

**SECTION 06 1000  
ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this section.

**1.02 SECTION INCLUDES**

- A. Structural dimension lumber framing.
- B. Nonstructural dimension lumber framing.
- C. Rough opening framing for doors, windows, and roof openings.
- D. Sheathing.
- E. Subflooring.
- F. Underlayment.
- G. Roof-mounted curbs.
- H. Roofing nailers.
- I. Roofing cant strips.
- J. Preservative treated wood materials.
- K. Fire retardant treated wood materials.
- L. Miscellaneous framing and sheathing.
- M. Concealed wood blocking, nailers, and supports.
- N. Miscellaneous wood nailers, furring, and grounds.

**1.03 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Setting anchors in concrete.
- B. Section 06 1733 - Wood I-Joists.
- C. Section 06 1753 - Shop-Fabricated Wood Trusses.
- D. Section 07 6200 - Sheet Metal Flashing and Trim: Sill flashings.

**1.04 REFERENCE STANDARDS**

- A. ANSI A208.1 - American National Standard for Particleboard 2016.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- D. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing 2003 (Reapproved 2017).
- E. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2021.

- F. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing 2019a.
- G. ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies 2018.
- H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- I. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials 2016.
- J. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings 2018.
- K. AWPA U1 - Use Category System: User Specification for Treated Wood 2018.
- L. ICC-ES AC310 - Acceptance Criteria for Water-resistive Membranes Factory-bonded to Wood-based Structural Sheathing, Used as Water-Resistive Barriers 2008, with Editorial Revision (2015).
- M. NELMA (SGR) - Standard Grading Rules for Northeastern Lumber 2017.
- N. PS 1 - Structural Plywood 2009 (Revised 2019).
- O. PS 2 - Performance Standard for Wood-Based Structural-Use Panels 2010.
- P. PS 20 - American Softwood Lumber Standard 2020.
- Q. SPIB (GR) - Grading Rules 2014.
- R. WWPA G-5 - Western Lumber Grading Rules 2017.

#### **1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Material List: Indicate selected wood species, stress ratings, grades and locations in the work.
- C. Manufacturer's Literature: Types of rough hardware indicating size and material.
- D. Product Data: Provide technical data on insulated sheathing, wood preservative materials, application instructions, and engineered metal connectors, underlayments, air-infiltration barriers, construction adhesives; indicate locations..
- E. Structural Composite Lumber: Submit manufacturer's published structural data including span tables, marked to indicate which sizes and grades are being used; if structural composite lumber is being substituted for dimension lumber or timbers, submit grading agency structural tables marked for comparison.
- F. Samples: Rough hardware and fasteners for framing.
- G. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.
- H. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.

#### **1.06 QUALITY ASSURANCE**

- A. Air Barrier Association of America (ABAA) Evaluated Materials Program (EAP); [www.airbarrier.org/#sle](http://www.airbarrier.org/#sle): Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.
- B. Lumber Grading Rules and Wood Species: Agencies, Bureaus and Lumber Associations certified by Board of Review, American Lumber Standards Committee or Canadian Lumber Standards Administrative Board.
- C. Grade Marks: identify lumber by original grade mark.

- D. Optional framing: Certain requirements of bracing, notching, lapping or nailing may be waived in lieu of engineering connectors. Code approval and performance of connectors must be submitted to the engineer for approval.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.
- C. Store materials no less than 6 inches above ground on framework or blocking.

#### **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

### **PART 2 PRODUCTS**

#### **2.01 WOOD PRODUCTS, GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements certified by the ALSC Board of Review.
  - 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at [www.alsc.org](http://www.alsc.org), and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
  - 3. Factory mark each piece of lumber with grade stamp of grading agency.
  - 4. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
  - 5. Provide dressed lumber, S4S, unless otherwise noted.

#### **2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Stud Framing (2 by 2 through 2 by 6 (50 by 50 mm through 50 by 150 mm )):
  - 1. Species: Southern Pine.
  - 2. Grade: No. 2.
- D. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 (50 by 150 mm through 100 by 400 mm )):
  - 1. Species: Southern Pine.
  - 2. Grade: No. 1 and Better.
- E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
  - 1. Lumber: S4S, Construction or No. 3 grade.
  - 2. Boards: Standard or No. 3.

#### **2.03 TIMBERS FOR CONCEALED APPLICATIONS**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.

- B. Moisture Content: S-dry (23 percent maximum).
- C. Beams and Posts 5 inches (125 mm) and over in thickness:
  - 1. Grade: Dense No. 1.

#### **2.04 STRUCTURAL COMPOSITE LUMBER**

- A. At Contractor's option, structural composite lumber may be substituted for concealed dimension lumber and timbers.
- B. Structural Composite Lumber: Factory fabricated beams, headers, and columns, of sizes and types indicated on drawings; structural capacity as published by manufacturer.
  - 1. Columns: Use laminated veneer lumber, laminated strand lumber, or parallel strand lumber with manufacturer's published modulus of elasticity, E: 1,800,000 psi (12,410 MPa), minimum.
  - 2. Beams: Use laminated veneer lumber, laminated strand lumber, or parallel strand lumber with manufacturer's published modulus of elasticity, E: 1,800,000 psi (12,410 MPa), minimum.
  - 3. Headers Not Longer Than 48 inches (1220 mm): Use laminated veneer lumber, laminated strand lumber, or parallel strand lumber.
  - 4. Manufacturers:
    - a. Weyerhaeuser Company; [\_\_\_\_]: [www.weyerhaeuser.com/#sle](http://www.weyerhaeuser.com/#sle).

