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**SECTION 02 4100
DEMOLITION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of built site elements. (Removal and replacement of decorative fence.)
- B. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

- A. General Conditions: Article 3.12 Use of Site & 3.13 Cutting & Patching
- B. General Conditions: 3.12.6 Site Security, and 3.15 Cleaning Up.
- C. General Conditions: 3.12.12 Survey Markers.

1.03 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.04 SUBMITTALS

- A. General Conditions: 3.11 Submittals.
- B. Site Plan: Showing:
 - 1. Areas for temporary construction and field offices.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
 - 2. Identify demolition firm and submit qualifications.
 - 3. Include a summary of safety procedures.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 SCOPE

- A. Remove portions of existing buildings in the following sequence:
 - 1. As shown on the drawings.
- B. Remove fences and gates.
- C. Remove other items indicated, for salvage, relocation, and recycling.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of NFPA 241.
 - 3. Use of explosives is not permitted.
 - 4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 5. Provide, erect, and maintain temporary barriers and security devices. Coordinate with County Representative for final locations, access, and routing.
 - 6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 7. Do not close or obstruct roadways or sidewalks without permit.

8. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
 - C. Do not begin removal until built elements to be salvaged or relocated have been removed.
 - D. Protect existing structures and other elements that are not to be removed.
 1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
 - E. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

3.03 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 1. Verify that construction and utility arrangements are as shown.
 2. Report discrepancies to Architect before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
 1. Provide, erect, and maintain temporary dustproof partitions of construction, coordinate with County Representative for locations, and extents.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- D. Remove existing work as indicated and as required to accomplish new work.
 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
 2. Remove items indicated on drawings.
- E. Services
 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.

2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 3. Verify that abandoned services serve only abandoned facilities before removal.
 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- F. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
 4. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

**SECTION 03 0100
CONCRETE REPAIR**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cleaning of existing concrete surfaces.
- B. Repair of exposed structural, shrinkage, and settlement cracks.
- C. Resurfacing of concrete surfaces having spalled areas and other damage.
- D. Repair of deteriorated concrete.
- E. Scope of Work: As indicated on the drawings.

1.02 REFERENCE STANDARDS

- A. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2011a.
- B. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2012a.
- C. ASTM C150/C150M - Standard Specification for Portland Cement; 2012.
- D. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2011.
- E. ASTM C928/C928M - Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Material for Concrete Repairs; 2009.
- F. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 1999 (Reapproved 2008).

1.03 SUBMITTALS

- A. Product Data: Indicate product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

- A. Degreaser:
 - 1. Products:
 - a. SpecChem, LLC; Citrus Cleaner: www.specchemllc.com.
 - b. W.R. Meadows, Inc.; Ultrite Degreaser: www.wrmeadows.com.
- B. Detergent: Non-ionic detergent.

2.02 CEMENTITIOUS PATCHING AND REPAIR MATERIALS

- A. Manufacturers:
 - 1. ARDEX Engineered Cements: www.ardexamericas.com.
 - 2. The QUIKRETE Companies: www.quikrete.com.
 - 3. W.R. Meadows, Inc: www.wrmeadows.com.
- B. Bonding Slurry: Water-based latex admixture complying with ASTM C1059/C1059M, combined with Portland cement and sand in accordance with admixture manufacturer's instructions.
 - 1. Admixture Products:
 - a. The QUIKRETE Companies; QUIKRETE® Concrete Bonding Adhesive: www.quikrete.com.
 - b. SpecChem, LLC; Acrylic Bonder: www.specchemllc.com.
 - c. W.R. Meadows, Inc.; Acry-lok: www.wrmeadows.com.
- C. Cementitious Resurfacing Mortar: One- or two-component, factory-mixed, polymer-modified cementitious mortar designed for continuous thin-coat application.
 - 1. Mixed with water or latex type bonding agent in proportions as recommended by manufacturer.

2. Products:
 - a. ARDEX Engineered Cements; ARDEX Feather Finish: www.ardexamericas.com.
 - b. The QUIKRETE Companies; QUIKRETE® Concrete Resurfacer: www.quikrete.com.
 - c. W.R. Meadows, Inc.; Parge-All AF or Meadow-Patch T2: www.wrmeadows.com.
- D. Cementitious Repair Mortar, Trowel Grade: One- or two-component, factory-mixed, polymer-modified cementitious mortar.
 1. In-place material capable of withstanding freeze/thaw conditions.
 2. Products:
 - a. ARDEX Engineered Cements; ARDEX TWP: www.ardexamericas.com.
 - b. The QUIKRETE Companies; QUIKRETE® FastSet™ Repair Mortar: www.quikrete.com.
 - c. W.R. Meadows, Inc.; Meadow-Patch T1, Meadow-Patch T2, Meadow-Patch 5, or Meadow-Patch 20: www.wrmeadows.com.
- E. Pre-Blended Concrete Mix for Small Projects: Construction-grade Portland cement uniformly blended with aggregates and other approved concrete ingredients, requiring only the addition of water.
 1. Compressive Strength; ASTM C39/C39M: 4000 pounds per square inch (27.6 MPa), minimum, at 28 days.
 2. Products:
 - a. The QUIKRETE Companies; QUIKRETE® Concrete Mix: www.quikrete.com.
 - b. The QUIKRETE Companies; QUIKRETE® Crack Resistant Concrete Mix: www.quikrete.com.

2.03 EPOXY PATCHING AND REPAIR MATERIALS

- A. Epoxy Injection Adhesive:

2.04 ANCILLARY MATERIALS

- A. Anchoring Adhesive: Self-leveling or non-sag as applicable.

1. Self-Leveling Epoxy Products:
 - a. SpecChem, LLC; SpecPoxy 2000; www.specchemllc.com.
 - b. W.R. Meadows, Inc.; Rezi-Weld 1000, Rezi-Weld 1000 State, Rezi-Weld (IP), or Rezi-Weld 3/2: www.wrmeadows.com.
2. Non-Sag Epoxy Products:
 - a. SpecChem, LLC; SpecPoxy 3000 or SpecPoxy 3000 FS; www.specchemllc.com.
 - b. W.R. Meadows, Inc.; Rezi-Weld Gel Paste or Rezi-Weld Gel Paste State: www.wrmeadows.com.

- B. Portland Cement: ASTM C150, Type I, grey.

- C. Sand: ASTM C33 or ASTM C404; uniformly graded, clean.

- D. Water: Clean and potable.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work.
- B. Beginning of installation means acceptance of substrate.

3.02 CLEANING EXISTING CONCRETE

- A. Clean concrete surfaces of dirt or other contamination using the gentlest method that is effective.
 1. Try the gentlest method first, then, if not clean enough, use a less gentle method taking care to watch for impending damage.
 2. Clean out cracks and voids using same methods.
- B. The following are acceptable cleaning methods, in order from gentlest to less gentle:

1. Water washing using low-pressure, maximum of 100 psi, and, if necessary, brushes with natural or synthetic bristles.
2. Increasing the water washing pressure to maximum of 400 psi.
3. Adding detergent to washing water; with final water rinse to remove residual detergent.
4. Steam-generated low-pressure hot-water washing.

3.03 CRACK REPAIR USING EPOXY ADHESIVE INJECTION

- A. Repair exposed cracks.
- B. Provide temporary entry ports spaced to accomplish movement of fluids between ports; no deeper than the depth of the crack to be filled or port size diameter no greater than the thickness of the crack. Provide temporary seal at concrete surface to prevent leakage of adhesive.
- C. Inject adhesive into ports under pressure using equipment appropriate for particular application.
- D. Begin injection at lower entry port and continue until adhesive appears in adjacent entry port. Continue from port to port until entire crack is filled.
- E. Remove temporary seal and excess adhesive.
- F. Clean surfaces adjacent to repair and blend finish.

3.04 CONCRETE SURFACE REPAIR USING CEMENTITIOUS MATERIALS

- A. Clean concrete surfaces, cracks, and joints of dirt, laitance, corrosion, and other contamination using method(s) specified above and allow to dry.
- B. Apply coating of bonding agent to entire concrete surface to be repaired.
- C. Fill voids with cementitious mortar flush with surface.
- D. Apply repair mortar by steel trowel to a minimum thickness of 1/4 inch (6 mm) over entire surface, terminating at a vertical change in plane on all sides.
- E. Trowel finish to match adjacent concrete surfaces.

END OF SECTION

SECTION 03 4900
GLASS-FIBER REINFORCED CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Architectural precast glass-fiber-reinforced concrete wall panels.
- B. Supports, anchors, and attachments.

