

SECTION 06105 - MISCELLANEOUS CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Rooftop equipment bases and support curbs.
 - 2. Wood blocking, cants, and nailers.
 - 3. Wood furring and grounds.
 - 4. Wood panel backing panels.
- B. Related Sections include the following:
 - 1. Division 6 Section "Interior Architectural Woodwork" for interior woodwork not specified in this Section.
 - 2. Division 7 Section "Siding" for exterior wood siding.

1.3 DEFINITIONS

- A. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. SPIB - Southern Pine Inspection Bureau.
 - 2. WCLIB - West Coast Lumber Inspection Bureau.
 - 3. WWPA - Western Wood Products Association.

1.4 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.
 - 1. Indicate component materials and dimensions and include construction and application details.
 - 2. Documentation for wood panel products indicating that no urea formaldehyde has been added to the product.
 - 3. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
 - a. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
 - 4. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
 - a. Include physical properties of treated materials, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.
 - 5. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 - 6. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. Local/regional source certification: Manufacturer or fabricator's certificate indicating location, and distance in miles from the Project Site, of each Product's final assembly, extraction, harvesting, or recovery prior to shipment to the Project Site.
- C. Documentation for each applicable Product, indicating maximum volatile organic compound (VOC).

- D. Documentation of wood veneer and lumber product/material qualifications:
 - 1. Documentation of country of origin for each species of wood veneer and lumber.
 - 2. Documentation of source of wood veneers and lumber (chain of custody), indicating each point of purchase from forest from which the material was harvested to incorporation into the Project
 - 3. Documentation of each country of origin's membership status in International Tropical Timber Organization (ITTO).
 - 4. Certification of compliance with the Forest Stewardship Council "Principles and Criteria, Document 1.2" for forest management.
- E. Documentation of status of each specified wood species related to Convention on International Trade in Endangered Species (CITES) Appendices I, II, or III.

1.5 QUALITY ASSURANCE

- A. Product/Material Qualifications:
 - 1. Wood veneer and lumber:
 - a. Wood veneers and lumber shall come from sources adopting best practices in forest management, logging, and processing, including conformance with the Forest Stewardship Council "Principles and Criteria, Document 1.2."
 - b. Wood veneers and lumber shall be certified as "certified wood" by an independent certification body, accredited by the Forest Stewardship Council (FSC), and shall include the FSC trademark logo indicating such certification.
 - c. Country of origin for tropical wood species shall be a member of International Tropical Timber Organization (ITTO).

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified.
 - a. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - 3. Provide dressed lumber, S4S.
 - 4. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less.
- B. Wood Panels:
 - 1. Thickness: As needed to comply with requirements specified but not less than thickness indicated.
 - 2. Factory mark panels according to indicated standards.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWPAC2 (lumber) and AWPAC9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPAC31 with inorganic boron (SBX).
 - 1. Preservative chemicals: Acceptable to authorities having jurisdiction and one of the following:
 - a. Ammoniacal, or amine, copper quat (ACQ).
 - b. Copper bis (dimethyldithiocarbamate) (CDDC).
 - 2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

- B. Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber.
 - 1. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.
 - 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece, or omit marking and provide certificates of treatment compliance issued by inspection agency.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Wood cants, nailers, curbs, equipment support bases, 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.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, provide materials that comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood). Identify fire-retardant-treated wood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Use treatment for which chemical manufacturer publishes physical properties of treated wood after exposure to elevated temperatures, when tested by a qualified independent testing agency according to ASTM D 5664, for lumber and ASTM D 5516, for plywood.
 - 2. Use treatment that does not promote corrosion of metal fasteners.
 - 3. Use Exterior type for exterior locations and where indicated.
 - 4. Use Interior Type A High Temperature (HT), unless otherwise indicated.
- B. Application: Treat items indicated on Drawings, and the following:
 - 1. Concealed dimensional lumber.
 - 2. Concealed blocking.
 - 3. Concealed wood panel products.