#### **2.05 EXPOSED BOARDS**

- A. Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.
- B. Moisture Content: Kiln-dry (15 percent maximum).
- C. Surfacing: S4S.
- D. Species: Southern Pine.
- E. Grade: No. 2, 2 Common, or Construction.

#### **2.06 CONSTRUCTION PANELS**

- A. Subfloor/Underlayment Combination: Oriented strand board wood structural panel; PS 2, rated Single Floor.
  - 1. Bond Classification: Exterior.
  - 2. Performance Category: 19/32 PERF CAT.
  - 3. Span Rating: 20.
  - 4. Edges: Square.
  - 5. Surface Finish: Fully sanded face.
  - 6. Exposure Time: Sheathing will not delaminate or require sanding due to moisture absorption from exposure to weather for up to 200 days.
  - 7. Provide fastening guide on top panel surface with separate markings indicating fastener spacing for 16 inches (406 mm), 19.2 inches (488 mm) and 24 inches (610 mm) on center, respectively.
- B. Underlayment, MgO Panels: Magnesium Oxide (MgO) Panels for use as flooring underlayment.
  - 1. Submittals:
    - a. Product Data
    - b. Shop Drawings: Indicating location and extent of underlayment. Include details at joints, corners, and penetrations.

2. Warranty: Manufacturer's standard form in which underlayment manufacturer agrees to repair or replace products that demonstrate deterioration or failure under normal use due to manufacturing defects within the warranty period, when installed according to manufacturer's instructions.
    - a. Warranty Period for Underlayment Products: 10 years from date of manufacture.
  3. Performance:
    - a. Fire Resistance Assembly in accordance with UL263 Design No. L528 (System No. 22):
      - 1) Rating: 1-Hour Fire Resistance Rating
    - b. Bare Sound Rating:
      - 1) STC: 57
      - 2) IIC: 50
      - 3) HIIC: 51
  4. Basis-of-Design:

EXACOR Underlayment by Huber Engineered Woods LLC
  5. Physical Characteristics:
    - a. Thickness: 1/2 inch (12 mm)
    - b. Panel Size: 48 by 96 inches (1220 by 2440mm)
    - c. Edge Profile: Straight (square)
  6. Fire-Resistant Characteristics in accordance with ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials:
    - a. Flame Spread: 0 (25 maximum)
    - b. Smoke Developed: 0 (450 maximum)
  7. Mold Resistance: No mold growth observed in accordance with ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
  8. Fasteners: Size and type comply with manufacturer's written instructions for Project conditions and requirements of authorities having jurisdiction.
    - a. Nails: Ring shank nails with shank diameter of 0.113 inches by 1.5 inches long, minimum. Minimum Hot-dipped galvanized
  9. Underlayment Panel Adhesive: Polyurethane or solvent based product complying with ASTM D3498 or APA AFG-01.
- C. Roof Sheathing: Oriented strand board structural wood panel, PS 2, with factory laminated roofing underlayment layer.
1. Sheathing Panel:
    - a. Grade: Structural 1 Sheathing.
    - b. Size: 4 feet (1219 mm) wide by 8 feet (2438 mm) long.
    - c. Performance Category: 5/8 PERF CAT.
    - d. Span Rating: 40/20.
    - e. Edge Profile: Square edge.
  2. Integral Roofing Underlayment Layer: Medium density, phenolic impregnated kraft paper overlay.
  3. Exposure Time: Sheathing undamaged and integral roofing underlayment layer intact after exposure to weather for up to 180 days.
  4. Provide fastening guide on top panel surface with separate markings indicating fastener spacing for 16 inches (406 mm) and 24 inches (610 mm) on center.
  5. Seam Tape: Manufacturer's standard pressure-sensitive, self-adhering, cold-applied seam tape consisting of polyolefin film with acrylic adhesive.
  6. Warranty: Manufacturer's standard 30 year limited system warranty of:
    - a. Performance: Panel and tape resistance to water penetration; tape adhesion.
    - b. Material: Free from manufacturing defects and panel delamination.