1.02 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011.
- B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2010.
- C. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2011a.
- D. ASTM C150/C150M - Standard Specification for Portland Cement; 2012.
- E. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete; 2010.
- F. PCI MNL-128 - Recommended Practice for Glass Fiber Reinforced Concrete Panels; Precast/Prestressed Concrete Institute; 2001, Fourth Edition.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate locations, fabrication details, reinforcement, metal framing details, connection details, dimensions, and relationship to adjacent materials. Provide erection drawings.
- B. Samples: Submit two samples 8 inch (N/A mm) by 8 inch (N/A mm) in size illustrating surface color, finish and texture.
- C. Manufacturer's Installation Instructions: Indicate surface cleaning instructions.
- D. Designer Qualifications.
- E. Fabricator Qualifications.
- F. Installer Qualifications.

1.05 QUALITY ASSURANCE

- A. Designer Qualifications: Design units under direct supervision of a Professional Engineer experienced in design of this Work and licensed in the State in which the Project is located.
- B. Fabricator Qualifications: Company specializing in performing the work of this section. Company needs to show four similar installations.
- C. Erector Qualifications: Company specializing in performing the work of this section.

1.06 MOCK-UP

- A. Construct one panel, four feet (N/A m) long by unit width feet (N/A m) wide, with surface finish applied, including supporting backup structure, and attachments.
- B. Locate where directed.
- C. Mock-up may remain as part of the Work.

1.07 PROJECT CONDITIONS

- A. Coordinate the Work with installation of backup supporting structure, windows.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Handle units to position, consistent with their shape and design. Lift and support only from support points.
- B. Lifting Device: Capable of maintaining unit shape during manufacture, storage, transportation, erection, and in position for fastening.
- C. Blocking and Lateral Support During Transport and Storage: Clean, non-staining, without causing harm to exposed surfaces. Provide temporary lateral support to prevent bowing and warping. Place spacers in same location during transport and site storage.
- D. Protect edges of units to prevent staining, chipping, or spalling of concrete.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Glass-Fiber-Reinforced Concrete:
 - 1. Moonlight Molds, Inc, 14920 S. San Pedro St. Gardena, CA 90328 (310) 538-9142. NO SUBSTITUTIONS ALLOWED.

2.02 GLASS-FIBER-REINFORCED CONCRETE UNITS

- A. Glass-Fiber-Reinforced Concrete Units: Factory-fabricated, complying with PCI MNL-128, using rigid molds, constructed to maintain unit panel uniform in shape, size and finish.
 - 1. Design and fabricate to comply with applicable code(s).
 - 2. Design to withstand dead loads, positive and negative wind loads, and erection forces.
 - 3. Control deflection of units to maintain fit with adjacent construction and openings within their tolerances.
 - 4. Design connections to accommodate building movement without damage to components, wracking of joint connections, breakage of seals, or moisture penetration.
 - 5. Allow for adjustment of connections to accommodate misalignment of structure without permanent distortion.
 - 6. Concrete Mix: Of strength to accommodate panel configuration, panel size and weight, and manufacturing criteria, air entrained.
 - 7. Appearance: Ensure exposed-to-view finish surfaces of units are uniform in color and appearance.
 - 8. Finish of Exposed-to-View Precast Unit Surfaces: Match adjacent cast-in-place concrete finish.

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150 Portland Type I - Normal; white color.
- B. Concrete Aggregates: ASTM C33.
- C. Reinforcement: Alkali resistant chopped glass fiber rovings specifically formulated for use in concrete, with lengths varying from 1-1/2 to 2 inches (38 to 51 mm).
- D. Color Additives: Pure, concentrated mineral pigments specifically intended for mixing into concrete and complying with ASTM C979.
 - 1. Color(s): As indicated on drawings.

2.04 FRAMING MATERIALS

- A. Metal Framing Members: Formed from hot-dipped galvanized steel sheet, ASTM A653/A653M, SS Grade 50 (340) Class 1, with G90/Z275 coating.

2.05 SUPPORT DEVICES

- A. Connecting and Support Devices: ASTM A666 Type 304 stainless steel.

2.06 FABRICATION

- A. Spray-up concrete mix in multiple passes; maintain consistent quality during manufacture.
- B. Place metal framing members in position in mold.

- C. Embed anchors, inserts, plates, angles, and other cast-in items as indicated on shop drawings.
- D. Fabricate connecting devices, items fit to framing members, fasteners and accessories necessary for proper installation.
- E. Locate hoisting devices to permit device removal after erection.
- F. Cure units to minimize appearance blemishes such as non-uniformity, staining or surface cracking.
- G. Identify each unit with corresponding code on erection drawings, in location not visible in finish work.
- H. Exposed Non-Galvanized Steel Components: Clean surfaces of rust, scale, grease, and foreign matter; prime paint in one coat, except surfaces in direct contact with concrete or requiring field welding.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that building structure, anchors, devices, and openings are ready to receive work of this section.

3.02 PREPARATION

- A. Provide for erection procedures and induced loads during erection. Maintain temporary bracing in place until final support is provided.

3.03 ERECTION

- A. Coordinate installation with that of structural supports, backup, and opening framing, if any.
- B. Erect units without damage to shape or finish. Replace or repair damaged panels.
- C. Erect units level and plumb within allowable tolerances.

3.04 TOLERANCES

- A. Maximum Variation from Plane of Location: 1/4 inch in 10 feet and 3/8 inch in 100 feet (6 mm in 3 m and 9 mm in 30 m), non-cumulative.
- B. Maximum Offset from True Alignment Between Two Connecting Units: 1/4 inch (6 mm).
- C. Variation From Dimensions Indicated on Shop Drawings: Plus or minus 1/8 inch (3 mm).
- D. Bowing of Units: Length of Unit/ 360.
- E. Exposed Joint Dimension: 1/2 inch (12 mm) plus or minus 1/4 inch (6 mm).

3.05 PROTECTION

- A. Protect installed units from damage.

END OF SECTION

**SECTION 04 0511
MASONRY MORTARING AND GROUTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 RELATED REQUIREMENTS

- A. Section 04 2000 - Unit Masonry: Installation of mortar and grout.
- B. Section 04 2616 - Adhered Masonry Veneer

1.03 REFERENCE STANDARDS

- A. ASTM C5 - Standard Specification for Quicklime for Structural Purposes; 2010.
- B. ASTM C91/C91M - Standard Specification for Masonry Cement; 2012.
- C. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2012.
- D. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2011.
- E. ASTM C150/C150M - Standard Specification for Portland Cement; 2012.
- F. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).
- G. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2012.
- H. ASTM C387/C387M - Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar; 2011b.
- I. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2011.
- J. ASTM C476 - Standard Specification for Grout for Masonry; 2010.
- K. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2012.
- L. ASTM C1019 - Standard Test Method for Sampling and Testing Grout; 2011.

1.04 SUBMITTALS

- A. 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.
- B. Reports: Submit reports on grout indicating conformance of component grout materials to requirements of ASTM C476 and test and evaluation reports to requirements of ASTM C 1019.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

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. Maintain materials and surrounding air temperature to minimum 40 degrees F (5 degrees C) prior to, during, and 48 hours after completion of masonry work.
- B. Maintain materials and surrounding air temperature to maximum 90 degrees F (32 degrees C) prior to, during, and 48 hours after completion of masonry work.

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 Mix Designs: ASTM C270, Property Specification.
 - 1. Historic Exterior Masonry Pointing Mortar: Type O; color to match existing.
 - 2. Exterior, Loadbearing Masonry: Type N.
 - 3. Exterior, Non-loadbearing Masonry: Type N.
- C. Grout Mix Designs:
 - 1. Engineered Masonry: 3,000 psi (21 MPa) strength at 28 days; 8-10 inches (200-250 mm) slump; provide premixed type in accordance with ASTM C 94/C 94M.

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. Packaged Dry Material for Mortar for Repointing: Premixed Portland cement, hydrated lime, and graded sand; capable of producing Type O mortar in accordance with ASTM C270 with the addition of water only.
- C. Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.
- D. Portland Cement: ASTM C150.
 - 1. Type: Type I - Normal.
 - 2. Color: Standard gray.
- E. Masonry Cement: ASTM C91.
 - 1. Type: Type N.
- F. Hydrated Lime: ASTM C207, Type S.
- G. Quicklime: ASTM C5, non-hydraulic type.
- H. Mortar Aggregate: ASTM C144.
- I. Grout Aggregate: ASTM C404.
- J. Water: Clean and potable.
- K. Bonding Agent: Latex type.

2.03 MORTAR MIXING

- A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.
- B. Maintain sand uniformly damp immediately before the mixing process.
- C. Do not use anti-freeze compounds to lower the freezing point of mortar.
- D. If water is lost by evaporation, re-temper only within two hours of mixing.

