DOCUMENT 000101 – Park Cabins

1.1 PROJECT MANUAL VOLUME 1

A. 2, 3, 4 and 6 Housing Units

B. Cherokee Nation Property Management.

C. Sallisaw Creek, State Park - Oklahoma.

END OF DOCUMENT 000101

DOCUMENT 000107 - SEALS PAGE

1.1 DESIGN PROFESSIONALS OF RECORD

A. Architect:

1. Ed G. Bishop.
2. Oklahoma Licensed Architect 3207.
3. Responsible for Divisions 01-49 Sections except where indicated as prepared by other design professionals of record.

END OF DOCUMENT 000107

DOCUMENT 000110 – TABLE OF CONTENTS

1.1 LIST OF SPECIFICATIONS

B. Specifications: Specifications consist of the Contract Specifications listed in the Table of Contents section titled Comprehensive Housing Specifications dated 07/20/2023, as modified by subsequent Addenda and Contract modifications.

C. List of Specifications: Specifications consist of the following Contract Specifications and other specifications of type indicated:

1. Division 00 Procurement and Contracting Requirements
   - 000101 Project Title Page
   - 000110 Table of Contents

2. Division 01 General Requirements
   - 014000 Quality Requirements
   - 016000 Product Requirements

3. Division 03 Concrete
   - 033000 Cast-in Place Concrete

4. Division 04 Unit Masonry
   - 042000 Unit Masonry

5. Division 05 Metals
   - 055000 Metal Fabrications

6. Division 06 Carpentry
   - 061000 Rough Carpentry
   - 061600 Sheathing
   - 061753 Shop Fabricated Wood Trusses
   - 062000 Finish Carpentry
   - 064113 Wood-Veneer-Faced Architectural Cabinets

7. Division 07 Moisture Protection
   - 072100 Thermal Insulation
   - 072500 Weather Barriers
   - 073113 Asphalt Shingles
   - 076200 Sheet Metal Flashing and Trim
   - 077100 Roof Specialties
   - 079200 Joint Sealants

8. Division 08 Doors and Windows
   - 081113 Hollow Metal Doors and Frames
   - 081416 Flush Wood Doors
   - 081423 Clad Wood Doors
   - 083113 Access Doors and Frames

- 085113 Aluminum Windows
- 087100 Door Hardware
- 088000 Glazing

9. Division 09 Finishes
   - 092613 Gypsum Veneer Plastering
   - 092900 Gypsum Board
   - 096516 Resilient Sheet Flooring
   - 096519 Resilient Tile Flooring
   - 096816 Sheet Carpeting
   - 099113 Exterior Painting
   - 099123 Interior Painting

10. Division 10 Specialties
    - 102800 Toilet, Bath, and Laundry Accessories

11. Division 11 Equipment
    - 113100 Residential Appliances

12. Division 22 Plumbing
    - 220000 General Plumbing
    - 220523 General-Duty Valves for Plumbing Piping
    - 220529 Hangers and Supports for Plumbing Piping and Equipment
    - 220533 Heat Tracing for Plumbing Piping
    - 220700 Plumbing Insulation
    - 221116 Domestic Water Piping
    - 221119 Domestic Water Piping Specialties
    - 221316 Sanitary Waste and Vent Piping
    - 221319 Sanitary Waste Piping Specialties
    - 223100 Domestic Water Softeners
    - 223300 Electric, Domestic-Water Heaters
    - 223400 Fuel-Fired, Domestic-Water Heaters
    - 224100 Residential Plumbing Fixtures

13. Division 23 Mechanical
    - 230000 General Mechanical
    - 230517 Sleeves and Sleeve Seals for HVAC Piping
    - 230593 Testing, Adjusting, and Balancing for HVAC
    - 230700 HVAC Insulation
    - 231123 Facility Natural-Gas Piping
    - 232300 Refrigerant Piping
    - 233100 HVAC Ducts and Casings
    - 233423 HVAC Power Ventilators
    - 233713 Diffusers, Registers, and Grilles
    - 235100 Breechings, Chimneys, and Stacks
    - 236313 Air-Cooled Refrigerant Condensers
    - 237339 Indoor, Direct-Fired Heating and Ventilating Units

14. Division 26 Electrical
    - 260519 Low-Voltage Electrical Power Conductors and Cables
    - 260526 Grounding and Bonding for Electrical Systems
    - 260529 Hangers and Supports for Electrical Systems
    - 260533 Raceway and Boxes for Electrical Systems
    - 262416 Panelboards
    - 262713 Electricity Metering
    - 262726 Wiring Devices
    - 262813 Fuses
    - 262816 Enclosed Switches and Circuit Breakers
    - 265100 Interior Lighting

15. Division 31 Earthwork
    - 311000 Site Clearing
    - 312000 Earth Moving

16. Division 32 Exterior Improvements
    - 321313 Concrete Paving

END OF DOCUMENT 000110

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

B. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements, comply with the most stringent requirement. Refer uncertainties to Architect for a decision.

C. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum. The actual installation may exceed the minimum within reasonable limits. Indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision.

D. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.

E. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

F. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, notices, receipts for fee payments, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

G. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

H. Testing Agency Qualifications: An independent agency with the experience and capability to conduct testing and inspecting indicated; and where required by authorities having jurisdiction, that is acceptable to authorities.

I. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

J. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor of irregularities or deficiencies in the Work observed during performance of its services.
2. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
3. Do not perform any duties of Contractor.

K. Associated Services: Cooperate with testing agencies and provide reasonable auxiliary services as requested. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Security and protection for samples and for testing and inspecting equipment.

L. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

B. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

B. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced.

1. Show compliance with requirements for comparable product requests.
2. Architect will review the proposed product and notify Contractor of its acceptance or rejection.

C. Basis-of-Design Product Specification Submittal: Show compliance with requirements.

D. Compatibility of Options: If Contractor is given option of selecting between two or more products, select product compatible with products previously selected.

E. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Deliver products to Project site in manufacturer's original sealed container or packaging, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
3. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
4. Store materials in a manner that will not endanger Project structure.
5. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

F. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. Provide products that comply with the Contract Documents, are undamaged, and, unless otherwise indicated, are new at the time of installation.

1. Provide products complete with accessories, trim, finish, and other devices and components needed for a complete installation and the intended use and effect.
2. Where products are accompanied by the term "as selected," Architect will make selection.
3. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Where the following headings are used to list products or manufacturers, the Contractor's options for product selection are as follows:

1. Products:

a. Where requirements include "one of the following," provide one of the products listed that complies with requirements.
b. Where requirements do not include "one of the following," provide one of the products listed that complies with requirements or a comparable product.

2. Manufacturers:

a. Where requirements include "one of the following," provide a product that complies with requirements by one of the listed manufacturers.
b. Where requirements do not include "one of the following," provide a product that complies with requirements by one of the listed manufacturers or another manufacturer.

3. Basis-of-Design Product: Provide the product named, or indicated on the Drawings, or a comparable product by one of the listed manufacturers.

C. Where Specifications require "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

D. Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Architect will consider Contractor's request for comparable product when the following conditions are satisfied:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications.
3. List of similar installations for completed projects, if requested.
4. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data concrete mix designs and submittals required by ACI 301.

B. Ready-Mixed Concrete Producer Qualifications: ASTM C 94/C 94M.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Comply with ACI 301, "Specification for Structural Concrete," and with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

2.2 MATERIALS

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

B. Plain Steel Wire: ASTM A 82/A 82M, as drawn.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, as drawn, flat sheet.

D. Portland cement: ASTM C 150, Type I or II.

E. Fly Ash: ASTM C 618, Class C or F.

F. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

G. Silica Fume: ASTM C 1240, amorphous silica.

H. Aggregates: ASTM C 33, coarse aggregate or better, graded**,** with at least 10 years' satisfactory service in similar applications.

1. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.

I. Air-Entraining Admixture: ASTM C 260.

J. Chemical Admixtures: ASTM C 494, water reducing. Do not use calcium chloride or admixtures containing calcium chloride.

K. Vapor Retarder: Reinforced sheet, ASTM E 1745, Class A.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. GCP Applied Technologies Inc. (formerly Grace Construction Products).
    b. Poly-America, L.P.
    c. W. R. Meadows, Inc.

L. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

M. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

N. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

2.3 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301.

B. Normal-Weight Concrete:

1. Minimum Compressive Strength: 3500 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.40.
3. Slump Limit: 4 inches for footings or 5 inches for concrete slabs with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
4. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of floor slabs to receive troweled finishes to exceed 3 percent.
5. Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of Portland cement, which would otherwise be used, by not less than 40 percent.
6. For concrete exposed to deicing chemicals, limit use of fly ash to 25 percent replacement of Portland cement by weight and granulated blast-furnace slag to 40 percent of Portland cement by weight; silica fume to 10 percent of Portland cement by weight.

C. Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116.

1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 CONCRETING

A. Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, 1/8 inch for concrete exposed to view and Class B, 1/4 inch for other concrete surfaces.

B. Place vapor retarder on prepared sub grade, with joints lapped 6 inches and sealed.

C. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

D. Install construction, isolation, and contraction joints where indicated. Install full-depth joint-filler strips at isolation joints.

E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.

F. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.

G. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material; rough-formed finish elsewhere.

H. Slab Finishes: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Provide the following finishes:

1. Scratch finish for surfaces to receive mortar setting beds.
2. Float finish for surfaces to receive waterproofing, roofing, or other direct-applied material.
   Troweled finish for floor surfaces and floors to receive floor coverings, paint, or other thin film-finish coatings.
3. Trowel and fine-broom finish for surfaces to receive thin-set tile.
4. Nonslip-broom finish to exterior concrete platforms, steps, and ramps.

I. Cure formed surfaces by moisture curing for at least seven days.

J. Begin curing concrete slabs after finishing. Keep concrete continuously moist for at least seven days.

K. Owner will engage a testing agency to perform field tests and to submit test reports.

L. Protect concrete from damage. Repair and patch defective areas.

END OF SECTION 033000

SECTION 042000 - UNIT MASONRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Allowances: Furnish face brick under the Face Brick Allowance specified in Section 012000 "Price and Payment Procedures."

B. See Section 055000 "Metal Fabrications" for furnishing steel lintels and shelf angles for unit masonry.

C. Submittals:

1. Samples for face brick and colored mortar.
2. Material Certificates: For each type of product indicated. Include statements of material properties indicating compliance with requirements.

D. Sample Panels: Construct a sample wall panel approximately 48 inches long by 48 inches high to demonstrate aesthetic effects and set quality standards for materials and execution.

PART 2 - PRODUCTS

2.1 UNIT MASONRY

A. Comply with TMS 602/ACI 530.1/ASCE 6.

2.2 MASONRY UNITS

A. Clay Face Brick: ASTM C 216, Grade SW, Type FBX or HBX, Type FBS or HBS, Type FBA or HBA.

1. Size (Actual Dimensions): 3” deep by 9” or 10” long
2. Solid brick with exposed surfaces finished for ends of sills and caps.
3. Special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.
4. Special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.

2.3 MORTAR AND GROUT

A. Mortar: ASTM C 270, proportion specification.

1. Use masonry cement mortar.
2. Do not use calcium chloride in mortar.
3. For masonry below grade or in contact with earth, use Type M.
4. For reinforced masonry, use Type M.
5. Colored Mortar: For face brick, use colored cement or cement-lime mix of color selected.

