

**DIVISION 6**  
**WOOD AND PLASTIC**

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PART 1 GENERAL

1.1 SUMMARY

- A. Wood grounds, nailers, and blocking; construction lumber; construction panels; wood and gypsum sheathing; roof blocking, curbs and cants; wall blocking; as required by Contract Documents.

1.2 DEFINITIONS

- A. Rough carpentry includes carpentry work and related products not specified as part of other Sections and generally not exposed, unless otherwise specified.

1.3 SUBMITTALS

- A. Product Data: Submit product data for gypsum wall sheathing, wood sheathing, and fasteners.
- B. Wood treatment data as follows, including chemical treatment manufacturer's instructions for handling, storing, installation, and finishing of treated material:
  - 1. For each type of preservative treated wood product include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
  - 2. For water-borne treated products include statement that moisture content of treated materials was reduced to levels indicated prior to shipment to Project Site.
- C. Certification: Provide manufacturer's certificate indicating gypsum wall sheathing product conforms to requirements indicated for mold resistance.
- D. Copy of unexecuted gypsum wall sheathing warranty.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.
  - 1. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.

1.5 QUALITY ASSURANCE

- A. Conform to applicable requirements of Section 01351, Sustainable Project Requirements.

1.6 WARRANTY

- A. Provide manufacturers 5 year warranty for gypsum wall sheathing material from manufacturing defects.

PART 2 PRODUCTS

2.1 LUMBER, GENERAL

- A. Lumber Standards: Furnish lumber manufactured to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.

- B. Inspection Agencies: Inspection agencies and the abbreviations used to reference them with lumber grades and species include the following:
  1. WCLIB - West Coast Lumber Inspection Bureau.
  2. WWPA - Western Wood Products Association.
- C. Grade Stamps: Provide lumber with each piece factory-marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
- D. Nominal and actual sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use. Where actual sizes are specified they are minimum dressed sizes for dry lumber.
  1. Provide dressed lumber, S4S, unless otherwise indicated.
  2. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes of 2 inches nominal or less in thickness, unless otherwise indicated.

## 2.2 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction including cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members.
- B. Fabricate miscellaneous lumber from dimension lumber of sizes indicated and into shapes shown.
- C. Moisture content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.
- D. Grade: "Standard" grade light-framing-size lumber of any species or board-size lumber as required. "No. 3 Common" or "Standard" grade boards per WCLIB or WWPA rules or "No. 2 Boards" per SPIB rules.

## 2.3 CONSTRUCTION PANELS, GENERAL

- A. Construction Panel Standards: Comply with PS 1 "U.S. Product Standard for Construction and Industrial Plywood" for plywood construction panels and, for products not manufactured under PS 1 provisions, with APA PRP-108.
- B. Trademark: Furnish construction panels that are each factory- marked with APA trademark evidencing compliance with grade requirements.
- C. Wood Adhesives: Type as recommended by manufacturer.
- D. Provide materials to comply with Low-emitting Materials (Adhesives and Sealants), Credit EQ 4.1.

## 2.4 CONSTRUCTION PANELS FOR EQUIPMENT BACKING

- A. Plywood Backing Panels: For mounting electrical or telephone equipment, provide fire-retardant-treated plywood panels with grade designation, APA C-D PLUGGED EXPOSURE 1, in thickness indicated, or, if not otherwise indicated, not less than 15/32 inch.
- B. Wood Adhesives: Type as recommended by manufacturer.
- C. Provide materials to comply with Low-emitting Materials (Adhesives and Sealants), Credit EQ 4.1.

## 2.5 GYPSUM WALL SHEATHING

- A. Gypsum sheathing shall conform to ASTM C 1177, 5/8 inch thick, inorganic glass mats or acrylic, minimum compressive strength 500 psi, square edges; water resistant type 'X' fire rated core with water repellent paper front, back and long edges.
- B. Manufacturers shall include Dens Glass Gold Fireguard Exterior Guard as manufactured by Georgia-Pacific or GlasRoc Sheathing as manufactured by BPB America Inc.
- C. Joint Sealant: As recommended by sheathing manufacturer.
- D. Underwriter's Laboratory Class A fire rating when tested in conformance with UL 7905 and UL classified and rated.
- E. Sheathing shall score a 10 when tested in accordance with ASTM D3273 for Performance for Mold Resistance.