2.04 GROUT MIXING

- A. Mix grout in accordance with ASTM C94/C94M.
- B. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and coarse grout.

PART 3 EXECUTION

3.01 PREPARATION

- A. Apply bonding agent to existing concrete surfaces.

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- B. Plug clean-out holes for grouted masonry with brick masonry units. Brace masonry to resist wet grout pressure.

3.02 INSTALLATION

- A. Install mortar and grout to requirements of section(s) in which masonry is specified.

3.03 GROUTING

- A. Perform all grouting by means of low-lift technique. Do not employ high-lift grouting.
- B. Low-Lift Grouting:
 - 1. Limit height of pours to 12 inches (300 mm).
 - 2. Limit height of masonry to 16 inches (400 mm) above each pour.
 - 3. Pour grout only after vertical reinforcing is in place; place horizontal reinforcing as grout is poured. Prevent displacement of bars as grout is poured.
 - 4. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.

3.04 FIELD QUALITY CONTROL

- A. Test and evaluate mortar in accordance with ASTM C780 procedures.
 - 1. Test with same frequency as specified for masonry units.
- B. Test and evaluate grout in accordance with ASTM C1019 procedures.
 - 1. Test with same frequency as specified for masonry units.

END OF SECTION

**SECTION 04 2000
UNIT MASONRY**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete Block.
- B. Clay Facing Brick.
- C. Common Brick.
- D. Reinforcement and Anchorage.

1.02 RELATED REQUIREMENTS

- A. Section 04 0511 - Masonry Mortaring and Grouting.
- B. Section 04 2616 Adhered Masonry Veneer

1.03 REFERENCE STANDARDS

- A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures and Related Commentaries; American Concrete Institute International; 2011.
- B. ASTM A82/A82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 2007.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2012.
- E. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2009a.
- F. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale); 2012.
- G. ASTM C67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile; 2012.
- H. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2012.
- I. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2011.
- J. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).
- K. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale); 2012.
- L. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2011.
- M. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2012.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Samples: Submit four samples of facing brick units to illustrate color, texture, and extremes of color range.

- D. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

1.06 QUALITY ASSURANCE

- A. Comply with provisions of ACI 530/530.1/ERTA, except where exceeded by requirements of the contract documents.

1.07 MOCK-UP

- A. Construct a masonry wall as a mock-up panel sized 8 feet (2.4 m) long by 6 feet (1.8 m) high; include mortar and accessories and structural backup in mock-up.
- B. Locate where directed.
- C. Mock-up may remain as part of the Work.

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.

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 x 8 inches (400 x 200 mm) and nominal depth of 8 inches (200 mm).
 - 2. Special Shapes: Provide non-standard blocks configured for corners.
 - 3. Load-Bearing Units: ASTM C90, normal weight.
 - a. Hollow block, as indicated.
 - b. Exposed faces: Manufacturer's standard color and texture where indicated.
 - 4. Non-Loadbearing Units: ASTM C129.
 - a. Hollow block, as indicated.
 - b. Lightweight.

2.02 BRICK UNITS

- A. Facing Brick: ASTM C216, Type FBS, Grade SW.
 - 1. Nominal size: As indicated on drawings.
 - 2. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.
- B. Building (Common) Brick: ASTM C62, Grade SW; solid units.
 - 1. Nominal size: As indicated on drawings.
 - 2. Compressive strength: As indicated on drawings, measured in accordance with ASTM C67.

2.03 MORTAR AND GROUT MATERIALS

- A. Mortar and grout: As specified in Section 04 0511.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Grout Aggregate: ASTM C404.

2.04 REINFORCEMENT AND ANCHORAGE

- A. Reinforcing Steel: ASTM A615/A615M Grade 40 (280) deformed billet bars; galvanized.
- B. Single Wythe Joint Reinforcement: Truss or ladder type; ASTM A 82/A 82M steel wire, mill galvanized to ASTM A 641/A 641M, Class 3; 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage on each exposure.
- C. 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 (1.91 mm) thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
2. Wire ties: Manufacturer's standard shape, 0.1875 inch (4.75 mm) thick.
3. Vertical adjustment: Not less than 3-1/2 inches (89 mm).

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.

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. 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 (5 degrees C) prior to, during, and 48 hours after completion of masonry work.
- B. Maintain materials and surrounding air temperature to maximum 90 degrees F (32 degrees C) 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 (200 mm).
 3. Mortar Joints: Concave.
- D. Brick Units:
 1. Bond: Running.
 2. Coursing: Three units and three mortar joints to equal 8 inches (200 mm).
 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.

3.06 WEEPS/CAVITY VENTS

- A. Install weeps in veneer and cavity walls at 24 inches (600 mm) on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom 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.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches (400 mm) on center.

3.09 REINFORCEMENT AND ANCHORAGE - SINGLE WYTHE MASONRY

- A. Install horizontal joint reinforcement 16 inches (400 mm) on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches (150 mm).

3.10 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Install horizontal joint reinforcement 16 inches (400 mm) on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches (150 mm).
- E. Masonry Back-Up: Embed anchors to bond veneer at maximum 16 inches (400 mm) on center vertically and 36 inches (900 mm) on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.

3.11 GROUTED COMPONENTS

- A. Lap splices minimum 24 bar diameters.
- B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.
- C. Place and consolidate grout fill without displacing reinforcing.

3.12 BUILT-IN WORK

- A. As work progresses, install built-in fabricated metal frames 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.

3.13 TOLERANCES

- A. Maximum Variation from Alignment of Columns: 1/4 inch (6 mm).
- B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch (1.6 mm).
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft (6 mm/3 m) and 1/2 inch in 20 ft (13 mm/6 m) or more.
- D. Maximum Variation from Plumb: 1/4 inch (6 mm) per story non-cumulative; 1/2 inch (13 mm) in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft (3 mm/3 m) and 1/4 inch in 10 ft (6 mm/3 m); 1/2 inch in 30 ft (13 mm/9 m).
- F. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft (3 mm/m).

3.14 CUTTING AND FITTING

- A. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.15 FIELD QUALITY CONTROL

- A. Clay Masonry Unit Tests: Test each variety of clay masonry in accordance with ASTM C67 requirements, sampling 5 randomly chosen units for each 50,000 installed.
- B. Mortar Tests: Test each type of mortar in accordance with ASTM C780, testing with same frequency as masonry samples.

3.16 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.

3.17 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

**SECTION 04 2616
ADHERED MASONRY VENEER**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Thin Brick.
- B. Adhesives.
- C. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 04 0511 - Masonry Mortaring and Grouting.

1.03 REFERENCE STANDARDS

- A. ANSI A108 Series/A118 Series/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2012.1.
- B. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy and Water Cleanable Tile Setting Epoxy Adhesive; 2012.1.
- C. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile; 2012.1.
- D. ASTM C841 - Standard Specification for Installation of Interior Lathing and Furring; 2003 (Reapproved 2008)e1.
- E. ASTM C933 - Standard Specification for Welded Wire Lath; 2011.
- F. ASTM C1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster; 2012a.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

- A. Product Data: Provide data for thin brick units, mortar, grout, and adhesive.
- B. Samples: Submit four samples of thin brick units to illustrate color, texture, and extremes of color range.
- C. Manufacturer's Certificate: Certify that thin brick units, adhesives, mortar, and grout meet or exceed specified requirements.

1.06 MOCK-UP

- A. Construct a mock-up panel sized 8 feet (2.4 m) long by 6 feet (1.8 m) high; include mortar, grout, adhesives, accessories, substrate, and representative wall openings in mock-up.
- B. Locate where directed.
- C. Mock-up may remain as part of the Work.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.
- B. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

1.08 FIELD CONDITIONS

- A. Do not install adhesives in an unventilated environment.
- B. Maintain materials and surrounding air temperature to minimum 40 degrees F (5 degrees C) prior to, during, and 48 hours after completion of masonry work.

- C. Maintain materials and surrounding air temperature to maximum 90 deg F (32 deg C) prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.01 THIN BRICK

- A. Manufacturers:
- B. Thin Brick: ASTM C1088.
 - 1. Type: TBX.
 - 2. Size: Manufacturer's standard Modular.
 - 3. Thickness: 5/8 inch (16 mm).
 - 4. Tolerances: 1/16 inch (1.6 mm).
 - 5. Protective Coating: Wax.

2.02 ADHESIVE MATERIALS

- A. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.
- B. Epoxy Adhesive: ANSI A118.3, thinset bond type.

2.03 MORTAR AND GROUT MATERIALS

- A. Mortar and Grout: As specified in Section 04 0511.