B. Grout: ASTM C 476 with a slump of 8 to 11 inches.

2.4 REINFORCEMENT, TIES, AND ANCHORS

A. Corrugated-Metal Veneer Anchors: 7/8 inch wide and made from 0.030-inch-thick steel sheet, galvanized after fabrication .

2.5 EMBEDDED FLASHING MATERIALS

A. Sheet Metal Flashing: [Stainless steel, 0.0156 inch thick] or 0.0135 inch thick for fully concealed flashing, 16-oz./sq. ft. weight or 0.0216 inch thick elsewhere].

B. Rubberized Asphalt Sheet Flashing: Pliable, adhesive rubberized-asphalt compound, bonded to a polyethylene film to produce an overall thickness of 0.040 inch. Use only where flashing is fully concealed.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Advanced Building Products Inc.
    b. Carlisle Coatings & Waterproofing Inc.
    c. W. R. Meadows, Inc.

C. Butyl Rubber Flashing: Pliable, butyl rubber compound, bonded to a polyethylene film, aluminum foil, or spun bonded polyolefin to produce an overall thickness of not less than 0.040 inch. Use only where flashing is fully concealed.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. DuPont Building Innovations: E. I. du Pont de Nemours and Company.
    b. GCP Applied Technologies Inc. (formerly Grace Construction Products).
    c. Protecto Wrap Company.

D. Elastomeric Thermoplastic Flashing: Composite flashing product consisting of a polyester-reinforced ethylene interpolymer alloy, 0.025 inch thick, with a 0.015-inch-thick coating of adhesive. Use only where flashing is fully concealed.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. DuPont Building Innovations: E. I. du Pont de Nemours and Company.
    b. Hohmann & Barnard, Inc.
    c. Hyload, Inc.
    d. Mortar Net Solutions.

2.6 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded strips complying with ASTM D 1056, Grade 2A1.

B. Preformed Control-Joint Gaskets: Designed to fit standard sash block and to maintain lateral stability in masonry wall; made from styrene-butadiene rubber or PVC.

C. Weep Holes: Cellular-plastic extrusion, full height and width of head joint][Round polyethylene tubing, 3/8-inch OD, 24 inches long or Free-draining polyethylene mesh, full height and width of head joint.

D. Cavity Drainage Material: Free-draining polymer mesh, full depth of cavity with dovetail-shaped notches that prevent mortar clogging.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Advanced Building Products Inc.
    b. CavClear/Archovations, Inc.
    c. Mortar Net Solutions.

E. Loose-Granular Perlite Insulation: ASTM C 549, Type II or IV.

F. Proprietary Acidic Masonry Cleaner: Product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Diedrich Technologies, Inc.; a division of Sandell Construction Solutions.
    b. EaCo Chem, Inc.
    c. PROSOCO, Inc.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cut masonry units with saw. Install with cut surfaces and, where possible, cut edges concealed.

B. Mix units for exposed unit masonry from several pallets or cubes as they are placed to produce uniform blend of colors and textures.

C. Stopping and Resuming Work: Step back units; do not tooth.

D. Tool exposed joints slightly concave when thumbprint hard unless otherwise indicated.

E. Keep cavities clean of mortar droppings and other materials during construction.

3.2 LINTELS

A. Install lintels where indicated.

B. Minimum bearing of 8 inches at each jamb unless otherwise indicated.

3.3 FLASHING AND WEEP HOLES

A. Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to the downward flow of water in the wall, and where indicated.

B. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing before covering with mortar.

1. Extend flashing 4 inches into masonry at each end and turn up 2 inches to form a pan.

C. Trim wicking material used in weep holes flush with outside face of wall after mortar has set.

3.4 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections required by authorities having jurisdiction.

1. Inspections: Level B in TMS 402/ACI 530/ASCE 5.
2. Place grouts only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.

3.5 CLEANING

A. Clean masonry as work progresses. Remove mortar fins and smears before tooling joints.

B. Final Cleaning: After mortar is thoroughly cured, clean exposed masonry.

1. Wet wall surfaces with water before applying acidic cleaner, then remove cleaner promptly by rinsing thoroughly with clear water.
2. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

END OF SECTION 042000

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Shop Drawings.

PART 2 - PRODUCTS

2.1 METALS

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

B. Cast Iron: ASTM A 48/A 48M or ASTM A 47/A 47M.

2.2 FASTENERS

A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners for exterior use and zinc-plated fasteners at exterior walls. Select fasteners for type, grade, and class required.

2.3 GROUT

A. Non-shrink, Nonmetallic Grout: ASTM C 1107; recommended by manufacturer for exterior applications.

2.4 FABRICATION

A. General: Shear and punch metals cleanly and accurately. Remove burrs and ease exposed edges. Form bent-metal corners to smallest radius possible without impairing work.

B. Welding: Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. At exposed connections, finish welds and surfaces smooth, with contour of welded surface matching those adjacent.

C. Comply with AWS for recommended practices in shop brazing. Braze behind finished surfaces without distorting or discoloring exposed side. Clean exposed brazed joints of flux, and dress exposed and contact surfaces.

D. Fabricate steel girders for wood frame construction from continuous steel shapes of sizes indicated.

E. Fabricate steel pipe columns with 1/2-inch steel base plates and 1/4-inch steel top plates welded to pipe with continuous fillet weld same size as pipe wall thickness. Drill top plates for connection bolts and base plates for 5/8-inch anchor bolts.

F. Fabricate loose lintels from steel angles and shapes. Size to provide bearing length at each side of openings equal to one-twelfth of clear span, but not less than 8 inches.

G. Fabricate pipe guards from 3/8-inch- thick by 12-inch- wide steel plate, bent to fit flat against the wall or column at ends and to fit around pipe with 2-inch clearance between pipe and pipe guard. Drill each end for two 3/4-inch anchor bolts.

2.5 STEEL AND IRON FINISHES

A. Hot-dip galvanize steel fabrications at exterior locations.

B. Prepare uncoated ferrous metal surfaces to comply with SSPC-SP 3 and paint with a fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide anchorage devices and fasteners where needed to secure items to in-place construction.

B. Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation, with edges and surfaces level, plumb, true, and free of rack.

C. Fit exposed connections accurately together to form hairline joints or, where indicated, with uniform reveals and spaces for sealants and joint fillers.

D. Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

END OF SECTION 055000

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for wood-preservative treated wood, fire-retardant treated wood, engineered wood products, shear wall panels and metal framing anchors.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

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

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

1. Allowable Design Stresses: Engineered wood products shall have allowable design stresses, as published by manufacturer that meet or exceed those indicated. Manufacturer's published values shall be demonstrated by comprehensive testing.

C. Certified Wood: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 for Homes Section 018113.36 - Sustainable Design Requirements - National Green Building Standard.

2.2 TREATED MATERIALS

A. Preservative-Treated Materials: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground].

1. Use treatment containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.
2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

B. Provide preservative-treated materials for items indicated on Drawings, and the following:

C. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
   1. Wood sills, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
   2. Wood framing members that are less than 18 inches above the ground.
   3. Wood floor plates that are installed over concrete slabs-on-grade.

D. Fire-Retardant-Treated Materials: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

   1. Use Exterior type for exterior locations and where indicated.
   2. Use Interior Type A unless otherwise indicated.
   3. For enclosed roof framing, framing in attic spaces, and where high-temperature fire-retardant treatment is indicated, provide material with design adjustment factors of not less than 0.85 for modulus of elasticity and 0.75 for extreme fiber in bending for Project's climatological zone.
   4. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
   5. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.

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

2.3 FRAMING

A. Dimension Lumber:

   1. Maximum Moisture Content: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness, no limit for more than 2-inch nominal thickness.
   2. Non-Load-Bearing Interior Partitions: Construction or No. 2, Any species Species groups in "Framing Other Than Non-Load-Bearing Interior Partitions" Subparagraph below are listed in order of decreasing strength (extreme fiber in bending).
   3. Framing Other Than Non-Load-Bearing Interior Partitions: Construction or No. 2 [Hem-fir (north): NLGA; Retain "Exposed Framing" Subparagraph below for better appearance for exposed work.
   4. Exposed Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

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

2.4 SHEAR WALL PANELS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Shear Transfer Systems.
2. Simpson Strong-Tie Co., Inc.
3. Weyerhaeuser Company.

B. Wood-Framed Shear Wall Panels: Prefabricated assembly consisting of wood perimeter framing, tie downs, and Exposure I, Structural I plywood or OSB sheathing.

C. Steel-Framed Shear Wall Panels: Prefabricated assembly consisting of cold-formed galvanized steel panel, steel top and bottom plates, and wood studs.

D. Allowable Design Loads: Shear wall panels shall have allowable design loads, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be demonstrated by comprehensive testing.

2.5 MISCELLANEOUS LUMBER

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

B. Utility Shelving: Mixed southern pine, No. 1: SPIB; Hem-fir, Select Merchantable or No. 1 Common: NLGA, WCLIB, or WWPA; or Spruce-pine-fir, Select Merchantable or No. 1 Common: NeLMA, NLGA, WCLIB, or WWPA; with 15 percent maximum moisture content.

C. Concealed Boards: Mixed southern pine, No. 2: SPIB; or Western woods, Standard: WCLIB; or No. 3 Common: WWPA; with 15 percent maximum moisture content.

2.6 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: Plywood, Exterior, AC, fire-retardant treated, not less than 3/4-inch nominal thickness.

2.7 MISCELLANEOUS PRODUCTS

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

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

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

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. KC Metals Products, Inc.
b. Simpson Strong-Tie Co., Inc.
c. USP Structural Connectors.

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

3. Use anchors made from stainless steel complying with ASTM A 666, Type 304 for exterior locations and where indicated.

C. Sill Sealer: Closed-cell neoprene foam, 1/4 inch thick.

D. Flexible Flashing: Self-adhesive product consisting of a butyl rubber, or rubberized-asphalt compound, bonded to a backing sheet to produce an overall thickness of not less than 0.025 inch.

PART 3 - EXECUTION

3.1 INSTALLATION

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

B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Do not splice structural members between supports unless otherwise indicated.

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

1. CABO NER-272 for power-driven fasteners.
2. Published requirements of metal framing anchor manufacturer.
3. Table 2304.9.1, "Fastening Schedule," in the IBC Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

END OF SECTION 061000

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for preservative-treated plywood, and fire-retardant-treated plywood.

PART 2 - PRODUCTS

2.1 WOOD PANEL PRODUCTS, GENERAL

A. Plywood: DOC PS 1.

B. Oriented Strand Board: DOC PS 2.

C. Certified Wood: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 for Homes Section 018113.36 - Sustainable Design Requirements - National Green Building Standard Section 018113.43 - Sustainable Design Requirements - ASHRAE 189.1.

2.2 TREATED PLYWOOD

A. Preservative-Treated Plywood: AWPA U1; Use Category UC2.

1. Use treatment containing no arsenic or chromium.
2. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.

B. Provide preservative-treated plywood for items indicated on Drawings and plywood in contact with masonry or concrete or used with roofing, flashing, vapor barriers, and waterproofing.

C. Fire-Retardant-Treated Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Use Exterior type for exterior locations and where indicated.
2. Use Interior Type A unless otherwise indicated.
3. For roof sheathing and where high-temperature fire-retardant treatment is indicated, span ratings for temperatures up to 170 deg F shall be not less than span ratings specified.
4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.