7. Manufacturers:
  - a. Huber Engineered Woods, LLC; ZIP System Roof/Wall Sheathing and ZIP System Seam Tape: [www.huberwood.com/#sle](http://www.huberwood.com/#sle).
  - b. Substitutions: See Section 01 6000 - Product Requirements.
- D. Wall Sheathing, For Infill areas: Plywood, PS 1, Grade C-D, Exposure I.
- E. Wall Sheathing, For Typical Exterior Wall Construction: Oriented strand board structural wood panel with factory laminated water-resistive barrier layer.
  1. Sheathing Panel: PS 2, Exposure 1.
    - a. Size: 4 feet (1219 mm) wide by 8 feet (2438 mm) long.
    - b. Grade: Sheathing.
    - c. Performance Category: 7/16 PERF CAT.
    - d. Span Rating: 24/16.
    - e. Edge Profile: Square edge.
  2. Integral Water-Resistive Barrier: Sheet material qualifying as a Grade D water-resistive barrier; complying with ICC-ES AC310.
  3. Water Vapor Permeance of Water-Resistive Barrier: 12 to 16 perms (689 to 918 ng/(Pa s sq m)), minimum, when tested in accordance with ASTM E96/E96M Procedure B.
  4. Maximum Allowable Air Leakage of Assembly: Comply with ASTM E2357.
    - a. Infiltration: 0.0072 cfm/sq ft (0.037 L/s per sq m), maximum, at a pressure differential of 1.57 psf (75 Pa).
    - b. Exfiltration: 0.0023 cfm/sq ft (0.012 L/s per sq m), maximum, at a pressure differential of 1.57 psf (75 Pa).
  5. Provide fastening guide on top panel surface with separate markings indicating fastener spacing for 16 inches (406 mm) and 24 inches (610 mm) on center, respectively.
  6. Seam Tape: Manufacturer's standard pressure-sensitive, self-adhering, cold-applied, seam tape.
  7. Warranty: Manufacturer's standard form in which sheathing manufacturer agrees to repair or replace sheathing products that demonstrate deterioration or failure under normal use due to manufacturing defects within warranty period specified, when installed according to manufacturer's instructions.
    - a. Warranty Period for Sheathing Products: 30 years following date of Substantial Completion.
    - b. Warranty Conditions: Special warranties exclude deterioration or failure due to structural movement resulting in stresses on sheathing products exceeding manufacturer's written specifications, or due to air or moisture infiltration resulting from cladding failure or mechanical damage.
- F. Wall Sheathing: Oriented strand board structural wood panel with factory laminated rigid plastic insulation board, and water-resistive barrier layer.
  1. Sheathing Panel (Oriented Strand Board): PS 2, Exposure 1, made with binder containing no added urea formaldehyde.
  2. Rigid Foam Plastic Insulation Board: Rigid polyisocyanurate (ISO) insulation board; comply with ASTM C1289, Type II, Class 2 - Faced with coated polymer-bonded glass fiber mat facers on both major surfaces of the core foam.
    - a. Nominal Density: 2.0 pcf (32 kg/cu. m).
    - b. Compressive Strength, ASTM D1621: Not less than 20 psi (150 kPa).
  3. Integral Water-Resistive Barrier: Sheet material qualifying as a Grade D water-resistive barrier; complying with ICC-ES AC310.
  4. Water Vapor Permeance of Water-Resistive Barrier: 12 to 16 perms (689 to 918 ng/(Pa s sq m)), minimum, when tested in accordance with ASTM E96/E96M Procedure B.

5. Maximum Allowable Air Leakage of Assembly: Complying with ASTM E2357, 0.04 cfm/sq ft (0.2 L/s sq m) at a pressure differential of 1.57 psf (75 Pa).
  6. Provide fastening guide on top panel surface with separate markings indicating fastener spacing for 16 inches (406 mm) and 24 inches (610 mm) on center, respectively.
  7. Edge Profile: Square.
  8. Seam Tape: Manufacturer's standard pressure-sensitive, self-adhering, cold-applied, seam tape.
  9. Manufacturers:
    - a. Huber Engineered Woods, LLC; ZIP System R-Sheathing: [www.huberwood.com/#sle](http://www.huberwood.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  10. Thickness: 1 inch (25 mm)
  11. Thermal Resistivity (R Value): 3.6
  12. Exterior Facer: Medium-density, phenolic-impregnated polymer-modified sheet material meeting requirements for ASTM D779 Grade D weather-resistive barrier in accordance with ICC AC38 and AC310, with fastener spacing symbol on exterior facer for 16 in and 24 inch on center spacing, with the following characteristics
    - a. Water Resistance of Coatings, ASTM D2247: Pass 14 day exposure test
    - b. Moisture Vapor Transmission, ASTM E96: Not less than 12 perms
    - c. Water Penetration, ASTM E331: Pass at 2.86 lbf/sq. ft
    - d. Wind Driven Rain, TAS-100: Pass
    - e. Accelerated Weathering, ASTM G154: Pass
- G. Sheathing Joint-and-Penetration Treatment Material
1. Self-Adhering Seam and Flashing Tape: Pressure-sensitive, self-adhering, cold applied, seam tape consisting of polyolefin film with acrylic adhesive, meeting ICC AC148.
  2. Manufacturer: Huber Engineered Woods, ZIP system tape
  3. Thickness: 0.012 inch (0.3 mm)

## 2.07 ACCESSORIES

- A. Fasteners and Anchors:
1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M or Type 304 stainless steel for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
  2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
  3. Nails, Brads, and Staples: ICC AC116 and ICC AC201.
  4. Power Driven Fasteners: ICC-ES-1539 or NER-272
  5. Wood Screws: ASME B18.6.1
- B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.
1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing complying with ASTM A653/A653M.
- C. Sill Gasket on Top of Foundation Wall: 1/4 inch (6 mm) thick, plate width, closed cell plastic foam from continuous rolls.
- D. Sill Flashing: See Section 07 6200.
- E. Subfloor Adhesives: Waterproof, air cure type, cartridge dispensed; adhesives designed for subfloor applications and complying with either ASTM C557 or ASTM D3498.