2.4 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including the following:
 - 1. Rooftop equipment bases and support curbs.
 - 2. Blocking.
 - 3. Cants.
 - 4. Nailers.
 - 5. Furring.
 - 6. Grounds.
- B. For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber with 19 percent maximum moisture content and any of the following species:
 - 1. Douglas fir-larch; WCLIB or WWPA.
 - 2. Douglas fir-south; WWPA.
 - 3. Douglas fir-larch (north); NLGA.
 - 4. Hem-fir; WCLIB or WWPA.
 - 5. Hem-fir (north); NLGA.
 - 6. Southern pine; SPIB.
- C. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
 - 1. Douglas fir-larch; WCLIB or WWPA.
 - 2. Douglas fir-south; WWPA.
 - 3. Douglas fir-larch (north); NLGA.
 - 4. Hem-fir; WCLIB or WWPA.
 - 5. Hem-fir (north); NLGA.
 - 6. Southern pine; SPIB.

2.5 PANEL PRODUCTS

- A. Wood Structural Panels: Engineered wood strand panel complying with PS 2, and with no added urea formaldehyde.
 - 1. Thickness: 3/4 inch unless otherwise indicated on Drawings.
 - 2. Size: 48 inch wide by longest practical length.
 - 3. Edges: Square.
 - 4. Available product: Provide the following:
 - a. J. M. Huber Corporation: AdvanTech.
- B. Fire-Rated Particle Board: ANSI A208.1 Grade 1-M-1, complying with UL 723, and with no added urea formaldehyde.
 - 1. Thickness: 3/4 inch unless otherwise noted on Drawings.
 - 2. Flame spread: 20.
 - 3. Smoke development: 25.
- C. Telephone and Electrical Equipment Backing Panels: Fire-rated particle board.
- D. Cementitious Board: ANSI A118.9.
 - 1. Thickness: 7/16 inch.
 - 2. Products: Subject to compliance with requirements, provide one of the products specified.
 - a. Glascrete, Inc.: Wonderboard.
 - b. United States Gypsum Company: Durock.

2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where 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.
- B. Nails, Wire, Brads, and Staples: FS FF-N-105.
- C. Power-Driven Fasteners: CABO NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Screws for Fastening 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.
- F. Lag Bolts: ASME B18.2.1...
- G. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

2.7 METAL FRAMING ANCHORS

- A. General: Provide galvanized steel framing anchors of structural capacity, type, and size indicated and acceptable to authorities having jurisdiction.
- B. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653, G60 coating designation.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
 - 1. Comply with Division 1 Section "Construction Waste Management."
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted.
 - 1. Fit carpentry to other construction; scribe and cope as needed for accurate fit.
 - 2. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- C. Apply field treatment complying with AWWPA M4 to cut surfaces of preservative-treated lumber and plywood.
- D. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.
- E. Countersink fastener heads on exposed carpentry work and fill holes with wood filler.
- F. Use fasteners of appropriate type and length.
 - 1. Pre-drill members when necessary to avoid splitting wood.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work.
 - 1. Form to shapes indicated and cut as required for true line and level of attached work.
 - 2. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading.
 - 1. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

3.3 WOOD FURRING INSTALLATION

- A. Install level and plumb with closure strips at edges and openings.
 - 1. Shim with wood as required for tolerance of finish work.
 - 2. Fire block furred spaces of walls, at each floor level and at ceiling, with wood blocking or noncombustible materials accurately fitted to close furred spaces.
- B. Furring to Receive Paneling: Install 1 inch by-3 inch nominal- size furring at 16 inches on center.

3.4 PANEL PRODUCT INSTALLATION

- A. Wood Structural Panels: Comply with applicable recommendations contained in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.

END OF SECTION 06105

SECTION 06402 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Interior standing and running trim.
 - 2. Wood cabinets.
 - 3. Wood veneer paneling.
 - 4. Agrifiber board paneling.
 - 5. Wood wall paneling.
 - 6. Interior ornamental woodwork including the following:
 - a. Radiused acoustical wood panels.
 - b. Perforated acoustical wood panels.
 - c. Wood veneer acoustical clouds.
 - 7. Interior frames and jambs.
 - 8. Shop finishing of wood cabinets.
- B. Related Sections include the following:
 - 1. Division 6 Section "Miscellaneous Carpentry" for wood furring, blocking, shims, and hanging strips required for installing woodwork and concealed within other construction before woodwork installation.
 - 2. Division 8 Section "Flush Wood Doors."
 - 3. Division 9 Section "Painting" for field finishing of interior architectural woodwork.