D. Provide fire-retardant-treated plywood for items indicated on Drawings.

2.3 WALL SHEATHING

A. Plywood Wall Sheathing: Exposure 1, Structural I sheathing.

B. Oriented-Strand-Board Wall Sheathing: Exposure 1, Structural I sheathing.

C. Paper-Surfaced Gypsum Wall Sheathing: ASTM C 1396/C 1396M, gypsum sheathing; with water-resistant-treated core.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Georgia-Pacific Building Products.
b. Temple-Inland Building Products by Georgia-Pacific.
c. United States Gypsum Company.

D. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. CertainTeed Corporation.
b. Georgia-Pacific Building Products.
c. National Gypsum Company.
d. United States Gypsum Company.

2.4 ROOF SHEATHING

A. Plywood Roof Sheathing: Exposure 1, Structural I sheathing.

B. Oriented-Strand-Board Roof Sheathing: Exposure 1, Structural I sheathing.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Atlas Roofing Corporation.
b. Dow Chemical Company (The).
c. Johns Manville; a Berkshire Hathaway company.
d. Rmax, Inc.

2.5 MISCELLANEOUS PRODUCTS

A. Fasteners: Size and type indicated.

1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
2. Power-Driven Fasteners: CABO NER-272.

B. Sheathing Joint-and-Penetration Treatment Materials:

1. Sealant for Glass-Mat Gypsum Sheathing: Silicone emulsion sealant, recommended by tape and sheathing manufacturers for application indicated.
2. Sheathing Tape for Glass-Mat Gypsum Sheathing: Self-adhering, glass-fiber tape recommended by sheathing and tape manufacturers for application indicated.

C. Adhesives for Field Gluing Panels to Framing: APA AFG-01.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Securely attach to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

B. Fastening Methods:

1. Wall and Roof Sheathing:

a. Nail to wood framing.

C. Glass-Mat Gypsum Sheathing Joint-and-Penetration Treatment: Seal sheathing joints and penetrations according to sheathing manufacturer's written instructions.

END OF SECTION 061600

SECTION 061753 - SHOP-FABRICATED WOOD TRUSSES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Shop Drawings, structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation, and ICC-ES evaluation reports for metal plate connectors and metal truss accessories.

B. Fabricator Qualifications: Shop that participates in a recognized quality-assurance program that complies with quality-control procedures in TPI 1 and that involves third-party inspection by an independent testing and inspecting agency acceptable to Architect and authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal-plate-connected wood trusses capable of withstanding design loads indicated without exceeding TPI 1 deflection limits.

B. Comply with applicable requirements and recommendations of the following publications:

1. TPI 1, "National Design Standard for Metal Plate Connected Wood Truss Construction."
2. TPI DSB, "Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses."
3. TPI BCSI, "Guide to Good Practice for Handling, Installing, Restraining & Bracing Metal Plate Connected Wood Trusses."

C. Wood Structural Design Standard: Comply with applicable requirements in AF&PA's "National Design Specifications for Wood Construction" and its "Supplement."

2.2 MATERIALS

A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review, any species, graded visually or mechanically.

1. Provide dry lumber with 15 percent maximum moisture content at time of dressing.

B. Certified Wood: Sustainable Design Requirements - LEED 2008 for Homes Section 018113.36Retain "Minimum Chord Size for Roof Trusses" Paragraph below if requirement for minimum chord sizes is needed to provide stiffer members for nailing.

C. Minimum Chord Size for Roof: 2 by 6 inches nominal for both top and bottom chords.

D. Minimum Specific Gravity for Top Chords: 0.50.

E. Connector Plates: TPI 1, fabricated from hot-dip galvanized-steel sheet complying with ASTM A 653/A 653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G60 coating designation; and not less than 0.036 inch thick.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Alpine Engineered Products, Inc.; a division of ITW Building Components Group, Inc.
b. CompuTrus, Inc.
c. Jager Building Systems, Inc.
d. Truswal Systems Corporation.

F. Fasteners: Where trusses are exposed to weather or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

G. Metal Framing Anchors: Provide framing anchors made from hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

a. Simpson Strong-Tie Co., Inc.

2.3 FABRICATION

A. Assemble trusses using jigs or other means to ensure uniformity and accuracy of assembly with joints closely fitted. Fabricate wood trusses within manufacturing tolerances in TPI 1.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install and brace trusses according to TPI recommendations and as indicated. Install trusses plumb, square, and true to line and securely fasten to supporting construction.

B. Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in metal framing anchor.

C. Securely connect each truss ply required for forming built-up girder trusses. Anchor trusses to girder trusses.

D. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.

1. Install bracing to comply with Section 061000 "Rough Carpentry."
2. Install and fasten strong-back bracing vertically against vertical web of parallel-chord floor trusses at centers indicated.

E. Install wood trusses within installation tolerances in TPI 1.

F. Do not alter trusses in field.

G. Remove wood trusses that are damaged or do not meet requirements and replace with trusses that do meet requirements.

END OF SECTION 061753

SECTION 062000 - FINISH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Samples for moldings and trim.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

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

B. Certified Wood: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 for Homes Section.

2.2 EXTERIOR FINISH CARPENTRY

A. Exterior Lumber Trim: Smooth-textured, Grade A, western red cedar.

1. Maximum Moisture Content: 15 percent.

B. Wood Moldings: WMMPA WM 4, N-grade wood moldings. Made from kiln-dried stock to patterns included in WMMPA WM 12.

1. Species: Western red cedar.

C. Cellular PVC Exterior Trim: Extruded, expanded PVC with a small-cell microstructure, made from UV- and heat-stabilized, rigid material.

D. Plywood Soffits: 3/8-inch- thick, Exterior-type, Grade A-C 303-30-S/W, cedar or fir faced, rough sawn, plain.

2.3 INTERIOR STANDING AND RUNNING TRIM

A. Interior Softwood Lumber Trim: C Select (Choice), eastern white, Idaho white, lodgepole, ponderosa, or sugar pine or C Select white woods.

1. Maximum Moisture Content: 15 percent.

B. Interior Hardwood Lumber Trim: Clear, kiln-dried, red oak.

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

1. Softwood Moldings for Transparent Finish: Western red cedar Douglas fir.
2. Hardwood Moldings for Transparent Finish: Red oak.
3. Moldings for Painted Finish: P-Grade primed medium-density fiberboard.
4. Base: WM 713, ranch base.
5. Shoe Mold: WM 126, 1/2-by-3/4-inch quarter-round shoe.
6. Casing: WM 327, clamshell casing.
7. Stop: WM 856, ranch stop.

2.4 SHELVING AND CLOTHES RODS

A. Shelving: 3/4-inch finish boards as specified for interior softwood lumber trim.

B. Clothes Rods: 1-5/16-inch- diameter, chrome-plated-steel tubes.

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

2.5 MISCELLANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry: hot-dip galvanized steel.

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

1. Wood glue shall have a VOC content of 30 g/L or less.

2. Use waterproof resorcinol glue for exterior applications.

3. Adhesive shall have a VOC content of 50 g/L or less.

C. Insect Screening for Soffit Vents: Aluminum.

D. Continuous Soffit Vents: Aluminum hat channel shape with stamped louvers or perforations.

PART 3 - EXECUTION

3.1 INSTALLATION

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

B. Prime and backprime lumber for painted finish exposed on the exterior. Cut to length and prime ends.

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

1. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.

D. Install standing and running trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long except where necessary. Stagger joints in adjacent and related trim. Cope at returns and inside corners and miter at outside corners.

END OF SECTION 062000

SECTION 064113 - WOOD-VENEER-FACED ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Shop Drawings Samples showing the full range of colors available for each type of finish and AWI Quality Certification Program certificates.

B. Fabricator Qualifications: Certified participant in AWI's Quality Certification Program.

C. Installer Qualifications: Fabricator of products.

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

PART 2 - PRODUCTS

2.1 ARCHITECTURAL CABINETS

A. Quality Standard: AWI, AWMAC, and WI's "Architectural Woodwork Standards."

B. Certified Wood: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 for Homes Section 018113.36 - Sustainable Design Requirements - National Green Building Standard Section 018113.43 - Sustainable Design Requirements - ASHRAE 189.1 Section 018113.53 - Sustainable Design Requirements - Green Globes.

C. Wood Cabinets for Transparent Finish: Custom grade.

1. Type of Construction: Frameless or Face frame.
2. Cabinet Door and Drawer Style: Flush overlay.
3. Wood Species for Exposed Surfaces: Red oak.
4. Cut: Plain sliced/plain sawn.
5. Grain Direction: Vertically for drawer fronts, doors, and fixed panels.
6. Matching of Veneer Leaves: Random match.
7. Veneer Matching within Panel Face: Running match.
8. Semiexposed Surfaces Other Than Drawer Bodies: Same species and cut indicated for exposed surfaces.
9. Drawer Subfronts, Sides, and Backs: Solid-hardwood lumber.
10. Drawer Bottoms: Hardwood plywood.

2.2 MATERIALS

A. Wood Moisture Content: 4 to 9 percent.

B. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.

2.3 CABINET HARDWARE AND ACCESSORY MATERIALS

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

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

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

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

D. Catches: Push-in magnetic catches, BHMA A156.9, B03131.

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

F. Shelf Rests: BHMA A156.9, B04013; metal.

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

1. Box Drawer Slides: Grade 1HD-100.
2. File Drawer Slides: Grade 1HD-100.
3. Trash Bin Slides: Grade 1HD-100.

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

1. Finish: Satin Stainless Steel: BHMA 630.

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

2.4 FABRICATION

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

2.5 SHOP FINISHING OF WOOD CABINETS

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

B. Finish cabinets at the fabrication shop; defer only final touchup until after installation.

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

C. Transparent Finish:

1. System - 4: Water-based latex acrylic.
2. System - 5: Conversion varnish.
3. System - 6: Synthetic penetrating oil.
4. System - 7: Catalyzed vinyl.
5. System - 8: Water-based cross linking acrylic.
6. System - 11: Catalyzed polyurethane.
7. Sheen: Satin.

PART 3 - EXECUTION

3.1 INSTALLATION

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

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

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

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

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

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

1. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c. with No. 10 wafer-head screws sized for 1-inch penetration into wood framing, blocking, or hanging strips.

END OF SECTION 064113

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Surface-Burning Characteristics: According to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

PART 2 - PRODUCTS

2.1 INSULATION PRODUCTS

A. Glass-Fiber-Blanket Insulation: ASTM C 665, Type I, unfaced with flame-spread and smoke-developed indexes of 25 and 450, respectively.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. CertainTeed Corporation.
    b. Johns Manville; a Berkshire Hathaway company.
    c. Owens Corning.

B. Glass-Fiber Loose-Fill Insulation: ASTM C 764, Type 1, pneumatic application, with flame-spread and smoke-developed indexes of 25 and 450, respectively.

2.2 ACCESSORIES

A. Vapor Retarder: Polyethylene, 6 mils thick.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Raven Industries, Inc.
    b. Reef Industries, Inc.

B. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed to fit between roof framing members and to provide cross-ventilation between insulated attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 INSTALLATION

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

B. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.

C. Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.

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

E. Install sheet radiant barriers according to ASTM C 1158.

F. Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage. Locate seams at framing members, overlap, and seal with tape. Seal joints caused by pipes, conduits, electrical boxes, and similar items with tape.

END OF SECTION 072100

SECTION 072500 - WEATHER BARRIERS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for water-resistive barrier.