2.04 LATH

- A. Welded Wire Lath: ASTM C933; galvanized; with 2 inch (50 mm) square openings, paper or felt backing, of weight to suit application, comply with deflection criteria, and as specified in ASTM C841 for framing spacing.
- B. Beads, Screeds, Joint Accessories, and Other Trim: Depth governed by plaster thickness, maximum possible lengths.

2.05 ACCESSORIES

- A. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive thin brick veneer.
- 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 installation of thin brick veneer.

3.02 INSTALLATION

- A. Exterior Applications: Comply with TCNA installation method W201, W202, or W244E.
- B. Install lath and furring for Portland cement plaster in accordance with ASTM C1063.

3.03 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. Brick Units:
 - 1. Bond: Running.
 - 2. Mortar Joints: Concave.

3.04 PLACING AND BONDING

- A. Remove excess mortar as work progresses.
- B. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove and replace.

- C. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.05 TOLERANCES

- A. Maximum Variation From Unit to Adjacent Unit: 1/16 inch (1.6 mm).
- B. Maximum Variation from Plane of Wall: 1/4 inch in 10 feet (6 mm in 3 m) and 1/2 inch in 20 feet (13 mm in 6 m) or more.
- C. Maximum Variation from Plumb: 1/4 inch (6 mm) per story non-cumulative; 1/2 inch (13 mm) in two stories or more.
- D. Maximum Variation from Level Coursing: 1/8 inch in 3 feet (3 mm in 1 m) and 1/4 inch in 10 feet (6 mm in 3 m); 1/2 inch in 30 feet (13 mm in 9 m).
- E. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft (3 mm/m).

3.06 CLEANING

- A. Remove excess mortar and mortar smears as work progresses.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.

3.07 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

**SECTION 07 0150.19
PREPARATION FOR RE-ROOFING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Removal of existing roofing system in preparation for a new roof membrane system.

1.02 REFERENCE STANDARDS

- A. ASTM C208 - Standard Specification for Cellulosic Fiber Insulating Board; 2012.
- B. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2008.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.
- B. Schedule work to coincide with commencement of installation of new roofing system.

1.04 FIELD CONDITIONS

- A. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Temporary Protection: Sheet polyethylene; provide weights to retain sheeting in position.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing roof surface is clear and ready for work of this section.

3.02 PREPARATION

- A. Sweep roof surface clean of loose matter.

3.03 MATERIAL REMOVAL

- A. Remove only existing roofing materials that can be replaced with new materials the same day.
- B. Remove metal counter flashings.

3.04 FIELD QUALITY CONTROL

- A. The drawings identify the approximate limits to material removal.
- B. Testing will identify the condition of existing materials and their reuse, repair or removal.

3.05 PROTECTION

- A. Provide temporary protective sheeting over uncovered deck surfaces.
- B. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights.
- C. Do not permit traffic over unprotected or repaired deck surface.

END OF SECTION

**SECTION 07 2100
THERMAL INSULATION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Batt insulation and vapor retarder in exterior wall construction.

1.02 REFERENCE STANDARDS

- A. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation; 2012.
- B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
- C. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.

1.03 SUBMITTALS

- A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.

2.02 BATT INSULATION MATERIALS

- A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 - 1. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 - 2. Facing: Aluminum foil, flame spread 25 rated; one side.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over member face.
- F. Tape seal tears or cuts in vapor retarder.
- G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

END OF SECTION

**SECTION 07 5100
BUILT-UP BITUMINOUS ROOFING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Built-up roofing membrane, conventional application.
- B. Insulation, flat and tapered.
- C. Vapor retarders.

1.02 ADMINISTRATIVE REQUIREMENTS

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

1.03 SUBMITTALS

- A. Product Data: Provide data indicating membrane and bitumen materials, base flashing materials, insulation, and vapor retarder.
- B. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Perform work in accordance with NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- C. Applicator Qualifications: Company specializing in performing the work of this section.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.
- B. Store products in weather protected environment, clear of ground and moisture.

1.06 FIELD CONDITIONS

- A. Do not apply roofing membrane during unsuitable weather.
- B. Do not apply roofing membrane when ambient temperature is below 40 degrees F (5 degrees C) or above 90 degrees F (N/A degrees C).
- C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

1.07 WARRANTY

- A. Correct defective Work within a two year period after Date of Substantial Completion.
- B. Provide five year manufacturer's material and labor warranty to cover failure to prevent penetration of water.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Sheet and Bitumen Materials:
 - 1. Koppers Inc: www.koppers.com.
 - 2. CertainTeed Corporation: www.certainteed.com.
 - 3. GAF: www.gaf.com.
 - 4. Johns Manville Corporation: www.jm.com.
- B. Insulation:

1. Atlas Roofing Corporation: www.atlasroofing.com.
2. GAF: www.gaf.com.
3. Dow Chemical Co: www.dow.com.
4. Owens Corning Corp: www.owenscorning.com.

2.02 ROOFING - CONVENTIONAL APPLICATION

- A. Built-up Bituminous Roofing: Asphalt felt membrane, four ply plus base sheet, with vapor retarder and insulation.
- B. Acceptable Insulation Types - Tapered Application: Any of the types specified.

2.03 SHEET MATERIALS

- A. Vapor Retarder Felt: Asphalt-saturated organic, ASTM D226, Type I ("No.15") felt, unperforated.
- B. Fire-Resistant Vapor Retarder: Reinforced Kraft paper laminate complying with requirements of fire rating classification; compatible with roofing and insulation materials.
 1. Fire-retardant adhesive.
- C. Base Sheet: Asphalt-saturated and -coated, venting glass fiber felt; ASTM D4897 Type II, heavy-duty.
- D. Roofing Felt: ASTM D2178; Asphalt-saturated glass fiber felt; standard duty.
- E. White Cap Sheet: Asphalt-saturated glass fiber roll roofing surfaced with flexible acrylic coating and ceramic granules; complying with ASTM D3909.
 1. Solar Reflectance: 0.75, minimum, initial, and 0.60, minimum, 3-year aged, certified by Cool Roof Rating Council.
 2. Thermal Emissivity: 0.80, minimum, initial, and 0.85, minimum, 3-year aged, certified by Cool Roof Rating Council.

2.04 BITUMINOUS MATERIALS

- A. Bitumen: ASTM D312 Type I, asphalt.
- B. Primer: ASTM D41, asphalt type.
- C. Roof Cement: ASTM D4586, Type I.

2.05 INSULATION

- A. Cellulose Fiber Board Insulation: ASTM C208, Type II; one faces finished with mineral fiber, asphalt and Kraft paper, with the following characteristics:
 1. Board Thickness: 1/2 inch (13 mm).
 2. Board Edges: Square.
 3. Thermal Conductivity (k factor): 0.38 (0.62).

2.06 ACCESSORIES

- A. Insulation Joint Tape: Glass fiber reinforced type as recommended by insulation manufacturer, compatible with roofing materials; 6 inches (150 mm) wide; self adhering.
- B. Roofing Nails: Galvanized, hot dipped type, size and configuration as required to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify deck surfaces are dry and free of snow or ice.
- E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 WOOD DECK PREPARATION

- A. Verify flatness and tightness of joints of wood decking. Fill knot holes with latex filler.
- B. Conventional Application: Lay one ply of dry sheathing paper; lap edges 2 inches (50 mm). Lay base sheet; lap edges 4 inches (100 mm). Nail laps 6 inches (150 mm) on center. Nail the field area at 12 inches (300 mm) on center staggered.

3.03 CONCRETE DECK PREPARATION

- A. Fill surface honeycomb and variations with latex filler.
- B. Confirm dry deck by moisture meter with 12 percent moisture maximum.

3.04 VAPOR RETARDER INSTALLATION - CONVENTIONAL APPLICATION

- A. Extend vapor retarder under cant strips and blocking.

3.05 MEMBRANE APPLICATION

- A. Equiviscous Temperature (EVT) at Point of Application: In accordance with NRCA recommendations.
- B. Apply membrane plies, weather lap edges and ends, and mop with 20 lb/square (98 kg/100 sq m) of bitumen per ply. Apply plies 2 on 2 in same direction.
- C. Apply smooth, free from air pockets, wrinkles, fish-mouths, or tears.
- D. At end of day's operation, install two plies membrane and bitumen glaze coat for cut-off. Glaze exposed felts. Remove cut-off before resuming roofing.
- E. At intersections with vertical surfaces:
 - 1. Extend membrane and base sheet over cant strips and up a minimum of 4 inches (100 mm) onto vertical surfaces.
 - 2. Mop on base flashing of two additional plies of felt and one ply of base flashing material.
- F. Around roof penetrations, mop in and seal flanges and flashings with two additional plies of felt.
- G. Coordinate installation of roof drains and related flashings.