1. Manufacturers:
  - a. Huber Engineered Woods, LLC; AdvanTech Subfloor Adhesive: [www.huberwood.com/#sle](http://www.huberwood.com/#sle).
- F. Construction Adhesives: Adhesives complying with ASTM C557 or ASTM D3498.

## 2.08 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
  1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
  2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWPA standards.
- B. Fire Retardant Treatment:
  1. Manufacturers:
    - a. Lonza Group; [\_\_\_\_]: [www.wolmanizedwood.com/#sle](http://www.wolmanizedwood.com/#sle).
    - b. Hoover Treated Wood Products, Inc; [\_\_\_\_]: [www.frtw.com/#sle](http://www.frtw.com/#sle).
    - c. Koppers, Inc; [\_\_\_\_]: [www.koppersperformancechemicals.com/#sle](http://www.koppersperformancechemicals.com/#sle).
  2. Interior Type A: AWWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
    - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
    - b. Treat rough carpentry items as indicated .
    - c. Do not use treated wood in applications exposed to weather or where the wood may become wet.
- C. Preservative Treatment:
  1. Manufacturers:
    - a. Lonza Group; [\_\_\_\_]: [www.wolmanizedwood.com/#sle](http://www.wolmanizedwood.com/#sle).
    - b. Koppers Performance Chemicals, Inc; [\_\_\_\_]: [www.koppersperformancechemicals.com/#sle](http://www.koppersperformancechemicals.com/#sle).
    - c. Substitutions: See Section 01 6000 - Product Requirements.
  2. Preservative Pressure Treatment of Lumber Above Grade: AWWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
    - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
    - b. Treat lumber exposed to weather.
    - c. Treat lumber in contact with roofing, flashing, or waterproofing.
    - d. Treat lumber in contact with masonry or concrete.
    - e. Treat lumber less than 18 inches (450 mm) above grade.

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches (100 mm) and seal.
- B. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.
- C. Coordinate installation of rough carpentry members specified in other sections.



### 3.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

### 3.03 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
- C. Install structural members full length without splices unless otherwise specifically detailed.
- D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes, AWC (WFCM) Wood Frame Construction Manual, and [\_\_\_\_\_].
- E. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches (38 mm) of bearing at each end.
- F. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
- G. Provide bridging at joists in excess of 8 feet (2.3 m) span as detailed. Fit solid blocking at ends of members.
- H. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

### 3.04 MAGNESIUM OXIDE BOARD UNDERLAYMENT INSTALLATION

- A. Underlayment Installation, General:
  - 1. Install underlayment boards in accordance with manufacturer's written instructions, requirements of applicable Fire-Resistance Assembly, Sound rated assembly, and requirements of authorities having jurisdiction.
  - 2. Fully support underlayment panels on wood structural panel subflooring.
  - 3. Maintain designed expansion joints through underlayment. Do not bridge designed expansion joints in structural panel subfloor.
- B. Underlayment Installation:
  - 1. Glue and nail wood structural subflooring
  - 2. Apply adhesive in accordance with manufacturer's written instructions.
    - a. Place EXACOR underlayment panels with smooth side exposed. butt underlayment tight to adjacent panels.
    - b. Offset underlayment edges a minimum of 4 inches from structural subflooring edges.
    - c. Ensure full contact between EXACOR underlayment and structural subflooring.
  - 3. Mechanically fasten underlayment board
    - a. Space Fasteners: 12 inches on center.
    - b. Locate fasteners 1/2 inches from board edges and 2 inches from panel corners
    - c. Fasten underlayment to subfloor.

- d. Ensure fasteners sit flush or slightly below panel surface.
- C. Protection and Repair:
1. Protect exposed board surfaces from damage due to high construction traffic and concentrated loads during construction.
  2. Patch small gaps (less than 2 sq. inches) and divots in underlayment with elastomeric patching compound.
  3. Where large repairs are required, cut out damaged area and replace with piece of underlayment, installing in same manner as initial installation. Apply patching compound to transition between board and patch.

### **3.05 BLOCKING, NAILERS, AND SUPPORTS**

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to authorities having jurisdiction may be used in lieu of solid wood blocking.
- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- F. Provide the following specific nonstructural framing and blocking:
1. Cabinets and shelf supports.
  2. Wall brackets.
  3. Handrails.
  4. Grab bars.
  5. Towel and bath accessories.
  6. Wall-mounted door stops.
  7. Chalkboards and marker boards.
  8. Wall paneling and trim.
  9. Joints of rigid wall coverings that occur between studs.

### **3.06 ROOF-RELATED CARPENTRY**

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

### **3.07 INSTALLATION OF CONSTRUCTION PANELS**

- A. Subflooring/Underlayment Combination: Glue and nail to framing; staples are not permitted.
- B. Underlayment: Secure to subflooring with nails and glue.
1. Place building paper between floor underlayment and subflooring.
- C. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.