PART 2 - PRODUCTS

2.1 WATER-RESISTIVE BARRIERS

A. Building Paper: ASTM D 226, Type 1 (No. 15 asphalt-saturated organic felt), un-perforated.

B. Building Paper: Kraft building paper with not less than 50 lbf/in. tensile strength, 1-hour water resistance, and 75 g/sq. m x 24 h water-vapor transmission.

2.2 ACCESSORIES

A. Flexible Flashing: Adhesive compound, bonded to plastic film or spunbonded polyolefin, with an overall thickness of 0.030 inch.

1. Butyl Rubber:

2. Rubberized Asphalt:

B. Building Wrap Tape: Pressure-sensitive plastic tape recommended by building-wrap manufacturer for sealing joints and penetrations in building wrap.

2.3 DRAINAGE MATERIAL

A. Drainage Material: Product shall maintain a continuous open space between water-resistive barrier and exterior cladding to create a drainage plane.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Building Paper Installation:

1. Apply building paper immediately after sheathing is installed.
2. Apply horizontally with a 2-inch overlap and a 6-inch end lap.

3. Seal seams, edges, fasteners, and penetrations with tape.
4. Extend into jambs of openings and seal corners with flexible flashing tape.

B. Flexible Flashing Installation:

1. Prime substrates as recommended by flashing manufacturer.
2. Lap seams and junctures with other materials at least 3 inches, except that at flashing flanges of other construction, laps need not exceed flange width.
3. Lap flashing over water-resistive barrier at bottom and sides of openings.
4. Lap water-resistive barrier over flashing at heads of openings.
5. After flashing has been applied, roll surfaces with a hard rubber or metal roller.

C. Install drainage material over building wrap and flashing to comply with manufacturer's written instructions.

END OF SECTION 072500

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Samples, and ICC-ES evaluation reports.

B. Warranties: Manufacturer's standard written warranty, signed by manufacturer agreeing to promptly repair or replace asphalt shingles that fail in materials for a period of 30 years, prorated, with first 15 years nonprorated.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A. Identify products with appropriate markings of testing and inspecting agency acceptable to authorities having jurisdiction.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

A. Three-Tab-Strip, SBS-Modified Asphalt Shingles: ASTM D 3462/D 3462M, glass-fiber reinforced, mineral-granule surfaced, and self-sealing; with tabs regularly spaced and complying with UL 2218, Class 4.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Certainteed Roofing.
    b. Tamko.

2.3 ACCESSORIES

Felts: ASTM D 226/D 226M or ASTM D 4869/D 4869M, Type II, 30 lb. asphalt-saturated organic felts.

A. Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied. Stable after testing at 240 deg F and passes after testing at minus 20 deg F; ASTM D 1970/D 1970M.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Atlas Roofing Corporation.
    b. Carlisle Residential; a division of Carlisle Construction Materials.
    c. GAF Materials Corporation.
    d. Grace Construction Products; W.R. Grace & Co. -- Conn.
    e. Owens Corning.
    f. Tamko Building Products, Inc.

B. Ridge Vent: Rigid UV-stabilized plastic ridge vent with nonwoven geotextile filter strips and with external deflector baffles; for use under ridge shingles.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Air Vent, Inc.; a Gibraltar Industries company.
    b. GAF Materials Corporation.
    c. Owens Corning.

C. Flexible Ridge Vent: Compression-resisting, three-dimensional, open-nylon or polyester-mat filter bonded to a nonwoven, nonwicking, geotextile fabric cover.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. GAF Materials Corporation.
    b. Obdyke, Benjamin Incorporated.
    c. Tamko Building Products, Inc.

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

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

1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

F. Felt-Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, 1-inch minimum diameter.

G. Sheet Metal Flashing and Trim: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

1. Sheet Metal: Zinc-tin alloy-coated steel.
2. Drip Edge: Formed sheet metal with at least a 2-inch roof deck flange and a 1-1/2-inch fascia flange with a 3/8-inch drip at lower edge.

3. Open-Valley Flashing: Fabricate with 1-inch- high, inverted-V profile at center of valley and equal flange widths of 12 inches.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with recommendations in ARMA's "Residential Asphalt Roofing Manual" and with asphalt shingle recommendations in NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems."

B. Apply self-adhering sheet underlayment at eaves and rakes from edges of roof to at least 36 inches inside exterior wall line.

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

D. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment.

E. Install valleys complying with NRCA instructions. Construct woven valleys.

F. Install metal flashings to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

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

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

END OF SECTION 073113

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

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

B. Coordinate installation of sheet metal flashing and trim with adjoining roofing and wall materials, joints, and seams to provide a leakproof, secure, and noncorrosive installation.

C. Warranty on Finishes: Manufacturer agrees to repair or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within 20 years.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Standard: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" unless otherwise indicated. Conform to dimensions and profiles shown unless more stringent requirements are indicated.

B. FM Approvals' Listing: Manufacture and install roof edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-105. Identify materials with name of fabricator and design approved by FM Approvals.

2.2 SHEET METAL

A. Zinc-Tin Alloy-Coated Stainless Steel: ASTM A 240/A 240M, Type 304, fully annealed stainless-steel sheet, not less than 0.015 inch thick, with 0.787-mil thickness zinc-tin alloy coating applied to each side; with factory-applied gray preweathering.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Revere Copper Products, Inc.

2.3 ACCESSORIES

A. Felt Underlayment: ASTM D 226, Type II (No. 30), asphalt-saturated organic felts.

B. Self-Adhering, High-Temperature Sheet Underlayment: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied. Stable after testing at 240 deg F and passes after testing at minus 20 deg F; ASTM D 1970.

C. Slip Sheet: Rosin-sized building paper, 3-lb/100 sq. ft. minimum.

D. Fasteners: Wood screws, annular-threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners.

1. Exposed Fasteners: Heads matching color of sheet metal roofing using plastic caps or factory-applied coating.
2. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
3. Fasteners for Zinc-Tin Alloy-Coated Stainless-Steel Sheet: Series 300 stainless steel.
4. Fasteners for Metallic-Coated Steel Sheet: Hot-dip galvanized steel or Series 300 stainless steel.

E. Solder for Zinc-Tin Alloy-Coated Stainless Steel: ASTM B 32, 100 percent tin.

F. Butyl Sealant: ASTM C 1311, solvent-release butyl rubber sealant.

G. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.4 FABRICATION

A. Fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to the design, dimensions, geometry, metal thickness, and other characteristics of item indicated.

B. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that are capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with cited sheet metal standards. Allow for thermal expansion; set true to line and level. Install Work with laps, joints, and seams permanently watertight and weatherproof; conceal fasteners where possible.

B. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

C. Seams: Fabricate nonmoving seams with flat-lock seams.

D. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to a width of 1-1/2 inches; however, reduce pretinning where pretinned surface would show in completed Work.

1. Do not solder metallic-coated steel sheet.
2. Do not pretin zinc-tin alloy-coated stainless steel.
3. Do not use torches for soldering.
4. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

E. Metal Protection: Where dissimilar metals contact each other, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating.

1. Coat concealed side of aluminum with bituminous coating where it contacts wood, ferrous metal, or cementitious construction.

END OF SECTION 076200

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

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

B. Warranties: Provide manufacturer's standard written warranty, without monetary limitation, signed by manufacturer agreeing to promptly repair or replace roof specialties that show evidence of deterioration of factory-applied finishes for the period of 10 years.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. SPRI Wind Design Standard: Manufacture and install roof-edge specialties tested according to SPRI ES-1 and capable of resisting design pressures indicated on Drawings.

2.2 ROOF SPECIALTIES

A. Gutters and Downspouts:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Architectural Products Company.
    b. Castle Metal Products.
    c. Hickman Company, W. P.
    d. Metal-Fab Manufacturing, LLC.

2. Gutters: Manufactured in uniform section lengths, with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least 1 inch above front edge. Furnish expansion joints and expansion-joint covers.

    a. Gutter Style: Ogee.
    b. Aluminum: 0.050 inch thick.
    c. Prepainted, Zinc-Coated Steel: 0.034 inch thick.
    d. Gutter Supports: Gutter brackets Straps Spikes and ferrules Manufacturer's standard supports as selected by Architect with finish matching the gutters.

3. Downspouts: Corrugated rectangular with mitered elbows. Furnish wall brackets of same material and finish as downspouts, with anchors.

    a. Formed Aluminum: 0.050 inch thick.
    b. Prepainted, Zinc-Coated Steel: 0.034 inch thick.

B. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces. Provide reglets with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
    1. Zinc-Coated Steel: Nominal 0.028-inch thickness.

C. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches designed to snap into reglets or through-wall-flashing receiver and compress against base flashings with joints lapped.
    1. Zinc-Coated Steel: Nominal 0.028-inch thickness.

2.3 MATERIALS

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

B. Aluminum Finish: Class I, color anodic finish; complying with AAMA 611.

C. Prepainted, Zinc-Coated Steel Sheet: ASTM A 653/A 653M, G90 coating designation. Prepare, pretreat, and apply coating to comply with ASTM A 755/A 755M.

D. Felt Underlayment: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felts.

E. Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied. Stable after testing at 240 deg F and passes after testing at minus 20 deg F; ASTM D 1970.

    1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        a. Carlisle Residential; a division of Carlisle Construction Materials.
        b. Grace Construction Products; W.R. Grace & Co. -- Conn.
        c. Owens Corning.

F. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements.

    1. Exposed Penetrating Fasteners: Gasketed screws with heads matching color of metal.
    2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel.

G. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane or silicone polymer sealant.

H. Butyl Sealant: ASTM C 1311, solvent-release butyl rubber sealant.

I. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement.

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

C. Separate dissimilar metals with a bituminous coating or polymer-modified, bituminous sheet underlayment.

D. Fastener Sizes: Use fasteners of sizes that will penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Gutters: Join and seal gutter lengths. Allow for thermal expansion. Attach gutters to firmly anchored gutter supports spaced not more than 24 inches apart. Attach ends with rivets and seal with sealant to make watertight. Slope to downspouts.

F. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c.

G. Reglets: Install reglets to receive flashings where flashing without embedded reglets is indicated on Drawings. Install at height so that inserted counterflashings overlap 4 inches over top edge of base flashings.

END OF SECTION 077100

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and color Samples.

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

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

A. Low-Emitting Materials: Sealants shall comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 for Homes Section 018113.36 - Sustainable Design Requirements - National Green Building Standard Section 018113.43 - Sustainable Design Requirements - ASHRAE 189.1 Section 018113.53 - Sustainable Design Requirements - Green Globes.

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

C. Sealant for Use in Building Expansion Joints, One of the Following:

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

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) Dow Corning Corporation.
        2) GE Construction Sealants; Momentive Performance Materials Inc.
        3) Sika Corporation; Joint Sealants.

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

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) GE Construction Sealants; Momentive Performance Materials Inc.

2) Sika Corporation; Joint Sealants.

D. Sealant for General Exterior Use Where Another Type Is Not Specified, One of the Following:

1. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) Dow Corning Corporation.
2) GE Construction Sealants; Momentive Performance Materials Inc.
3) Sherwin-Williams Company (The).

2. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and for Use NT.

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) BASF Corporation; Construction Systems.
2) Bostik, Inc.
3) Sherwin-Williams Company (The).
4) Sika Corporation; Joint Sealants.

3. Single-component, nonsag polysulfide sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) W. R. Meadows, Inc.

E. Sealant for Exterior Traffic-Bearing Joints, Where Slope Precludes Use of Pourable Sealant:

1. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use T.