3.06 FIELD QUALITY CONTROL

- A. Require site attendance of roofing and insulation material manufacturers daily during installation of the Work.

3.07 CLEANING

- A. Remove bituminous markings from finished surfaces.
- B. In areas where finished surfaces are soiled by bitumen or other source of soiling caused by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

3.08 PROTECTION

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

**SECTION 07 9005
JOINT SEALERS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sealants and joint backing.

1.02 REFERENCE STANDARDS

- A. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2011a.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with other sections referencing this section.

1.04 SUBMITTALS

- A. Product Data: Provide data indicating sealant chemical characteristics.
- B. Manufacturer's Installation Instructions: Indicate special procedures.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section.

1.06 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Gunnable and Pourable Sealants:
 1. Adhesives Technology Corporation: www.atc.ws.
 2. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
 3. Bostik Inc: www.bostik-us.com.
 4. Dow Corning Corporation: www.dowcorning.com.
 5. Hilti, Inc: www.us.hilti.com.
 6. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com.
 7. Pecora Corporation: www.pecora.com.
 8. The QUIKRETE Companies: www.quikrete.com.
 9. Red Devil: www.reddevil.com.
 10. Tremco Global Sealants: www.tremcosealants.com.
 11. Sherwin-Williams Company: www.sherwin-williams.com.
 12. W.R. Meadows, Inc: www.wrmeadows.com.

2.02 SEALANTS

- A. Sealants and Primers - General: Provide products having volatile organic compound (VOC) content as specified in Section 01 6116.

2.03 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave.

3.04 CLEANING

- A. Clean adjacent soiled surfaces.

3.05 PROTECTION

- A. Protect sealants until cured.

END OF SECTION

**SECTION 08 5200
WOOD WINDOWS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Factory fabricated wood windows.
- B. Operating hardware.
- C. Wood trim for exterior finishing.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; American Architectural Manufacturers Association; 2011.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Show component dimensions.
- C. Shop Drawings: Indicate opening dimensions.
- D. Manufacturer's Certificate: Certify that products furnished meet or exceed specified requirements.

1.06 QUALITY ASSURANCE

- A. Manufacturer and Installer Qualifications: Company specializing in manufacturing commercial wood windows experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect factory finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C).
- B. Maintain this minimum temperature during and after installation of sealants.

1.09 WARRANTY

- A. Correct defective Work within a five year period after Date of Substantial Completion.
- B. Provide five year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same.
- C. Warranty: Include coverage for:
 - 1. Degradation of color finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Marvin Windows; Clad Ultimate Casement, operating swing window, both crank out and push out models.

2.02 FRAME DESCRIPTION

- A. Interior: Clear Pine
- B. Frame Thickness: 1-3/16 inches.
- C. Frame Depth: Refer to window details on drawings.
- D. Frame Exterior Clad: 0.050 inch thick extruded aluminum.

2.03 SASH DESCRIPTION

- A. Clear Pine
 - 1. Kiln dried to moisture content no greater than twelve (12) percent at the time of fabrication.
 - 2. Water repellent preservative treated in accordance with WDMS I.S.4.
- B. Sash Thickness: 1-7/8 inches with 1" insulated glass.
- C. Sash Exterior: Clad: 0.050 inch thick extruded aluminum.

2.04 FINISH

- A. Exterior: Aluminum clad. Fluoropolymer modified acrylic topcoat over primer. Meets or exceeds AAMA 2605 requirements.
 - 1. Custom Color: Match color of existing windows or front/street side of building. Submit color sample to Owner for field verification and approval.
- B. Painted Interior: Factory applied water based acrylic topcoat over compatible primer.
 - 1. Custom Color: As selected by Owner.

2.05 HARDWARE

- A. Casement Crank Out: Factory installed operating hardware
- B. Locks:
 - 1. Multi-point, sequential, concealed locking system in the jamb opposite the hinge side. Lock handles are removable, non-handed, and same color finish as handles. Standard tie bar, cams and keepers steel coated with E-Gard.
- C. Handles:
 - 1. Folding operating handle, zinc painted with the standard folding cover being molded plastic.
 - 2. Color to match other window components.
- D. Hinges:
 - 1. One at the sill to bottom rail, one at the head jamb to the top rail. Hinges are steel coated with E-Gard. Hinge track is stainless steel. Units with a frame OM of 20 inches and greater use an 18 inch wash/egress hinge to allow the sash to slide across the frame opening which causes the sash exterior to rotate towards the user for easy wash ability. Units under a frame OM of 20 inches width use a standard 2 bar hinge which will position the sash when fully opened to a 90 degree for the user to wash.
- E. Casement Push Out:
 - 1. Hinges:
 - a. One at the sill to bottom rail, one at the head jamb to the top rail. Hinges are steel coated with E-Gard. Hinge track is stainless steel. Units with a frame OM of 20 inches and greater use an 18 inch wash/egress hinge to allow the sash to slide across the frame opening which causes the sash exterior to rotate towards the user for easy wash ability. Units under 20 inch OM width use a standard 2 bar hinge which will position the sash when fully opened to a 90 degree for the user to wash.
 - b. Push Out unit to include one friction limiter device to control the sash open position. The limiter to include adjustable friction via a screw adjustment. The limiter to have multiple positions that can be locked to hold the sash firmly in place.
 - c. Locks are a s multi-point sequential concealed locking system in jamb opposite the hinge side. Lock sets are removable and non-handed. Standard tie bar, cams and keepers are steel coated with E-Gard.
- F. Weather Strip
 - 1. Weather stripping at frame is a hollow foamed material bent around 90 degree corner to allow for seamless corner joints. Sash weather strip is bulb shaped glass filled material.
 - 2. Color: As selected by Owner from manufacturer's standard colors.

G. Jamb Extension

1. Jamb Extensions: Factory applied, applied up to 12 inches wide.
2. Finish: Match adjacent color.

H. Insect Screens

1. Crank Out:
 - a. Retractable wood screen, species to match species of window unit.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

3.03 TOLERANCES

- A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft (1.5 mm/m) non-cumulative or 1/8 inches per 10 ft (3 mm/3 m), whichever is less.

3.04 CLEANING

- A. Remove protective material from factory finished surfaces.
- B. Wash surfaces by method recommended and acceptable to sealant and window manufacturer; rinse and wipe surfaces clean.

END OF SECTION

**SECTION 08 8000
GLAZING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glass.
- B. Glazing compounds and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2011).
- B. ASTM C1036 - Standard Specification for Flat Glass; 2011e1.
- C. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.
- D. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2012a.
- E. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2010.
- F. GANA (GM) - GANA Glazing Manual; Glass Association of North America; 2009.
- G. GANA (SM) - GANA Sealant Manual; Glass Association of North America; 2008.

1.03 SUBMITTALS

- A. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- B. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.
- C. Samples: Submit two samples 6 x6 inch (N/A mm) in size of glass and plastic units, showing coloration and design.
- D. Certificates: Certify that products meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA Glazing Manual and GANA Sealant Manual for glazing installation methods.
- B. Installer Qualifications: Company specializing in performing the work of this section.

1.05 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 50 degrees F (10 degrees C).

1.06 WARRANTY

- A. Sealed Insulating Glass Units: Provide a five (5) year warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.

PART 2 PRODUCTS

2.01 GLAZING TYPES

- A. Type IG-1 - Sealed Insulating Glass Units: Vision glazing.
 - 1. Application(s): All exterior glazing unless otherwise indicated.
 - 2. Outboard Lite: Annealed float glass, 1/4 inch (6 mm) thick, minimum.
 - a. Tint: Clear.
 - 3. Inboard Lite: Annealed float glass, 1/4 inch (6 mm) thick, minimum.
 - a. Tint: Clear.
 - 4. Total Thickness: 1 inch (25 mm).
 - 5. Glazing Method: Gasket glazing.

2.02 EXTERIOR GLAZING ASSEMBLIES

- A. Structural Design Criteria: Select type and thickness to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with ASCE 7.
 - 1. Use the procedure specified in ASTM E1300 to determine glass type and thickness.
 - 2. Limit glass deflection to 1/200 or flexure limit of glass, whichever is less, with full recovery of glazing materials.
 - 3. Thicknesses listed are minimum.