1. Nail panels to framing; staples are not permitted.
- D. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.
  1. Use plywood or other acceptable structural panels at building corners, for not less than 96 inches (2440 mm), measured horizontally.
  2. Place water-resistive barrier horizontally over wall sheathing, weather lapping edges and ends.
- E. Wall Sheathing and Roof Sheathing with Laminated Water-Resistive Barrier and Air Barrier: Secure to studs in accordance with manufacturer's installation instructions.
  1. Install with laminated water-resistive and air barrier on exterior side of sheathing. Stagger end joints of adjacent panel runs.
  2. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
  3. Apply manufacturer's standard seam tape to joints between sheathing panels; use tape gun or hard rubber roller in accordance with manufacturer's installation instructions.

### **3.08 TOLERANCES**

- A. Framing Members: 1/4 inch (6 mm) from true position, maximum.
- B. Surface Flatness of Floor: 1/8 inch in 10 feet (1 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.
- C. Variation from Plane, Other than Floors: 1/4 inch in 10 feet (2 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.

### **3.09 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Coordination of ABAA Tests and Inspections:
  1. Provide testing and inspection required by ABAA QAP.
  2. Notify in ABAA writing of schedule for air barrier work. Allow adequate time for testing and inspection.
  3. Cooperate with ABAA testing agency.
  4. Allow access to air barrier work areas and staging.
  5. Do not cover air barrier work until tested, inspected, and accepted.

### **3.10 CLEANING**

- A. Waste Disposal: See Section 01 7419 - Construction Waste Management and Disposal.
  1. Comply with applicable regulations.
  2. Do not burn scrap on project site.
  3. Do not burn scraps that have been pressure treated.
  4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

**END OF SECTION**

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## SECTION 064023

### INTERIOR ARCHITECTURAL WOODWORK AND FINISH CARPENTRY

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

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

##### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Interior standing and running trim, miscellaneous wood trim.
  - 2. Wood veneer display cabinets and associated components.
  - 3. Wood veneer millwork.
  - 4. Solid Surface material used in vertical and horizontal applications.

##### 1.3 DEFINITIONS

- A. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips for installing woodwork items unless concealed within other construction before woodwork installation.

##### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated, including cabinet hardware and accessories, finishing materials and processes.
  - 1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
  - 1. Reproduction of Contract Document Drawings by Architect will not be accepted as shop drawing submittal.
  - 2. Show details at 3" = 1'-0" whenever item is smaller than 30" x 42". Show details no smaller than 3/4" per foot.
  - 3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.

4. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, and other items installed in architectural woodwork.
5. Show veneer leaves with dimensions, grain direction, exposed face, and identification numbers indicating the flitch and sequence within the flitch for each leaf.
6. Show locations of plastic laminate finishes and colors.

C. Samples for Verification:

1. Lumber with or for transparent finish, not less than 4 inches wide by 12 inches long, for each species and cut, finished on 1 side and 1 edge.
2. Veneer leaves representative of and selected from fitches, mounted to substrate and finished.
3. Plastic laminates, 6 by 6 inches min., for each type, color, pattern, and surface finish, with 1 sample applied to core material, and specified edge material applied to 1 edge.
4. Thermoset decorative-panels, 6 by 6 inches, for each type, color, pattern, and surface finish, with edge banding on 1 edge.
5. Solid-surfacing materials, 6 inches square, each color.
6. Cabinet hardware and accessories, one unit for each type and finish.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and fabricator.
- B. Product Certificates: For each type of product, signed by product manufacturer.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- B. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork with sequence- matched wood veneers of transparent-finished wood doors that are required to be of same species as woodwork. Refer to Section "Wood Flush Doors" for information regarding matching with doors.
- C. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for Custom Grade interior architectural woodwork for all materials, construction, finishes, installation, and all other requirements.

- D. Fire-Test-Response Characteristics: Where fire-retardant materials or products are indicated, provide materials and products with specified fire-test-response characteristics as determined by testing identical products per test method indicated by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
- F. General: Unless noted below provide materials with a minimum Class C flame spread rating as tested under ASTM E84, with smoke developed less than 450.
  - 1. Provide Class A material in kitchens, storerooms, maintenance and custodial areas and assembly areas (gymnasiums, auditoriums, Media Center, LGI).

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

#### 1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
- B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed, and indicate measurements on Shop Drawings.
  - 2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and

coordinate construction to ensure that actual dimensions correspond to established dimensions.

## 1.9 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Provide materials that comply with requirements of AWI's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Solid Wood Species and Cut for Transparent Finish:
  - 1. Maple, plain sawn.
- C. Veneer Wood Species and Cut for Transparent Finish: Maple, Plain Saw.
  - 1. Matching of Adjacent Veneer Leaves: Slip match
  - 2. Veneer Matching within Panel Face: Balance matched.
- D. Softwood Plywood: DOC PS 1.
- E. Wood Products: Comply with the following:
  - 1. Medium-Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde. Substrate for melamine finishes unless noted otherwise. Substrate for fire-retardant veneer cabinetry and where indicated in Drawings.
  - 2. High-Density Particleboard: ANSI A208.1, Grade M-2-Exterior Glue. Substrate for laminate products unless noted otherwise. Product shall contain no urea formaldehyde. High-Density Particleboard shall be 47 psf minimum density for this Project.
  - 3. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.
- F. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.



