

SECTION 064023

INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Custom casework, including the following:
 - a. Plastic-laminate cabinets and shelving.
 - b. Plastic-laminate countertops.
 - c. Solid-surfacing-material countertops.
 - d. Wall-mounted adjustable shelving.
 - 2. Shop finishing of interior woodwork.
- B. Related Sections include the following:
 - 1. Division 05 Section "Metal Fabrications" for miscellaneous framing and supports for countertops.
 - 2. Division 09 Section "Interior Finish Schedule" for product finish information not specified in this Section.
- C. See Structural Drawings for plywood sheathing, backing panels, and other miscellaneous plywood.
- D. See Structural Drawings for wood backing and blocking required for installing woodwork and concealed within other construction before woodwork installation.

1.2 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.

1.3 SUBMITTALS

- A. Product Data: For panel products, high-pressure decorative laminate, adhesive for bonding plastic laminate, ABS T-moldings, solid-surfacing material, fire-retardant-treated materials, cabinet hardware and accessories, and 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. Show details full size.
 - 2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.

3. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, and other items installed in architectural woodwork.
4. Apply WI-certified compliance label to first page of Shop Drawings.

C. Samples:

1. Plastic laminates, 8 by 10 inches, for each type, color, pattern, and surface finish, with 1 sample applied to core material and specified edge material applied to 1 edge.
2. Thermoset decorative-panels, 8 by 10 inches, for each type, color, pattern, and surface finish.
3. Solid-surfacing materials, 6 inches square, for each type, color, pattern, and surface finish.
4. Exposed cabinet hardware and accessories, one unit for each type and finish.

D. Product Certificates: For each type of product, signed by product manufacturer.

E. Woodwork Quality Standard Compliance Certificates: WI-certified compliance certificates.

F. Qualification Data: For Installer and fabricator.

1.4 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. Shop is a licensee of WI's Certified Compliance Program.

B. Installer Qualifications: Fabricator of products.

C. Quality Standard: Unless otherwise indicated, comply with WI's "Manual of Millwork" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.

1. Provide WI-certified compliance labels and certificates indicating that woodwork, including installation, complies with requirements of grades specified.

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 01 Section "Project Management and Coordination."

1.5 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.

1.6 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.

1.7 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 WI's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Wood Products: Comply with the following:
 - 1. Hardboard: AHA A135.4.
 - 2. Medium-Density Fiberboard: ANSI A208.2, Grade MD, made with binder containing no urea formaldehyde; weight 48 lbs/cu. ft.
 - a. Products:
 - 1) SierraPine's Medite II.
 - 2) Weyerhaeuser's Premier Plus.
 - 3) Accepted equal.
 - 3. High-Density Fiberboard: ANSI A208.2, Grade HD, made with binder containing no urea formaldehyde; weight 55 lbs/cu. ft.
 - a. Products:
 - 1) SierraPine's Medite 55 lb.
 - 2) Accepted equal.
 - 4. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
 - 5. Softwood Plywood: DOC PS 1.
- C. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.
 - 1. Provide PVC or polyester edge banding complying with LMA EDG-1 on components with exposed or semiexposed edges.
- D. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.

1. Manufacturer: As specified in Division 09 Section "Interior Finish Schedule and indicated on the Drawings.
- E. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.
 1. Manufacturer: As specified in Division 09 Section "Interior Finish Schedule and indicated on the Drawings.
- F. Tempered Float Glass for Cabinet Doors: ASTM C 1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3, with exposed edges seamed before tempering, 6 mm thick, unless otherwise indicated.

2.2 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this Article, 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. Exterior Type: Organic-resin-based formulation thermally set in wood by kiln drying.
 2. Interior Type A: Low-hygroscopic formulation.
 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.

3. Product: Subject to compliance with requirements, provide "Duraflake FR" by Weyerhaeuser.
- 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.
 1. Product: Subject to compliance with requirements, provide "Medite FR" by SierraPine Ltd.; Medite Div.