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) BASF Corporation; Construction Systems.
2) LymTal International Inc.

F. Sealant for Exterior Traffic-Bearing Joints, Where Slope Allows Use of Pourable Sealant:

1. Single-component, pourable urethane sealant, ASTM C 920, Type S; Grade P; Class 25; for Use T.

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) BASF Corporation; Construction Systems.
2) Pecora Corporation.
3) Sherwin-Williams Company (The).

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

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

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) Dow Corning Corporation.
2) GE Construction Sealants; Momentive Performance Materials Inc.
3) May National Associates, Inc.; a subsidiary of Sika Corporation.

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

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

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) BASF Corporation; Construction Systems.
2) May National Associates, Inc.; a subsidiary of Sika Corporation.
3) Sherwin-Williams Company (The).

2.2 MISCELLANEOUS MATERIALS

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

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

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

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

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with ASTM C 1193.

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

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

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS

GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Shop Drawings.

B. Furnish labor, materials and equipment to install all wood doors shown on drawings and / or specified herein.

PART 2 - PRODUCTS

2.1 HOLLOW METAL DOORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Masonite.
2. Pioneer Industries.
3. Stanley.
4. Windsor Door.

B. Fire-Rated Doors and Frames: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. At vertical exit enclosures and exit passageways, provide doors that that have a temperature rise rating of 450 deg F.

C. Doors: Complying with SDI A250.8 for level and model and SDI A250.4 for physical-endurance level indicated, 1-3/4 inches thick unless otherwise indicated.

1. Interior Doors: Level 1 and Physical Performance Level C (Standard Duty) or greater.
2. Exterior Doors: Level 2 and Physical Performance Level B (Heavy Duty) or greater, Model 2 (Seamless), metallic-coated steel sheet faces.

    a. Thermal-Rated (Insulated) Doors: Where indicated, provide doors with thermal-resistance value (R-value) of not less than 2.1 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.

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

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

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

F. Prepare doors and frames to receive mortised and concealed hardware according to SDI A250.6 and BHMA A156.115.

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

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

2.2 MATERIALS

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

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

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

D. Material for frames, stops, casings, etc., shall comply with the requirement of Division 6.

E. Finish hardware shall comply with Division 8.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Pre-hung Doors: The contractor may, if he chooses, deliver wood doors to the job pre-hung and complete with frames and casings.

B. Install door frames plumb and true without springing and binding according to manufacturer’s recommendations.

C. Install doors to provide clearances between doors and frames as indicated in SDI A250.11.

D. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying rust-inhibitive primer.

E. Sealant to be installed where door frame construction to make installation weather proof.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Samples for factory-finished doors.

PART 2 - PRODUCTS

2.1 FLUSH WOOD DOORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Graham Wood Doors; ASSA ABLOY Group company.
2. Marlite.
3. Mohawk Flush Doors, Inc.
4. Vancouver Door Company.

2.2 DOOR CONSTRUCTION, GENERAL

A. Quality Standard: WDMA I.S.1-A.

B. Certified Wood: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 for Homes

C. Before retaining "Low-Emitting Materials" Paragraph below, verify availability with manufacturers.

D. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.

E. WDMA I.S.1-A Performance Grade:

1. Heavy duty unless otherwise indicated.
2. Standard Duty: Closets (not including janitor's closets) Private toilets and where indicated.

F. Fire-Rated Wood Doors: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Where indicated, and or At vertical exit enclosures and exit passageways], provide doors that have a temperature rise rating of 450 deg F.

2. Provide core specified or mineral core as needed to provide fire-protection rating indicated.

2.3 FLUSH WOOD DOORS

A. Veneer-Faced Doors for Transparent Finish (where indicated within the construction documents):

1. Interior Hollow-Core Doors: Premium grade, seven-ply, standard hollow cores with lock blocks on both sides.

a. Faces: Grade A, As indicated within architect's construction documents.
b. Veneer Matching: as indicated within the construction documents, as well pleasing in match. Visible veneer doors must be consistent throughout the home.
c. Pair matching.

B. Doors for Opaque Finish:

1. Interior Hollow-Core Doors: Standard hollow cores with lock blocks on both sides.

a. Faces: Medium-density overlay or any closed-grain hardwood.

C. Factory-fit doors to suit frame-opening sizes indicated and to comply with clearances specified.

D. Factory-machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3.

E. Cut and trim openings to comply with referenced standards.

1. Trim light openings with moldings indicated.

F. Factory-finish doors indicated for transparent finish with stain and manufacturer's standard finish complying with WDMA TR-4, conversion varnish, and or WDMA TR-6, catalyzed polyurethane for grade specified for doors.

1. Sheen: Satin.

G. Factory-finish doors indicated for opaque finish with manufacturer's standard finish complying with WDMA OP-4, conversion varnish, and or WDMA OP-6, catalyzed polyurethane for grade specified for doors.

1. Sheen: Satin, and or Semigloss.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install doors to comply with manufacturer's written instructions and WDMA I.S.1-A, and as indicated.

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

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

C. Clearances: As follows unless otherwise indicated:

1. 1/8 inch at heads, jambs, and between pairs of doors.
2. 1/8 inch from bottom of door to top of decorative floor finish or covering.
3. 1/4 inch from bottom of door to top of threshold.
4. Comply with NFPA 80 for fire-rated doors.

END OF SECTION 081416

SECTION 081423 - CLAD WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 MOLDED-HARDBOARD-FACED DOORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Jeld-Wen, Inc.
2. Masonite International Corporation.

B. Fire-Rated Wood Doors: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, based on testing at positive pressure according to NFPA 252 or UL 10C.

C. Certified Wood: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 for Homes.

D. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.

E. Faces: 1/8-inch- thick tempered hardboard, molded to panel configuration indicated, with smooth finish and or wood grain finish yet must be consistent throughout the home unit's construction.

1. Panel Configuration: as indicated per architectural/construction drawings. E.g., such as flush, 1-panel, 2-panel, 4-panel, or 6-panel. All must be consistent with a home units.

F. Hollow-Core Doors with Hardboard Faces: Three-ply or greater (yet must be consistent throughout a unit), hollow cores with lock blocks on both sides.

1. Core: Honeycomb or grid core routed to provide clearance for recessed areas of faces and provide full contact at remainder of faces.
2. Stiles and Rails: Softwood, 1-1/4-inch- wide stiles and 2-1/2-inch- wide rails.

G. Factory-fit doors to suit frame-opening sizes indicated and to comply with clearances specified.

H. Factory-machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3.

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

PART 3 - EXECUTION

3.1 INSTALLATION

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

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

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

END OF SECTION 081423

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

1. Vertical Access Doors: NFPA 252 or UL 10B.
2. Horizontal Access Doors and Frames: NFPA 288.

2.2 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Access Panel Solutions.
2. Acudor Products, Inc.

B. Flush Access Doors with Exposed Flanges: Prime-painted steel units.

C. Flush Access Doors with Concealed Flanges: Prime-painted steel units with gypsum board bead flange.

D. Recessed Access Doors: Prime-painted steel pan recessed [**1/2 inch**] [**5/8 inch**] with gypsum board bead for concealed flange installation.

E. Aluminum, Flush Access Doors (where applies): Clear anodic finish with exposed flanges.

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

G. Fire-Rated, Flush Access Doors with Concealed Flanges: Prime-painted steel, self-latching units with automatic closer.

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

2.3 MATERIALS

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

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

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

D. Aluminum Sheet: ASTM B 209, Alloy 5005-H15.

PART 3 - EXECUTION

3.1 INSTALLATION

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

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

END OF SECTION 083113

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Hardware schedule.

PART 2 - PRODUCTS

2.1 HARDWARE

A. Hinges:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Baldwin Hardware Corporation.
    b. Ives; an Allegion brand.
    c. McKinney Products Company; an ASSA ABLOY Group company.
    d. Stanley Commercial Hardware; a division of Stanley Security Solutions.

2. Brass/bronze hinges with stainless-steel pins for exterior.
3. Two hinges for 1-3/8-inch- thick wood doors.
4. Three hinges for 1-3/4-inch- thick doors 90 inches or less in height.

B. Locksets and Latchsets:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Corbin Russwin, Inc.; an ASSA ABLOY Group company.
    b. SARGENT Manufacturing Company; ASSA ABLOY.
    c. Schlage; an Allegion brand.
    d. Weiser Lock Corp.
    e. Yale Security Inc; an ASSA ABLOY Group company.

2. BHMA A156.2, Series 4000, Grade 2 for bored locks and latches.
3. Lever handles on locksets and latchsets,.

C. Key locks to Owner's new master-key system.

1. Cylinders with six-pin tumblers.
2. Provide cylinders for overhead doors, and other locking doors that do not require other hardware.

3. Provide construction keying.
4. Provide key control system, including cabinet.

D. Provide wall stops or floor stops for doors without closers.

E. Hardware Finishes:

1. Hinges: Matching finish of lockset/latchset.
2. Locksets, Latchsets, and Exit Devices: Oil-rubbed, oxidized bronze;.
3. Other Hardware: Matching finish of lockset/latchset.

F. Door Viewer:

1. Front Entrance Door: National Manufacturing “Eagle Eye”, wide angle, model V-805.
2. Mount 5’-0” above finish floor to center of view glass.

G. Electric Chimes:

1. Front Entrance Door Lighted Push Button: Nutone, Model PB-16L.

2. Hallway Chimes: Nutone, Model LB-14.

3. Attic Transformer: Nutone, Model 101-N.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount hardware in locations required to comply with governing regulations and according to SDI A250.8 and DHI WDHS.3.

B. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet.

C. Deliver keys to Owner.

3.2 HARDWARE SCHEDULE

A. Hardware Set No.01: All Exterior Doors to Dwelling Units & Interior Door to Garage

1. Hinges.
2. Bored entry handleset (F94).
3. Bored auxiliary deadlock, key both sides.
4. Stop – Save-a-Wall Model M-10, Casey Enterprises.
5. Door viewer.
6. Threshold and weather stripping.

B. Hardware Set No.02: Doors to Bathrooms & Master Bedroom

1. Hinges.
2. Bored privacy, bedroom or bath lock (F76).
3. Stop – Save-a-Wall Model M-10, Casey Enterprises.

C. Hardware Set No.03: All Double Doors (Where Required)

1. Hinges.
2. (2) Dummy Knobs.
3. (2) Ball Catches.

D. Hardware Set No.04: All Other Bedroom & Closet Doors

1. Hinges.
2. Passage latchset
3. Stop – Save-a-Wall Model M-10, Casey Enterprises

END OF SECTION 087100

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Samples.

PART 2 - PRODUCTS

2.1 GLASS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: "Glazing Manual."
2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.

C. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

D. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

E. Windborne-Debris-Impact Resistance: Exterior glazing shall comply with enhanced-protection testing requirements in ASTM E 1996 for Wind Zone 3 when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on Project and shall be installed in same manner as glazing indicated for use on Project.

1. Large-Missile Test: For glazing located within 30 feet (9.1 m) of grade.
2. Small-Missile Test: For glazing located more than 30 feet (9.1 m) above grade.

2.2 GLASS PRODUCTS

A. Heat-Strengthened Float Glass: ASTM C 1048, Kind HS; Type I; Quality-Q3.

B. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190.

2.3 GLAZING SEALANTS

A. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Bostik, Inc.
b. Dow Corning Corporation.
c. GE Construction Sealants; Momentive Performance Materials Inc.
d. Sika Corporation.
e. Tremco Incorporated.