2.03 GLASS MATERIALS

- A. Float Glass Manufacturers:
 - 1. AGC Flat Glass North America, Inc: www.na.agc-flatglass.com.
 - 2. Guardian Industries Corp: www.sunguardglass.com.
 - 3. Pilkington North America Inc: www.pilkington.com/na.
 - 4. PPG Industries, Inc: www.ppgideascape.com.
- B. Float Glass: All glazing is to be float glass unless otherwise indicated.
 - 1. Annealed Type: ASTM C1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select).
 - 2. Heat-Strengthened and Fully Tempered Types: ASTM C1048.
 - 3. Tinted Types: Color and performance characteristics as indicated.
 - 4. Thicknesses: As indicated; for exterior glazing comply with specified requirements for wind load design regardless of specified thickness.

2.04 SEALED INSULATING GLASS UNITS

- A. Manufacturers:
 - 1. Any of the manufacturers specified for float glass.
- B. Sealed Insulating Glass Units: Types as indicated.
 - 1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
 - 2. Edge Spacers: Aluminum, bent and soldered corners.
 - 3. Edge Seal: Glass to elastomer with supplementary silicone sealant.
 - 4. Purge interpane space with dry hermetic air.

2.05 GLAZING COMPOUNDS

2.06 GLAZING ACCESSORIES

- A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C864 Option I. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) x width of glazing rabbet space minus 1/16 inch (1.5 mm) x height to suit glazing method and pane weight and area.
- B. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option I; _____ color.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that openings for glazing are correctly sized and within tolerance.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.02 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.
- D. Install sealant in accordance with manufacturer's instructions.

3.03 INSTALLATION - EXTERIOR/INTERIOR DRY METHOD (GASKET GLAZING)

- A. Place setting blocks at 1/4 points with edge block no more than 6 inches (150 mm) from corners.
- B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.04 CLEANING

- A. Remove glazing materials from finish surfaces.
- B. Remove labels after Work is complete.
- C. Clean glass and adjacent surfaces.

3.05 PROTECTION

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

END OF SECTION

**SECTION 09 2116
GYPSUM BOARD ASSEMBLIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Gypsum wallboard.
- D. Joint treatment and accessories.
- E. Textured finish system.

1.02 REFERENCE STANDARDS

- A. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002 (Reapproved 2007).
- B. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2011a.
- C. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2011.
- D. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2011.
- E. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2011.
- F. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2007.
- G. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2010a.
- H. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2011.
- I. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 2010.

1.03 SUBMITTALS

- A. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.
- B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board application and finishing.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

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

2.02 METAL FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf (240 Pa).
 - 1. Studs: "C" shaped with flat or formed webs with knurled faces.
 - 2. Runners: U shaped, sized to match studs.
- B. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.

2.03 BOARD MATERIALS

- A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - 2. Thickness:
 - a. Vertical Surfaces: 5/8 inch (16 mm).

2.04 ACCESSORIES

- A. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless otherwise indicated.
 - 1. Types: As detailed or required for finished appearance.
- B. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
- C. Textured Finish Materials: Latex-based compound; plain.
- D. Screws for Attachment to Steel Members Less Than 0.03 inch (0.7 mm) In Thickness, to Wood Members, and to Gypsum Board: ASTM C1002; self-piercing tapping type; cadmium-plated for exterior locations.
- E. Screws for Attachment to Steel Members From 0.033 to 0.112 inch (0.8 to 2.8 mm) in Thickness: ASTM C954; steel drill screws for application of gypsum board to loadbearing steel studs.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
- B. Studs: Space studs as permitted by standard.
 - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
 - 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
 - 3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.

3.03 BOARD INSTALLATION

- A. Comply with ASTM C 840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
- B. Corner Beads: Install at external corners, using longest practical lengths.

3.05 JOINT TREATMENT

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 3: Walls to receive textured wall finish.
- B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).

3.06 TEXTURE FINISH

- A. Apply finish texture coating by means of spraying apparatus in accordance with manufacturer's instructions and to match approved sample.

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3.07 TOLERANCES

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

END OF SECTION

**SECTION 09 2216
NON-STRUCTURAL METAL FRAMING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal partition framing.
- B. Framing accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2011a.
- B. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2011.

1.03 SUBMITTALS

- A. Shop Drawings:
 - 1. Indicate prefabricated work, component details, stud layout, framed openings, anchorage to structure, acoustic details, type and location of fasteners, accessories, and items of other related work.
 - 2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement of framing connections.
- B. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- C. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

PART 2 PRODUCTS

2.01 FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf (240 Pa).
 - 1. Studs: C shaped with flat or formed webs with knurled faces.
 - 2. Runners: U shaped, sized to match studs.

2.02 FABRICATION

- A. Fabricate assemblies of framed sections to sizes and profiles required.
- B. Fit, reinforce, and brace framing members to suit design requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.

3.02 INSTALLATION OF STUD FRAMING

- A. Extend partition framing to structure where indicated and to ceiling in other locations.
- B. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
- C. Align and secure top and bottom runners at 24 inches (600 mm) on center.
- D. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- E. Align stud web openings horizontally.
- F. Secure studs to tracks using crimping method. Do not weld.
- G. Fabricate corners using a minimum of three studs.

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- H. Double stud at wall openings, door and window jambs, not more than 2 inches (50 mm) from each side of openings.
- I. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.

3.03 TOLERANCES

- A. Maximum Variation From True Position: 1/8 inch in 10 feet (3 mm in 3 m).
- B. Maximum Variation From Plumb: 1/8 inch in 10 feet (3 mm in 3 m).

END OF SECTION

**SECTION 09 2236.23
METAL LATH**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal lath for Portland cement and gypsum plaster.

1.02 REFERENCE STANDARDS

- A. ASTM C847 - Standard Specification for Metal Lath; 2012.
- B. ASTM C933 - Standard Specification for Welded Wire Lath; 2011.

1.03 SUBMITTALS

- A. Product Data: Provide data on furring and lathing components, structural characteristics, material limitations, and finish.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum five years experience.

PART 2 PRODUCTS

2.01 LATH

- A. Flat Rib Metal Lath: ASTM C847, galvanized; 1/8 inch (3 mm) thick.
 - 1. Weight: To suit application, comply with deflection criteria, and as specified in ASTM C841 for framing spacing.
 - 2. Weight: 1.8 lb/sq yd (1.0 kg/sq m).
- B. Beads, Screeds, Joint Accessories, and Other Trim: Depth governed by plaster thickness, maximum possible lengths.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that substrates are ready to receive work and conditions are suitable for application.
- C. Do not begin until unacceptable conditions have been corrected.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION - GENERAL

- A. Install interior lath and furring in accordance with ASTM C841.

3.03 LATH INSTALLATION

- A. Apply metal lath taut, with long dimension perpendicular to supports.
- B. Lap ends minimum 1 inch (25 mm). Secure end laps with tie wire where they occur between supports.
- C. Continuously reinforce internal angles with corner mesh, except where the metal lath returns 3 inches (75 mm) from corner to form the angle reinforcement; fasten at perimeter edges only.
- D. Place corner bead at external wall corners; fasten at outer edges of lath only.
- E. Place base screeds at termination of plaster areas; secure rigidly in place.
- F. Place 4 inch (100 mm) wide strips of metal lath centered over junctions of dissimilar backing materials. Secure rigidly in place.
- G. Place lath vertically above each top corner and each side of door frames to 6 inches (150 mm) above ceiling line.

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- H. Place casing beads at terminations of plaster finish. Butt and align ends. Secure rigidly in place.
- I. Place additional strip mesh diagonally at corners of lathed openings. Secure rigidly in place.

3.04 TOLERANCES

- A. Maximum Variation from True Lines and Levels: 1/8 inch in 10 feet (3 mm in 3 m).
- B. Maximum Variation from True Position: 1/8 inch (3 mm).

END OF SECTION

**SECTION 09 2400
PORTLAND CEMENT PLASTERING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Portland cement plaster for installation over metal lath, masonry, concrete, and solid surfaces.

1.02 RELATED REQUIREMENTS

- A. Section 09 2236.23 - Metal Lath: Metal furring and lathing for plaster.

1.03 REFERENCE STANDARDS

- A. ASTM C91/C91M - Standard Specification for Masonry Cement; 2012.
- B. ASTM C150/C150M - Standard Specification for Portland Cement; 2012.
- C. ASTM C206 - Standard Specification for Finishing Hydrated Lime; 2003 (Reapproved 2009).
- D. ASTM C926 - Standard Specification for Application of Portland Cement-Based Plaster; 2012a.

1.04 SUBMITTALS

- A. Product Data: Provide data on plaster materials, characteristics and limitations of products specified.
- B. Samples: Submit two samples, 6 x 6 inch (N/A mm) in size illustrating finish color and texture.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section.

1.06 MOCK-UP

- A. Construct mock-up of exterior wall, 6 feet (N/A m) long by 6 feet (N/A m) wide, illustrating surface finish.