- G. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.
  - 1. Colors and Patterns: As selected by the Architect.
- H. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.
  - 1. Manufacturer: As indicated in the Drawings, or matching in colors and finished indicated in the Drawings.
    - a.
- I. Tempered Float Glass for Cabinet Doors: ASTM C 1048, Kind FT, Condition A, Type I, Class 1 (clear) with exposed edges seamed before tempering, 3/8" thick, or as required by operating system.
- J. Tempered Float Glass for Cabinet Shelves: ASTM C 1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3; with exposed edges seamed before tempering, 1/2" thick.

## 2.2 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this Articles that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified.
  - 1. Do not use treated materials that do not comply with requirements of referenced woodworking standard or that are warped, discolored, or otherwise defective.
  - 2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
  - 3. Identify fire-retardant-treated materials with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Comply with performance requirements of AWPA C20 (lumber) and AWPA C27 (plywood). Use the following treatment type:
  - 1. Interior Type A: Low-hygroscopic formulation.
  - 2. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking plant certified by testing and inspecting agency.
  - 3. Mill lumber before treatment and implement special procedures during treatment and drying processes that prevent lumber from warping and

- developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated woodwork.
4. Kiln-dry materials before and after treatment to levels required for untreated materials.
- C. Fire-Retardant Particleboard: Panels complying with the following requirements, made from softwood particles and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 25 or less per ASTM E 84.
1. For panels 3/4 inch thick and less, comply with ANSI A208.1 for Grade M-2 except for the following minimum properties: modulus of rupture, 1600 psi; modulus of elasticity, 300,000 psi; internal bond, 80 psi and screw-holding capacity on face and edge, 250 and 225 lbf , respectively.
  2. For panels 13/16 to 1-1/4 inches thick, comply with ANSI A208.1 for Grade M-1 except for the following minimum properties: modulus of rupture, 1300 psi; modulus of elasticity, 250,000 psi; linear expansion, 0.50 percent; and screw- holding capacity on face and edge, 250 and 175 lbf, respectively.
- D. Fire-Retardant Fiberboard: Medium-density fiberboard panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.

### 2.3 HARDWARE AND ACCESSORIES

- A. Support Brackets:
1. Aluminum support brackets for counters as per Drawings: Provide heavy gauge bracket as follows: with capacity of 450 lbs / bracket supporting load.
    - a. Rakks, Model #EH-1824 and #EH-1818 (Basis-Of-Design).
      - I. Acceptable equal: WorkSpace Brackets by Media Technologies.
    - b. Material: 6063 T-6 "T" shaped extruded aluminum.
    - c. Construction: MIG welded along both 45 degree miters and across back without the requirement for structural angle or web.
    - d. Capacity: 450 lbs/bracket
    - e. Finish: Clear Anodized
- B. Round Grommets for Cable Passage through Countertops: 2-1/2-inch, molded-plastic grommets and matching plastic caps with slot for wire passage. Color to be selected by Architect.
- C. Square Grommets
1. 2-3/4" square, satin aluminum frame with white brush liners

2. Basis-of-Design: Max11/A Square Mini Max Grommet available from Doug Mockett and Company, Inc.

D. Under Counter Continuous Wire Management

1. 2-1/8" square profile continuous light gray plastic tray with slot
2. Basis-of-Design: WM4 - G-Shape Wire Manager available from Doug Mockett and Company, Inc.

E. Under Counter PC Bracket

1. Finishes: white powder coated steel and brushed aluminum
2. Adjustable to fit CPUs 3.5" to 9" wide and 12" to 20" tall
3. supporting CPUs weighing up to 50 lbs.
4. Slides front to back with 16" range on top-track glides
5. Rotates 360° for access to cables and ports
6. Basis-of-Design: CPU600 CPU Holder by Humanscale

## 2.4 DISPLAY CABINET

A. Adjustable Shelf Standards and Supports at Display Cabinets:

1. Vertical Shelf Standards: 5/8-inch wide by 13/32-inch deep metallic finish (Knappe and Vogt KV 80 in "titanium") 5-foot lengths cut to fit in available space.
2. Shelf Brackets: metallic finish (Knappe and Vogt KV 180 in "titanium").
  - a. Bracket depth and quantities as follows:
    - 1) 6" (27)
    - 2) 10" (6)
    - 3) 16" (6)
    - 4) 20" (6)

B. Glass Shelving:

1. 3/8-inch thick tempered clear glass shelves in the following dimensions and quantities:
  - a. 20"d x 32"w (3)
  - b. 16"d x 56"w (2)
  - c. 10"d x 56"w (2)
  - d. 6"d x 56"w (9)

C. Glass Doors:

1. Basis of Design: CR Laurence Co.; CRL-Blumcraft Sating Anodized 1301 Series Display Case Door.
2. 3/8-inch thick tempered clear glass doors.

3. Surface mounted pivots for door operation.
4. Locking; key all alike. Provide three keys.

## 2.5 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.
- B. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln dried to less than 15 percent moisture content.
- C. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.
- D. Low-Emitting Materials: Adhesives 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."
- E. VOC Limits for Installation Adhesives: Installation adhesives shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
  1. Wood Glues: 30 g/L.
  2. Multipurpose Construction Adhesives: 70 g/L.
  3. Contact Adhesive: 250 g/L.
- F. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.
  1. Adhesive for Bonding Edges: Hot-melt adhesive.