B. Low-Emitting Materials: Sealants shall have a VOC content of not more than 250 g/L.

PART 3 - EXECUTION

3.1 INSTALLATION

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

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

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

3.2 INSULATING-GLASS TYPES

A. Glass Type : Low-E-coated, clear insulating glass.

1. Overall Unit Thickness: 5/8 inch (16 mm).
2. Thickness of Each Glass Lite: 4 mm.
3. Outdoor Lite: Annealed or Heat-strengthened float glass.
4. Interspace Content: Argon.
5. Indoor Lite: Annealed float glass.
6. Visible Light Transmittance: 75 percent minimum.
7. Safety glazing where required.

END OF SECTION 088000

SECTION 092613 - GYPSUM VENEER PLASTERING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

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

2.2 GYPSUM VENEER PLASTER

A. Gypsum Veneer Plaster: ASTM C 587, one and or two-component veneer plaster system.

1. One-Component Gypsum Veneer Plaster:

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) Georgia-Pacific Building Products.
2) National Gypsum Company.
3) United States Gypsum Company.

2. Two-Component Gypsum Veneer Plaster:

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1) National Gypsum Company.
2) United States Gypsum Company.

2.3 PANEL PRODUCTS

A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

B. Gypsum Base for Veneer Plaster: ASTM C 1396/C 1396M, in thicknesses indicated. Regular type unless otherwise indicated, Foil backed where indicated, Type X where indicated, and or Type as required for specific fire-resistance-rated assemblies.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. CertainTeed Corporation.
    b. Georgia-Pacific Building Products.
    c. National Gypsum Company.
    d. United States Gypsum Company.

C. Backing Panels for Multilayer Application: ASTM C 1396/C 1396M, in thicknesses indicated. Same type as face layer unless otherwise indicated. Foil backed where indicated.

D. Cementitious Backer Units: ANSI A118.9 or ASTM C 1288, in thicknesses indicated.

2.4 ACCESSORIES

A. Trim Accessories: ASTM C 1047, formed from galvanized-steel sheet, or aluminum-coated steel sheet; rolled zinc, plastic, or paper-faced, galvanized-steel sheet, galvanized-steel sheet, or aluminum-coated steel sheet, or rolled zinc plastic, paper-faced, galvanized-steel sheet.

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

B. Aluminum Accessories: Extruded aluminum, in profile indicated, and with corrosion-resistant primer compatible with veneer plaster.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Fry Reglet Corporation.
    b. Gordon, Inc.

C. Joint-Reinforcing Materials: ASTM C 587.

1. Joint Tape: As recommended by gypsum veneer plaster manufacturer for applications indicated.
2. Embedding Material: As recommended by gypsum veneer plaster manufacturer.

D. Cementitious Backer Unit Joint-Treatment Materials: As recommended by cementitious backer unit manufacturer.

E. Bonding Agent: ASTM C 631, polyvinyl acetate.

F. Sound-Attenuation Blankets: ASTM C 665, Type I (un faced).

G. Acoustical Sealant for Exposed and Concealed Joints: Non sag, paintable, non staining latex sealant complying with ASTM C 834.

1. Sealants shall have a VOC content of 250 g/L or less.
2. Sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install panel products to comply with ASTM C 844 and as follows:

1. Isolate veneer plaster assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
3. Multilayer Fastening Methods: Fasten base layers with screws, and face layers to base layers with adhesive and supplementary fasteners.

B. STC-Rated Assemblies: Comply with ASTM C 919 for locating edge trim and closing off sound-flanking paths around or through assemblies.

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

D. Cementitious Backer Units: Comply with ANSI A108.11.

E. Apply bonding agent to dry concrete, masonry, and or cementitious backer units where finish is to cover.

F. Apply gypsum veneer plaster to comply with ASTM C 843 and manufacturer's written recommendations.

1. One-Component Gypsum Veneer Plaster: Trowel apply base coat over substrate to uniform thickness of 1/16 to 3/32 inch. Fill all voids and imperfections.
2. Two-Component Gypsum Veneer Plaster: Trowel apply base coat over substrate to uniform thickness of 1/16 to 3/32 inch. Fill all voids and imperfections. Trowel apply finish-coat plaster over base-coat plaster to uniform thickness of 1/16 to 3/32 inch.
3. Radiant-Heat, Two-Component Gypsum Veneer Plaster Ceilings: Apply plaster base coat to sufficiently cover electric heating cables. Trowel plaster parallel in direction of cables to uniform thickness of 3/16 inch. Completely cover cables.

After base coat has developed sufficient bond, apply finish coat. Trowel plaster to uniform thickness of 1/16 to 3/32 inch.

4. Where gypsum veneer plaster abuts only metal door frames, windows, and other units, groove finish coat to eliminate spalling.
5. Provide finish as indicated.

END OF SECTION 092613

SECTION 092900 - GYPSUM BOARD

GENERAL

A.1 SECTION REQUIREMENTS

A. Submittals: Product data.

B. Related Work:

1. Joint Finish and Texture: Sheetrock joint finishing and texture is called for under Division 9A. This Sub-Contractor shall state in his proposal to General Contractor if joint finishing is included or excluded.

2. Division 6 – Finish Carpentry and Millwork.

    a. Note: Wood Framing: Check the spacing and alignment of wood framing members before installation. Carpenter shall correct members found out of line. The installation of any wallboard shall be considered in acceptance of framing system.

3. Division 9 - Painting

PRODUCTS

A.2 PERFORMANCE REQUIREMENTS

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

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

A.3 PANEL PRODUCTS

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

B. Gypsum Wall Board: Shall be ½” thick min. (exception 5/8” thick; where and if indicated and required by local codes; and shall not vary less than if local code requires 5/8”gyp bd. For General assembly of all walls; except walls between the living unit and the garage, of which shall be 5/8” fire-rated. Gypsum board ceilings shall be 5/8”. Moisture resistant wallboard shall be same as above and installed on all bathroom and laundry room walls and ceilings, as scheduled.

C. Drywall Accessories: Shall be galvanized steel and shall include Standard Corner Bead 1”x1 ¼”.

D. Tape and Bedding: Material shall be equal to U.S.G. Perf-A-Tape.

E. Interior Gypsum Board: ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Type X where indicated. Type as required for specific fire-resistance-rated assemblies Sag-resistant type for ceiling surfaces where indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. American Gypsum.
b. Georgia-Pacific Building Products.
c. National Gypsum Company.
d. United States Gypsum Company.

F. Exterior Gypsum Soffit Board: ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. American Gypsum.
b. Georgia-Pacific Building Products.
c. National Gypsum Company.
d. United States Gypsum Company.

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

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. American Gypsum.
b. Georgia-Pacific Building Products.
c. Temple-Inland Building Products by Georgia-Pacific.
d. United States Gypsum Company.

H. Cementitious Backer Units: ANSI A118.9, ASTM C 1288, or ASTM C 1325.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. C-Cure.
b. CertainTeed Corporation.
c. James Hardie Building Products, Inc.
d. United States Gypsum Company.

A.4 ACCESSORIES

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

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

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

1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
2. Joint Compounds: Drying-type, ready-mixed, all-purpose compounds, or Setting-type taping compound and drying-type, ready-mixed, compounds for topping. Use setting-type compounds at exterior soffits.
3. Skim Coat: For final coat of Level 5 finish, use.

C. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

1. Low-Emitting Materials: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 for Homes.

D. Textured Finish where applies and or indicated: Polystyrene aggregate ceiling finish where indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Georgia-Pacific Building Products.
b. National Gypsum Company.
c. United States Gypsum Company.

E. Textured Finish where applies and or indicated: Aggregate finish where indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. CertainTeed Corporation.
b. Georgia-Pacific Building Products.
c. National Gypsum Company.
d. United States Gypsum Company.

F. Textured Finish where applies and or indicated: Acoustical finish where indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. International Cellulose Corp.
b. United States Gypsum Company.

EXECUTION

A.5 INSTALLATION

A. Furnish all labor and material to install all drywall work shown on plans and described herein. All material stored on the job shall be be neatly stacked in a dry place.

B. Gypsum Board Application: Gyp. Board is installed over wood studs. Apply sheets to the studs and follow the printed instruction of manufacturer. Apply perpendicular to framing.

C. Boards shall extend to within ¼" of the floor, but shall not touch the floor and to the plate as shown.

D. Gypsum board shall be nailed to the studs with 1 ¼" GWB-54, ¼" head nail, spaced 8" o.c. on edges and 12"o.c. in field for ½" gyp, use 1 3/8" for 5/8" gyp. board.

E. Where fiberglass tub or fiberglass shower is on an exterior wall, insulated and install poly-film as specified elsewhere. Then install moisture resistance gyp. Board wall on exterior wall before tub is installed. After tub or shower is installed, apply second layer of moisture resistant gyp-board to cover edge tabs.

F. As work progress, waste material shall be removed from the job site, keeping the building and site cleared and orderly. Work in harmony with other trades that need to install bucks, supports, hangers, doors, windows and insulation.

G. Do not apply wallboard until all in-wall plumbing, electrical and mechanical lines and devices are installed, inspected and approved. Do all cutting of wallboard for Plumber and Electrician.

H. Special care shall be taken to "cut to fit" electrical boxes and plumbing pipes.

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

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

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

K. Finishing Gypsum Board: ASTM C 840.

1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.

2. At substrates for tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges.
3. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.

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

M. Joint Treatment and Textures Finish:
1. All joints in gypsum board shall be bedded and taped and all exposed surfaces finished in a texture. Install Perf-A-Tape (or equal industry product) in accordance with directions of manufacturer, taping all joints in gyp-board including vertical, horizontal and inside corners. All outside corners shall have standard metal corner.

2. This portion of the work shall be done by skilled trade mechanics. All joints must be brought to a true and uniform surface. The amount of joint work required will depend upon the framing and erection of gyp-board.

3. Use a steel trowel and extend mud as much as 12” from joint to provide a smooth uniform surface. The joint system shall be inspected under good light and approved before any texture is applied.

4. Surfaces to receive texture shall have one heavy coat of texture applied to surface, finishing in a light stipple. Texture may be roller applied or blown on.

5. Clean drywall and adjoining surfaces including the edges of casings, doors, floors, etc. and repair any damage from such case.

END OF SECTION 092900

SECTION 096516 - RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product data and Samples. This contract includes all labor and material required for the installation of vinyl tile flooring as called within the Finish Schedule and as specified hereinafter. The Contractor shall submit actual samples of the floor covering to the Housing Authority for approval and to the project's Architectural manager. Include full color and or pattern selection.

B. Extra Materials: Deliver to Owner at least 10 linear feet larger patterns provide piece that shows pattern, in roll form and in full roll width, for each type and color of resilient sheet flooring installed.

C. The Housing Authority shall approve all colors. The materials hereinafter mentioned are intended to specify a quality of material.

D. Location of floor covering is designated on the Finish Schedule of the project documents. Unless referred elsewhere within the documents.

E. Indicate in drawing location of seams within room(s). Reduce seam occurences so to have as few as possible seams to the center of open rooms and walkways. Confer with Housing Authority and Architectural project manager any seam discrepancies or concerns. Determine and note compatibleness with other materials that come into contact and or adjacent surroundings.

