements: Comply with ASTM G21, D412, and D624 for Mildew Resistance, Tensile Strength, and Tear Strength.
 - 3. Fire Testing: NFPA Type I Rated
 - 4. Total Thickness: 0.26 inch.
 - 5. Color: As indicated on drawings.

2.02 TILE FLOORING

- A. Luxury Vinyl Tile: Solid vinyl with color and pattern throughout thickness.
 - 1. Manufacturers:
 - a. Tarkett: commercial.tarkett.com., or approved equivalent.
 - 2. Minimum Requirements: Comply with ASTM F1700, of Class corresponding to type specified.
 - 3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
 - 4. Square Tile Size: 24 by 24 inch.
 - 5. Total Thickness: 0.100 inch.
 - 6. Color: As indicated on drawings.
- B. Patterns: As indicated on the Drawings, provide custom designs indicated using flooring manufacturer's waterjet cutting technology. Final design shall be approved by Architect prior to cutting and installation.

2.03 RESILIENT BASE

- A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; style as scheduled.
 - 1. Manufacturers: Provide product as indicated on Drawings, or approved equivalent by one of the following.
 - a. Burke Flooring: www.burkeflooring.com.
 - b. Johnsonite, a Tarkett Company: www.johnsonite.com.
 - c. Roppe Corporation: www.roppe.com.
 - 2. Height: 4 inch.
 - 3. Thickness: 0.125 inch.
 - 4. Finish: Satin.
 - 5. Length: Roll.
 - 6. Color: As indicated on drawings.

2.04 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.

- B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
- C. Moldings, Transition and Edge Strips: Same material as flooring, unless otherwise indicated.
- D. Filler for Coved Base: Plastic.
- E. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 - 1. Test as Follows:
 - a. Alkalinity (pH): ASTM F710.
 - b. Internal Relative Humidity: ASTM F2170.
 - c. Moisture Vapor Emission: ASTM F1869.
 - 2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI (RWP).
- B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- C. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- D. Prohibit traffic until filler is fully cured.
- E. Clean substrate.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Adhesive-Applied Installation:
 - 1. Spread only enough adhesive to permit installation of materials before initial set.
 - 2. Fit joints and butt seams tightly.
 - 3. Set flooring in place, press with heavy roller to attain full adhesion.
- D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
 - 1. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
 - 2. Resilient Strips: Attach to substrate using adhesive.
- F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

3.05 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION 096500

SECTION 099113
EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - 1. Exposed surfaces of steel lintels and ledge angles.
 - 2. Mechanical and Electrical:
 - a. On the roof and outdoors, paint equipment that is exposed to weather or to view, except factory-finished materials.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Non-metallic roofing and flashing.
 - 6. Stainless steel, anodized aluminum, bronze, terne coated stainless steel, zinc, and lead.
 - 7. Floors, unless specifically indicated.
 - 8. Brick, glass unit masonry, and cast stone.
 - 9. Glass.
 - 10. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 099123 - Interior Painting.

1.03 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this section.

1.04 SUBMITTALS

- A. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
 - 3. Manufacturer's installation instructions.
 - 4. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.

- B. Verification Samples: Submit three (3) paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
 - 2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens definitely not required.
 - 3. Allow 30 days for approval process, after receipt of complete samples by Architect.
 - 4. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as masonry and factory finished metals, have been approved.
- C. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.
- D. Maintenance Data: Submit coating maintenance manual including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Paint and Finish Materials: 1 gallon of each color and type; from the same product run, store where directed.
 - 2. Label each container with color and type in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five (5) years' experience and approved by manufacturer.

1.06 MOCK-UP

- A. Provide door and frame assembly illustrating paint color, texture, and finish.
- B. Locate where directed by Architect.
- C. Approved mock-up may remain as part of the work.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer, no exceptions.
- B. Paints:
 - 1. Base Manufacturer: Sherwin-Williams Company: www.sherwin-williams.com, except as indicated.
 - 2. Behr Process Corporation: www.behr.com/#sle.
 - 3. Benjamin Moore & Co.: www.benjaminmoore.com.
 - 4. Kelly-Moore Paint Company, Inc.: www.kellymoore.com.
 - 5. PPG Paints: www.ppgpaints.com/#sle.
 - 6. Tnemec Company, Inc.: www.tnemec.com.
- C. Primer Sealers: Same manufacturer as top coats.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready mixed, unless required to be a field-catalyzed paint.
 - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 - 3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
 - 4. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Flammability: Comply with applicable code for surface burning characteristics.
- C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- D. Colors: As indicated on drawings.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Masonry/Concrete, Opaque, Latex, 3 Coat:
 - 1. One coat of block filler.
 - 2. Semi-gloss: Two coats of latex enamel; Sherwin-Williams Solo Acrylic Semi-Gloss, A76 Series.

- B. Galvanized Metals, Epoxy, 3 Coat: Provide the following system, or equivalent products by Sherwin-Williams or PPG Paints.
 - 1. One coat zinc primer; Tnemec Company, Inc.; Series 94-H2O Hydro-Zinc: www.tnemec.com.
 - 2. Intermediate coat epoxy; Tnemec Company, Inc.; Series 27WB Tyoxy: www.tnemec.com.
 - 3. Semi-gloss: One coat air dry fluoropolymer; Tnemec Company, Inc.; Series 1070 Fluoronar: www.tnemec.com.

2.04 PRIMERS

- A. Primers: Provide primer as required and as recommended by manufacturer of top coats for applicable substrate.

PART 3 EXECUTION

3.01 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Masonry (Including concrete masonry):
 - 1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
 - 2. Prepare surface as recommended by top coat manufacturer.
- G. Galvanized Surfaces (Including, but not limited to, handrails and guardrails, and bollards):
 - 1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
 - 2. Prepare surface according to SSPC-SP10/NACE 2.
- H. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.02 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions.

- C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- E. Apply each coat to uniform appearance.
- F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats until complete hide is achieved.
- G. Sand metal surfaces lightly between coats to achieve required finish.
- H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.03 FIELD QUALITY CONTROL

- A. Inspect and test questionable coated areas as directed by Owner.

3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION 099113