## 2.6 WOOD SHEATHING

- A. Wood Sheathing for roofing shall be plywood conforming to DOC PS1, Exterior Structural 1 sheathing; Span Rating not less than 32/16. Nominal thickness not less than 23/32 inch unless indicated otherwise on Contract Drawings. Board size shall be 48 inch by 96 inch.
- B. Wood Adhesives: Type as recommended by manufacturer.
- C. Provide materials to comply with Low-emitting Materials (Adhesives and Sealants), Credit EQ 4.1.

## 2.7 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Where rough carpentry is exposed to weather, sheathing, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of AISI Type 304 stainless steel.
- B. Nails, Wire, Brads, and Staples: FS FF-N-105.
- C. Power Driven Fasteners: National Evaluation Report NER-272.
- D. Wood Screws: ANSI B18.6.1.
- E. Lag Bolts: ANSI B18.2.1. (ANSI B18.2.3.8M)
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 hex nuts and where indicated, flat washers.
- G. Multipurpose Construction Adhesive: Type recommended by manufacturer to suit application and comply with ASTM D 3498. Comply with regulations regarding toxic and hazardous materials. Adhesives shall have a VOC content less than 70 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- H. Screws for Fastening Wood Panels to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.
  - 1. For roof sheathing panels, provide screws with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.

- I. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length and type recommended by sheathing manufacturer for thickness of sheathing board to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.
  - 1. For steel framing less than 0.0329 inch (0.835 mm) thick, attach sheathing to comply with ASTM C 1002 and UL assembly.
  - 2. For steel framing from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick, attach sheathing to comply with ASTM C 954 and UL assembly.

## 2.8 PRESERVATIVE WOOD TREATMENT BY PRESSURE PROCESS

- A. General: Where lumber or plywood is indicated as preservative-treated wood or is specified herein to be treated, comply with applicable requirements of AWPA Standards U1 and T1. Mark each treated item with the AWPB or SPIB Quality Mark Requirements.
- B. Pressure-treat above-ground items with water-borne preservatives to a minimum retention of 0.25 lb/cu. ft. For interior uses, after treatment, kiln-dry lumber and plywood to a maximum moisture content, respectively, of 19 percent and 15 percent. Treat indicated items and the following:
  - 1. Wood cants, nailers, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
  - 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
- C. Complete fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces to comply with AWPA M4. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.
- D. Products containing chromium or arsenic will not be permitted.

## 2.9 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, provide materials that comply with performance requirements in AWPA P17. Identify fire-retardant-treated wood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another tests and inspecting agency acceptable to authorities having jurisdiction.
  - 1. Fire retardant treatment of wood products shall conform to the requirements of AWPA U1, Commodity Specification H and AWPA Standard T1, Section 8.8.
  - 2. Use treatment that does not promote corrosion of metal fasteners.
  - 3. Use Interior Type A High Temperature (HT), unless otherwise indicated.

## 2.10 ACCESSORIES

- A. Slip Sheet: ASTM D 226, Type 1, unperforated, asphalt-saturated organic felt.

# PART 3 EXECUTION

## 3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of rough carpentry construction and that are too small to use in fabricating rough carpentry with minimum joints or optimum joint arrangement.
- B. Set rough carpentry to required levels and lines, with members plumb and true to line and cut and fitted.

- C. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated.
- E. Countersink nail heads on exposed carpentry work and fill holes.
- F. Use fasteners appropriate for substrate, and as indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; predrill as required.
- G. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

### 3.2 WOOD GROUNDS, NAILERS, AND BLOCKING

- A. Install wood grounds, nailers, and blocking where shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.
- B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.
- C. Install wood blocking in toilet room stud wall as required for support of toilet room accessories. Coordinate with actual accessories to be installed.