PART 2 - PRODUCTS

2.1 UNBACKED VINYL SHEET FLOORING

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Armstrong World Industries, Inc.
2. Forbo Flooring Systems.
3. Johnsonite; a Tarkett company.
4. Shaw Contract Group; a Berkshire Hathaway company.

B. Unbacked Sheet Vinyl Floor Covering: ASTM F 1913, 0.080 inch minimum thick.

C. Wearing Surface: Smooth and or Embossed. Highest wear layer possible. Wear layer surface .020in. (.05mm) min.

D. Sheet Width: 6.6 feet.

2.2 INSTALLATION ACCESSORIES

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

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

1. Low-Emitting Materials: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 For Homes.

C. Chemical-Bonding Compound: Manufacturer's product for chemically bonding seams.

1. Low-Emitting Materials: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 For Homes.

A. Floor Polish: Protective liquid floor polish products as recommended by manufacturer. Polish shall be provided only if product manufacturer recommends for standard wear and usage of flooring within one day to one year of use.

PART 3 - EXECUTION

3.1 INSTALLATION

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

B. Floor covering shall not be undertaken until after completion of all other work except moveable or detachable equipment.

C. Any floor too rough for direct application shall be machine sanded, or as otherwise directed for the removal of irregularities. Cracks and depressions shall be filled with latex underlayment.

D. Unroll sheet floor coverings and allow them to stabilize before cutting and fitting.

E. Maintain uniformity of resilient sheet flooring direction, and match edges for color shading at seams.

F. Lay-in full bed of adhesive, with all joints straight and tight. Sheet vinyl shall be laid symmetrically about center of rooms.

G. Where there is no metal threshold and where covering does not extend into adjoining room, provide 2” vinyl edging strip under doors and openings. Heat twenty-four hours before laying floor and continue to heat.

H. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in substrates.

I. Cleaning: Remove surplus material from floors and adjoining surfaces. When building is otherwise complete, clean surfaces of any foreign matter and buff.

Floor Polish: Polish shall be provided only if product manufacturer recommends for standard wear and usage of flooring within one day to one year of use.

1. Remove soil, visible adhesive and surface blemishes from floor covering before applying liquid floor polish. Revise subparagraph below to suit products selected.

2. Apply as product and polish manufacturer’s recommended coat(s).

END OF SECTION 096516

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals:

1. Product Data: Include printout of MPI's "MPI Approved Products List" with product highlighted.
2. Samples.

B. Extra Materials: Deliver to Owner 1 gal. of each color and type of finish-coat paint used on Project, in containers, properly labeled and sealed.

C. Before starting work the painter shall submit to the Housing Authority a complete list of the materials he/she intends to use and no material shall be delivered to the premises until such list has been approved.

D. Workmanship in General:
1. Work shall done by skilled mechanics in a workmanlike manner. Paint shall be of proper consistency and left free of brush marks, sages, or other defects.

2. Method of Application: Paint shall be applied with a roller or airless sprayer. All woodwork, metal and trim shall be brush painted, except as noted for pre-finish woodwork.

E. A minimum temperature of 50 degrees Fahrenheit. Shall be maintained where painting is to be being done or is drying. The General contractor shall guarantee all painting as called for in General Requirements.

F. The painter shall furnish all labor, materials, scaffolding, tools, etc., required for painting and wall covering described herein. He shall work in harmony with other trades and protect their work from damage.

G. Extra Materials: Deliver to Owner 1 gal.of each color and type of finish-coat paint used on Project, in containers, properly labeled and sealed.

H. Bathroom, Kitchen, and or laundry adjacent wall areas shall be painted withpaint that is made to be installed and is compatible for use within kitchens, bathrooms, and laundry rooms. Interior finish coat shall provide a washable finish.

I. Storage and Handling:

1. A space will be designated for the storage and mixing of paint, materials and tools. This space shall be adequately protected from damage to floors, walls, etc.

2. Paints shall be kept covered at all times. Take such precautions as needed to prevent fires.

J.

PART 2 - PRODUCTS

2.1 PAINT

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Behr Process Corporation.
2. Benjamin Moore & Co.
3. Kelly-Moore Paint Company Inc.
4. Pratt & Lambert.
5. Rust-Oleum Corporation; a subsidiary of RPM International, Inc.
6. Sherwin-Williams Company (The).
7. Zinsser; Rust-Oleum Corporation.

B. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List."
1. Primer, Alkali Resistant, Water Based: MPI #3.
2. Primer, Latex: MPI #6.
3. Primer, Alkyd: MPI #5.
4. Latex, Exterior Flat (Gloss Level 1): MPI #10.
5. Latex, Exterior Low Sheen (Gloss Level 3-4): MPI #15.
6. Latex, Exterior Semigloss (Gloss Level 5): MPI #11.
7. Latex, Exterior, Gloss (Gloss Level 6): MPI #119.
8. Alkyd, Exterior Flat (Gloss Level 1): MPI #8.
9. Alkyd, Exterior, Semigloss (Gloss Level 5): MPI #94.
10. Alkyd, Exterior Gloss (Gloss Level 6): MPI #9.
11. Alkyd, Quick Dry, Semigloss (Gloss Level 5): MPI #81.
12. Alkyd, Quick Dry, Gloss (Gloss Level 7): MPI #96.

C. Material Compatibility: Provide materials that are compatible with one another and with substrates.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

D. Colors: As selected and as scheduled.

PART 3 - EXECUTION

3.1 PREPARATION

A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.

C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces.

3.2 APPLICATION

A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Paint exposed surfaces unless otherwise indicated.

1. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.

C. Apply paints according to manufacturer's written instructions.

1. Use brushes only where the use of other applicators is not practical.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

1. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

3.3 EXTERIOR PAINT APPLICATION SCHEDULE

A. Galvanized Metal:

1. Flat or Low-Sheen Latex: [**Two coats**] over waterborne galvanized-metal primer: MPI EXT 5.3H.
2. Flat, or Low-Sheen Latex: Two coats over primer recommended by topcoat manufacturer for exterior use on galvanized-metal.
3. Flat, or Semigloss, Alkyd: Two coats over primer recommended by topcoat manufacturer for exterior use on galvanized-metal.

B. Aluminum:

1. Flat, or Low-Sheen Latex: Two coats over quick-drying primer for aluminum: MPI EXT 5.4H.

2. Flat, or Semigloss, Alkyd: Two coats over quick-drying primer for aluminum: MPI EXT 5.4F.

C. Wood: Including wood trim, architectural woodwork, doors, windows, wood siding, wood fences, and or wood-based panel products.

1. Flat, or Low-Sheen Latex: Two coats over latex primer: MPI EXT 6.3L.
2. Flat, or Low-Sheen Latex: Two coats over alkyd primer: MPI EXT 6.3A.

D. Plastic Trim:

1. Flat, or Low-Sheen Latex: Two coats over water-basedbonding primer: MPI EXT 6.8A.
2. Flat, or Semigloss Alkyd: Two coats over water-based bonding primer: MPI EXT 6.8B.

E. Exterior Gypsum Soffit Board:

1. Flat, or Low-Sheen Latex: Two, or Three coats: MPI EXT 9.2A.

END OF SECTION 099113

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals:

1. Product Data: Include printout of MPI's "MPI Approved Products List" with product highlighted.
2. Samples.

B. Mockups: Full-coat finish Sample of each type of coating, color, and substrate, applied where directed.

C. Before starting work the painter shall submit to the Housing Authority a complete list of the materials he/she intends to use and no material shall be delivered to the premises until such list has been approved.

D. Workmanship in General:

1. Work shall done by skilled mechanics in a workmanlike manner. Paint shall be of proper consistency and left free of brush marks, sages, or other defects.

2. Method of Application: Paint shall be applied with a roller or airless sprayer. All woodwork, metal and trim shall be brush painted, except as noted for pre-finish woodwork.

E. A minimum temperature of 50 degrees Fahrenheit. Shall be maintained where painting is to be being done or is drying. The General contractor shall guarantee all painting as called for in General Requirements.

F. The painter shall furnish all labor, materials, scaffolding, tools, etc., required for painting and wall covering described herein. He shall work in harmony with other trades and protect their work from damage.

G. Extra Materials: Deliver to Owner 1 gal.of each color and type of finish-coat paint used on Project, in containers, properly labeled and sealed.

H. Bathroom, Kitchen, and or laundry adjacent wall areas shall be painted withpaint that is made to be installed and is compatible for use within kitchens, bathrooms, and laundry rooms. Interior finish coat shall provide a washable finish.

I. Storage and Handling:

1. A space will be designated for the storage and mixing of paint, materials and tools. This space shall be adequately protected from damage to floors, walls, etc.

2. Paints shall be kept covered at all times. Take such precautions as needed to prevent fires.

J. Related Work:

1. **Division 6 – Finish Carpentry and Millwork.**

2. **Joint Finish and Texture: Sheetrock joint finishing and texture is called for under Division 9A. This Sub-Contractor shall state in his proposal to General Contractor if joint finishing is included or excluded section.**

PART 2 - PRODUCTS

2.1 PAINT

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Benjamin Moore & Co.
2. Devoe.
3. Glidden Professional.
4. Kelly-Moore Paint Company Inc.
5. Pittsburg.
6. Rust-Oleum Corporation; a subsidiary of RPM International, Inc.
7. Sherwin-Williams Company (The).
8. Zinsser; Rust-Oleum Corporation.

B. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List."
1. Primer Sealer, Latex: MPI #50.
2. Primer, Alkali Resistant, Water Based: MPI #3.
3. Primer Sealer, Institutional Low Odor/VOC: MPI #149.
4. Primer, Latex, for Interior Wood: MPI #39.
5. Primer Sealer, Alkyd, Interior: MPI #45.

C. Material Compatibility: Provide materials that are compatible with one another and with substrates.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

D. Low-Emitting Materials: Comply with Section 018113.26 - Sustainable Design Requirements - LEED 2008 for Homes.

E. Colors: As selected and or scheduled as approved by The Housing Authority. Colors selected and approved on site must be relayed to the project architect manager’s office for proper verification and documentation of project form.

1. Color Selections:
   a. Coordinate texture pattern and method of application with Housing Authority. Paint and stain colors as selected by Housing Authority.
   b. Contractor shall provide 4 color selections, submitted to Housing Authority, on each of the following items:
      1) Exterior Colors: Brick, Roof Shingles.
      2) Interior Colors: Floor Tile, (Carpet, if required), Wall/Ceiling Paint, Transparent Stain and Plastic Laminate Counter-tops.

PART 3 - EXECUTION

3.1 PREPARATION

A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Paints shall be mixed and applied according to manufacturer's directions, using only such thinners as recommended. Materials shall be delivered in their original containers with labels intact and seals unbroken.

C. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.

D. Protect floors, equipment and other work from damage during painting operation.

E. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces.

F. Surfaces shall be free from moisture, and properly prepared to receive finish. Sand between coats and remove all dust, dirt or foreign matter.

G. The finish of walls in kitchens, bathrooms, and laundry areas shall be smooth and be resistant to damage from grease, water, detergents and normal household chemicals.

H. Woodwork shall be cleaned and dusted before painting. Nails in woodwork shall be set by the Carpenter. Wood surfaces shall be sanded smooth before priming.

I. Woodwork, including cracks and nail holes, shall be filled after the first coat with spackling putty. Putty shall be tinted to suit the particular surface.