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 SUBMITTALS

- A. Product Data: For each type of product specified, including cabinet hardware and accessories, and finishing materials and processes.
 - 1. Documentation for wood panel products indicating that no urea formaldehyde has been added to the product.
- B. Local/regional source certification: Manufacturer or fabricator's certificate indicating location, and distance in miles from the Project Site, of each Product's final assembly, extraction, harvesting, or recovery prior to shipment to the Project Site
- C. Documentation of wood veneer, wood panel, and lumber product/material qualifications:
 - 1. Documentation for wood panel products indicating that no urea formaldehyde has been added to the product.
 - 2. Documentation of country of origin for each species of wood veneer and lumber.
 - 3. Documentation of source of wood veneers and lumber (chain of custody), indicating each point of purchase from forest from which the material was harvested to incorporation into the Project
 - 4. Documentation of each country of origin's membership status in International Tropical Timber Organization (ITTO).
 - 5. Certification of compliance with the Forest Stewardship Council "Principles and Criteria, Document 1.2" for forest management.

- D. Documentation of status of each specified wood species related to Convention on International Trade in Endangered Species (CITES) Appendices I, II, or III.
- E. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 1. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
 - 2. Show locations and sizes of cutouts and holes for items installed in architectural woodwork.
 - 3. Indicate extent of each mockup.
- F. Samples for Initial Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available for each type of material indicated.
 - 1. Shop-applied transparent finishes.
- G. Samples for Verification: For the following:
 - 1. Lumber for transparent finish, width indicated by 12 inches long, for each species and cut.
 - 2. Wood-veneer-faced panel products with or for transparent finish, 8 by 10 inches, for each species and cut.
 - a. Include at least one face-veneer seam and finish as specified.
- H. Product Certificates: Signed by manufacturers of woodwork certifying that products furnished comply with requirements.
- I. Quality Assurance Submittals:
 - 1. Documentation for each applicable Product, indicating maximum volatile organic compound (VOC).
 - 2. Qualification data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience.
 - a. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed architectural woodwork similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Fabricator Qualifications: A firm experienced in producing architectural woodwork similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units, plus the following.
 - 1. Member of Architectural Woodwork Institute.
- C. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork, construction, finishes, and other requirements.
- D. Mockups: Before fabricating and installing interior architectural woodwork, build mockups for each form of construction and finish required to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution.
 - 1. Build mockups to comply with the following requirements, using materials indicated for the completed Work:
 - a. Build mockups in the location and of the size indicated, as follows:
 - 1) 100 square feet of Auditorium 127 wood veneer paneling, including outside corners.
 - 2) 100 square feet of agrifiber board paneling, including outside corners.
 - 3) 1 radiused acoustical wood panels.
 - 4) 100 square feet Auditorium 127 perforated acoustical wood panels including outside corners and borders.
 - 5) 1 wood veneer acoustical clouds.
 - b. Notify Architect seven days in advance of dates and times when mockups will be fabricated and installed.
 - c. Demonstrate the proposed range of aesthetic effects and workmanship.
 - d. Obtain Architect's approval of mockups before starting interior architectural woodwork fabrication.

- e. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."

1.6 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.

1.7 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 will maintaining temperature between 60 and 90 degrees F and relative humidity between 25 and 55 percent 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.
 - 1. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 2. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed and indicate measurements on Shop Drawings.
 - 3. Established dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements.
 - a. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.8 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.
- B. Hardware Coordination: Distribute copies of approved hardware schedule specified in Division 8 Section "Door Hardware" to fabricator of architectural woodwork; coordinate Shop Drawings and fabrication with hardware requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide materials that comply with requirements of the AWI quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Wood Species and Cut for Transparent Finish: Provide at locations indicated.
 - 1. Wood Veneer Type 1: Maple, rotary sliced with curly figure.
 - a. Available Products: Subject to compliance with requirements, cavity drainage materials that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Vida: Flitch # 202370.
 - 2. Wood Veneer Type 2: American Beech, quarter sliced, steamed, ANSI/HPVA Grade AA.
 - 3. Wood Lumber Type 1: Select White Hard Maple, plain sawn, AWI Grade I.
 - 4. Wood Lumber Type 2: American Beech, plain sawn, AWI Grade I.