## 2.6 FABRICATION, GENERAL

- A. Interior Woodwork Grade: Unless otherwise indicated, provide Custom-grade interior woodwork complying with referenced quality standard.
- B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.
- C. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.

- D. Complete fabrication, including assembly, finishing, and hardware application, 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.
  - 1. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements indicated on Shop Drawings before disassembling for shipment.
- E. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
  - 1. Seal edges of openings in countertops with a coat of varnish.
- F. Install glass to comply with applicable requirements in Division 8 Section “Glazing” and in GANA’s “Glazing Manual”.

## 2.7 INTERIOR STANDING AND RUNNING TRIM FOR TRANSPARENT FINISH

- A. Grade: Custom
- B. Wood Species and Cut of Solid Hardwood:
  - 1. Exposed running trim shall be Maple hardwood, quarter-sliced.
    - a. Notify Architect immediately if indicated hardwood species and cut do not match existing exposed trim in the same area of the building. Match to existing exposed wood trim is the design intent by Architect. Therefore, approval to other wood species than named herein this Section and to other cut than named herein this Section must be obtained in writing from Architect.
    - b. If no other architectural woodwork is located in same area of building, provide premium grade maple hardwood with quarter-sliced cut as selected by Architect.
- C. Use solid hardwood trim unless noted otherwise for hardwood veneer on Drawings. For trim items wider than available lumber, use veneered construction. Do not glue for width. Provide continuous 3/4-inch minimum Maple hardwood with quarter-sliced cut for required edge banding of veneered construction. Overlap hardwood edge band with veneer at trim face.

- D. Backout or groove backs of flat trim members and kerf backs of other wide, flat members, except for members with ends exposed in finished work.
- E. Assemble casings in plant except where limitations of access to place of installation require field assembly.
- F. Assemble moldings in plant to maximum extent possible. Miter corners in plant and prepare for field assembly with bolted fittings designed to pull connections together.

## 2.8 SOLID-SURFACING-MATERIAL

- A. Grade: Custom.
- B. Solid-Surfacing-Material Thickness: 1/2-inch for veneer applications, horizontal and vertical.
- C. Colors, Patterns, and Finishes: Provide materials and products that result in colors of solid-surfacing material complying with the following requirements:
  - 1. As selected by Architect from manufacturer's full range.
- D. Fabricate tops in one-piece, unless otherwise indicated. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.
  - 1. Fabricate tops with shop-applied edges of materials and configuration indicated.
- E. Adhesives: Silicone adhesive, suitable for use between solid surface material and MDF panels in both horizontal and vertical applications.

## 2.9 SHOP FINISHING

- A. Grade: Provide finishes of same grades as items to be finished.
- B. General: Finish architectural woodwork at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.
- C. Finishing Materials: Products 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."
- D. Shop Priming: Shop apply the prime coat including backpriming, if any, for transparent-finished items specified to be field finished.

- E. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork, as applicable to each unit of work.
  - 1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling and to end-grain surfaces. Concealed surfaces of plastic-laminate-clad woodwork do not require backpriming when surfaced with plastic laminate, backing paper, or thermoset decorative panels.
  
- F. Transparent Finish:
  - 1. Grade: Custom.
  - 2. AWI Finish System: Catalyzed polyurethane.
  - 3. Staining: Match approved sample for color.
  - 4. Wash Coat for Stained Finish: Apply wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
  - 5. Filled Finish for Open-Grain Woods: After staining (if any), apply paste wood filler to open-grain woods and wipe off excess. Tint filler to match stained wood.
    - a. Apply wash-coat sealer after staining and before filling.
  - 6. Sheen: Semigloss, 46-60 gloss units measured on 60-degree gloss meter per ASTM D 523.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.
  
- B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

#### 3.2 INSTALLATION

- A. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.
  
- B. Assemble woodwork and complete fabrication at Project site to comply with requirements for fabrication in Part 2, to extent that it was not completed in the shop.

- C. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm).
- D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with chemical treatment manufacturer's written instructions, including those for adhesives used to install woodwork.
- F. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
- G. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 96 inches long, except where shorter single-length pieces are necessary.
  - 1. Fill gaps, if any, between top of base and wall with plastic wood filler, sand smooth, and finish same as wood base if finished.
  - 2. Install standing and running trim with no more variation from a straight line than 1/8-inch in 96 inches (3 mm in 2400 mm).
- H. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.

### 3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean woodwork on exposed and semi-exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 064023



**SECTION 06 4100  
ARCHITECTURAL WOOD CASEWORK**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Specially fabricated cabinet units.
- B. Hardware.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 06 1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- C. Section 12 3600 - Countertops.