1.07 FIELD CONDITIONS

- A. Do not apply plaster when substrate or ambient air temperature is under 50 degrees F (10 degrees C) or over 80 degrees F (27 degrees C).
- B. Maintain minimum ambient temperature of 50 degrees F (10 degrees C) during installation of plaster and until cured.

PART 2 PRODUCTS

2.01 PORTLAND CEMENT PLASTER ASSEMBLIES

- A. Exterior Stucco: Portland cement plaster system, made of finish, brown, and scratch coat and reinforcing mesh.

2.02 PLASTER MATERIALS

- A. Portland Cement, Aggregates, and Other Materials: In accordance with ASTM C926.
- B. Premixed Plaster for Stucco Scratch, Brown, and Finish Coats: Complying with material requirements of ASTM C926.
- C. Portland Cement: ASTM C150, Type I.
 - 1. For finish coat: White color.
- D. Masonry Cement: ASTM C91 Type N.
- E. Lime: ASTM C206, Type S.
- F. Aggregate: Natural sand, within the following sieve sizes and percentage retained limits:
 - 1. No. 4 (4.75 mm): 0.
 - 2. No. 8 (2.36 mm): 0 to 5.
 - 3. No. 16 (1.18 mm): 5 to 30.

- G. Water: Clean, fresh, potable and free of mineral or organic matter that could adversely affect plaster.

2.03 METAL LATH

- A. Metal Lath and Accessories: As specified in Section 09 2236.23.
- B. Beads, Screeds, and Joint Accessories: As specified in Section 09 2236.23.

2.04 PLASTER MIXES

- A. Over Solid Bases: Two-coat application, mixed and proportioned in accordance with manufacturer's instructions.
- B. Over Metal Lath: Three-coat application, mixed and proportioned in accordance with manufacturer's instructions.
- C. Premixed Plaster Materials: Mix in accordance with manufacturer's instructions.
- D. Mix only as much plaster as can be used prior to initial set.
- E. Mix materials dry, to uniform color and consistency, before adding water.
- F. Protect mixtures from freezing, frost, contamination, and excessive evaporation.
- G. Do not retemper mixes after initial set has occurred.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify the suitability of existing conditions before starting work.
- B. Masonry: Verify joints are cut flush and surface is ready to receive work of this section. Verify no bituminous or water repellent coatings exist on masonry surface.
- C. Concrete: Verify surfaces are flat, honeycomb are filled flush, and surfaces are ready to receive work of this section. Verify no bituminous, water repellent, or form release agents exist on concrete surface that are detrimental to plaster bond.
- D. Metal Lath and Accessories: Verify lath is flat, secured to substrate, and joint and surface perimeter accessories are in place.

3.02 PREPARATION

- A. Dampen masonry surfaces to reduce excessive suction.
- B. Clean concrete surfaces of foreign matter. Clean surfaces using acid solutions, solvents, or detergents. Wash surfaces with clean water.
- C. Roughen smooth concrete surfaces and apply bonding agent in accordance with manufacturer's instructions.

3.03 PLASTERING

- A. Apply plaster in accordance with ASTM C926.
- B. Moist cure base coats.
- C. Apply second coat immediately following initial set of first coat.
- D. After curing, dampen previous coat prior to applying finish coat.
- E. Avoid excessive working of surface. Delay troweling as long as possible to avoid drawing excess fines to surface.
- F. Moist cure finish coat for minimum period of 48 hours.

3.04 TOLERANCES

- A. Maximum Variation from True Flatness: 1/8 inch in 10 feet (3 mm in 3 m).

END OF SECTION

**SECTION 09 9000
PAINTING AND COATING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, and other coatings.
- C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically so 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. Floors, unless specifically so indicated.
 - 7. Glass.
 - 8. Concealed pipes, ducts, and conduits.

1.02 DEFINITIONS

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

1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2012.
- C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2007.
- D. GreenSeal GS-11 - Paints; 1993.

1.04 SUBMITTALS

- A. Product Data: Provide complete list of all products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. MPI product number (e.g. MPI #47).
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
 - 4. Manufacturer's installation instructions.
 - 5. If proposal of substitutions is allowed under submittal procedures, explanation of all substitutions proposed.
- B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) 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 14 for approval process, after receipt of complete samples by Architect.
- C. Certification: By manufacturer that all paints and coatings do not contain any of the prohibited chemicals specified; GreenSeal GS-11 certification is not required but if provided shall constitute acceptable certification.

- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Paint and Coatings: 1 gallon (4 L) of each color; store where directed.
 - 3. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience.

1.06 MOCK-UP

- A. Provide panel, 6 feet (N/A m) long by 6 feet (N/A m) wide, illustrating selected coating color, texture, and finish.
- B. Provide door and frame assembly illustrating paint coating color, texture, and finish.
- C. Locate where directed.
- D. 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 (7 degrees C) and a maximum of 90 degrees F (32 degrees C), 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 coatings 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: 45 degrees F (7 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 - 1. Comex Group (Color Wheel, Frazee, General Paint, Kwal, or Parker): www.thecomexgroup.com.
 - 2. Glidden Professional: www.gliddenprofessional.com.
 - 3. Benjamin Moore & Co: www.benjaminmoore.com.
 - 4. PPG Architectural Finishes, Inc: www.ppgaf.com.
 - 5. Pratt & Lambert Paints: www.prattandlambert.com.
 - 6. Sherwin-Williams Company: www.sherwin-williams.com.

2.02 PAINTS AND COATINGS - GENERAL

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.

1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 2. Supply each coating material in quantity required to complete entire project's work from a single production run.
 3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Volatile Organic Compound (VOC) Content:
1. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Colors: As indicated on drawings

2.03 PAINT SYSTEMS - EXTERIOR

- A. All Exterior Concrete and Masonry Surfaces
1. Preparation as specified by manufacturer.
 2. Two top coats and one coat primer recommended by manufacturer.
 3. Primer On Concrete and Concrete Masonry: One heavy coat latex block filler (100 percent acrylic) squeegeed into pores.
- B. Paint WE-OP-3L - Wood, Opaque, Latex, 3 Coat:
1. One coat of latex primer sealer.
 2. Semi-gloss: Two coats of latex enamel.
- C. Paint GE-OP-2L - Gypsum Board and Plaster, Opaque, Latex, 2 Coat:
1. One coat of latex primer sealer.
 2. Flat: One coat of latex.

2.04 PAINT SYSTEMS - INTERIOR

- A. Paint I-OP - All Interior Surfaces Indicated to be Painted, Unless Otherwise Indicated: Including gypsum board and wood.
1. Two top coats and one coat primer.
 2. Primer(s): As recommended by manufacturer of top coats.
- B. Paint WI-OP-2L - Wood, Opaque, Latex, 2 Coat:
1. One coat of latex primer sealer.
 2. Semi-gloss: One coat of latex enamel.
 3. Eggshell: One coat of latex enamel.
 4. Flat: One coat of latex enamel.
- C. Paint GI-OP-3L - Gypsum Board/Plaster, Latex, 3 Coat:
1. One coat of alkyd primer sealer.
 2. Semi-gloss: Two coats of latex enamel.
 3. Eggshell: Two coats of latex enamel.
 4. Flat: Two coats of latex enamel.

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.
- B. Patching Material: Latex filler.

- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of coatings until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.
 - 2. Plaster and Stucco: 12 percent.
 - 3. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 - 4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
 - 5. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to coating 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 repair existing coatings that exhibit surface defects.
- D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- G. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
- I. Plaster Surfaces to be Painted: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- J. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied. Back prime concealed surfaces before installation.

3.03 APPLICATION

- A. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.
- B. Apply products in accordance with manufacturer's instructions.
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

Westgroup Designs, Inc.

- D. Apply each coat to uniform appearance.
- E. Sand wood and metal surfaces lightly between coats to achieve required finish.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

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 finished coatings until completion of project.
- B. Touch-up damaged coatings after Substantial Completion.

END OF SECTION

**SECTION 12 2400
WINDOW SHADES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Window shades and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM D4674 - Standard Practice for Accelerated Testing for Color Stability of Plastics Exposed to Indoor Office Environments; 2002a (Reapproved 2010).
- B. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films; 2010.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Sequencing:
 - 1. Do not fabricate shades until field dimensions for each opening have been taken.
 - 2. Do not install shades until final surface finishes and painting are complete.

1.04 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.
- B. Shop Drawings: Include shade schedule indicating size, location and keys to details.
- C. Selection Samples: Include fabric samples in full range of available colors and patterns.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.
- B. Handle and store shades in accordance with manufacturer's recommendations.