5. Wood Lumber Type 3: Kiln dried 100 percent reclaimed Sinker Cypress, milled free of paint and other surface containments.
 - a. Size: As indicated.
 - b. Thickness: 3/4 inch, unless otherwise indicated.
 - c. Edges: As indicated.
 - d. Source: Provide products from the following:
 - 1) Frenchman Contractors (512-288-9545.)
 - 2) Riverfront Lumber (800-669-6624.)
- C. Wood Panel Products: Comply with the following:
 1. Medium-density fiberboard: ANSI A208.2, Grade MD, with no added urea formaldehyde, containing not less than 90 percent recycled materials.
 - a. Thickness: 3/4 inch unless otherwise indicated.
 2. Hardwood plywood and face veneers: HPVA HP-1, with no added urea formaldehyde
 - a. Core: Medium-density fiberboard.
 - 1) Thickness: 3/4 inch unless otherwise indicated.

2.2 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets.
- B. Hardware Standard: Comply with BHMA A156.9 for items indicated by referencing BHMA numbers or items referenced to this standard.
- C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 100 degrees of opening, self-closing.
- D. Wire Pulls: Back mounted, 5 inches long, 2-1/2 inches deep, and 5/16 inches in diameter, stainless steel.
- E. Shelf Rests: BHMA A156.9, B04013.
- F. Drawer Slides: Side-mounted, full-extension, zinc-plated steel drawer slides with steel ball bearings, BHMA A156.9, B05091, and rated for the following loads:
 1. Box drawer slides: 100 pounds.
- G. Door Locks: BHMA A156.11, E07121.
- H. Drawer Locks: BHMA A156.11, E07041.
- I. Grommets for Cable Passage through Countertops: 2-inch OD, black, molded-plastic grommets and matching plastic caps with slot for wire passage.
 1. Product: Subject to compliance with requirements, provide the following:
 - a. Doug Mockett and Co., Inc.: Series OG.
- J. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 1. Satin stainless steel: BHMA 630.
- K. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.3 INSTALLATION MATERIALS

- A. Z Reveal Trim:
 1. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221, alloy 6063-T5.
 2. Finish: Class I, Clear Anodic Finish: AA-M12C22A41.
 3. Product: Subject to compliance with requirements, provide the following.
 - a. Fry Reglet Corp.: TDM-50-50.

- b. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1) Gordon, Inc.
 - 2) MM Systems Corporation.
 - 3) Pittcon Industries.
 - B. Metal Corner Trim:
 - 1. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221, alloy 6063-T5.
 - 2. Finish: Class I, Clear Anodic Finish: AA-M12C22A41.
 - 3. Product: Subject to compliance with requirements, provide the following.
 - a. Fry Reglet Corp.: XDM-50-50.
 - b. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1) Gordon, Inc.
 - 2) MM Systems Corporation.
 - 3) Pittcon Industries.
 - C. Horizontal Metal Reveal Trim:
 - 1. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221, alloy 6063-T5.
 - 2. Finish: Class I, Clear Anodic Finish: AA-M12C22A41.
 - 3. Product: Subject to compliance with requirements, provide the following.
 - a. Fry Reglet Corp.: DCS-50-50.
 - b. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1) Gordon, Inc.
 - 2) MM Systems Corporation.
 - 3) Pittcon Industries.
 - D. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.
 - E. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage.
 - 1. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance.
 - 2. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.
 - F. Fasteners for Wood Lumber Type 3: Type 316 stainless steel self-tapping screws, 1/4 inch diameter by 2-1/2 inches long, with hex head.
- 2.4 FABRICATION, GENERAL
- A. Interior Woodwork Grade: Provide Premium grade interior woodwork complying with the 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. Fabricate woodwork to dimensions, profiles, and details indicated.
 - 1. Ease edges to radius indicated for the following:
 - a. Corners of cabinets and edges of solid-wood (lumber) members and rails: 1/16 inch.
 - E. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible, before shipment to Project site.
 - 1. Disassemble components only as necessary for shipment and installation.
 - 2. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

- F. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items.
 - 1. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings.
 - 2. Sand edges of cutouts to remove splinters and burrs.
 - 3. Seal edges of openings in countertops with a coat of varnish.

2.5 INTERIOR STANDING AND RUNNING TRIM FOR TRANSPARENT FINISH

- A. Quality Standard: Comply with AWI Section 300.
- B. Grade: Premium.
- C. For trim items wider than available lumber, use veneered construction.
 - 1. Do not glue for width.
- D. For rails wider or thicker than available lumber, use veneered construction.
 - 1. Do not glue for width or thickness.
- E. 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.