### 3.3 WOOD FURRING

- A. Install plumb and level with closure strips at edges and openings. Shim with wood as required for tolerance of finished work.

### 3.4 INSTALLATION OF CONSTRUCTION PANELS

- A. General: Comply with applicable recommendations contained in Form No. E30, "APA Design/Construction Guide - Residential & Commercial," for types of construction panels and applications indicated and the following:
- B. Fastening Methods: Fasten panels as indicated below:
  1. Plywood Backing Panels: Anchor to masonry substrate with expansion anchors.

### 3.5 INSTALLATION OF GYPSUM WALL SHEATHING

- A. Install gypsum sheathing in accordance with GA253 and ASTM C 1280 requirements.

### 3.6 INSTALLATION OF WOOD SHEATHING

- A. Mechanically fasten sheathing boards to framing in staggered pattern.
- B. Space panels 1/8 inch apart at edges and ends.
- C. Cut sheathing at ridge back 2 inches from ridge point on both sides at continuous ridge vent to allow venting.

### 3.7 WASTE MANAGEMENT

- A. Process construction waste in accordance with Waste Management Plan, as specified in Section 01351, Sustainable Project Requirements, and as follows:

1. Select lumber sizes to minimize waste; reuse scrap lumber to the greatest extent possible. Clearly separate scrap lumber for use on site as accessory components, including: shims, bracing, and blocking.
2. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill. Prevent saw dust and wood shavings from entering the storm drainage system.
3. Do not burn scrap lumber that has been pressure treated.
  - a. Do not send lumber treated with pentachlorophenol, CCA, or ACA to co-generation facilities or “waste-to-energy” facilities.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes finish carpentry items and accessories as required by Contract Documents.

1.2 SUBMITTALS

- A. Shop Drawings: Indicate materials, component profiles, assembly details, profiles, fastening methods, jointing details, and accessories, to a minimum scale of 1-1/2 inch to 1 foot.
- B. Product Data:
  - 1. Submit manufacturer's product data for solid surfacing material.
- C. Samples:
  - 1. Submit two samples minimum 3 inch square of each selected solid surfacing material and minimum 6 inch long of each wood trim and handrail.
- D. Certification: Submit copy of fabricator's AWI Quality Certification Program license. Submit copy of solid-surfacing material fabricator and installer qualifications.
- E. Copy of unexecuted warranty for solid-surfacing surface material.

1.3 QUALITY ASSURANCE

- A. Perform work in accordance with AWI (Architectural Woodwork Institute) Architectural Woodwork Quality Standards Illustrated. Grade as indicated.
- B. Engineered Wood Products:
  - 1. Determine formaldehyde concentrations in air from wood products under test conditions of temperature and relative humidity in accordance with ASTM D 6007 or E 1333.
  - 2. Determine Volatile Organic Compounds (VOC), excluding formaldehyde, emitted from manufactured wood-based panels in accordance with ASTM D 6330.
- C. Conform to applicable requirements of Section 01351, Sustainable Project Requirements.

1.4 QUALIFICATIONS

- A. Fabricator: Company(s) specializing in fabricating the products specified in this Section with minimum three years documented experience.
- B. Solid-surfacing material installation and fabrication shall be by trained personnel and Certified as a Commercial Installer of specified product to be utilized.

1.5 PRE-INSTALLATION MEETING

- A. Convene minimum one week prior to commencing work of this Section.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect work from moisture damage.



## 1.7 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

## 1.8 SEQUENCING

- A. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

## 1.9 COORDINATION

- A. Coordinate the work with plumbing rough-in, electrical rough-in, and installation of associated and adjacent components.

## 1.10 WARRANTY

- A. Provide manufacturer's 10 year warranty for solid-surfacing material from manufacturing defects.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Finish material manufacturers as indicated on the Contract Drawings.