1.07 FIELD CONDITIONS

- A. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.08 WARRANTY

- A. Provide manufacturer's warranty from the Date of Substantial Completion, covering the following:
 - 1. Shade Hardware: one year.
 - 2. Fabric: one year.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manually Operated Roller Shades:
 - 1. Draper, Inc; Clutch Operated FlexShade: www.draperinc.com.
 - 2. Hunter Douglas: www.hunterdouglas.com.
 - 3. Graber, division of Springs Window Fashions: www.graberblinds.com.

2.02 WINDOW SHADE APPLICATIONS

- A. Shades:
 - 1. Type: Roller shades.
 - 2. Color: As selected by Architect from manufacturer's full range of colors.

2.03 ROLLER SHADES

- A. Roller Shades: Fabric roller shades complete with mounting brackets, roller tubes, hembars, hardware and accessories; fully factory-assembled.
 - 1. Drop: Regular roll.
 - 2. Size: As indicated on drawings.
- B. Fabric: Non-flammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation; PVC-free; 100 percent recycled.
 - 1. Flammability: Pass NFPA 701 large and small tests.
- C. Roller Tube: As required for type of operation, extruded aluminum with end caps.
 - 1. Fabric Attachment: Utilize double sided adhesive tape.
- D. Hembars and Hembar Pockets: Wall thickness designed for weight requirements and adaptation to uneven surfaces, to maintain bottom of shade straight and flat.

2.04 FABRICATION

- A. Fabricate shades to fit openings within specified tolerances.
 - 1. Vertical Dimensions: Fill openings from head to sill with 1/2 inch (13 mm) space between bottom bar and window stool.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine finished openings for deficiencies that may preclude satisfactory installation.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.
- B. Coordinate with window installation and placement of concealed blocking to support shades.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved shop drawings, using mounting devices as indicated.
- B. Installation Tolerances:
 - 1. Maximum Offset From Level: 1/16 inch (1.5 mm).
- C. Adjust level, projection and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure shades for smooth operation.

3.04 CLEANING

- A. Clean soiled shades and exposed components as recommended by manufacturer.
- B. Replace shades that cannot be cleaned to "like new" condition.

3.05 PROTECTION

- A. Protect installed products from subsequent construction operations.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION



OFFICE OF
CLERK OF THE BOARD OF SUPERVISORS
1st FLOOR, COUNTY ADMINISTRATIVE CENTER
P.O. BOX 1147, 4080 LEMON STREET
RIVERSIDE, CA 92502-1147
PHONE: (951) 955-1060
FAX: (951) 955-1071

KECIA HARPER-IHEM
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR
Assistant Clerk of the Board

December 17, 2013

RIVERSIDE COUNTY RECORD
ATTN: LEGALS
PO BOX 3187
RIVERSIDE, CA 92519

FAX (951) 685-2961
E-MAIL: recordmde@aol.com

RE: NOTICE INVITING BIDS: RIVERSIDE HISTORIC COURTHOUSE FACADE PROJECT

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **THREE (3) TIMES:**

THURSDAY – DECEMBER 19, 2013
THURSDAY – DECEMBER 26, 2013
THURSDAY – JANUARY 2, 2014

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office in duplicate, WITH TWO CLIPPINGS OF THE PUBLICATION.

NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN FORMAT.

Thank you in advance for your assistance and expertise.

Sincerely,

Cecilia Gil

Board Assistant to:
KECIA HARPER-IHEM, CLERK OF THE BOARD

Gil, Cecilia

From: Michael Evans <recordmde@aol.com>
Sent: Tuesday, December 17, 2013 8:26 AM
To: Gil, Cecilia
Subject: Re: FOR PUBLICATION: Riverside Historic Courthouse

Good Morning,

I have received the notice inviting bids for publication.
Thanks you, Mike

-----Original Message-----

From: Gil, Cecilia <CCGIL@rcbos.org>
To: recordmde <recordmde@aol.com>
Sent: Tue, Dec 17, 2013 7:30 am
Subject: FOR PUBLICATION: Riverside Historic Courthouse

One more... Notice Inviting Bids, for publication on Dec. 19, 26, and Jan. 2. Please confirm. THANK YOU!

Cecilia Gil
Board Assistant
Clerk of the Board
951-955-8464
MS# 1010

NOTICE INVITING BIDS

NOTICE IS HEREBY GIVEN that the County of Riverside ("County") invites sealed Bids for the construction of the following project ("Work"):

Riverside Historic Courthouse Façade

Bids shall be prepared in conformance with the Instructions to Bidders and other Bidding Documents. Bids must be received, by hand delivery or mail, by the Clerk of the Board located on the 1st floor of the County Administrative Center, 4080 Lemon Street, Riverside, CA 92501, no later than the Bid Closing Deadline of **10:00 a.m. on 1/27/14** to be thereafter on said date and at said location publicly opened and read aloud. The Bidder assumes sole responsibility for timely receipt of its Bid.

Copies of Bidding Documents will be available to Bidders for pick-up, or for mailing to Bidder upon request by Bidder submitted to IB Reprographics, 3363 Durahart Street, Riverside 92507, (951)682-1850. At the time of such pick-up or request for mailing, a non-refundable fee for each set of Bidding Documents shall be paid by Bidder by cash or by check or money order made payable to IB Reprographics.

A mandatory Pre-Bid Conference will be conducted on **1/07/14**, commencing promptly at 10:00 a.m. at the **empty lot located on the corner of 11th and Orange Street in downtown Riverside. Attendance at the mandatory Pre-Bid Conference is required as a condition of bidding.**

The Bidder receiving the Award by the County is required:

- (1) to furnish a Performance Bond and Payment Bond as provided in the Instructions to Bidders and other Bidding Documents;
- (2) both at the time Bidder submits its Bid and other Bid Submittals and at the time of Award, to: (a) hold a contracting license, active and in good standing, issued by the Contractors State License Board for the State of California for the following license classification(s): B General; and
- (3) to comply with the provisions of the California Labor Code, including, without limitation, Sections 1773.1, 1774, 1775 and 1776 of the California Labor Code and including, without limitation, the obligations to pay the general prevailing rates of wages in the locality in which the Work is to be performed and comply with Section 1777.5 of the California Labor Code governing employment of apprentices. Copies of the prevailing rates of per diem wages are on file at California State Department of Industrial Relations, 464 West Fourth St., Suite 348, San Bernardino, CA 92401, and are available to any interested party on request.

Substitution of securities for any moneys withheld by County shall be permitted as provided for by Section 22300 of the California Public Contract Code.

Pursuant to Public Contract Code section 3400(b), the Board has found and authorized the specified use of a product manufactured by Moonlight Molds, Inc., and no substitutions will be accepted or considered with regard to such product.

Capitalized terms used herein shall have the meanings assigned to them in the Bidding Documents. For information contact: Rebecca Tsagris whose email is rtsagris@rivcoeda.org or phone (951) 955-8764 at the Economic Development Agency, 3403 10th St., Suite 400, Riverside, CA 92501.

Dated: December 17, 2013

Kecia Harper-Ihem, Clerk of the Board

By: Cecilia Gil, Board Assistant

Gil, Cecilia

From: Tsagris, Rebecca <RTsagris@rivcoeda.org>
Sent: Wednesday, December 11, 2013 12:57 PM
To: Gil, Cecilia
Subject: RE: NIB for two projects

Yes, please add. And yes, it will be just for County Recorder then.

Thanks Cecilia!

From: Gil, Cecilia
Sent: Wednesday, December 11, 2013 11:17 AM
To: Tsagris, Rebecca
Subject: RE: NIB for two projects

Rebecca,

It will be an additional \$100 more or less for another day (Jan. 2), for one Notice. Do you want to add Jan. 2?

Cecilia Gil
Board Assistant
Clerk of the Board
951-955-8464
MS# 1010

From: Tsagris, Rebecca [<mailto:RTsagris@rivcoeda.org>]
Sent: Wednesday, December 11, 2013 10:57 AM
To: Gil, Cecilia
Subject: RE: NIB for two projects

Great – thanks Cecilia! Just curious, how much would it cost to add January 2nd to the publishing?

From: Gil, Cecilia
Sent: Wednesday, December 11, 2013 10:44 AM
To: Tsagris, Rebecca
Subject: RE: NIB for two projects

Hello Rebecca! Thank you for being on top of this! I don't need to call everybody asking who the project manager is ☺.

Everything looks good on the schedule you have. Thank you for being considerate and not rushing me to publish. My only question is: since this is 2nd District, we usually publish on Riverside County Record, which publishes on Thursdays only. So, if Riverside County Record is okay with you, I will publish by Dec. 19 and 26, 2013.

If any additional publication is required aside from the Riverside County Record, we could do so, just let me know.

Thanks!

Cecilia Gil
Board Assistant