2.6 WOOD CABINETS FOR TRANSPARENT FINISH

- A. Quality Standard: Comply with AWI Section 400 requirements for wood cabinets.
- B. Grade: Premium.
- C. AWI Type of Cabinet Construction: Flush overlay.
- D. Wood Species and Cut for Exposed Surfaces: Wood Veneer/Lumber Type 2.
 - 1. Grain matching: Run and match grain vertically for drawer fronts, doors, and fixed panels.
 - 2. Matching of veneer leaves: Book match.
 - 3. Vertical matching of veneer leaves: End match.
 - 4. Veneer matching within panel face: Running match.
- E. Semiexposed Surfaces: Provide surface materials indicated below:
 - 1. Surfaces other than drawer bodies: Compatible species to that indicated for exposed surfaces, finished to match.
 - 2. Drawer sides and backs: Solid-hardwood lumber, finished to match species indicated for exposed surfaces.
 - 3. Drawer bottoms: Medium density fiberboard.
- F. Provide locks for each door and drawer.

2.7 FLUSH WOOD PANELING AND WAINSCOTS

- A. Quality Standard: Comply with AWI Section 500 requirements for flush wood paneling.
- B. Grade: Premium.
- C. Matching of Adjacent Veneer Leaves: Book match.
- D. Vertical Matching of Adjacent Veneer Leaves: End match.
- E. Veneer Matching within Panel Face: Running match.

- F. Panel-Matching Method: Match panels within each separate area by the following method:
 - 1. Premanufactured sets selectively reduced in width.

- G. Vertical Panel-Matching Method: End match.

2.8 INTERIOR ORNAMENTAL WORK FOR TRANSPARENT FINISH

- A. Quality Standard: Comply with AWI Section 700.

- B. Grade: Premium.

- C. Curved and Radiused Particleboard Substrate:

- 1. Thickness: 13/16 inch.
- 2. Fire rating: Class 1.
- 3. Available products: Subject to compliance with requirements, provide products by one of the following:
 - a. Interior Products, Inc.: Kerfkore.

2.9 WOOD RAILS

- A. Quality Standard: Comply with AWI Section 800.

- B. Grade: Premium.

- C. Finishes: Transparent.

2.10 AGRIFIBER BOARD PANELING

- A. Quality Standard: Comply with AWI Section 500 requirements for flush wood paneling.

- B. Agrifiber Paneling:

- 1. Thickness: 3/4 inch.
- 2. Available products: Subject to compliance with requirements, provide products by one of the following:
 - a. Phenix Biocomposites: Biofiber Wheat.

2.11 INTERIOR FRAMES AND JAMBS FOR TRANSPARENT FINISH

- A. Quality Standard: Comply with AWI Section 900.

- B. Grade: Premium.

- C. For frames or jambs wider than available lumber, use veneered construction.
 - 1. Do not glue for width.

2.12 SHOP FINISHING

- A. Quality Standard: Comply with AWI Section 1500, unless otherwise indicated.

- 1. Grade: Provide finishes of same grades as items to be finished.

- B. General: Finish wood cabinets at fabrication shop as specified in this Section.

- 1. Defer only final touchup, cleaning, and polishing until after installation.
- 2. Refer to Division 9 Section "Painting" for material and application requirements for woodwork not specified to receive final finish in this Section.

- C. Preparations 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:
 - a. Apply one coat of sealer, compatible with finish coats, to concealed surfaces of woodwork.
 - b. Apply two coats to back of paneling and to end-grain surfaces.
- D. Transparent Finish: Comply with requirements indicated below for grade, finish system, staining, and sheen, with sheen measured on 60-degree gloss meter per ASTM D 523:
 - 1. Grade: Premium.
 - 2. AWI Finish System TR-6: Catalyzed polyurethane.
 - 3. Staining: None required.
 - 4. Sheen: Satin, 30-50 gloss units.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Condition woodwork to average prevailing humidity conditions in installation areas before installation.
- 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. Quality Standard: Install woodwork to comply with AWI Section 1700 for the same grade specified in Part 2 of this Section for type of woodwork involved.
- B. Install woodwork 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.
- C. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces and repair damaged finish at cuts.
- D. Anchor woodwork to anchors or blocking built in or directly attached to substrates.
 - 1. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation.
 - 2. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
- E. Standing and Running Trim:
 - 1. Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible.
 - 2. Do not use pieces less than 96 inches long, except where shorter single-length pieces are necessary.
 - a. Scarf running joints and stagger in adjacent and related members.
 - 3. Fill gaps, if any, between top of base and wall with plastic wood filler, sand smooth, and finish same as wood base, if finished.
 - 4. Install wall railings on indicated metal brackets securely fastened to wall framing.
 - 5. Install standing and running trim with no more variation from a straight line than 1/8 inch in 96 inches.
- F. Cabinets:
 - 1. Install without distortion so doors and drawers fit openings properly and are accurately aligned.
 - 2. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.
 - a. Complete installation of hardware and accessory items as indicated.
 - 3. Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 - 4. Maintain veneer sequence matching of cabinets with transparent finish.

5. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches on center with No. 10 wafer-head screws sized for 1-inch penetration into wood framing, blocking, or hanging strips.
- G. Paneling:
1. Anchor paneling to supporting substrate with concealed panel-hanger clips.
 - a. Do not use face fastening, unless.
 2. Install flush paneling with no more than 1/16 inch in 96-inch vertical cup or bow and 1/8 inch in 96-inch horizontal variation from a true plane.
- H. Rails: Install rails with no more than 1/8 inch in 96-inch variation from a straight line.
- I. Refer to Division 9 Sections for final finishing of installed architectural woodwork.
- 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 semiexposed surfaces.
 1. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 06402

SECTION 06650 – SOLID PHENOLIC FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Solid phenolic countertops.
 - 2. Solid phenolic shelves.
- B. Related Sections include the following:
 - 1. Division 6 Section "Miscellaneous Carpentry" for wood furring, blocking, shims, and hanging strips required for installing woodwork and concealed within other construction before woodwork installation.
 - 2. Division 6 Section "Interior Architectural Woodwork" for casework.

1.3 SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 1. Show locations and sizes of cutouts and holes for items installed in fabrications.
- C. Samples for Verification: For the following:
 - 1. 4 inches by 4 inches of solid phenolic material.
- D. Quality Assurance Submittals:
 - 1. Local/regional source certification: Manufacturer or fabricator's certificate indicating location, and distance in miles from the Project Site, of each Product's final assembly, extraction, harvesting, or recovery prior to shipment to the Project Site.
 - 2. Documentation for each applicable Product, indicating maximum volatile organic compound (VOC).

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Fabricator Qualifications: A firm experienced in producing work similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Where work is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings.
 - 1. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 2. Locate concealed framing, blocking, and reinforcements that support work by field measurements before being enclosed and indicate measurements on Shop Drawings.
 - 3. Established dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating work without field measurements.

1.6 COORDINATION

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

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Solid Phenolic Material: Solid sheets of thermosetting resins, homogeneous reinforced with wood fibers manufactured under high pressure and temperature, with an integrated melamine-impregnated paper surface finish.
 - 1. Thickness: 1 inch unless otherwise indicated on Drawings.
 - 2. Profiles: As indicated on Drawings.
 - 3. Color: Black.
 - 4. Fire ratings for 1/2-inch thick material when tested in accordance with ASTM E84.
 - 5. Flame spread: Not more than 10.
 - 6. Smoke development: Not more than 75.
 - 7. Available products: Subject to compliance with requirements, provide products by one of the following:
 - a. Abet Laminati
 - b. Trespa North America, Ltd.

2.2 INSTALLATION MATERIALS

- A. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage.

2.3 FABRICATION

- A. Fabricate to dimensions, profiles, and details indicated.
 - 1. Ease edges 1/8 inch radius.
 - 2. Form joints between components using manufacturer's standard joint adhesive, without conspicuous joints.
 - 3. Fabricate inside corners to rounded configuration.
- B. Complete fabrication, including assembly and finishing, to maximum extent possible, before shipment to Project site.
 - 1. Disassemble components only as necessary for shipment and installation.
- C. Shop cut openings, to maximum extent possible, to receive appliances, plumbing fixtures, electrical work, and similar items.
 - 1. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings.
 - 2. Sand edges of cutouts to remove splinters and burrs.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Condition woodwork to average prevailing humidity conditions in installation areas before installation.
- 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. Install work level, plumb, true, and straight.
 - 1. Shim as required with concealed shims.
 - 2. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.
- B. Scribe and cut Work to fit adjoining work, and refinish cut surfaces and repair damaged finish at cuts.
- C. Anchor fabrications to anchors or blocking built in or directly attached to substrates.
 - 1. Secure with countersunk, concealed fasteners as required for complete installation.

3.3 ADJUSTING AND CLEANING

- A. Clean work on exposed and semiexposed surfaces.

END OF SECTION 06650