### 2.2 COMPONENTS

- A. High Pressure Decorative Laminate: NEMA LD 3, GP50 for horizontal surfaces, GP28 for vertical surfaces, CL20 for cabinet liner surfaces, BK20 for undecorated backing sheets, PF42 for post forming, thru color. Manufacturer, color and pattern selected by Owner/ Architect.
- B. Wood Particleboard: ANSI A 208.1 Type 1; composed of wood chips or sawdust, medium density, made with water resistant adhesive; sanded faces, shall contain no urea formaldehyde resins.
- C. Hardwood Lumber PS20: AWI Grade premium grade, maximum moisture content of 6-8 percent. Recycled wood content shall be minimum 5 percent post-consumer recycled content or minimum 20 percent pre-consumer recycled content.
- D. Softwood Plywood: PS 1 Grade C-D softwood plywood core; type of glue recommended for application. Recycled wood content shall be minimum 5 percent post-consumer recycled content or minimum 20 percent pre-consumer recycled content.
- E. Medium-Density Fiberboard: ANSI A208.2, Grade MD – water resistant, shall contain no urea formaldehyde resins.

### 2.3 TRIM

- A. Wood: Hardwood lumber, white maple, Grade A finish; Finish lumber S45; conforming to AWI Quality Standards 300, Premium Grade.
- B. Provide profile and size as indicated on Contract Drawings.
- C. Attachment of items shall be nails, screws or other anchoring devices of type, size, material and finish required for application indicated to provide secure attachment and concealed fastening.

## 2.4 SHELVING

- A. Shelving shall be 3/4 inch thick MDF board with plastic laminate covering where indicated or painted surface where not indicated otherwise.
- B. Adjustable Standards and Brackets: Surface mounted, 5/8 inch wide, slotted, BHMA No BB4071, zinc plated steel. Brackets shall be zinc plated steel, width for shelves.
- C. Provide two standards per 4 feet length of shelving, unless indicated otherwise.
- D. Edging: 3 mm vinyl.

## 2.5 HANDRAILING

- A. Clear, kiln-dried red oak of pattern indicated, either solid or laminated.
- B. Profile shall be AWI Profile HRL-5014, maximum 1-1/2 inch diameter.
- C. Railings shall be in conformance with AWI Section 300, Premium Grade.
- D. Railings shall be finished as specified in Section 09931, Wood Stains and Transparent Finishes.

## 2.6 VENEERED WOOD

- A. Wood veneer laminated to medium density fiberboard, plywood or lumber conforming to AWI Quality Standards 200. Veneer shall be plain cut white maple species and shall receive field finish as indicated on Contract Drawings. Face grade shall be "AA".
- B. All exposed panel face shall be covered with indicated veneer. All exposed panel edges shall have edgebanding to match face veneer.
- C. Refer to Contract Drawings for sizes, locations, finishes, and patterns of veneered wood.
- D. Plywood and fiberboard cores shall be 7/16 inch thick. Lumber sizes shall be as required for indicated sizes.

## 2.7 ACCESSORIES

- A. Adhesive and Sealant for High Pressure Decorative Laminates and Solid Surfacing: Waterproof type recommended by material manufacturer to suit application. Comply with regulations regarding toxic and hazardous materials. Adhesives and sealants shall have a VOC content less than 250 g/L less water when calculated to 40 CFR 59, Subpart D (EPA Method 24).
- B. Multipurpose Construction Adhesive: Type recommended by manufacturer to suit application and comply with ASTM D 3498. Comply with regulations regarding toxic and hazardous materials. Adhesives shall have a VOC content less than 70 g/L when calculated to 40 CFR 59, Subpart D (EPA Method 24).
- C. Panel Adhesive: Type recommended by manufacturer to suit application. Adhesives shall have a VOC content less than 50 g/L or less when calculated to 40 CFR 59, Subpart D (EPA Method 24).
- D. Fasteners: Of size and type to suit application.
- E. Concealed Joint Fasteners: Threaded steel.