J. Note: items previously specified as pre-finished in Division 6 of this specification are not included herein.

3.2 APPLICATION

New construction, comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

A. Paint exposed surfaces, new and existing, unless otherwise indicated.

1. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces.
2. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint the back side of access panels.
4. Color-code mechanical piping in accessible ceiling spaces.
5. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.

B. Apply paints according to manufacturer's written instructions.

1. Use brushes only where the use of other applicators is not practical.
2. Use rollers for finish coat on interior walls and ceilings.
3. Do not paint in extremely cold weather, frost, or extremely damp weather.
4. Do not paint in dusty areas.

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

1. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

2. Upon completion of painting operation, examine all painted surfaces and touch up any areas necessary.

3. Do all painting to complete hide of underlying surfaces. Finish coats should be the minimum mil thickness specified in B-935 upon completion.

3.3 INTERIOR PAINT APPLICATION SCHEDULE

A. The following list covers the type of material and the number of coats required.

B. Mil thickness for interior and exterior painting to be as follows:
1. Preparation Coat: 1.5 Mils
2. Finish Coats 3.0 Mils
3. Total Average Thickness 4.5 Mils

C. Wood: Including wood trim, architectural woodwork doors windows, wood-based panel products.

1. Semi gloss Latex: two coats over latex primer for wood: MPI INT 6.3T. Where Latex paint is call for within the construction documents and approved by the IHA.
2. Semi gloss and or Gloss (Only where specifically indicated to have gloss finish surface.) Latex: Two coats over alkyd primer: MPI INT 6.3U. Where Alkyd paint and sheen type is called for within the construction documents and approved by the IHA.
3. Flat Gloss Level 2, and or Semi gloss Institutional Low-Odor/VOC Latex: Two coats over latex primer for wood: MPI INT 6.3V. Where Institutional Low-Odor/VOC Latex is called for within the construction documents and approved by the IHA.
4. Gloss Level 2, and or Semi gloss High-Performance Architectural Latex: Two coats over latex primer for wood: MPI INT 6.3A. Where High-Performance Architectural Latex is called for within the construction documents and approved by the IHA.
5. Semi gloss, and or Gloss (Only where specifically indicated to have gloss finish surface.) Alkyd: Two coats over alkyd primer: MPI INT 6.3B. Where alkyd paint is called for within the construction documents and approved by the IHA.

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D. Gypsum Board
   1. General Areas:
      a. Texture (As Selected by IHA)
      b. Flat Latex: One coat over latex primer/sealer: MPI INT 9.2A.
      c. Flat Low-Odor/VOC Latex: One coat over low-odor/VOC primer/sealer: MPI INT 9.2M.
      d. Semi gloss High-Performance Architectural Latex: one coat over latex primer/sealer: MPI INT 9.2B.

   2. Kitchens and Utility/Laundry Areas:
      a. Texture with knock down trowel applied texture (smooth (As Selected by IHA))
      b. Flat Latex: One coat over texture: MPI INT 9.2A.
      c. Flat (Egg-Shell) Institutional Low-Odor/VOC Latex: Two coats over low-odor VOC primer/sealer: MPI INT 9.2M.
      d. Semi gloss High Performance Architectural Latex: One coat over latex primer/sealer: MPI INT 9.2B.

   3. Full Baths, ¾ baths, and ½ bathrooms.
      a. Texture (smooth (As Selected by IHA))
      b. Flat primer/sealer Low-Odor/VOC Latex: One coat over texture finish.
      c. (Egg-Shell) or Semi gloss (As approved by Housing Authority for project.) enamel Low-Odor/VOC: One coat over low-odor VOC primer/sealer.
      d. (Egg-Shell) or Semi gloss (As approved by Housing Authority for project.) Low-Odor/VOC: One coat over low-odor/VOC.

   4. Spray-Textured Ceilings:
      a. Ceiling in general throughout (including the garage areas).

1) Blown plaster textured ceiling throughout. Finished with sample approved trowel knocked down texture (smooth (As Selected by IHA)). (Garage included.)
2) Flat primer/sealer Low-Odor/VOC Latex: One coat over primer/sealer: MPI INT 9.1A
3) Flat Latex throughout: two coats over latex primer/sealer: MPI INT 9.1A.

b. Ceiling in Laundry rooms, all bathrooms, and enclosed kitchen ceilings (Vertical dry-wall at all 4 walls of a kitchen.).
1) Blown plaster textured ceiling throughout. Finished with sample approved; trowel knocked down texture (smooth (As Selected by IHA)).
2) Flat primer/sealer Low-Odor/VOC Latex: One coat over primer/sealer: MPI INT 9.1A
3) Semi gloss Latex: One coat over alkyd primer/sealer: MPI INT 9.1B.

END OF SECTION 099123

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 TOILET AND BATH ACCESSORIES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. American Specialties, Inc.
2. Bobrick Washroom Equipment, Inc.
3. Bradley Corporation.

B. Toilet Tissue Dispenser:

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.
2. Type: Single-roll dispenser.
3. Mounting: Surface mounted with concealed anchorage.
4. Material: Chrome-plated zinc alloy (zamac) or steel.
5. Operation: Noncontrol delivery with standard spindle.
6. Capacity: Designed for 4-1/2- or 5-inch- diameter-core tissue rolls.

C. Grab Bar:

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.
2. Material: Stainless steel, 0.050 inch thick.
3. Mounting: Concealed.
4. Gripping Surfaces: Smooth, satin finish.
5. Outside Diameter: 1-1/2 inches for heavy-duty applications.
6. Mounting: Surface.
7. Material: Stainless steel, No. 4 finish (satin).

D. Shower Curtain Rod:

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.
2. Outside Diameter: 1-1/4 inches.
3. Mounting: Flanges with exposed fasteners.
4. Material and Finish: Stainless steel, No. 4 finish (satin).

E. Medicine Cabinet:

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.
2. Mounting: Recessed, for nominal 4-inch wall depth.
3. Size: 18 by 24 inches.
4. Door: Framed mirror door concealing storage cabinet equipped with continuous hinge and spring-buffered, rod-type stop and magnetic door catch.
5. Shelves: Three, adjustable.

F. Robe Hook:

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.
2. Description: Double-prong unit.
3. Material and Finish: Stainless steel, No. 4 finish (satin).

G. Towel Bar:

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.
2. Description: 3/4-inch- square tube with rectangular end brackets.
3. Mounting: Flanges with concealed fasteners.
4. Length: 18 inches 24 inches 30 inches.
5. Material and Finish: Stainless steel, No. 4 finish (satin).

H. Underlavatory Guard:

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.
2. Description: Insulating pipe coverings for supply and drain piping assemblies, which prevent direct contact with and burns from piping and allow service access without removing coverings.
3. Material and Finish: Antimicrobial, molded plastic, white.

2.2 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, No. 4 finish (satin), 0.031-inch minimum nominal thickness unless otherwise indicated.

B. Chromium Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).

C. Baked-Enamel Finish: Factory-applied, gloss-white, baked-acrylic-enamel coating.

D. Mirrors: ASTM C 1503, mirror glazing quality, clear-glass mirrors, nominal 6.0 mm thick.

E. Galvanized-Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

F. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

1. Install grab bars to withstand a downward load of at least 250 lbf, when tested according to method in ASTM F 446.

B. Adjust accessories for unencumbered, smooth operation, and verify that mechanisms function properly. Replace damaged or defective items. Remove temporary labels and protective coatings.

END OF SECTION 102800

SECTION 113100 - RESIDENTIAL APPLIANCES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 RESIDENTIAL APPLIANCES

A. Regulatory Requirements: Comply with the following:

1. NFPA: Provide electrical appliances listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. ANSI: Provide gas-burning appliances that comply with ANSI Z21 Series standards.

B. Accessibility: Where residential appliances are indicated to comply with accessibility requirements, comply with ICC A117.1.

C. Electric or Gas Range: 30-inch- wide, freestanding range with 4 burners and manual-cleaning oven with broiler unit.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Amana; a division of Whirlpool Corporation.
b. General Electric Company (GE Appliances).
c. General Electric Company (Hotpoint).
d. Maytag; a division of Whirlpool Corporation.
e. Sears Brands LLC (Kenmore).
f. Whirlpool Corporation.

2. Color: White.

D. Exhaust Hood: 30-inch , wall-mounted ventilating exhaust hood with three-speed automatic fan.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. General Electric Company (GE Appliances).
b. General Electric Company (Hotpoint).

c. Maytag; a division of Whirlpool Corporation.
d. Sears Brands LLC (Kenmore).
e. Whirlpool Corporation.

2. Color: White.
3. Fan Control: Hood-mounted switch, with separate light switch.
4. Weatherproof roof cap with back draft damper and rodent-proof screening.

E. Refrigerator/Freezer: Freestanding, frost-free, two-door refrigerator with top-mounted freezer, ABS thermoplastic-copolymer interior cabinet liners.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Amana; a division of Whirlpool Corporation.
b. General Electric Company (GE Appliances).
c. General Electric Company (Hotpoint).
d. Maytag; a division of Whirlpool Corporation.
e. Sears Brands LLC (Kenmore).
f. Whirlpool Corporation.

2. Color: White.

3. Fresh Food Compartment Volume: 15.6 cu. ft..
4. Freezer Compartment Volume: 5.13 cu. ft..
5. Shelf Area: Three adjustable glass shelves, 26 sq. ft..
6. Options: Ice maker.
7. Energy Performance: Provide appliances that qualify for the EPA/DOE ENERGY STAR product labeling program.

F. Dishwasher: Built-in, under-counter, automatic dishwasher, sized to replace 24-inch-base cabinet, four wash cycles with hot-air and heat-off drying cycles, porcelain-enamel tub and door liner, nylon-coated sliding dish racks.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Amana; a division of Whirlpool Corporation.
b. General Electric Company (GE Appliances).
c. General Electric Company (Hotpoint).
d. Sears Brands LLC (Kenmore).
e. Whirlpool Corporation.

2. Color: White.
3. Energy Performance: Provide appliances that qualify for the EPA/DOE ENERGY STAR product labeling program.

G. Clothes Washer: Freestanding, top-loading, automatic clothes washer with 3.2-cu. ft. capacity porcelain-enamel tub and four wash cycles including regular, delicate, and permanent press; 3/4-hp reversible motor.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Amana; a division of Whirlpool Corporation.
   b. General Electric Company (GE Appliances).
   c. General Electric Company (Hotpoint).
   d. Maytag; a division of Whirlpool Corporation.
   e. Sears Brands LLC (Kenmore).
   f. Whirlpool Corporation.

2. Color: White.
3. Energy Performance: Provide appliances that qualify for the EPA/DOE ENERGY STAR product labeling program.

H. Electric or Gas Clothes Dryer: Freestanding, front-loading clothes dryer, 6-cu. ft. capacity with porcelain-enamel-coated steel interior.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Amana; a division of Whirlpool Corporation.
   b. General Electric Company (GE Appliances).
   c. General Electric Company (Hotpoint).
   d. Maytag; a division of Whirlpool Corporation.
   e. Sears Brands LLC (Kenmore).
   f. Whirlpool Corporation.

2. Color: White.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Built-in Appliances: Securely anchor to supporting cabinetry or countertops with concealed fasteners. Verify that clearances are adequate for proper functioning and rough openings are completely concealed.

B. Freestanding Appliances: Place in final locations after finishes have been completed in each area. Verify that clearances are adequate to properly operate equipment.

C. Test each item of residential appliances to verify proper operation. Make necessary adjustments.

D. Verify that accessories required have been furnished and installed.

END OF SECTION 113100