2.3 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets.
- B. Butt Hinges: 2-3/4-inch, 5-knuckle steel hinges made from 0.095-inch- thick metal, and as follows:
 1. Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521.
 - a. Products:
 - 1) Rockford Process Control, Inc.'s Model 374.
 - 2) Accepted equal.
- C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 170 degrees of opening, self-closing.
- D. Back-Mounted Pulls: BHMA A156.9, B02011.
- E. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.
- F. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.
- G. Drawer Slides: BHMA A156.9, B05091.
 1. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Side mounted; full-extension type; zinc-plated steel ball-bearing slides.
 2. Box Drawer Slides: Grade 1HD-100; for drawers not more than 6 inches high and 24 inches wide.
 3. File Drawer Slides: Grade 1HD-200; for drawers more than 6 inches high or 24 inches wide.
 4. Pencil Drawer Slides: Grade 1; for drawers not more than 3 inches high and 24 inches wide.
- H. Mechanical Locks:
 1. Door Locks: BHMA A156.11, E07121.
 2. Drawer Locks: BHMA A156.11, E07041.
- I. Built-in Locks: For casework units indicated to be accessible to persons with disabilities, provide Digilock's ADA-compliant, Button-Key Lock Model T-52, or accepted equal lock as recommended by manufacturer for intended applications. Provide one-touch access and management bypass keys.

- J. ADA Decals: For casework units indicated to be accessible to persons with disabilities, provide ADA-compliant decal or other identifying graphics to face of doors as required by applicable accessibility requirements.
- K. Electronic Locking System:
 - 1. Keypad: International Electronics, Inc.'s Model 212iLW Architectural Backlit Keypad.
 - 2. Locks: Security Door Control's Electromagnetic Cabinet Lock, Model 1583 12/24VDC.
 - 3. Power Supply: International Electronics, Inc.'s 24 VDC plug-in power supply.
- L. Grommets for Cable Passage through Countertops: 3-inch OD, black, molded-plastic grommets and matching plastic caps with slot for wire passage.
 - 1. Product: Subject to compliance with requirements, provide "XG series" by Doug Mockett & Company, Inc.
- M. Wire Management Trough: 3-1/4-inch high by 1-inch deep, black, molded-plastic. Provide in continuous lengths as required to achieve indicated layout.
 - 1. Product: Subject to compliance with requirements, provide "WM2A" by Doug Mockett & Company, Inc.
- N. Wall-Mounted Adjustable Shelf Standards and Supports:
 - 1. Manufacturer: Knape & Vogt (K-V), Reeve Store Equipment Co., or accepted equal.
 - 2. Standards: K-V Series 87 slotted extra heavy duty standard, 7/8-inch wide by 11/16-inch high, with 2-inch slot increments.
 - 3. Knife Brackets: K-V No. 187 extra heavy duty bracket, size as required for shelf depth as indicated, with 2-inch adjustment.
 - 4. Shelf Rests: K-V Nos. K210 End, K211 Center, and K212 Front shelf rests.
 - 5. Finish: Manufacturer's standard electro-plated anochrome finish.
- O. Clothes Rods: Knape & Vogt 660 rod and 734 flanges, or accepted equal.
- P. Sliding Glass Window Hardware: Hafele sliding glass door frame with EKU-Clipo 25 GR 20/20 Infront hardware with locks on each panel, and stoppers at each end/jamb.
- Q. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 - 1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
 - 2. Satin Stainless Steel: BHMA 630.
- R. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.4 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln dried to less than 15 percent moisture content.
- B. 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.

- C. Adhesives, General: Do not use adhesives that contain urea formaldehyde.
- D. VOC Limits for Installation Adhesives and Glues: Use installation adhesives that 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. Contact Adhesive: 250 g/L.

2.5 FABRICATION, GENERAL

- A. Interior Woodwork Grade: Provide interior woodwork complying with referenced quality standard, as follows:
 - 1. Typical Grade, Unless Otherwise Indicated: Custom.
 - 2. Solid Surface Countertops: Premium.
- 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.
- E. 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.
- F. 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.
- G. Install glass to comply with applicable requirements in Division 08 Section "Glazing" and in GANA's "Glazing Manual." For glass in wood frames, secure glass with removable stops.
- H. Door and Drawer Locks: Unless otherwise indicated, fabricate all door and drawer units to receive locking devices.
 - 1. Key locks similarly within each space where locking casework occurs.
 - 2. Key casework differently between different spaces.
 - 3. Provide master key system for all locking casework.

2.6 PLASTIC-LAMINATE CABINETS

- A. Grade: Custom.
- B. Applicable Standard: WI Section 15; Casework – Laminated Plastic.
- C. WI Construction Style: Style A, Frameless.
- D. WI Construction Type: Type I, multiple self-supporting units rigidly joined together or II, single-length sections to fit access openings, at fabricator's option.
- E. WI Door and Drawer Front Style: Flush overlay.
- F. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:
 - 1. Horizontal Surfaces Other Than Tops: Grade HGS.
 - 2. Postformed Surfaces: Grade HGP.
 - 3. Vertical Surfaces: Grade VGS.
 - 4. Edges: ABS T-mold matching laminate in color, pattern, and finish.
- G. Materials for Semiexposed Surfaces:
 - 1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, Grade VGS.
 - a. Edges of Plastic-Laminate Shelves: ABS T-mold matching laminate in color, pattern, and finish.
 - b. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, Grade VGS.
 - 2. Drawer Sides and Backs: Solid-hardwood lumber.
 - 3. Drawer Bottoms: Thermoset decorative panels.
- H. Concealed Backs of Panels with Exposed Plastic Laminate Surfaces: High-pressure decorative laminate, Grade BKL.
- I. Colors, Patterns, and Finishes: As specified in Division 09 Section "Interior Finish Schedule" and indicated on the Drawings.

2.7 PLASTIC-LAMINATE COUNTERTOPS

- A. Grade: Custom.
- B. Applicable Standard: WI Section 16; Countertops – Laminated Plastic.
- C. High-Pressure Decorative Laminate Grade: HGS.
- D. Colors, Patterns, and Finishes: As specified in Division 09 Section "Interior Finish Schedule" and indicated on the Drawings.
- E. Edge Treatment: As indicated.
- F. Backer Sheet: Provide plastic-laminate backer sheet, Grade BKL, on underside of countertop substrate.

2.8 SOLID-SURFACING-MATERIAL COUNTERTOPS

- A. Grade: Premium.
- B. Applicable Standard: WI Section 17; Countertops – Solid Surface.
- C. Solid-Surfacing-Material Thickness: As indicated on the Drawings.
- D. Colors, Patterns, and Finishes: As specified in Division 09 Section “Interior Finish Schedule” and indicated on the Drawings.
- E. 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.
 - 2. Fabricate tops with loose backsplashes for field application.
- F. Install integral sink bowls in countertops in shop.
- G. Drill holes in countertops for plumbing fittings and soap dispensers in shop.

2.9 WALL-MOUNTED ADJUSTABLE SHELVING

- A. Applicable Standard: WI Section 15; Casework – Laminated Plastic.
- B. Load Capacity: Not less than 50 pounds per square foot with deflection not to exceed L/144.
- C. High-Pressure Decorative Laminate Grade: HGS.
- D. Colors, Patterns, and Finishes: As specified in Division 9 Section “Interior Finish Schedule” and indicated on the Drawings.
- E. Edges: ABS T-mold matching laminate in color, pattern, and finish.

2.10 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.

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.

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 (including tops) to a tolerance of 1/8 inch in 96 inches.
- 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 as required for complete installation.
- G. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
 - 1. Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 - 2. Fasten wall cabinets through back, near top and bottom, and at ends, at spacing indicated.
- H. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
 - 1. Align adjacent solid-surfacng-material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
 - 2. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 - 3. Secure backsplashes to tops with concealed metal brackets at 16 inches o.c. and to walls with adhesive.
 - 4. Calk space between backsplash and wall with sealant specified in Division 07 Section "Joint Sealants."
- I. Wall-Mounted Adjustable Shelves: Secure shelf standards to backing plates. Secure shelves to shelf rests of knife brackets with wood screws.
- J. 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 semiexposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 064023