**1.03 REFERENCE STANDARDS**

- A. AWI (QCP) - Quality Certification Program Current Edition.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).
- C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 4.0 2021.
- D. BHMA A156.9 - American National Standard for Cabinet Hardware 2015.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Convene a preinstallation meeting not less than one week before starting work of this section; require attendance by all affected installers.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
  - 1. Scale of Drawings: 1-1/2 inch to 1 foot (125 mm to 1 m), minimum.
- C. Product Data: Provide data for hardware accessories.
- D. Samples: Submit actual samples of architectural cabinet construction, minimum 12 inches (300 mm) square, illustrating proposed cabinet, countertop, and shelf unit substrate and finish.
- E. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

**1.06 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
  - 1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
  - 2. Single Source Responsibility: Provide and install this work from single fabricator.
- B. Quality Certification:
  - 1. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.

2. Provide designated labels on shop drawings as required by certification program.
3. Provide designated labels on installed products as required by certification program.
4. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.
5. Replace, repair, or rework all work for which certification is refused.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Protect units from moisture damage.

#### **1.08 FIELD CONDITIONS**

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

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Single Source Responsibility: Provide and install this work from single fabricator.

#### **2.02 CABINETS**

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Cabinets at Laundry Rooms:
  1. Finish - Exposed Exterior Surfaces: Wood.
  2. Finish - Exposed Interior Surfaces: Wood.
  3. Finish - Semi-Exposed Surfaces: Wood
  4. Finish - Concealed Surfaces: Manufacturer's option.

#### **2.03 WOOD-BASED COMPONENTS**

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

#### **2.04 LAMINATE MATERIALS**

- A. Manufacturers:
  1. Formica Corporation; : [www.formica.com/#sle](http://www.formica.com/#sle).
  2. Panolam Industries International, Inc; Nevamar Standard HPL: [www.panolam.com/#sle](http://www.panolam.com/#sle).
  3. Wilsonart LLC; : [www.wilsonart.com/#sle](http://www.wilsonart.com/#sle).

#### **2.05 COUNTERTOPS**

- A. Countertops: See Section 12 3600.

#### **2.06 HARDWARE**

- A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
- B. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated self rests, polished chrome finish, for nominal 1 inch (25 mm) spacing adjustments.
- C. Adjustable Shelf Supports: Standard back-mounted system using surface mounted metal shelf standards and coordinated cantilevered shelf brackets, satin chrome finish, for nominal 1 inch (25 mm) spacing adjustments.

- D. Fixed Specialty Workstation and Countertop Brackets:
  - 1. Material: Steel.
  - 2. Finish: Manufacturer's standard, factory-applied powder coat.
- E. Fixed Standard Shelf, Countertop, and Workstation Brackets:
  - 1. Material: Steel.
  - 2. Finish: Manufacturer's standard, factory-applied, textured powder coat.
  - 3. Color: Selected by Architect from manufacturer's standard range.

## **2.07 FABRICATION**

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify adequacy of backing and support framing.

### **3.02 INSTALLATION**

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

### **3.03 CLEANING**

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

**END OF SECTION**

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**SECTION 06 6400  
PLASTIC PANELING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. Section Includes:

- 1. Plastic sheet paneling within Warming Kitchen / Kitchenette.

**1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Samples: For plastic paneling, in manufacturer's standard sizes.

**1.4 PROJECT CONDITIONS**

- A. Environmental Limitations: Do not deliver or install plastic paneling until spaces are enclosed and weathertight and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Source Limitations: Obtain plastic paneling and trim accessories from single manufacturer.

**2.2 PLASTIC SHEET PANELING**

- A. Glass-Fiber-Reinforced Plastic Paneling: Gelcoat-finished, glass-fiber-reinforced plastic panels complying with ASTM D 5319.
  - 1. Surface-Burning Characteristics: As follows when tested by a qualified testing agency according to ASTM E 84. Identify products with appropriate markings of applicable testing agency.
    - a. Flame-Spread Index: 25 or less.
    - b. Smoke-Developed Index: 450 or less.
  - 2. Nominal Thickness: Not less than 0.075 inch (1.9 mm).
  - 3. Surface Finish: Molded pebble texture.
  - 4. Color: White.

**2.3 ACCESSORIES**

- A. Exposed Fasteners: Nylon drive rivets recommended by panel manufacturer.

- B. Adhesive: As recommended by plastic paneling manufacturer.
- C. Sealant: Mildew-resistant, single-component, neutral-curing silicone sealant recommended by plastic paneling manufacturer and complying with requirements in Section 079200 "Joint Sealants."

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Prepare substrate by sanding high spots and filling low spots as needed to provide flat, even surface for panel installation.
- B. Clean substrates of substances that could impair adhesive bond, including oil, grease, dirt, and dust.
- C. Condition panels by unpacking and placing in installation space before installation according to manufacturer's written recommendations.

#### 3.3 INSTALLATION

- A. Install plastic paneling according to manufacturer's written instructions.
- B. Install panels in a full spread of adhesive.
- C. Install panels with fasteners. Layout fastener locations and mark on face of panels so that fasteners are accurately aligned.
  - 1. Drill oversized fastener holes in panels and center fasteners in holes.
  - 2. Apply sealant to fastener holes before installing fasteners.
- D. Remove excess sealant and smears as paneling is installed. Clean with solvent recommended by sealant manufacturer and then wipe with clean dry cloths until no residue remains.

END OF SECTION 06 6400