- F. Lumber for Shimming, and Blocking: Softwood lumber of pine species.
- G. Veneer Edge Band: Standard wood veneer edge band matching face veneer.
- H. Primer: Alkyd primer sealer type.
- I. Wood Filler: Solvent base, tinted to match surface finish color, low VOC values.
- J. Reglets: Equal to Fry Reglet Corp. extruded aluminum reveal channel #DCS-50-50 (millwork) and #DCS-50-100 (wall panels).
- K. Countertop Support Brackets: Equal to Outwater, LLC cold rolled steel #CSB-18-SC-CRS 18" x 18" low profile bracket.

## 2.8 FABRICATION

- A. Fabricate to AWI Premium standards, unless noted otherwise.
- B. Shop assemble work for delivery to Site, permitting passage through building openings.
- C. Fit exposed sheet material edges with matching veneer edging. Use one piece for full length only.
- D. Cap exposed high pressure decorative laminate finish edges with material of same finish and pattern.
- E. Shop prepare and identify components for book match grain matching during Site erection.
- F. When necessary to cut and fit on-site, provide materials with ample allowance for cutting. Provide trim for scribing and Site cutting.
- G. Apply laminate backing sheet to reverse face of high pressure decorative laminate finished surfaces.
- H. Fabricate and install molding, panels and other trim where indicated on the Contract Drawings.
- I. Install wood trim including chair rail and handrailing 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 standing and running trim. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints.
  1. Match color and grain pattern across joints.
  2. Install trim after gypsum board joint-finishing operations are completed.
  3. Drill pilot holes in hardwood before fastening to prevent splitting. Fasten to prevent movement or warping. Countersink fastener heads and fill holes.
  4. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation
- J. Plywood Edges: Edges of flush panels exposed to view shall be pressure glued and edge-banded with hardwood in accordance with AWI Section 500, Premium Grade.

## 2.9 FABRICATION – COUNTERTOPS

- A. Granite Tops and Splashes:
  - 1. All fabrication and installation, and all components attached to or installed in or through shall be in compliance with the manufacturer's recommendations.
  - 2. Back and side splashes shall be size as indicated on Contract Drawings, adhered with silicone adhesive; straight cut.
  - 3. Core material shall be minimum 3/4 inch thickness unless required thicker by manufacturer.
  - 4. Joints, if required, shall be neatly and carefully made. Care shall be taken to make joints watertight, and connecting surfaces shall be flush within the manufacturing tolerances of the process used.

## 2.10 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. Apply wood filler in exposed nail and screw indentations.
- C. On items to receive transparent finishes, use wood filler which matches surrounding surfaces and of types recommended for applied finishes.
- D. Stain, seal, and varnish exposed to view surfaces.
- E. Seal internal surfaces and semi-concealed surfaces.
- F. Prime paint surfaces in contact with cementitious materials.
- G. Refer to wood finishing requirements in Section 09931, Wood Stains and Transparent Finishes.
- H. All exposed wood shall receive a finish as indicated on Contract Drawings. If a finish is not indicated, exposed wood shall receive a finish; coordinate with the Professional.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this Section are placed and ready to receive this work.

### 3.2 INSTALLATION

- A. Install work in accordance with AWI Quality Standard, to match fabrication.
- B. Set and secure materials and components in place, plumb and level.
- C. Install work as indicated on Contract Drawings and as required for proper attachment.
- D. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.
- E. Install hardware and accessories as required.
- F. Install all prefinished wood work in accordance with manufacturer's recommendations.

- G. Install countertops by screwing through corner blocks of base units into underside of countertop. Form seams using splines to align adjacent surfaces, and secure with glue and concealed clamping devices designed for this purpose.
  - 1. Provide cutouts for sinks and lavatories, including holes for faucets and accessories.
  - 2. Seal edges of cutouts by saturating with varnish.
  
- H. Preparation for Site Finishing:
  - 1. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
  - 2. Site Finishing: Refer to Section 09931, Wood Stains and Transparent Finishes.
  - 3. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

### 3.3 ERECTION TOLERANCES

- A. Maximum Variation from True Position: 1/16 inch.
  
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION